



# Contract Review Sheet

PW-4735-22

Contract for Services #: PW-4735-22 Amendment #: \_\_\_\_\_

Contact: Chalyce MacDonald Department: Public Works

Phone #: 503-566-4139 Date Sent: Wednesday, June 15, 2022

Title: Environmental Monitoring and Reporting

Contractor's Name: SCS Engineers

Term - Date From: July 1, 2022 Expires: June 30, 2027

Contract Total: \$ 749,343.40 Amendment: \$ - New Total: \$ 749,343.40

Incoming Funds  Federal Funds  Reinstatement  Retroactive  Amendment greater than 25%

Source Selection Method: RFP CMS # 1027

### Description of Services or Grant Award

This is a contract for the environmental monitoring and reporting services for the North Marion County Disposal Facility and Browns Island Demolition Landfill. These services are required by our Oregon Department of Environmental Quality (DEQ) permits for those sites, which also require that these services be performed by a third-party professional geologist registered in the State of Oregon. SCS Engineers have provided this service for MCPW since 2014.

Desired BOC Session Date: 7/6/2022 BOC Planning Date: 6/23/2022

Files submitted in CMS: 6/15/2022 Printed packet & copies due in Finance: 6/21/2022

BOC Session Presenter(s) Brian May

### FOR FINANCE USE

Date Finance Received: 6/15/2022 Date Legal Received: \_\_\_\_\_

Comments: Y

### REQUIRED APPROVALS

\_\_\_\_\_  
Finance - Contracts Date

\_\_\_\_\_  
Contract Specialist Date

\_\_\_\_\_  
Legal Counsel Date

\_\_\_\_\_  
Chief Administrative Officer Date



MARION COUNTY BOARD OF COMMISSIONERS

# Board Session Agenda Review Form

Meeting date: July 6, 2022

Department: Public Works

Agenda Planning Date: June 23, 2022

Time required: 5 min

Audio/Visual aids N/A

Contact: Brian May

Phone: 503-365-3147

Department Head Signature:

**TITLE** Consider approval of a 5-year contract with SCS Engineers for Environmental Monitoring and Reporting Services for North Marion Transfer Station and Browns Island Landfill, as required by ODEQ.

**Issue, Description & Background** Marion County is required by the ODEQ solid waste disposal permits to perform environmental monitoring and reporting of groundwater quality for the North Marion Transfer Station (NMTS) and Browns Island Demolition Landfill (BILF). All work must be performed and certified by a "third party" professional geologist registered in the State of Oregon.

**Financial Impacts:** SCS Engineers is to provide environmental monitoring and reporting services for the Financial Impacts: NMTS and BILF over five years for an amount of \$576,418, plus a 30 percent contingency reserve for potential unknown monitoring, re-sampling and additional reporting.

**Impacts to Department & External Agencies** None

**Options for Consideration:** 1) Approve the Contract for Services with SCS Engineers for Environmental Monitoring and Reporting Services.  
2) Direct the Department to consider other contractors.

**Recommendation:** 1) It is the recommendation of the Department of Public Works that the Board of Commissioners approve the Contract For Services with SCS Engineers.

**List of attachments:** Feasibility Determination, Solicitation results, Contract for Services and attachments

**Presenter:** Brian May

*Copies of completed paperwork sent to the following: (Include names and e-mail addresses.)*

**Copies to:** Chalyce MacDonald, cmacdonald@co.marion.or.us

**MARION COUNTY**  
**STANDARD PROFESSIONAL SERVICES CONTRACT**

(Architectural, Engineering, Land Surveying and Related Services)

THIS PROFESSIONAL SERVICES CONTRACT (the “Contract”) is between Marion County, a political subdivision of the State of Oregon, by and through its Public Works Department, (the “Owner”), and:

Company: SCS Engineers

Address: 14945 Sequoia Pkwy Ste 180

City, State Zip: Portland, OR 97224

Phone: 503-639-9201

Contract # PW-4735-22

Fax # 503-684-6948

Email: BLary@scsengineers.com

(the “Consultant”) (collectively Owner and Consultant are referred to as the "Parties"). This Contract is for all Services related to completion of the project more particularly described as follows (the “Project”):

Marion County Public Works Department (Owner) has contracted SCS Engineers (Consultant) to provide environmental monitoring and reporting per the Oregon Department of Environmental Quality’s (DEQ) environmental monitoring guidelines in relation to solid waste and landfills.

Consultant will perform Environmental Monitoring and Reporting in accordance with the attached Environmental Monitoring Plans (EMPs) for the North Marion County Disposal Facility (NMCDF) and the Brown’s Island Landfill (BI) as provided in Exhibits F1 and F2, respectively.

This Contract shall become effective on the date that the Contract is fully executed by the Parties and all required Marion County approvals have been obtained (the “Effective Date”). No Services shall be performed prior to the Effective Date. The Contract shall expire, unless otherwise terminated or extended, on June 30, 2027. Generally, the Services to be performed by Consultant on the Project consist of the following (the “Services”):

Consultant will perform groundwater sampling, laboratory analysis, data management, review, and analysis, reporting, and project management.

The Services are more specifically described in the **EXHIBIT A, Statement of Work**. Owner agrees to pay Consultant a sum not to exceed \$789,331.95 for performance of the Services, which shall include all allowable expenses. Progress payments shall be made in accordance with **EXHIBIT B, Consultant Compensation**.

This Contract consists of these introductory provisions and the signature page(s), Section 1-Relationship of the Parties, Section 2-Consultant’s Responsibilities; Representations and Warranties, Section 3-Responsibilities of Owner; Special Contract Provisions, Section 4-General Contract Provisions and the following exhibits attached hereto and incorporated herein by this reference:

EXHIBIT A: Statement of Work

EXHIBIT B: Consultant Compensation

EXHIBIT C: Insurance Provisions

EXHIBIT D: Task Schedule

EXHIBIT E: Rate Schedule

EXHIBITS F1 & F2: EMPs

EXHIBIT G: Request for Proposal

EXHIBIT H: SCS Engineers Proposal

THIS CONTRACT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES ON THE SUBJECT MATTERS ADDRESSED HEREIN. THE TERMS OF THIS CONTRACT CANNOT BE WAIVED, ALTERED, MODIFIED, SUPPLEMENTED OR AMENDED, IN ANY MANNER WHATSOEVER, EXCEPT BY WRITTEN INSTRUMENT SIGNED BY THE PARTIES AND CONTAINING ALL REQUIRED APPROVALS. ANY SUCH WAIVER, ALTERATION, MODIFICATION, SUPPLEMENTATION OR AMENDMENT SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, REGARDING THIS CONTRACT EXCEPT AS CONTAINED, INCORPORATED, OR REFERENCED HEREIN. CONSULTANT, BY THE SIGNATURE BELOW OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT IT HAS READ THIS CONTRACT, UNDERSTANDS THIS CONTRACT, AND AGREES TO BE BOUND BY ALL OF THIS CONTRACT'S TERMS AND CONDITIONS. THIS CONTRACT, AND ANY AMENDMENTS TO IT, MAY BE EXECUTED IN COUNTERPARTS (EACH OF WHICH SHALL BE AN ORIGINAL AND ALL OF WHICH SHALL CONSTITUTE BUT ONE AND THE SAME INSTRUMENT) OR IN MULTIPLE ORIGINALS.

**MARION COUNTY SIGNATURES  
BOARD OF COMMISSIONERS:**

\_\_\_\_\_  
Chair Date

\_\_\_\_\_  
Commissioner Date

\_\_\_\_\_  
Commissioner Date

Authorized Signature: \_\_\_\_\_  
Department Director or designee Date

Authorized Signature: \_\_\_\_\_  
Chief Administrative Officer Date

Reviewed by Signature: \_\_\_\_\_  
Marion County Legal Counsel Date

Reviewed by Signature: \_\_\_\_\_  
Marion County Contracts & Procurement Date

**SCS ENGINEERS SIGNATURE**

Authorized Signature: \_\_\_\_\_  
Date

Title: \_\_\_\_\_



## **1 RELATIONSHIP OF THE PARTIES**

**1.1** Consultant shall provide the Services for the Project in accordance with the terms and conditions of this Contract. Consultant's performance of Services shall be as a professional consultant to Owner to carry out the Project and to provide the technical documents and supervision to achieve Owner's Project objectives.

**1.2** In administering this Contract, Owner may retain the services of an independent project manager and other consultants as needed to fulfill Owner's objectives.

**1.3** Consultant shall provide a list of all sub-consultants which Consultant intends to utilize on the Project (the "Sub-consultants"). This list shall include such information on the qualifications of the Sub-consultants as may be requested by Owner. Owner reserves the right to review the Sub-consultants proposed. Consultant shall not retain a Sub-consultant to which Owner has a reasonable objection.

**1.4** Consultant acknowledges that this Contract was awarded on the basis of the unique background and abilities of the key personnel of Consultant and Sub-consultants identified by Consultant (collectively, the "Key Personnel" and individually, the "Key Person"). Therefore, Consultant shall make available Key Personnel as identified in its proposal. Consultant shall provide to Owner a list of the proposed Key Personnel to be assigned to the Project. This list shall include such information on the professional background of each Key Person as may be requested by Owner. If any Key Person becomes unavailable to Consultant, the Parties shall mutually agree upon an appropriate replacement. Without prior notice to, and the written consent of, Owner, Consultant shall not: (i) re-assign or transfer any Key Person to other duties or positions so that the Key Person is unable to fully perform his or her responsibilities under the Contract; (ii) allow any Key Person to delegate to anyone his or her performance of any management authority or other responsibility required under the Contract; or (iii) substitute any Key Person. Any of these actions shall constitute a material breach of the Contract. Consultant shall remove any individual or Sub-consultant from the Project if so directed by Owner in writing following discussion with Consultant, provided that Consultant shall have a reasonable time period within which to find a suitable replacement.

## **2 CONSULTANT'S RESPONSIBILITIES; REPRESENTATIONS AND WARRANTIES**

**2.1** Consultant agrees that:

**2.1.1** The phrase "Standard of Care" that is used in this Contract is defined as follows: the same professional skill, care, diligence and standards as other professionals performing similar services under similar conditions (the "Standard of Care");

**2.1.2** Consultant shall perform all Services in accordance with the Standard of Care;

**2.1.3** Consultant shall prepare, in accordance with the Standard of Care, all drawings, specifications, deliverables and other documents so that they accurately reflect, fully comply with and incorporate all applicable laws, rules, and regulations, and so that they are complete and functional for the purposes intended, except as to any deficiencies which are due to causes beyond the control of Consultant;

**2.1.4** Consultant shall be responsible for correcting any inconsistencies, errors or omissions in the drawings, specifications, deliverables and other documents prepared by Consultant at no additional cost to Owner;

**2.1.5** Owner's review or acceptance of documents shall not be deemed as approval of the adequacy of the drawings, specifications, deliverables, and other documents. Any review or acceptance by Owner will not relieve Consultant of any responsibility for complying with the Standard of Care;

**2.1.6** Except as provided in Supplemental Services addressed within Exhibits A and B, Consultant shall, at no additional cost to Owner, render assistance to Owner in resolving problems or other issues relating to the Project design or to specified materials;

**2.1.7** During the term of the Contract, Consultant shall obtain, hold, maintain and fully pay for all licenses and permits required by law for Consultant to conduct its business and perform the Services. During the term of the Contract, Owner shall pay for, and Consultant shall obtain, hold and maintain all licenses and permits required for the Project, unless otherwise specified in the Contract. Consultant shall review the Project site and the nature of the Services and advise Owner throughout the course of the Project as to the necessity of obtaining all Project permits and licenses, the status of the issuance of any such permits and licenses, and any issues or impediments related to the issuance or continuation of any such permits and licenses; and

**2.1.8** Consultant shall pay all Sub-consultants and other subcontractors as required by Consultant's contracts with those Sub-consultants and subcontractors. Consultant agrees that Owner has no direct or indirect contractual obligation or other legal duty whatsoever to pay the Sub-consultants and other subcontractors of Consultant or otherwise ensure that Consultant makes full and timely payment to those Sub-consultants and subcontractors for services performed on the Project.

**2.2** Consultant represents and warrants to Owner that:

**2.2.1** Consultant has the power and authority to enter into and perform this Contract; the persons executing this Contract on behalf of Consultant have the actual authority to bind Consultant to the terms of this Contract;

**2.2.2** When executed and delivered, this Contract shall be a valid and binding obligation of Consultant enforceable in accordance with its terms; the provisions of this Contract do not conflict with or result in a default under any agreement or other instrument binding upon Consultant and do not result in a violation of any law, regulation, court decree or court order or other legal process applicable to Consultant;

**2.2.3** Consultant shall, at all times during the term of this Contract, be duly licensed to perform the Services, and if there is no licensing requirement for the profession or Services, be duly qualified and competent;

**2.2.4** Consultant is an experienced firm having the skill, legal capacity, and professional ability necessary to perform all the Services required under this Contract and to design and administer a project having the scope and complexity of the Project;

**2.2.5** Consultant has the capabilities and resources necessary to perform Consultant's obligations under this Contract;

**2.2.6** Consultant is, or shall become, in a manner consistent with the Standard of Care, familiar with all current laws, rules, and regulations which are applicable to the design and construction of the Project;

**2.2.7** All Services shall be performed in accordance with the Standard of Care;

**2.2.8** The Project, when completed and if constructed in accordance with the intent established by the drawings, specifications, deliverables and other documents prepared by Consultant pursuant to this Contract, shall be structurally sound and a complete and properly functioning facility suitable for the purposes for which it is intended; and

**2.2.9** The published specifications of the "Automated Systems" that Consultant has specified, designated, and planned pursuant to this Contract conform to the Contract requirements. For the purposes of this subsection, "Automated Systems" shall mean any computers, software, firmware, HVAC systems, elevators, electrical systems, fire or life safety systems, security systems and any other electrical, mechanized, or computerized devices serving the Project.

**2.3** The warranties set forth in this section are in addition to, and not in lieu of, any other warranties provided in this Contract or at law.

### **3 RESPONSIBILITIES OF OWNER; SPECIAL CONTRACT PROVISIONS**

Owner's responsibilities under this Contract, and certain additional responsibilities of Consultant, are set forth in Exhibit D-Special Contract Provisions.

### **4 GENERAL CONTRACT PROVISIONS**

**4.1 *Contract Performance.*** Consultant shall at all times perform the Services diligently and without delay and shall punctually fulfill all Contract requirements consistent with the schedule for the performance of Services set forth in Exhibits A and E. Expiration or termination of the Contract shall not extinguish, prejudice, or limit either party's right to enforce this Contract with respect to any default or defect in performance. Time is of the essence in the performance of this Contract.

**4.2 *Access to Records.*** For not less than ten (10) years after the Contract's expiration or termination, Owner, the Secretary of State's Office of the State of Oregon, the federal government, and their duly authorized representatives shall have access to the books, documents, papers, and records of Consultant and the Sub-consultants which pertain to the Contract for the purpose of making audits, examination, excerpts, and transcripts. If, for any reason, any part of this Contract, any Project-related consultant contract or any Project-related construction contract(s) is involved in litigation, Consultant shall retain all pertinent records for not less than seven (7) years or until all litigation is resolved, whichever is longer. Consultant shall provide Owner and the other entities referenced above with full access to these records in preparation for and during litigation.

**4.3 *Funds Available and Authorized.*** Owner reasonably believes as of the Effective Date that sufficient funds are available and authorized for expenditure to finance the cost of this Contract

within Owner's appropriation or limitation. Consultant understands and agrees that, to the extent that sufficient funds are not available and authorized for expenditure to finance the cost of this Contract, Owner's payment of amounts under this Contract attributable to Services performed after the last day of the current budget cycle is contingent upon County budgeting and appropriating funds or other expenditure authority sufficient to allow County, in the exercise of its reasonable administrative discretion, to continue to make payments under this Contract.

**4.4 Insurance.** Consultant shall maintain in effect for the duration of this Contract, or any other time periods required herein, the insurance set forth in Exhibit C-Insurance Provisions.

**4.5 Indemnity.**

**4.5.1 CLAIMS FOR OTHER THAN PROFESSIONAL LIABILITY.** CONSULTANT SHALL INDEMNIFY, DEFEND, SAVE, AND HOLD HARMLESS OWNER, AND ITS OFFICERS, AGENTS, AND EMPLOYEES, FROM AND AGAINST ALL CLAIMS, SUITS, ACTIONS, LOSSES, DAMAGES, LIABILITIES, COSTS AND EXPENSES OF WHATSOEVER NATURE RESULTING FROM OR ARISING OUT OF THE ACTS OR OMISSIONS OF CONSULTANT OR ITS SUB-CONSULTANTS, SUBCONTRACTORS, AGENTS, OR EMPLOYEES UNDER THIS CONTRACT FOR WHICH THEY ARE LEGALLY LIABLE.

**4.5.2 CLAIMS FOR PROFESSIONAL LIABILITY.** CONSULTANT SHALL INDEMNIFY, DEFEND, SAVE, AND HOLD HARMLESS OWNER, AND ITS OFFICERS, AGENTS, AND EMPLOYEES, FROM AND AGAINST ALL CLAIMS, SUITS, ACTIONS, LOSSES, DAMAGES, LIABILITIES, COSTS AND EXPENSES OF WHATSOEVER NATURE ARISING OUT OF THE PROFESSIONALLY NEGLIGENT ACTS, ERRORS OR OMISSIONS OF CONSULTANT OR ITS SUB CONSULTANTS, SUBCONTRACTORS, AGENTS, OR EMPLOYEES IN THE PERFORMANCE OF PROFESSIONAL SERVICES UNDER THIS CONTRACT.

**4.5.3 Owner Defense Requirements.** Notwithstanding the obligations under Sections 4.5.1 and 4.5.2, neither Consultant nor any attorney engaged by Consultant shall defend any claim in the name of Marion County, nor purport to act as legal representative of Marion County or any of its agencies, without the prior written consent of Marion County Legal Counsel. Owner may, at any time and at its election, assume its own defense and settlement of any claims in the event that: it determines that Consultant is prohibited from defending Marion County; Consultant is not adequately defending Marion County's interests; an important governmental principle is at issue; or it is in the best interests of Marion County to do so, Marion County reserves all rights to pursue any claims it may have against Consultant if Marion County elects to assume its own defense.

**4.5.4 Owner's Actions.** This Section 4.5 does not include indemnification by Consultant of Owner or their officers, agents, and employees, for the acts or omissions of the Owner or their officers, agents, and employees, whether within the scope of the Contract or otherwise.

**4.6 Consultant's Status.**

**4.6.1** Consultant shall perform all Services as an independent contractor. Although Owner reserves the right to set the delivery schedule for the Services to be performed and to evaluate the quality of the completed performance, Owner cannot and will not control the means and manner of Consultant's performance. Consultant is responsible for determining the appropriate means and manner of performing the Services. Consultant, Consultant's employees and the Sub-consultants are not "officers, employees, or agents" of Owner, as those terms are used in ORS 30.265.

**4.6.2** Consultant shall not have control or charge of, and shall not be responsible for, the acts or omissions of other consultants or contractors under contract with Owner who are performing services or construction work on the Project. However, this provision does not in any way change Consultant's professional responsibility to report to Owner any information, including information on the performance of consultants or contractors outside the control or charge of Consultant, concerning activities or conditions that have or could have an adverse effect on Owner or the Project.

**4.6.3** Consultant is not a contributing member of the Public Employee's Retirement System and will be responsible for any federal, state, or other taxes applicable to any compensation or payments paid to Consultant under this Contract. Consultant will not be eligible for any benefits from any payments made under this Contract for federal Social Security, unemployment insurance, or worker's compensation, except as a self-employed individual. If any payment under this Contract is to be charged against federal funds, Consultant certifies that it is not currently employed by the federal government.

**4.7** *Successors & Assignments.* The provisions of this Contract shall be binding upon and shall inure to the benefit of the Parties and their respective successors and assigns. After the original Contract is executed, Consultant shall not enter into any Sub-consultant agreements for any of the Services or assign or transfer any of its interest in this Contract, without the prior written consent of Owner.

**4.8** *Compliance with Applicable Law.* Consultant shall comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to the Services. Owner's performance under this Contract is conditioned upon Consultant's compliance with the provisions of ORS 279C.505, 279C.515, 279C.520, and 279C.530, which are hereby incorporated by reference. Consultant, the Sub-consultants, if any, and all employers providing Services, labor or materials under this Contract are subject employers under the Oregon workers' compensation law and shall comply with ORS 656.017.

**4.9** *Governing Law; Jurisdiction; Venue.* This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, suit or proceeding (collectively "Claim") between Owner and Consultant that arises from or relates to this Contract shall be brought and conducted solely and exclusively within the Circuit Court of Marion County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this "Governing Law; Jurisdiction; Venue" section be construed as a waiver by Marion County of any form of defense or immunity, whether based on sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the United States Constitution or otherwise. CONSULTANT, BY

EXECUTION OF THIS CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF SAID COURTS.

**4.10 Tax Compliance Certification.**

**4.10.1** By signature on this Contract, the undersigned certifies under penalty of perjury that the undersigned is authorized to act on behalf of Consultant and that Consultant is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws.

**4.10.2** For purposes of this certification, "Oregon Tax Laws" means a state tax imposed by ORS 401.792 to 401.816 (Tax For Emergency Communications), 118 (Inheritance Tax), 314 (Income Tax), 316 (Personal Income Tax), 317 (Corporation Excise Tax), 318 (Corporation Income Tax), 320 (Amusement Device and Transient Lodging Taxes), 321 (Timber and Forestland Tax), 323 (Cigarettes and Tobacco Products Tax), the elderly rental assistance program under ORS 310.630 to 310.706, and any local taxes administered by the Department of Revenue under ORS 305.620.

**4.11 Severability.** The Parties agree that if any term or provision of this Contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Contract did not contain the particular term or provision held to be invalid.

**4.12 Force Majeure.** Neither party shall be held responsible for delay or default in the performance of its obligations due to a cause beyond its reasonable control, including, but not limited to fire, riot, acts of God, terrorist acts or war where such cause was beyond such party's reasonable control. Each party shall, however, make all reasonable efforts to remove or eliminate such a cause of delay or default and shall, upon the cessation of the cause, diligently pursue performance of its obligations under the Contract.

**4.13 Waiver.** The failure of Owner to enforce any provision of this Contract shall not constitute a waiver by Owner of that or any other provision.

**4.14 Third Party Beneficiaries.** Nothing contained in this Contract shall create a contractual relationship with or a cause of action in favor of a third party against Owner or Consultant. Consultant's Services under this Contract shall be performed solely for Owner's benefit and no other entity or person shall have any claim against Consultant because of this Contract for the performance or nonperformance of Services hereunder.

**4.15 Ownership of Work Product; Confidentiality.**

**4.15.1 Definitions.** As used in this Contract, the following terms have the meanings set forth below:

4.15.1.1 "Consultant Intellectual Property" means any intellectual property that is owned by Consultant and developed independently from this Contract and that is applicable to the Services or included in the Work Product.

4.15.1.2 “Third Party Intellectual Property” means any intellectual property that is owned by parties other than Owner or Consultant and that is applicable to the Services or included in the Work Product.

4.15.1.3 “Work Product” means the Services Consultant delivers or is required to deliver to Owner under this Contract. Work Product includes every invention, discovery, work of authorship, trade secret or other tangible or intangible item and all intellectual property rights therein, and all copies of plans, specifications, reports, and other materials, whether completed, partially completed or in draft form.

**4.15.2 Work Product.** Except as provided in Sections 4.15.3 and 4.15.4, all Work Product created by Consultant pursuant to this Contract, including derivative works and compilations, and whether or not such Work Product is considered a “work made for hire” or an employment to invent, shall be the exclusive property of Owner. Owner and Consultant agree that such original works of authorship are “work made for hire” of which Owner is the author within the meaning of the United States Copyright Act. To the extent that Owner is not the owner of the intellectual property rights in such Work Product, Consultant hereby irrevocably assigns to Owner any and all of its rights, title, and interest in all original Work Product created pursuant to this Contract, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrine. Upon Owner’s reasonable request, Consultant shall execute such further documents and instruments necessary to fully vest such rights in Owner. Consultant forever waives any and all rights relating to original Work Product created pursuant to this Contract, including without limitation, any and all rights arising under 17 USC §106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications.

**4.15.3 Consultant Intellectual Property.** In the event that Consultant Intellectual Property is necessary for the use of any Work Product, Consultant hereby grants to Owner an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use Consultant Intellectual Property, including the right of Owner to authorize contractors, consultants and others to use Consultant Intellectual Property, for the purposes described in this Contract.

**4.15.4 Third Party Intellectual Property.** In the event that Third Party Intellectual Property is necessary for the use of any Work Product, Consultant shall secure on Owner’s behalf and in the name of Owner, an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the Third-Party Intellectual Property, including the right of Owner to authorize contractors, consultants and others to use the Third Party Intellectual Property, for the purposes described in this Contract.

**4.15.5 Consultant Intellectual Property-Derivative Work.** In the event that Work Product created by Consultant under this Contract is a derivative work based on Consultant Intellectual Property or is a compilation that includes Consultant Intellectual Property, Consultant hereby grants to Owner an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the pre-existing elements of Consultant Intellectual Property employed in the Work Product, including the right of Owner to authorize contractors, consultants and others to use the pre-existing elements of Consultant Intellectual Property employed in a Work Product, for the purposes described in this Contract.

**4.15.6 Third Party Intellectual Property-Derivative Work.** In the event that Work Product created by Consultant under this Contract is a derivative work based on Third Party Intellectual Property, or is a compilation that includes Third Party Intellectual Property, Consultant shall secure on Owner's behalf and in the name of Owner an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the pre-existing elements of the Third Party Intellectual Property employed in a Contract Work Product, including the right to authorize contractors, consultants and others to use the pre-existing elements of the Third Party Intellectual Property employed in a Contract Work Product, for the purposes described in this Contract.

**4.15.7 Limited Owner Indemnity.** To the extent permitted by the Oregon Constitution, Article XI, Section 7, and by the Oregon Tort Claims Act, ORS 30.260 through 30.397, Consultant shall be indemnified and held harmless by Owner from liability arising out of re-use or alteration of the Work Product by Owner which was not specifically contemplated and agreed to by the Parties in this Contract or under separate contract.

**4.15.8 Consultant Use of Work Product.** Consultant may refer to the Work Product in its brochures or other literature that Consultant utilizes for advertising purposes and, unless otherwise specified, Consultant may use standard line drawings, specifications, and calculations on other, unrelated projects.

**4.15.9 Confidential Information.** Consultant acknowledges that it or its employees, Sub-consultants, subcontractors or agents may, in the course of performing their responsibilities under this Contract, be exposed to or acquire information that is the confidential information of Owner or Owner's clients. Any and all information provided by Owner and marked confidential, or identified as confidential in a separate writing, that becomes available to Consultant or its employees, Sub-consultants, subcontractors or agents in the performance of this Contract shall be deemed to be confidential information of Owner ("Confidential Information"). Any reports or other documents or items, including software, that result from Consultant's use of the Confidential Information and any Work Product that Owner designates as confidential are deemed Confidential Information. Confidential Information shall be deemed not to include information that: (a) is or becomes (other than by disclosure by Consultant) publicly known; (b) is furnished by Owner to others without restrictions similar to those imposed by this Contract; (c) is rightfully in Consultant's possession without the obligation of nondisclosure prior to the time of its disclosure under this Contract; (d) is obtained from a source other than Owner without the obligation of confidentiality; (e) is disclosed with the written consent of Owner; (f) is independently developed by employees or agents of Consultant who can be shown to have had no access to the Confidential Information or (g) is required to be disclosed pursuant to subpoena or document discovery demand, law or result, applicable regulation or judicial or administrative order.

**4.15.10 Non-Disclosure.** Consultant agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Consultant uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to Owner under this Contract, and to advise each of its employees, Sub-consultants, subcontractors and agents of their obligations to keep Confidential Information confidential. Consultant shall



use its best efforts to assist Owner in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the generality of the foregoing, Consultant shall advise Owner immediately in the event Consultant learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and Consultant will at its expense cooperate with Owner in seeking injunctive or other equitable relief in the name of Owner or Consultant against any such person. Consultant agrees that, except as directed by Owner, Consultant will not at any time during or after the term of this Contract disclose, directly or indirectly, any Confidential Information to any person, except in accordance with this Contract, and that upon termination of this Contract or at Owner's request, Consultant will turn over to Owner all documents, papers, and other matter in Consultant's possession that embody Confidential Information.

**4.15.11 Injunctive Relief.** Consultant acknowledges that breach of this Section 4.15, including disclosure of any Confidential Information, will give rise to irreparable injury to Owner that is inadequately compensable in damages. Accordingly, Owner may seek and obtain injunctive relief against the breach or threatened breach of this Section 4.15, in addition to any other legal remedies that may be available. Consultant acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interests of Owner and are reasonable in scope and content.

**4.15.12 Publicity.** Consultant agrees that news releases and other publicity relating to the subject of this Contract will be made only with the prior written consent of Owner.

**4.15.13 Security.** Consultant shall comply with all virus-protection, access control, back-up, password, and other security and other information technology policies of Owner when using, having access to, or creating systems for any of Owner's computers, data, systems, personnel, or other information resources.

#### **4.16 *Termination.***

**4.16.1 Parties Right to Terminate by Agreement.** This Contract may be terminated at any time, in whole or in part, by written mutual consent of the Parties.

**4.16.2 Owner's Right to Terminate for Convenience.** Owner may, at its sole discretion, terminate this Contract, in whole or in part, by written notice to Consultant specifying the termination date of the Contract.

**4.16.3 Owner's Right to Terminate for Cause.** Owner may terminate this Contract immediately, in whole or in part, upon written notice to Consultant, or such later date as Owner may establish in such notice, upon the occurrence of any of the following events:

4.16.3.1 In the event the Board of Commissioners of the COUNTY, in the exercise of its reasonable discretion, reduces, changes, eliminates, or otherwise modifies the funding for any of the services identified, the Consultant agrees to abide by any such decision including termination of service;

4.16.3.2 Federal, state or local laws, regulations or guidelines are modified or interpreted in such a way that either the Services under this Contract are prohibited or Owner is prohibited from paying for such Services from the planned funding source;

4.16.3.3 Consultant no longer holds all licenses or certificates that are required to perform the Services; or

4.16.3.4 Consultant fails to provide Services within the times specified or allowed under this Contract; fails to perform any of the provisions of this Contract; or so fails to perform the Services as to endanger performance of this Contract in accordance with its terms, and after receipt of written notice from Owner, does not correct such failures within the time that Owner specifies (which shall not be less than 10 calendar days, except in the case of emergency).

**4.16.4** Cessation of Services. Upon receiving a notice of termination, and except as otherwise directed in writing by Owner, Consultant shall immediately cease all activities related to the Services or the Project.

**4.16.5** Consultant's Right to Terminate for Cause.

4.16.5.1 Consultant may terminate this Contract if Owner fails to pay Consultant pursuant to this Contract, provided that Owner has failed to make such payment to Consultant within fifteen (15) calendar days after receiving written notice from Consultant of such failure.

4.16.5.2 Consultant may terminate this Contract, for reasons other than non-payment, if Owner commits any material breach or default of any covenant, warranty, obligation or agreement under this Contract, fails to perform under the Contract within the time specified, or so fails to perform as to endanger Consultant's performance under this Contract, and such breach, default or failure is not cured within thirty (30) calendar days after delivery of Consultant's notice, or such longer period as Consultant may specify in such notice.

**4.16.6** Delivery of Work Product/Retained Remedies of Owner. As directed by Owner, Consultant shall, upon termination, promptly deliver to Owner all documents, information, works in progress and other property that are deliverables or would be deliverables if the Contract had been completed. By Consultant's signature on this Contract, Consultant allows Owner to use Work Product and other property for Owner's intended use. The rights and remedies of Owner provided in this Section 4.16 are not exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

**4.16.7** Payment upon Termination.

4.16.7.1 In the event of termination pursuant to Sections 4.16.1, 4.16.2, 4.16.3.1, 4.16.3.2 or 4.16.5, Consultant's sole remedy shall be a claim for the sum designated for accomplishing the Services multiplied by the percentage of Services completed and accepted by Owner plus Consultant's reasonable Contract close-out costs, less previous amounts paid and any claim(s) which Owner has against Consultant, except in the event of a termination under Section 4.16.3.1, where no payment will be due and payable for Services performed or costs incurred after the last day of the current biennium, consistent with Section 4.3. Within thirty

(30) days after termination, Consultant shall submit an itemized invoice for all un-reimbursed Services completed before termination and all Contract close-out costs actually incurred by Consultant. Owner shall not be obligated to pay for any such costs invoiced to and received by Owner later than thirty (30) days after termination. If previous amounts paid to Consultant exceed the amount due to Consultant under this subsection, Consultant shall promptly refund any excess amount upon demand.

4.16.7.2 In the event of termination pursuant to Sections 4.16.3.3 or 4.16.3.4, Owner shall have any remedy available to it in law or equity. Such remedies may be pursued separately, collectively or in any order whatsoever. If it is determined for any reason that Consultant was not in default under Sections 4.16.3.3 or 4.16.3.4, the rights and obligations of the Parties shall be the same as if the Contract was terminated pursuant to Section 4.16.2.

**4.17 Foreign Contractor.** If Consultant is not domiciled in or registered to do business in the State of Oregon as of the Effective Date, Consultant shall promptly provide to the Oregon Department of Revenue and the Secretary of State's Corporation Division all information required by those agencies relative to this Contract. Consultant shall demonstrate its legal capacity to perform the Services under this Contract in the State of Oregon prior to executing this Contract.

**4.18 Notice.** Except as otherwise expressly provided in this Contract, any notices to be given hereunder shall be given in writing by personal delivery, facsimile, or mail, postage prepaid, to Consultant or Owner at the address or number set forth on Exhibit A, or to such other address or number as either party may provide pursuant to this "Notice" section. Any notice delivered by mail shall be deemed to be given five (5) calendar days after the date of mailing. Any notice delivered by facsimile shall be deemed to be given when the transmitting machine generates a receipt of the transmission. To be effective against Owner, any facsimile communication or notice must be confirmed by telephone notice to Owner's Representative for the Project as indicated in Exhibit A and shall not be deemed to be given until such confirmation is completed. Any notice by personal delivery shall be deemed to be given when actually delivered. Regular, day-to-day communications between the Parties may be transmitted through one of the methods set forth above, in person, by telephone, by e-mail, or by other similar electronic transmission.

**4.19 Media Contacts; Confidentiality.** Consultant shall provide no news release, press release, or any other statement to a member of the news media regarding this Project, without Owner's prior written authorization.

**4.20 Conflict of Interest.** Except with Owner's prior written consent, Consultant shall not engage in any activity, or accept any employment, interest or contribution that would, or would reasonably appear to, compromise Consultant's professional judgment with respect to this Project, including, without limitation, concurrent employment on any project in direct competition with the Project.

Exhibits A through H are attached.

**MARION COUNTY  
STANDARD PROFESSIONAL SERVICES CONTRACT**

**EXHIBIT A - STATEMENT OF WORK**

Owner and Consultant agree that the following Services shall be provided as described below.

PROJECT DESCRIPTION: Consultant must perform the following tasks and services:

- a. Provide all equipment and labor to perform the required Environmental Monitoring and Sampling, Analysis and Reporting for the North Marion County Disposal Facility and Browns Island Landfill as required by the site-specific Environmental Monitoring Plans and ODEQ permits.
- b. Provide Laboratory Analyses of Samples
- c. Provide Re-sampling, if necessary
- d. Provide ODEQ Notification of sampling events
- e. Notify and Assist in ODEQ Split Sampling Events
- f. Administer and Maintain Existing Database of Environmental Monitoring Data
- g. Maintain and revise the Environmental Monitoring Plans as required by permit. Both EMPs will require periodic updating as required or upon renewal of the permits.
- h. Provide Statistical Evaluation of Analyses
- i. Provide Groundwater Contour Maps, site maps and diagrams as required.
- j. Provide Semi-annual Exceedance Reports
- k. Prepare and provide a cover letter and Annual Environmental Monitoring Reports (AEMR) for both sites to Marion County for submittal to ODEQ.
- l. Provide technical assistance to the County as required in addressing Environmental Monitoring and Reporting issues.
- m. If required, generate and submit to Marion County semiannual Exceedance Reports, listing exceedances of primary drinking water standards, secondary drinking water standards, local limits, DEQ trigger levels, or other benchmark for all sample points. Report shall be delivered to Marion County within 30 days of reported laboratory results.

Consultant shall meet the following qualifications:

- a. The Consultant's Project Manager shall be a Registered Professional Geologist in the State of Oregon, with experience in administering, sampling, analyzing and reporting for at least 3 landfill sites in Oregon.
- b. Consultant's Project Manager shall have a minimum of 7 years experience performing these types of services and or similar environmental monitoring and hydrogeology related activities.
- c. The Consultant shall update both BI and NMCDF Environmental Monitoring Plans to reflect all monitoring changes, for recordkeeping purposes and compliance with ODEQ requirements.
- d. The Consultant shall maintain and update both the BI and NMCDF Water Quality Monitoring Databases after each sampling event as required.
- e. Provide four hard copies of the AEMR, of which two copies shall be submitted to ODEQ by the County. Provide a digital copy of all reports, tables and figures.
- f. Consultant shall provide a list of hourly rates for staff and equipment involved with this type of project for unspecified future work in their proposal.
- g. Consultant should provide a list of rates for all analytical services and a copy of the Quality Control / Quality Assurance program in their proposal.
- h. Please note that the Consultant shall not be responsible for NPDES, Compost Operations sampling or Methane Gas sampling requirements, except for minor information updates and data insertion into the Environmental Monitoring Reports and Plans.
- i. The Owner shall provide the Consultant with site topographical maps (AutoCAD) for use in generating required maps.

Representatives of the Parties for this Contract and the Project are:

Consultant: Barbara E. Lary, Senior Project Professional                      Telephone: 971-284-1297

Owner: Andrew Johnson, ES Operations Supervisor                      Telephone: 503-566-4184

**MARION COUNTY**  
**STANDARD PROFESSIONAL SERVICES CONTRACT**  
**EXHIBIT B - CONSULTANT COMPENSATION**

**B.1 BASIS OF COMPENSATION**

- B.1.01 Owner shall compensate Consultant for the performance of Services set forth in Exhibit A, as follows:

The maximum, not to exceed total amount payable under this Contract is \$789,331.95, of which \$182,153.53 is to be held as a contingency reserve.

Use of the contingency reserve shall be at the discretion of the Owner and shall only be valid for work not identified in Exhibit A. The Consultant shall not perform any work that would require payment from the contingency reserve without prior written authorization from the Owner.

- B.1.02 **METHOD OF PAYMENT FOR SERVICES.** Invoices will be prepared monthly or more frequently for work in progress unless otherwise agreed. Invoices are due and payable upon receipt. Payment will be made only for actual expenditures up to the maximum amount(s) specified. The Consultant will submit monthly reports of expenditures/requests for reimbursement as soon as possible following the close of the reimbursable month.

- B.1.03 **BASIS OF PAYMENT FOR SERVICES.** Owner shall pay Consultant monthly progress payments upon Owner's approval of Consultant's invoice submitted to Owner for completed Services and delivered Goods, but only after Owner has determined that Consultant has completed, and Owner has accepted the completed Services and Owner has accepted the delivered goods.

The Consultant will submit the final monthly expenditure report, if required, no later than 30 days after the expiration of this contract. The Owner will use these reports to determine correct payment amounts under this contract. The Owner will compare the correct payment amount with the actual payments made during the contract period. Differences owing to the Consultant will be collected from the Owner. Differences owing to the Owner will be paid by the Consultant.

- B.1.04 **EXPENSE REIMBURSEMENT.** Owner will not reimburse Consultant for any expenses not outlined in proposed cost estimate unless given prior written approval.

- B.1.05 **GENERAL PAYMENT PROVISIONS.** Notwithstanding any other payment provision of this contract, failure of the Consultant to submit required reports when due, or failure to perform or document the performance of contracted services, may result in withholding of payments under this contract. Such withholding of payment for cause shall begin thirty (30) days after written notice is given by the Owner to the Consultant, and shall continue until the Consultant submits required reports, performs required services or establishes, to the Owner's satisfaction, that such

failure arose out of causes beyond the control, and without the fault or negligence of the Consultant.

- B.1.06 INVOICES. Consultant shall send all invoices to Owner's Contract Administrator at the address specified below or to any other address as Owner may indicate in writing to Consultant.

**Marion County Public Works  
Attn: Environmental Svcs Division Manager  
5155 Silverton Rd NE  
Salem, OR 97305**

**MARION COUNTY  
STANDARD PROFESSIONAL SERVICES CONTRACT**

**EXHIBIT C - INSURANCE PROVISIONS**

A. **REQUIRED INSURANCE.** Contractor shall obtain at Contractor's expense the insurance specified in this section prior to performing under this Contract and shall maintain it in full force and at its own expense throughout the duration of this Contract and all warranty periods. Contractor shall obtain the following insurance from insurance companies or entities that are authorized to transact the business of insurance and issue coverage in Oregon and that are acceptable to County:

i. **WORKERS COMPENSATION.** All employers, including Contractor, that employ subject workers, as defined in ORS 656.027, shall comply with ORS 656.017 and shall provide workers' compensation insurance coverage for those workers, unless they meet the requirement for an exemption under ORS 656.126(2). Contractor shall require and ensure that each of its subcontractors complies with these requirements.

ii. **PROFESSIONAL LIABILITY.** Covering any damages caused by an error, omission or any negligent acts related to the services to be provided under this Contract. Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

**Required by County**    **Not required by County.**

- \$1,000,000 Per occurrence limit for any single claimant; and
- \$2,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Risk Manager

iii. **CYBER LIABILITY.** Covering network security, breach of data, and coverage for regulatory fines and fees imposed against County due to failures in products and services provided under this Contract. Cyber Liability coverage must include errors, omissions, negligent acts, denial of service, media liability (including software copyright), dishonesty, fraudulent or criminal acts by a person or persons whether identified or not, intellectual property infringement, computer system attacks, unauthorized access and use of computer system, regulatory actions, and contractual liability.

**Required by County**    **Not required by County.**

- \$2,000,000 Per occurrence limit for any single claimant; and
- \$5,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Information Technology Director and Risk Manager

iv. **COMMERCIAL GENERAL LIABILITY.** Covering bodily injury, death, and property damage in a form and with coverages that are satisfactory to the County. This insurance shall include personal injury liability, products and completed operations. Coverage shall be written on an occurrence basis. Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

**Required by County**    **Not required by County.**



**Minimum Limits:**

- \$1,000,000 Per occurrence limit for any single claimant; and
- \$2,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Risk Manager
- \$500,000 Per occurrence limit for any single claimant
- \$1,000,000 Per occurrence limit for multiple claimant

v. AUTOMOBILE LIABILITY INSURANCE. Covering all owned, non-owned, or hired vehicles. This coverage may be written in combination with the Commercial General Liability Insurance (with separate limits for “Commercial General Liability” and “Automobile Liability”). Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

Required by County  Not required by County.

**Minimum Limits:**

- Oregon Financial Responsibility Law, ORS 806.060 (\$25,000 property damage/\$50,000 bodily injury \$5,000 personal injury).
- \$500,000 Per occurrence limit for any single claimant; and
- \$1,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Risk Manager

B. ADDITIONAL INSURED. The Commercial General Liability insurance required under this Contract shall include Marion County, its officers, employees, and agents as Additional Insureds but only with respect to Contractor's activities to be performed under this Contract. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

C. NOTICE OF CANCELLATION OR CHANGE. There shall be no cancellation, material change, potential exhaustion of aggregate limits or non-renewal of insurance coverage(s) without 30 days written notice from this Contractor or its insurer(s) to County. Any failure to comply with the reporting provisions of this clause shall constitute a material breach of Contract and shall be grounds for immediate termination of this Contract by County.

D. CERTIFICATE(S) OF INSURANCE. Contractor shall provide to County Certificate(s) of Insurance for all required insurance before delivering any Goods and performing any Services required under this Contract. The Certificate(s) must specify all entities and individuals who are endorsed on the policy as Additional Insured (or Loss Payees). Contractor shall pay for all deductibles, self-insured retention, and self-insurance, if any.

**MARION COUNTY  
STANDARD PROFESSIONAL SERVICES CONTRACT**

**EXHIBIT D – TASK SCHEDULE 2022-2027**

Tasks are described in detail in Exhibit H: SCS Engineers Proposal, Ex. 3 – Summary of Scope of Work

Task No.	Task Description	2022 - 2027	
		# Samples	Frequency
1.1	<b>North Marion County Disposal Facility Spring and Fall Field Sampling Events</b>		
	Willamette Silt Tier 1 Detection Wells	7 wells	semiannual
	Willamette Silt Tier 2 Detection Wells	6 wells	semiannual
	Willamette Silt Tier 3 Detection Wells*	6 wells	annual
	Troutdale Formation Wells	6 wells	semiannual
	1973 Landfill Site Wells	1 well	annual
	Surface Water Locations	4 samples	semiannual
		1 sample	annual
	Leachate/LDS Sampling Locations	9 samples	semiannual
	<b>Laboratory Analysis</b>	45 groundwater samples/yr	
		9 surface water samples/yr	
		18 leachate/LDS samples/yr	
		QA/QC samples/yr: 12 field duplicates, 5 trip blanks	
2.1	<b>Browns Island Landfill Spring and Fall Field Sampling Events</b>		
	Shallow Alluvium Wells	1 well	semiannual
	Intermediate Alluvium Wells	5 wells	semiannual
	Deep Alluvium Wells	6 wells	semiannual
	Marine Sedimentary Rock Wells	1 well	semiannual
	<b>Laboratory Analysis</b>	26 groundwater samples/yr	
		QA/QC samples/yr: 4 field duplicates; 1 trip blank	
1.2/2.2	<b>Data Management, Review, and Regulatory Evaluation</b>	Scope of work consistent each monitoring year.	
1.3/2.3	<b>DEQ Split Sampling Events and Reporting</b>	Assumes two DEQ split sampling events per site during the 5-year contract period (dates unspecified).	
1.4/2.4	<b>Annual Environmental Monitoring Report</b>	Scope of work consistent each monitoring year.	
1.5/2.5	<b>Environmental Monitoring Plan Update</b>	Update as needed.	
1.6/2.6	<b>Project Management</b>	Scope of work consistent each monitoring year.	

**MARION COUNTY  
STANDARD PROFESSIONAL SERVICES CONTRACT**

**EXHIBIT E - RATE SCHEDULE**

	Hourly Rates 2022*
Project Director	\$210
Project Manager	\$170
Project Professional	\$120
Staff Professional (DB Management)	\$94
Staff Professional	\$92
Associate Staff Professional	\$90
Designer/Drafter	\$102
Administrative	\$78

\*Upon first rate increase on January 1, 2023, a 5 percent escalation will be added to the labor rate, after which a fixed increase of 2.75 percent will be added each January 1 for the remainder of the contract.

For all other expenses, the Owner agrees to pay the Consultant in accordance with the Table 4-1 Breakdown of Estimated Project Costs, 2021 through 2027 Environmental Monitoring and Reporting, contained in the Consultant's proposal, which is attached to and hereby made a part of this Contract as Exhibit H, dated December 14, 2021.

# EXHIBIT F1

RFP EXHIBIT 2

## Environmental Monitoring Plan - North Marion County Disposal Facility Marion County Oregon

Prepared for

**Marion County Department of Public Works - Environmental Services**



June 2013

Prepared by

**Parametrix**

# EXHIBIT F1

## **Environmental Monitoring Plan North Marion County Disposal Facility Marion County Oregon**

*Prepared for*

**Marion County Department of Public Works - Environmental Services**

5155 Silverton Road NE  
Salem, Oregon 97305

*Prepared by*

**Parametrix**

700 NE Multnomah, Suite 1000  
Portland, OR 97232-4110  
T. 503.233.2400 T. 360.694.5020 F. 503.233.4825  
[www.parametrix.com](http://www.parametrix.com)

Version Date: June 7, 2013

# EXHIBIT F1

## CITATION

Parametrix. 2013. Environmental Monitoring Plan  
North Marion County Disposal Facility  
Marion County Oregon. Prepared by Parametrix,  
Portland, Oregon. June 2013.

# EXHIBIT F1

*Environmental Monitoring Plan  
North Marion County Disposal Facility  
Marion County Oregon*

Marion County Department of Public Works - Environmental Services

## CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a registered professional hydrogeologist licensed to practice as such, is affixed below.



---

Prepared by Rick Malin  
Project Manager

## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>1</b>
<b>PLAN ORGANIZATION.....</b>	<b>2</b>
<b>SITE LOCATION AND OPERATIONS.....</b>	<b>3</b>
SITE BACKGROUND INFORMATION.....	3
Southwest Fill Area.....	3
Northwest Fill Area.....	4
Ash Monofills.....	4
Leachate Storage Lagoon and Treatment System.....	5
Backup Landfill Cell.....	6
Active Waste Management Areas.....	6
Off-Site Management Areas.....	6
<b>REFERENCES.....</b>	<b>8</b>

### LIST OF FIGURES

- 1 Site Location
- 2 Facility Site Map

### SECTIONS

- SECTION 1. WATER QUALITY MONITORING PLAN
- SECTION 2. LEACHATE CONTROL MANAGEMENT PLAN
- SECTION 3. LANDFILL GAS MONITORING PLAN
- SECTION 4. SAMPLING AND ANALYSIS PLAN
- SECTION 5. NMCDF SOLID WASTE DISPOSAL SITE PERMIT



# EXHIBIT F1

## ACRONYMS

DEQ	Oregon Department of Environmental Quality
EMP	Environmental Monitoring Plan
GCL	Geo-synthetic clay liner
LCMP	Leachate Control Management Plan
LCRS	Leachate collection and removal system
LGMP	Landfill Gas Monitoring Plan
NMCDF	North Marion County Disposal Facility
NPDES	National Pollutant Discharge Elimination System
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SLCRSs	Secondary Leachate Collection and Removal Systems
TF	Troutdale Formation
VE	Value Engineering
WPCFP	Water Pollution Control Facilities Permit
WQMP	Water Quality Monitoring Plan
WS	Willamette Silt

## INTRODUCTION

This Environmental Monitoring Plan (EMP) for the North Marion County Disposal Facility (NMCDF) addresses monitoring plan requirements set forth in Section 14.0 of the NMCDF Solid Waste Disposal Site Permit Number 240 (Permit) issued on May 9, 2007. A copy of the NMCDF Permit is presented in Section 5 of this plan for reference purposes.

Environmental monitoring is required at solid waste disposal facilities to evaluate the performance of engineered control and containment systems (e.g., leachate collection and disposal systems, gas collection, etc.) and the magnitude and significance of any leachate or gas release impacts from the landfill on human health, welfare and safety, and the environment (DEQ 1993). The DEQ's Solid Waste Permit Guidance (DEQ 1996) was referenced in the development of this EMP.

Environmental monitoring at the NMCDF includes water quality (both groundwater and surface water), leachate collection systems (both primary and secondary collection and recovery systems), and landfill gas (both active extraction system monitoring and maintenance and soil gas monitoring). Specific plans that address monitoring these specific elements at the site are presented in this EMP.

The NMCDF has undergone a number of environmental studies and investigations culminating in a Remedial Investigation/Feasibility Study (RI/FS) completed in 1998. The RI/FS addressed the presence of contaminants detected in groundwater samples from the uppermost aquifer at concentrations above state and federal maximum contaminant levels along the western solid waste compliance boundary. In response to the RI/FS, the Oregon Department of Environmental Quality (DEQ) completed a Record of Decision (ROD) in March 1999 that identified remedial actions that would be used to respond to the identified remedial action objectives. Environmental monitoring requirements and elements identified in the ROD are addressed in this EMP. Monitoring associated with the adjacent Land Application Area and the 1973 Landfill Site are also addressed in this EMP.

This EMP presents site-specific plans for the monitoring and evaluation of:

- **Water Quality** – The Water Quality Monitoring Plan (WQMP) describes the existing monitoring network established at the site that will be used to monitor surface water and groundwater quality conditions. Historical and current water quality conditions are described to provide the rationale for the water quality monitoring program.
- **Leachate Control Management** – The Leachate Control Management Plan (LCMP) presents site-specific monitoring procedures used to detect releases from lined portions of the disposal facility equipped with Secondary Leachate Collection and Removal Systems (SLCRSs), before such releases enter the groundwater system.
- **Air Quality** – The Landfill Gas Monitoring Plan (LGMP) presents site-specific procedures and methods that will be used to verify compliance with state regulations and assess subsurface gas migration. The plan describes procedures to guide monitoring of gas in soils and aid monitoring for potential accumulation within or adjacent to select onsite structures. The LGMP also describes operation, maintenance, and monitoring of the active landfill gas extraction and treatment system.

- **Sampling and Analysis Plan** – The Sampling and Analysis Plan (SAP) describes the methods and procedures used to collect and analyze water quality samples from the water quality monitoring network as described in the WQMP and LCMP.

## PLAN ORGANIZATION

This EMP consists of the following five sections:

- **Section 1: Water Quality Monitoring Plan (WQMP)**

The WQMP describes the established site water quality monitoring network. Well documentation and a description of surface water quality monitoring points are presented. Historic and current water quality conditions at the site are described and provide the rationale for the site's water quality monitoring program. Data review procedures and reporting are described in the plan.

- **Section 2: Leachate Control Management Plan (LCMP)**

The LCMP presents how the primary and secondary leachate collection and recovery systems (LCRSs) at the site will be monitored. The plan describes the design of the site LCRSs and the techniques and procedures to inspect, measure, and sample fluid from the system's monitoring points. Both primary and secondary LCRSs are monitored. These sample points are associated with the site's lined ash monofills. Historic and current water quality conditions at these monitoring points are described and provide the rationale for the leachate control monitoring program.

- **Section 3: Landfill Gas Monitoring Plan (LGMP)**

The LGMP presents how the site will be monitored for landfill gas and analyzed for methane and explosive gases. The plan describes the sampling procedures and locations for monitoring of subsurface gas migration around the perimeter of the facility and into on-site structures. The LGMP describes gas monitoring recordkeeping and reporting procedures to be employed. Section 3 also includes a manual that details operation and maintenance of the site's active landfill gas control system.

- **Section 4: Sampling and Analysis Plan (SAP)**

The SAP describes the procedures recommended for obtaining, preparing, documenting, preserving, and shipping water quality samples collected through the WQMP and LCMP and establishes Quality Assurance/Quality Control (QA/QC) requirements for sample acquisition and handling. Water quality analysis is completed by an Oregon accredited environmental laboratory (ORELAP). The SAP includes the site's designated laboratory's quality assurance program manual.

- **Section 5: NMCDF Solid Waste Disposal Site Permit**

For reference purposes, a copy of the NMCDF Solid Waste Disposal Site Permit Number 240, issued on May 9, 2007, is presented in Section 5 of the document. The expiration date of this permit is November 30, 2015.

The four plans presented in Sections 1 through 4 were developed to function as separate standalone documents.

A water quality database of samples collected at the site since 1988 has been developed and maintained. This database is used and summary tables are presented in NMCDF Annual Environmental Monitoring Reports.

It is anticipated that elements of this EMP will need to be revised from time to time as site conditions and monitoring objectives and procedures change. Consequently, this EMP uses a three-ring binder format to allow for portions of the document to be updated or amended without full plan revision.

The remaining portion of this section to the EMP presents a description of the NMCDF and adjacent areas addressed by the facility's environmental monitoring program. History and operations associated with these areas is also provided.

## **SITE LOCATION AND OPERATIONS**

The NMCDF, formerly known as the Woodburn Landfill, is located in Marion County approximately three miles northwest of Woodburn, Oregon (Figure 1). The site is situated in the French Prairie region of the northern Willamette Valley and has been in operation since September 24, 1974. The facility currently provides the following waste disposal and recycling functions: waste transfer, ash monofilling, material recycling, and backup landfill capability. Figure 2 presents site topography and features and identifies various facility operations.

Marion County is the owner, permittee, and operator of the scales and leachate collection and the former land application system at the NMCDF. The transfer station, backup landfill, material recycling, and the ash monofills had historically been operated by Valley Landfills, Inc., under contract with the county, however, beginning in 2006, the County assumed all of the site operational activities.

There are several permits associated with the NMCDF. Solid waste disposal is permitted under the DEQ Solid Waste Disposal Site Permit Number 240, issued on May 9, 2007. Land application of distillate (treated wastewater) from a variable vacuum distillation system (VVDS) was permitted under DEQ Water Pollution Control Facilities Permit (WPCFP) Number 102364, dated November 5, 2001. Operation of the leachate treatment system was discontinued in June 2004 and the WPCFP permit was terminated by the DEQ effective October 31, 2007. Surface water discharge from the site is permitted by the EPA through the DEQ under a general National Pollutant Discharge Elimination System (NPDES) 1200-Z Permit; site file number 103964; EPA number ORR50-1463. Surface water samples are collected from each of the site's four sample points in accordance with the NPDES permit requirements as described in the NMCDF Stormwater Pollution Control Plan.

## **SITE BACKGROUND INFORMATION**

The NMCDF has been in operation since September 24, 1974, and served as Marion County's northern disposal site primarily for municipal solid waste until 1986 when the Waste-to-Energy facility, located in Brooks, Oregon, began operating. The site originally operated as a trench fill type landfill. However, findings from cover exploration activities suggest that waste was placed in continuous excavations rather than in trenches. The NMCDF now serves as the disposal site for ash generated at the Waste-to-Energy facility, which is placed in lined monofill cells.

The following describes the waste management areas that have been established at the site.

# EXHIBIT F1

## Southwest Fill Area

The 1996 NMCDF Remedial Investigation report (Dames & Moore 1996) indicated that approximately ten unlined trenches, oriented in an east/west direction, were filled in an approximately 15-acre area in the southwest part of the facility. The location of these trenches underlies the bypass/demolition landfill shown on Figure 2. The trenches were originally approximately 60 feet wide but were subsequently enlarged by the site operator by narrowing the intervening berms to maximize waste capacity (Dames & Moore 1996). The estimated volume of waste placed in these trenches ranges from 100,000 to 200,000 cubic yards. The depth of the trench excavations corresponded to the summer water table level.

In 1987, a demolition/by-pass landfill was constructed over a portion of the municipal solid waste fill area in the southwestern portion of the disposal facility (Figure 2). The demolition fill area rises approximately 35 feet above the surrounding ground surface and is bounded by drainage ditches on its south, east and west sides. The demolition/by-pass landfill primarily received demolition material and cannery wastes and became inactive in 1997. It received a final closure cover system in the fall of 1998 and winter of 1999. Landfill gas is currently removed from this fill area by the site's active landfill gas extraction system.

## Northwest Fill Area

Ten additional unlined trenches, oriented in a north/south direction, were filled in an approximately 17-acre area in the northwest portion of the disposal facility (Dames & Moore 1996). The location of these excavations is shown on Figure 2 as closed sanitary landfill. Based on cover exploration findings, this fill area also may actually be one continuous excavation. The northwest fill area is bounded to the north by a drainage ditch, to the east by the transfer station and the backup landfill and access roads, to the south by the closed demolition/by-pass landfill, and to the west by a drainage ditch. During 1998, this area was graded to provide positive drainage off the fill trenches and seeded with grass. Additional cover filling and grading was completed in 2001 and again in 2003 to maintain positive drainage over the fill area. Landfill gas is currently being removed from the southern portion of this fill area by the site's active landfill gas extraction system. Treated soil from a former soil treatment facility tenant along with soil excavated during construction of the Cell IV ash monofill is currently being stockpiled in the northern area of this closed fill area as indicated on Figure 2.

## Ash Monofills

In 1987, ash monofill Cell I was constructed with a one-foot thick clay bottom layer and a leachate collection system. Cell I is located adjacent to the east boundary of the landfill property near the current gatehouse (Figure 2). Cell I received ash from the Waste-to-Energy incinerator. The final cover system for Cell I was completed in October 1990. Ash monofill Cell II was constructed in 1990 south of and abutting Cell I. Cell II is also lined and has a leachate collection system. Cell II also received ash from the Waste-to-Energy incinerator. Cell II was closed to operation in early 1997 with a final cover system completed by the fall of 1997.

During the summer and fall of 1996, ash monofill Cell III was constructed in the northeast corner of the site (Figure 2) and began receiving waste on March 20, 1997. The Cell III liner system consists of two 60-millimeter smooth HDPE geomembrane liners that are separated by a 28-inch bentonite enhanced soil liner. The leachate collection and removal system (LCRS) for Cell III consists of two identical sumps, one for each half of the cell (north and south sub-cells). Each sump is constructed with two collection levels: Primary and

Secondary. The Primary LCRS is located on top of the upper geomembrane and collects the bulk of the leachate. The Secondary LCRS (SLCRS) is located under the soil liner and collects any liquid that penetrates the upper geomembrane and soil liner and/or any construction waters released from clay consolidation (i.e., the bentonite enhanced soil liner). Leachate from both the Primary and Secondary LCRSs are pumped to a lift station and then pumped to the leachate storage lagoon. During the summer of 2005, the northern portion of Cell III (approximately 5 acres) was closed with a final cover.

During the summer and fall of 2002, ash monofill Cell IV was constructed adjacent to the south side of Cell III (Figure 2). The Cell IV liner system consists of two 60-millimeter textured HDPE geomembrane liners that are separated by a geo-synthetic clay liner (GCL) that is adhered to 40-millimeter HDPE liner. The LCRS for Cell IV consists of three identical sumps, one for each third of the cell's fill area. Similar to ash monofill Cell III, each LCRS is constructed with two collection levels: a Primary and a Secondary. The Primary LCRS is located on top of the upper 60-millimeter HDPE liner and collects leachate that drains down through a 12 inch thick gravel drainage layer. This drainage layer is separated from the ash waste fill by 12 inches of native soil, which functions as an operations layer. A geotextile layer separates the operation soil layer from the gravel drainage layer. The SLCRS is located between the GCL and the top of the lower 60-mil HDPE liner. A geo-composite liner is present between the GCL and the SLCRS. The SLCRS collect liquid that penetrates the upper HDPE liner and the GCL. Leachate from both the Primary and Secondary LCRSs are pumped to a lift station, where they mix with leachate produced from Cell III, and then pumped to the leachate storage lagoon. The location of the Cells III and IV lift station and leachate storage lagoon is shown on Figure 2. A 20-millimeter temporary tarp is placed over unused portions of Cell IV for stormwater removal and cell protection.

The County began placing ash in Cell IV on February 10, 2004. Filling began in the northeast corner and is proceeding west along the south face of Cell III. A complete fill-sequencing plan has been incorporated into the NMCDF Operations Plan. A Cell IV filling objective is to dispose of ash in a manner that minimizes the exposed working face and prevents filled areas from coming into contact with precipitation. To meet this objective, the County has incorporated an ongoing "interim cover" tarping program to divert stormwater away from the ash cell and to prevent unnecessary contact with the ash, thereby minimizing the amount of leachate generated. This tarping program was also used during filling of adjacent Cell III.

In 2011 Marion County initiated an ash screening and metal recovery operation within the Cell IV ash monofill. A screening and recovery demonstration was completed in 2010 to determine the economic and operational feasibility of removing ferrous and non-ferrous metal from the ash and utilizing the ash alternative daily cover at the Coffin Butte Landfill. The screening and recovery operation has changed the way ash is handled. Daily management of incoming ash still involves pushing the ash up slope along the active face. However, instead of grading the ash to a final elevation and slope for closure, the ash is managed as a resource in a stockpiling fashion. The ash is pushed up slope into piles where it is allowed to de-water for future processing through the metal recovery screen plant. The active working face and processing area of the Cell IV monofill is graded to contain the precipitation within the ash cell. No ash has been placed in a portion of the southwest corner of Cell IV, which is used as a drainage swale for stormwater from the processing area.

## **Leachate Storage Lagoon and Treatment System**

A lined leachate storage lagoon, located south of ash monofill Cells I and II (Figure 2), was completed in October 1988. The lagoon receives leachate from the leachate collection systems associated with the four ash monofill cells (Cells I through IV). Gas condensate from

## EXHIBIT F1

the landfill gas flare system is also directed to the lagoon. The leachate generated by the ash monofill cells is characterized by high concentrations of salts (calcium, chloride, potassium, sodium, and sulfate) along with lower concentrations of trace metals (arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc). Historically, leachate in the lagoon was diluted with water from the spray irrigation water supply well and then spray irrigated onto an approximately 55-acre field located south of the landfill facility (Figure 2). Land application of the diluted leachate was discontinued in September 1997. A floating cover over the lagoon was installed in October 1998 to minimize rainfall from mixing with the leachate in the lagoon.

A leachate treatment system utilizing variable vacuum distillation (VVDS) was completed in 2002 and began regular operation in February of 2003. The VVDS was designed to remove leachate contaminants by distillation under a vacuum using mechanical vapor recompression resulting in a distillate (distilled water). Distillate from the VVDS was then to be applied to the Land Application Area (Figure 2 former spray irrigation area) using a drip irrigation method. The VVDS operated intermittently between July 2002 and June 2004 and due to ongoing performance issues was shut down on June 20, 2004, and subsequently dismantled and removed.

Beginning in 2006, through its agreement with Waste Connections, the County began transporting and disposing wastewater (leachate) contained in the lagoon to Finley Buttes Landfill and Wasco Landfill in eastern Oregon, both of which are operated by Waste Connections. Under the long-term agreement, Waste Connections loads, transports, treats and disposes approximately 3.5 million gallons of leachate per year. This is an estimated quantity and is dependent upon annual rainfall and the area of open landfill face. The historical annual production of leachate typically ranges from a minimum of 2.5 million gallons to 4.5 million gallons per year, depending on the amount of precipitation received and the surface area of the open active landfill face. Waste Connections is contractually required to transport and dispose of enough leachate by October 31st of each year to attain an elevation of 4.0 feet (3,008,000 gallons) or less in the leachate storage lagoon.

### **Backup Landfill Cell**

A backup landfill cell was constructed along the north side of the site in 1989 (Figure 2). The purpose of the backup landfill is to receive unburned waste if operations at the Waste-to-Energy incinerator were halted for any length of time. The backup landfill has not been used. It is anticipated that the backup landfill cell will be modified and used in the future for disposal of ash.

### **Active Waste Management Areas**

There are currently two active waste management areas at the facility. These two areas are:

1. Ash monofill Cell IV, located just south of Cell III (Figure 2). This ash monofill cell began to receive waste on February 10, 2004. Filling began in the cell's northeast corner and is proceeding west along the south face of Cell III. A complete fill-sequencing plan is contained in the NMCDF Operations Plan.
2. The transfer station and materials recycling area are located in the central area of the site (Figure 2). The transfer station was constructed in 1986 and expanded in 2007 to accommodate the increase in waste volume. The transfer station serves as the central collection point for self-hauling north-County residents and businesses.

## **Off-Site Management Areas**

Off-site management areas include the 1973 Landfill Site and the Land Application Area. A brief description of the off-site NMCDF management areas are described below.

### **1973 Landfill Site**

The closed 1973 Landfill is located approximately a half-mile southwest of the North Marion County Disposal Facility (Figure 1). The site is owned by Marion County. The former Marion County Department of Public Works Woodburn Shop is located adjacent to the southeast corner of the site (Figure 2). The approximately ten-acre solid waste disposal site began operation as an open burn-type landfill in the early 1950s. Waste disposal filling reportedly began in the southwest corner of the site where a swale apparently existed. Following waste incineration, the resulting ash was pushed to form a berm along and adjacent to Senecal Creek. Recycling of metal and other items was also conducted at the site during this time. Sometime during the period of 1966 to 1967 waste handling operations at the site switched from open burning to trench filling. Trench filling apparently started in the western area of site with filling progressing to the east. The fill trenches were reportedly 20 to 25 feet deep. The final fill trench is reportedly located just west of the Public Works Shop. Waste disposal at the site ceased in 1973 when landfilling at the NMCDF was initiated. The site operated before the solid waste program mandated by the State of Oregon Resource Conservation and Recovery Act was implemented. Consequently, the facility was never issued a solid waste disposal permit.

In response to public concerns raised during public meetings presenting the NMCDF Record of Decision, five monitoring wells (designated PW-1 through PW-5) were voluntarily installed by the county at the 1973 Landfill Site in 1999. Figure 2 shows the locations of the five wells. With the exception of well PW-5, the wells are completed in the upper portion of the Willamette Silt (WS) formation. Deeper well PW-5 is completed in the upper portion of the underlying Troutdale Formation (TF). Following installation in 1999, voluntary sampling of these wells was completed on a semi-annual basis until 2003 when a reduced monitoring frequency was implemented. A Senecal Creek sample point (SC-73) was established in 2000 adjacent to the down-stream corner of the landfill site.

Monitoring of the 1973 Landfill Site was further reduced in 2013 in response to concentration trends showing generally stable or declining trends and Senecal Creek SC-73 samples not indicating any notable change in water quality conditions compared with locations up- and down-stream of the landfill. In a letter dated April 16, 2013 DEQ approved a sample modification request focusing on confirming no impacts are occurring to the TF or Senecal Creek.

### **Land Application Area**

The 55-acre Land Application Area is located immediately south of the NMCDF (Figure 1). The closed bypass/demolition landfill, ash monofill Cells I and II, and the leachate lagoon are located north of the application area. The closed 1973 Landfill Site and Senecal Creek are located west of the application area. Pasture grass (a mixture of tall fescue, perennial rye, white clover, and white oats) was planted in the application area in 1992. The pasture grass is mowed on an annual basis. Land use surrounding the Land Application Area is primarily agricultural (rotating crops) and, to a lesser extent, standing timber, with some rural residential development. Leachate treated by the VVDS was applied to the Land Application Area by means of drip irrigation. Following discontinuation of the VVDS in 2004, the Land



## EXHIBIT F1

Application Area has been inactive with regards to NMCDF facility activities and used for growing pasture grass.

Prior to construction of the VVDS, leachate from the lined ash monofill cells had been applied to the 55-acre application area utilizing a spray irrigation method. By this method, leachate contained in the storage lagoon was mixed with clean “chase water” pumped from a nearby deep water supply well. This diluted wastewater was then applied, by means of spray irrigation, to the application area (previously referred to as the spray irrigation area). The former spray irrigation system became operational on August 22, 1989, and ceased operation eight years later on September 23, 1997. Spray irrigation of diluted leachate was terminated because elevated levels of chloride were detected in the groundwater beneath the application area.

There are nine existing Land Application Area wells (I-series wells) as shown on Figure 2. Following termination of the WPCFP associated with the land application area in 2007, the County continued voluntary sampling of seven I-series monitoring wells to assess groundwater quality changes over time in the Land Application Area. In 2010, the County transferred ownership of well I-33 to the land owner and the well became inactive. Sample results collected from the former land application area monitoring wells following discontinuation of spray irrigation in 1997 indicated that: the locations where historically highest concentrations were detected have decreased to the point that in a number of cases they are now below other sample points; there continues to be a general overall declining trend for all parameters; and most of the historic application contaminants (salts) have been flushed out. In April 2013 discontinuation of voluntary sampling of the Land Application Area monitoring wells was proposed. In a letter dated April 16, 2013, the DEQ agreed that voluntary post-usage monitoring of groundwater quality conditions of the former Land Application Area is no longer a significant concern.

## REFERENCES

- Dames & Moore. August 14, 1996. Final Remedial Investigation Report, Focused Remedial Investigation/Feasibility Study, North Marion County Disposal Facility, Woodburn, Oregon; prepared for Marion County Department of Waste Management.
- Dames & Moore. April 7, 1998. Focused Feasibility Study for North Marion County Disposal Facility, Woodburn, Oregon; prepared for Marion County Department of Waste Management.
- Department of Environmental Quality (DEQ). 1996. Solid Waste Guidance, Municipal Solid Waste Landfills. Oregon Department of Environmental Quality, Salem, Oregon. September 1, 1996
- Department of Environmental Quality (DEQ). 2002. Draft Environmental Monitoring Plan Guidance Document. Oregon Department of Environmental Quality, Land Quality Division – Solid Waste Program. March 2002.
- Parametrix. 1998. Environmental Monitoring Plan Update, North Marion County Disposal Facility, Marion County, Oregon. Prepared by Parametrix, Portland, Oregon. June 15, 1998.
- Parametrix. 2007. Environmental Monitoring Plan Update, North Marion County Disposal Facility, Marion County, Oregon. Prepared by Parametrix, Portland, Oregon. October 5, 2007.

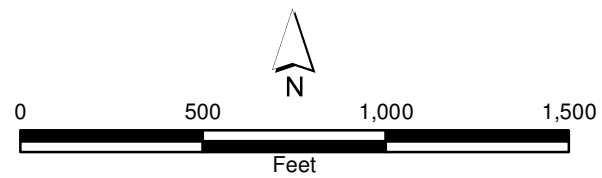
# EXHIBIT F1

**FIGURES**





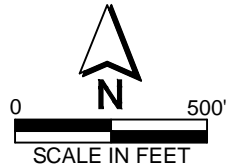
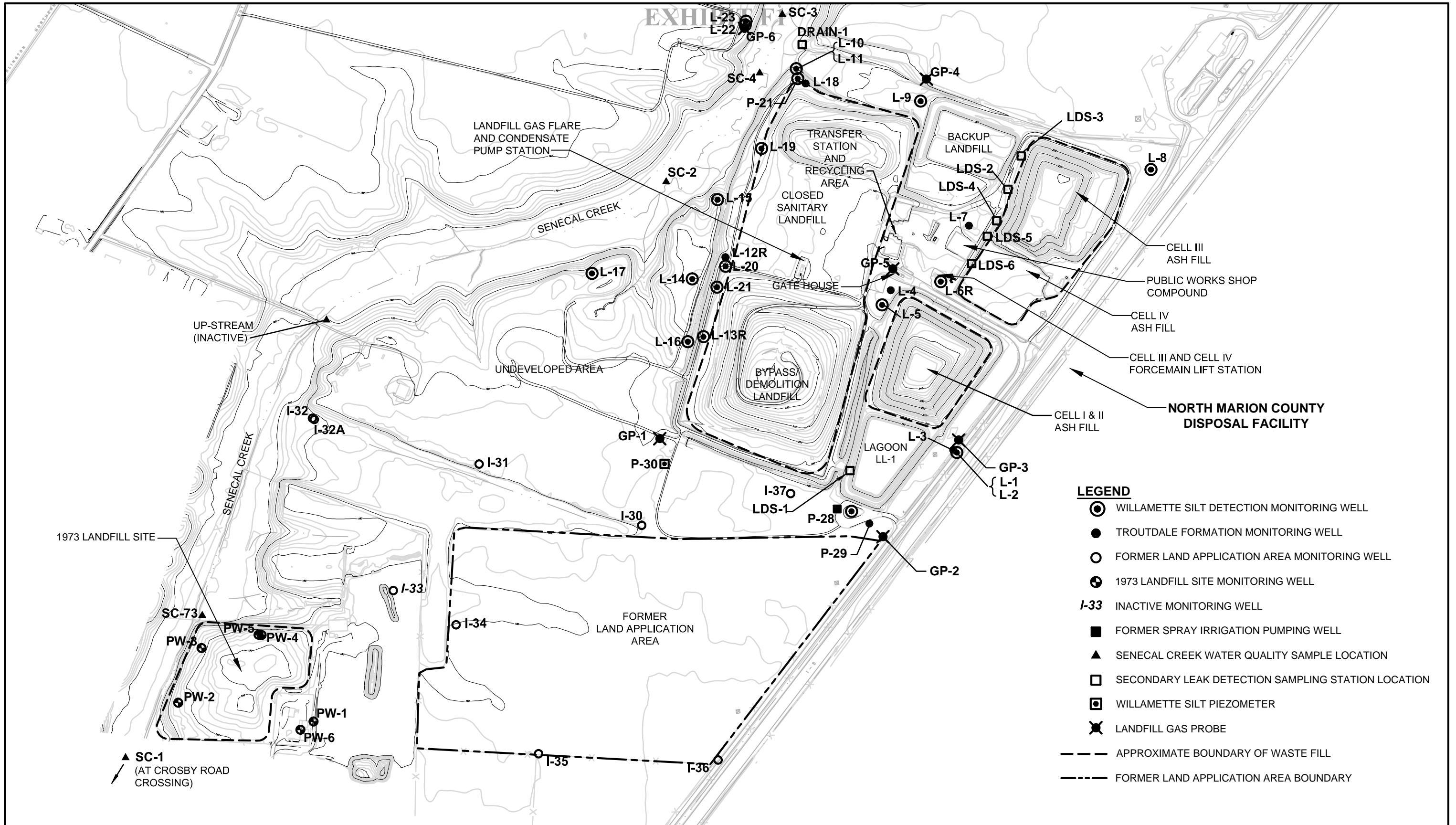
Parametrix DATE: January 24, 2011 FILE: N\_Marion\_Locator.mxd



**Figure 1**  
**Site Location**

Annual Environmental Monitoring Report  
North Marion County Disposal Facility  
Marion County, Oregon





**Figure 2**  
**Facility Site Map**  
**Environmental Monitoring Plan**  
 NORTH MARION COUNTY DISPOSAL FACILITY  
 MARION COUNTY, OREGON

# EXHIBIT F2

RFP EXHIBIT 3

## Environmental Monitoring Plan Browns Island Landfill Marion County

*Prepared for*

**Marion County Department of Public Works**

Environmental Services  
5155 Silverton Road NE  
Salem, Oregon 97305

*Prepared by*

**Parametrix**

700 NE Multnomah, Suite 1000  
Portland, OR 97232-4110  
T. 503.233.2400 T. 360.694.5020 F. 503.233.4825  
[www.parametrix.com](http://www.parametrix.com)

# EXHIBIT F2

## CITATION

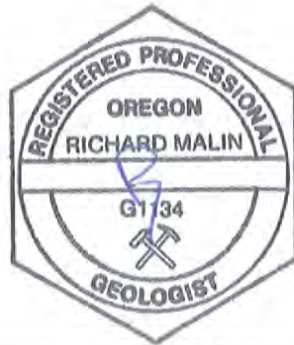
Parametrix. 2013. Environmental Monitoring Plan  
Browns Island Landfill  
Marion County. Prepared by Parametrix, Portland,  
Oregon. March 18, 2013.

# EXHIBIT F2

*Environmental Monitoring Plan*  
*Browns Island Landfill*  
*Marion County*  
Marion County Department of Public Works

## CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional hydrogeologist licensed to practice as such, is affixed below.



---

Rick Malin, R.G.

## TABLE OF CONTENTS

<b>1. INTRODUCTION</b> .....	<b>1-1</b>
1.1 EMP HISTORY .....	1-1
1.2 PLAN ORGANIZATION .....	1-2
1.3 SITE LOCATION AND OPERATING BACKGROUND.....	1-2
1.3.1 Site Location.....	1-3
1.3.2 Site Description .....	1-3
1.3.3 Site Developments.....	1-3
1.3.4 Composting Facility .....	1-3
1.3.5 On-Site Water Supply.....	1-4
1.3.6 Adjacent Properties .....	1-4
1.3.7 Site Monitoring.....	1-5
1.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS .....	1-5
1.4.1 Geologic Conditions.....	1-6
1.4.2 Hydrogeologic Conditions.....	1-6
<b>2. SITE MONITORING BACKGROUND</b> .....	<b>2-1</b>
2.1 MONITORING WELL NETWORK .....	2-1
2.1.1 Network Development.....	2-1
2.1.2 Completion Depths .....	2-2
2.1.3 Background Monitoring .....	2-2
2.1.4 Network Adjustments .....	2-2
2.1.5 Well Survey .....	2-3
2.2 GROUNDWATER QUALITY .....	2-3
2.2.1 GQAR Findings.....	2-4
2.2.2 GQAR Update Findings .....	2-4
2.2.3 Annual Monitoring Report Findings .....	2-5
2.2.4 Organic Constituent Detections.....	2-5
2.2.5 River Water Quality .....	2-7
<b>3. GROUNDWATER MONITORING PLAN</b> .....	<b>3-1</b>
3.1 GROUNDWATER QUALITY MONITORING POINTS .....	3-1
3.2 MONITORING SCHEDULE .....	3-2
3.3 COMPLIANCE BOUNDARY AND CONCENTRATION LIMITS.....	3-2
3.4 REVIEW OF GROUNDWATER QUALITY RESULTS .....	3-2
3.4.1 Routine Event Data Review Action Criteria .....	3-3
3.4.2 Resampling Event Data Review Action Criteria.....	3-3
3.5 DATA ANALYSIS AND EVALUATION.....	3-4
3.5.1 Data QA/QC .....	3-4
3.5.2 Data Presentation and Analysis .....	3-4



# EXHIBIT F2

## TABLE OF CONTENTS (CONTINUED)

3.6	REPORTING.....	3-5
3.6.1	Annual Water Quality Monitoring Report.....	3-5
3.6.2	DEQ Laboratory Split Sampling Report .....	3-6
3.7	REDUCTION IN MONITORING .....	3-7
<b>4.</b>	<b>REFERENCES.....</b>	<b>4-1</b>

### APPENDICES

- A Solid Waste Disposal Site Closure Permit Number 255
- B Monitoring Well Logs, 1997 Well Evaluation & Upgrade Report
- C Well Logs on Record - Sections 29 thru 32
- D Property Owners and Zoning within ½-mile of the Site
- E Nitrate Investigation – 2007/2008

### ATTACHMENT

- A Sampling and Analysis Plan

### LIST OF FIGURES

- 1 Site Location
- 2 Facility Map
- 3 Aerial Site Map
- 4 North/South Cross-Section
- 5 Well Cross-Section A-A'

### LIST OF TABLES

- 1 Monitoring Well Summary Data
- 2 Sample Location Summary – 1974 through 2000
- 3 Water Quality Sample Locations, Frequency, and Schedule
- 4 Water Quality Monitoring Parameters

## 1. INTRODUCTION

This March 18, 2013 Environmental Monitoring Plan (EMP) for the Browns Island Landfill (BI) is an update completed to reflect changes to the site's groundwater monitoring program that have occurred since development of the April 26, 2001 EMP. Select elements of the April 26, 2001 EMP were updated on September 22, 2005. This EMP for BI address environmental monitoring requirements set forth in Section 14 of Solid Waste Disposal Site Closure Permit Number 255, issued on May 4, 2006, for BI. A copy of the BI Solid Waste Disposal Site Closure Permit (the closure permit) is presented in Appendix A for reference purposes.

Environmental monitoring is required at solid waste disposal facilities to evaluate the performance of engineered control and containment systems and the magnitude and significance of any leachate or gas release impacts from the landfill on human health, welfare and safety, and the environment (DEQ 1996). Environmental monitoring at the BI consists of groundwater quality monitoring. This EMP update considers site-specific conditions to provide a monitoring program that address closure permit requirements while being protective of human health, welfare and safety, and the environment.

The Browns Island Landfill operated as a municipal solid waste disposal facility for the City of Salem and surrounding Marion County area from April 1967 until September 1986 with final closure approval granted in September 1987. The total area of the landfill complex is approximately 87 acres. An unfilled approximately 8 acre area located near the north central portion of the landfill is currently being filled with construction and demolition debris under Solid Waste Disposal Site Permit Number 399. A 4.5-acre composting facility located on the east central portion of the landfill was constructed in September 1999.

### 1.1 EMP HISTORY

Groundwater quality conditions at the site have been monitored through a network of monitoring wells since 1974. The wells were originally sampled by the DEQ Laboratory on a semi-annual frequency until March 1995 when Marion County assumed site monitoring. Following county assumption of site monitoring in 1995, the April 19, 1996 EMP was completed as required by the closure permit issued on October 11, 1995.

The EMP was updated on April 26, 2001 to reflect monitoring modifications and adjustments that had occurred since completion of the April 19, 1996 EMP. These modification and adjustments were based on additional site characterization and data analysis that resulted in the recommendation and approval for several adjustments and modifications to the facility's groundwater monitoring program. Site activities completed between the April 19, 1996 and the April 26, 2001 EMPs included:

- Monitoring Well Evaluation – An evaluation of the monitoring well network was completed in 1997 to assess the characteristics and integrity of the existing monitoring wells at the site. This evaluation effort and findings are presented in the Monitoring Well Evaluation Plan (Parametrix 1997a) and the Monitoring Well Upgrade Report (Parametrix 1997b). Appendix B includes the 1997 monitoring well evaluation plan and upgrade report along with associated correspondence.
- Groundwater Quality Assessment – A Groundwater Quality Assessment Update Report (GQAR) (Parametrix 1998) was completed to further evaluate groundwater quality conditions at the site, evaluate facility impacts to the Willamette River, and to modify the monitoring well network based on the report findings. The 1996 BI

## EXHIBIT F2

Groundwater Quality Assessment Report (Parametrix 1996) compiled and evaluated available groundwater quality data collected at the site since April 1985.

Select portions of the April 26, 2001 EMP were updated on September 22, 2005 to reflect modifications and adjustments that had occurred to the site's groundwater monitoring program. Specifically, the September 22, 2005 EMP update incorporated permit-specific concentration limits approved by the DEQ in a letter dated May 5, 2005.

This March 18, 2013 EMP update incorporates modification and adjustments that had occurred to the site's groundwater monitoring program since the September 22, 2005 EMP update. Monitoring modifications and adjustments since 2005 include use of dedicated sampling pumps, low-flow sampling methodology, and adjustments to the site's sample analysis schedule. This 2013 EMP update also identifies changes that have occurred in land use of properties adjacent to the landfill complex and results of a nitrate investigation completed in 2007 and 2008.

### 1.2 PLAN ORGANIZATION

The DEQ's Solid Waste Permit Guidance (DEQ 1996) was referenced in the development of this plan. This EMP update maintains the structure originally presented in the April 26, 2011 and is organized in the following manner:

- Section 1 - Introduction. This section presents site location and operations background, site characterization activities, geologic and hydrogeologic conditions, and area climate. Current and proposed uses of properties adjacent to the site are also described.
- Section 2 – Site Monitoring. This section presents background information on the site's monitoring history. The groundwater monitoring network established at the site is described. Historical groundwater quality conditions are presented.
- Section 3 – Groundwater Quality Monitoring Plan. This section describes groundwater quality monitoring program for the site and monitoring elements such as schedule, analysis, data review, evaluation, and reporting.
- Attachment A contains a site-specific Sampling and Analysis Plan (SAP). The BI SAP describes the procedures recommended for obtaining and documenting water quality samples collected at the site.

EMP appendices contain the following supporting information:

- On-site well logs with installation details and recorded upgrades (Appendix B). Documentation associated with a well evaluation and upgrades completed during 1997 are also presented.
- Well logs on recorded at the Oregon Water Resource Department for Township 7 south, Range 3 west, Sections 29 through 32 (Appendix C). As indicated on a map contained in Appendix C, portions of BI are situated in four sections. The Marion/ Polk County line is located in the middle of the Willamette River
- Landowners and property zoning within a half-mile radius of the site (Appendix D). This listing includes landowners located in both Marion and Polk Counties.
- Activities and findings associated with a nitrate investigation completed during 2007 and 2008 (Appendix E). The material was presented in the 2007 and 2008 BI Annual Water Quality Monitoring Reports.

References cited are presented in Section 4.

Attachment A to the EMP contains the SAP. There are two attachments associated with the SAP. Attachment 1 presents sampling field data sheets. Attachment 2 contains an electronic file of the current designated laboratories quality assurance program (QAP). This QAP is contained on a compact disc.

It is expected that elements of this EMP will continue to be revised from time to time as site conditions and monitoring objectives change. Consequently, this EMP is presented in three-ring binder format to allow for portions of the document to be updated or amended without full plan revision.

## **1.3 SITE LOCATION AND OPERATING BACKGROUND**

Background information regarding the site's location, setting, and operation is presented along with an overview of geologic and hydrogeologic conditions based on findings presented in the GQAR Update.

### **1.3.1 Site Location**

The Browns Island Landfill is located in Marion County approximately 1.5 miles west of Salem, Oregon (Figure 1). The site is located in the northeast  $\frac{1}{4}$  of the northeast  $\frac{1}{4}$  of Section 31 and the northwest  $\frac{1}{4}$  of Section 32, Township 7 South, Range 3 West and situated on Browns Island, a Quaternary (Holocene) river alluvium deposit. Browns Island is bordered by the Willamette River on its north and west sides, and by unnamed interconnecting sloughs on its south and east sides.

The landfill complex (total area of approximately 87 acres) is enclosed within a flood protection berm that is elevated approximately two feet higher than the 100-year flood level. The site is located in and bounded by an area zoned as urban transition. The area around the site was historically used for agricultural purposes but has more recently transitioned over to conservation reserve enhancement use in an effort to protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and enhance water quality in the floodplain area adjacent to the Willamette River. Figure 2 presents a facility site map based on a May 8, 2012, aerial photograph of the site.

### **1.3.2 Site Description**

BI operated as a municipal solid waste disposal facility for the City of Salem and the surrounding Marion County area from April 1967 until September 1986. The Department of Environmental Quality (DEQ) granted final closure approval in a letter dated September 8, 1987. Landfilling began in the central portion of the site in 1967 and expanded onto City and County land in the mid to late 1970s. From 1979 through 1986, landfill expansion was toward the west onto adjacent private (former Trussell) property. The approximate fill thickness is 35 feet in the older eastern portion of the site and 40 feet in the western area of the landfill. The County secured water rights appurtenant to the former Trussell property and a major portion of the adjoining City of Salem property and purchased the Trussell property in 1997. In 2003, surface water irrigation rights were leased back to the State of Oregon as part of the Conservation Reserved Enhancement Project completed at the site.

When the use of the site as a municipal landfill was terminated, there remained an unfilled area (a former gravel pit) of approximately eight acres located near the north central portion of the landfill (Figure 2). This unfilled area, originally bordered on the north by the protection

## EXHIBIT F2

berm and by completed areas on all other sides, is currently being filled with construction and demolition debris under Solid Waste Disposal Site Permit Number 399.

### 1.3.3 Site Developments

Several site developments have occurred since completion of the 1996 EMP. These developments include construction of a composting facility over a portion of the eastern fill area; conversion of the former Trussell domestic water well to an operations water supply well; and conversion of land north and east/southeast of the landfill from cropland through conservation reserved enhancement program to become part of the Minto-Browns Island Park complex. Aggregate mining is occurring east of the site with a plan to ultimately create a lake that would be integrated into the park complex.

### 1.3.4 Composting Facility

Construction of the BI composting facility was completed in September 1999. The facility consists of an approximately four-acre asphalt composting pad. A stormwater collection and management system and a water supply system were developed for the facility. The location of the composting pad is shown on Figure 2.

The BI composting facility (BICF) is scheduled to receive and process up to 5,000 tons of Type 1 feedstocks (primarily source-separated yard and garden wastes) material per year. Yard debris is received from various County and City sponsored yard cleanup events held within Marion County. Yard debris is delivered to the BICF by county, city, public, and franchise waste haulers during specific collection events.

The volume of incoming yard debris is recorded and unloaded on a portion of the asphalt pad and shredded using an on-site tub grinder. The shredded yard debris is formed into windrows, watered and turned as required for the composting process. All composting activities occur on the asphalt pad. The BICF Operations Plan further describes composting operations.

### 1.3.5 On-Site Water Supply

In 1998 the former Trussell domestic water supply well was upgraded and converted to an on-site nonpotable limited use water supply source primarily for dust control on landfill access roads, routine equipment wash down and cleaning, watering of compost to maintain optimal moisture content, and fire suppression. As part of the BICF development, an underground pipe was constructed from the well pump house to the compost facility. The pipeline is designed to provide water to hydrants at the BICF. Water from the hydrants is used to wet and cool the compost.

This well draws from the marine sediments bedrock unit that underlies the site as described in Section 1.4. Water in this deeper rock unit is commonly high in dissolved solids and iron (Sweet 1987). A flow meter and totalizer is installed on the well. The water supply well is sampled on the same frequency for the same parameters as the BI monitoring wells. Samples from the on-site water supply well are designated MW-5, consistent with the historic DEQ site groundwater sample location designation.

### 1.3.6 Adjacent Properties

In 1997, the County purchased 58.3 acres of cropland adjacent to the Willamette River, which was part of the Brown's Island Demolition Landfill Property acquired from Robert Trussell. The eastern portion of this area is shown on Figure 2 as the area with topographic contours between the landfill and the river. The land had been farmed for many years without cause for concern. Seasonal flooding of the Willamette River resulted in severe erosion of the

riverbank and farmland that raised several concerns including the loss of topsoil, sediment and nutrient pollution from agricultural operations adjacent to the river, stability of the river bank, and potential impact to the closed municipal solid waste landfill. Investigation into these concerns led the Marion County to the Conservation Reserve Enhancement Program (CREP).

The U.S. Department of Agriculture's Farm Service Agency Commodity Credit Corporation (CCC) and the State of Oregon agreed to implement a voluntary CREP at the site to improve water quality of streams providing habitat for nine salmon and two trout species listed under the Federal Endangered Species Act. CREP is designed to encourage and assist landowners to voluntarily plant long lasting areas of ground cover (trees and shrubs – riparian buffer) on environmentally sensitive cropland. In return for participation in the program, landowners receive annual rental payments and cost-share assistance for the planting. Under CREP, Marion County entered into a 15-year contract with the CCC and the State of Oregon.

The CREP project initiated by Marion County in 2000 occurred on county land located between the western portion of BI and the Willamette River. This area has become part of the county park system known as Eola Bend Park. This approximately 60 acre area was planted with over 45,000 native plants that serve to control erosion, reduce flood damage, and provide wildlife habitat along the river. On City of Salem property adjacent to the eastern portion of BI is the western portion of the Minto-Brown Island Park. In recent years the City through CREP planted over 5,000 native trees to create a 200-foot buffer along the sloughs and river banks within the Minto-Brown Island Park. Year around footpaths have been established in both parks. The locations of both parks are shown on Figure 3.

The Minto-Browns Island Park includes approximately 286 acres of cropland; approximately 107 acres borders the eastern portion of BI (Figure 3). In 2010, the City entered into a floodplain easement agreement with the U.S. Department of Agriculture Resources Conservation Services to remove approximately 166 acres of cropland. The easement areas are to be restored to a more natural native condition. Initial restoration work began in 2010 with planting of various types of native trees and shrubs.

The cropland (farm field) located southwest of the western portion of BI is located outside the park complex and is still used an active agriculture field. In 2012, a backflow channel or initial expansion cell associated with the aggregate operation located west of BI facility was excavated along the south side of the farm field that is adjacent to the western corner of BI.

Commercial Redimix Aggregate, Inc. operates an aggregate quarry west of BI in the area shown on Figure 3. High quality sand and gravel deposits are extracted by surface mining to produce material for various aggregate-related construction needs. Present operation consists of extracting gravel, sizing the crushed rock, and cleaning sand and gravel for concrete. The facility is permitted by the Department of Geology and Mineral Industries under operating permit aggregate identification number 24-0010. The current disturbed area of the facility is identified to be 115 acres with a total permitted area of 287 acres. As described in a 1997 aggregate expansion plan for the facility, the proposed long term plan for the facility is to continue extraction, processing, and distribution of aggregate products ultimately creating a lake which will be up to 150 surface acres in size. According to the facility's 1997 Eola Point Project description, the lake and a portion of the surrounding property will be incrementally dedicated to the public as an undeveloped regional park and recreation site.

### **1.3.7 Site Monitoring**

Groundwater quality conditions at the BI site have been monitored through a network of monitoring wells since 1974. The location of these wells is shown on Figures 2 and 3. The

wells are sampled on a semi-annual basis. Site monitoring activities and findings are discussed in Section 2.

## 1.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Geologic and hydrogeologic conditions at the site are described in the BI GQAR Update (Parametrix 1998). The geology at the site can be characterized as young river terrace deposits consisting of stratified sands with well-rounded pebbles, gravels, and cobbles. Underlying the young alluvium deposits is an older marine sedimentary rock unit consisting of tuffaceous siltstone and sandstone. Groundwater flow at the site is primarily toward the northeast with the Willamette River functioning as a discharge or a recharge boundary dependent upon river stage. The base of the uppermost aquifer at the site is at the top of the older marine sedimentary rock unit.

### 1.4.1 Geologic Conditions

There are two distinct geologic units that underlie the site. These units are the recent river alluvium deposits and Eocene-Oligocene sedimentary rock.

The recent river alluvium consists of Quaternary (Holocene) age deposits from the Willamette River. The unit consists of stratified sands with well-rounded pebbles, gravel, and cobbles. The upper 15 feet of the unit generally consists of light brown sand and silt overburden material. The lower terrace deposits, which may be present in the lower portion of the alluvium unit, consist of unconsolidated to semi-consolidated cobbles and gravel with sand, silt, and clay.

Underlying the river alluvium deposit is an Eocene-Oligocene sedimentary rock unit consisting of tuffaceous siltstone and sandstone of marine depositional origin. On-site well logs describe the unit as consisting of sandstone, silty sand, sandy clay, or blue clayey silt and clay. At the site, the unit has been encountered at depths ranging from 27 to 55 feet below ground surface (bgs). The Columbia River Basalt Group (CRBG) flows that are present northwest and southeast of the site overlie this sedimentary rock unit. However, at the site, the CRBG flows have been eroded away by the Willamette River. No known CRBG flow remnants are present at the site.

Based on well logs, the elevation of the top of the sedimentary rock unit appears to be highest in the central area of the landfill and slopes downward toward the Willamette River. Since the surface elevation is fairly consistent in the unfilled area of the site, the thickness of the recent alluvium appears to increase from the landfill to the river.

### 1.4.2 Hydrogeologic Conditions

There are two hydrogeologic units present at the site corresponding with the two geologic units. The uppermost aquifer is present in the river alluvium deposit. Water-bearing zones are also present in the deeper marine sedimentary rock unit. The hydrogeologic conditions of these two units are described below. Figure 4 presents a north/south oriented cross-section of the site showing the two hydrogeologic units at the site.

#### 1.4.2.1 Alluvium

The uppermost aquifer is present in the river alluvium with groundwater depths generally ranging from 8 to 18 feet bgs with an average depth of approximately 14 feet bgs. The uppermost aquifer is bounded on all sides by hydraulic boundaries in the form of surface water bodies. The Willamette River forms a boundary on the north and west sides of the site

and the slough system forms boundaries on the south and east sides of the site (Figure 1). The water elevation of slough system has been observed to be predominantly higher than the Willamette River (Parametrix 1998). A small spill dam located at the east slough's confluence with the Willamette River helps to maintain a higher slough stage.

The direction of groundwater flow in the uppermost aquifer is predominantly toward the Willamette River. Groundwater flow direction reversals (i.e., flow away from the river) have been observed to occur during periods of high river stage conditions (Parametrix 1998). The Willamette River functions as a losing or gaining stream in the site area dependent upon river stage conditions. In general, changes in river stage level correlate with changes in groundwater elevations measured at the site. Changes in river stage influence the gradient of the alluvial groundwater system (i.e., a rising river stage will decrease the groundwater flux to the river causing a flatter groundwater gradient).

Slug tests were performed on wells MW-8b/c, MW-12a/b, MW-16, and MW-17 on June 16, 1999. Both falling and rising head tests were completed on each well. Well response was recorded using a pressure transducer and data logger. In general, well response to the inclusion or removal of the slug was quick. The average horizontal hydraulic conductivity for rising head was 3.3E-02 cm/sec (93.4 ft/day). The average horizontal hydraulic conductivity for falling head was 3.9E-02 cm/sec (110.4 ft/day). Slug test activities and analysis were presented in an August 23, 1999, memorandum to the DEQ.

As depicted in Figure 4, the saturated thickness of the alluvium aquifer generally increases from the landfill toward the river. As mentioned in Section 1.4.1, this is due to the apparent decreasing elevation of the top of the sedimentary bedrock unit. The area of greatest saturated thickness appears to be in the area of wells MW-12a/b. An increase in saturated thickness represents an increase in the transmissivity of the aquifer. Given the understood hydrogeologic conditions of the site, it appears that the greatest volume of groundwater flowing away from the landfill is moving in the area between wells MW-12a/b and MW-8a/b/c (Parametrix 1998).

## **1.4.2.2 Marine Bedrock**

There are water-bearing zones present in the underlying Tertiary marine sedimentary bedrock unit. Regionally, water-bearing zones present in this bedrock unit have been observed to be confined with vertical upward gradients (Woodward 1998). Tertiary sedimentary units in the Willamette Valley commonly produce saline waters (Woodward 1998) that yield only small quantities of water that may be highly mineralized (Foxworthy 1970). The direction of groundwater flow in this unit is not known but the Willamette River in the site area would appear to function as a local area discharge point.



## 2. SITE MONITORING BACKGROUND

This section presents background information on the environmental monitoring network established at the site. The network consists of groundwater quality monitoring wells and groundwater level measurement points. Groundwater quality monitoring at the site has been conducted on a semi-annual basis since May 1974. This section describes the existing site groundwater quality monitoring well network and water quality conditions.

### 2.1 MONITORING WELL NETWORK

Figure 2 shows the locations of active, nonactive, and decommissioned wells at the site. Summary data for both active and nonactive wells are presented in Table 1. Table 1 also identifies abandoned wells. Appendix B contains copies of the monitoring well logs.

Based on the current understanding of site hydrogeologic conditions, the functionality and integrity of the BI monitoring well network is considered good for monitoring groundwater quality conditions at the site. An evaluation of the monitoring well network was completed in 1997 (Parametrix 1997a). The evaluation led to an upgrade effort on several of the older wells (Parametrix 1997b). Documents and correspondence associated with the 1997 monitoring well evaluation and upgrades can be found in Appendix B. All wells at the site are secure, protected, and surveyed.

The SAP (Attachment A) describes the procedure that will be used to routinely evaluate and maintain the integrity of all monitoring points at the site. Section 3 describes in further detail how groundwater quality conditions at the BI will be monitored using the existing monitoring well network.

#### 2.1.1 Network Development

The first monitoring wells at the site were installed in 1973 and additional wells have been installed over time as the site's groundwater monitoring program has been modified and adjusted. There have been five phases of well installations at the site. These well installation phases are:

- Phase I (May 1973) wells: MW-1a/b/c, MW-2a/b, MW-4a/b/c, and MW-6a/b/c. Wells MW-3 and MW-5 were existing water supply wells. Wells MW-2a/b and MW-6a/b/c were installed in existing supply wells.
- Phase II (October 1975) wells: MW-7a/b and MW-8a/b/c.
- Phase III (May/June 1979) wells: MW-9a/b, MW-10a/b/c, MW-11a/b, and MW-12a/b.
- Phase IV (October 1986) wells: MW-13, MW-14, and MW-15.
- Phase V (November 1998) wells MW-16 and MW-17.

Wells installed prior to 1980 were completed as single, double, or triple installations. The 1997 Monitoring Well Evaluation Plan (Parametrix 1997a) presents additional monitoring well network information in association with a plan that was used to address well suitability issues. The 1997 Monitoring Well Upgrade Report (Parametrix 1997b) describes the upgrades completed to the site monitoring well network.

## 2.1.2 Completion Depths

Monitoring wells at the site have generally been completed at three different depths or zones in the uppermost aquifer as identified below:

- Shallow wells: MW-9b, MW-10a\*, MW-6a\*, MW-2a\*, MW-8a, and MW-7a\*. The screen intervals for these wells are above elevation 110 feet.
- Intermediate wells: MW-10c, MW-15, MW-6b\*, MW-12a, MW-1a\*, MW-8b, MW-7b\*, MW-13\*, and MW-14\*. The screen intervals for these wells are generally located between elevations 100 feet and 110 feet.
- Deep wells: MW-9a, MW-10b, MW-6c\*, MW-12b, MW-1b\*, MW-1c\*, MW-2b\*, MW-8c, MW-16, and MW-17. The screen intervals for these wells are generally below elevation 100 feet.

Several monitoring wells have also been completed in the underlying marine sedimentary rock unit. Wells included in this group are:

- Sedimentary rock wells: MW-6c\*, MW-5, MW-1b\*, and MW-1c\*.

Wells with an asterisk indicate that the well is an inactive water quality monitoring point. All inactive wells are used as piezometers to provide additional information on groundwater flow characteristics at the site.

Figure 5 presents a cross-section showing well depths across the site with respect to elevation.

Well MW-5 is the on-site water supply well and formerly known as the Trussell well and briefly identified as well W-1. The DEQ Laboratory identified this well as MW-5 in their site monitoring program.

## 2.1.3 Background Monitoring

Well MW-15 functions as the up-gradient background well for the site. However, during temporary groundwater flow reversals that can occur during high river stage events, MW-15 become a down-gradient well. Wells MW-9a/b are located cross-gradient (with respect to groundwater flow) of the landfill and historically have similar water quality concentrations as well MW-15. The 1998 GQAR Update included a limited parameter statistical comparison of wells MW-15 and MW-9a/b. This analysis found that use of wells MW-9a/b as supplemental background water quality monitoring locations was not statistically supported. Given the occurrence of groundwater flow reversals at the site, use of wells MW-9a/b as supplemental background monitoring points may still be justified. However, recent aggregate mining activities occurring just south of MW-9a/b, as discussed in Section 1.3.6, will likely cause geochemical changes to occur at this well pair.

## 2.1.4 Network Adjustments

Since completion of the 1996 BI EMP, inactive monitoring wells MW-11a/b were abandoned during September 1997 due to erosion of the river bank where they were located. Well group MW-4a/b/c was discovered during construction of the new compost facility during 1999. The MW-4 well nest was abandoned shortly afterward in August 1999.

As recommended in the 1998 GQAR Update, cross-gradient monitoring wells MW-13 and MW-14 became inactive monitoring points following the spring 1998 event and two new deep replacement monitoring wells MW-16 and MW-17 were installed in November 1998. Inactive wells MW-13 and MW-14 are used as piezometers.

## EXHIBIT F2

The 1999 AWQMR presented a request to switch shallow well MW-10a with adjacent inactive intermediate well MW-10c. The switch was requested due to shallow well MW-10a not being able to provide water samples year around and yielding turbid samples when water was available. The DEQ approved this request in a letter dated April 27, 2000.

### 2.1.5 Well Survey

All wells at the site were surveyed during February 2008 by the county. This survey updated the 1998 completed by David Evans and Associates. The 2008 survey included determining the vertical elevations of the water level measurement point (i.e., top of the well PVC) and the top of the aluminum monument caps. Aluminum cap survey monuments were installed next to each well location as part of the 1998 well survey. Elevations are in NAVD88 units and northing/easting coordinates are NAD83 units. The 2008 survey top of the PVC water level measurement point elevations are presented on Table 1.

## 2.2 GROUNDWATER QUALITY

This section presents a review of historic and recent groundwater quality data from the site.

Review of historical water quality data has indicated that groundwater quality conditions at the site are seasonally variable. The concentrations of water quality parameters are typically higher during the fall event and lower during the spring event. This seasonal variation of groundwater quality is understood to be caused by Willamette River interaction with the uppermost aquifer at the site. During the spring, the river stage is typically high as a result of the wet winter season and spring runoff events, which effectively recharge the aquifer to some extent. During the fall a low river stage has been established for several months in response to dry summer conditions and as a result discharge to the river from the uppermost aquifer has been established. Due to these conditions, groundwater quality conditions at the site can vary substantially between spring and fall events, especially in wells located closest to the river.

Groundwater quality samples at the site have been collected and analyzed on a semi-annual basis since 1974. Table 2 identifies which wells at the site have been sampled 1974 to 2000. Wells indicated as sampled in 2000 are the same wells sampled from 2001 thru 2012.

The following water quality standards are typically exceeded in groundwater samples collected from the site monitoring well network:

- OAR 340-80 Table 3 Guidance Levels or the EPA secondary drinking water standards associated with manganese, iron, and total dissolved solids (TDS). These aesthetic based standards have been exceeded at the site the past four years (2009 through 2013) typically occurring at the following locations: TDS (wells MW-8a/b/c and MW-12a/b), manganese (all wells except MW-9b and MW-15), and iron (all wells except MW-8a/c, MW-9a/b, and MW-15).
- Nitrate has been detected several times in shallow well MW-9b and almost consistently in fall event samples from MW-8s above the OAR 340-80 Table 1 Reference Level, EPA primary drinking water standard associated with nitrate. The PSCL for nitrate, equal to the Primary Drinking Water Standard for nitrate, is also exceeded.

The exceedance of manganese, iron, and TDS Guidance Levels has been reported in past annual environmental monitoring reports.

The exceedance of nitrate Reference Level and PSCL at well MW-8a has been previously reported. The source of nitrate being detected at MW-8a was investigated as reported in the 2007 and 2008 BI AWQMR. Appendix E contains activities and findings presented in these two reports. As noted in the 2012 AWQMR, nitrate is regularly detected above its primary standard at well MW-8a in fall event samples (14 times in the past 16 years). Elevated nitrate concentrations have also been observed in up-gradient well MW-15 and in cross-gradient wells MW-9a/b. In a July 17, 2009 letter, the DEQ concluded that nitrogen compounds do not appear to be adversely affecting the beneficial uses of groundwater.

## 2.2.1 GQAR Findings

The March 28, 1996, GQAR presented an analysis of groundwater quality data collected from the monitoring well network for the period of April 1985 to March 1995. This time period was selected to evaluate the change in groundwater quality characteristics at the site since closure occurred in 1986.

The 1996 GQAR noted that some landfill indicator parameters are higher in wells down-gradient (north and northeast) of the landfill than in background well MW-15, including: specific conductance, alkalinity, hardness, dissolved iron, dissolved manganese, sulfate, chemical oxygen demand (COD), and total organic carbon (TOC). Wells that were identified as having elevated indicator parameters were MW-8a/b/c, MW-10a/b/c, and MW-12a/b. The GQAR noted that some downward trends are apparent on the time-series plots for some of the parameters in these down-gradient wells, suggesting that closure activities are beginning to reduce leachate generation and subsequent groundwater quality impacts. In the DEQ's letter review of the GQAR, the current and/or past exceedances of water quality standards were identified as; TDS, iron, manganese, sulfate, total coliform, total cadmium, and total lead at the compliance boundary.

## 2.2.2 GQAR Update Findings

The GQAR Update presented a non-parametric trend analysis (Sen's slope estimator) used to determine whether the concentrations of six indicator parameters (alkalinity, specific conductance, COD, manganese, chloride, and sulfate) were increasing, decreasing, or remaining the same at both active and inactive well locations. Analysis completed on the active wells found that:

1. Upward trends were occurring primarily at down-gradient well MW-12b, to a lesser extent at shallow well MW-12a; and at background well MW-15 with the exception of chemical oxygen demand (COD) (no change) and manganese (down-ward).
2. Downward trends were occurring primarily in down-gradient wells MW-8a/b/c with the exception of sulfate and at well MW-5 (former Trussell supply well) also with the exception of sulfate.

An explanation for the observed upward trends at wells MW-12a/b and downward trends at wells MW-8a/b/c was that:

1. The more westerly wells MW-12a/b are detecting impacts from the more recent use of the western landfill area;
2. The more easterly wells MW-8a/b/c are detecting impacts from the older eastern landfill area.

## 2.2.3 Annual Monitoring Report Findings

Recent annual water quality monitoring reports for BI have noted the following groundwater quality conditions at the site.

- Examination of recent trends generally indicates site-wide stable or declining concentrations. Wells MW-12b, and to a lesser extent MW-10c, appear to be showing an overall upward trend while wells MW-8b, MW-12a, MW-16, and MW-17 appear to be showing an overall downward trend. The remaining wells are showing either an overall stable trend or no clear overall upward or downward trend.
- Wells MW-8c, MW-10b/c, MW-12a/b, and MW-17 show the greatest indications of water quality impact. These wells are located between the landfill and the river. Some of the highest parameter concentrations are being detected at wells MW-12a/b followed by wells MW-17 and MW-8c. A sustained decreasing concentration trend is occurring at well MW-8c. In general, the greatest impacts are observed in wells completed near the base of the uppermost aquifer down-gradient of the landfill.
- Observed groundwater quality impacts at the site are primary in the form of ions; specifically calcium, magnesium, bicarbonate, and to a lesser extent chloride, sulfate, iron, and manganese. The highest trace metal concentrations are generally observed at locations where high ion concentrations are also observed (wells MW-8a/b/c, MW-10c, and MW-12a/b).
- Recent trace metals results indicate that four (barium, cobalt, nickel, and arsenic) of the nine metals analyzed were detected above the reporting limit in more than 50 percent of the monitoring wells sampled. Selenium and silver were not detected and cadmium was detected in one sample at the reporting limit. The detection frequency of chromium and lead was less than 40 percent. Trace metals were most commonly detected in well MW-9a and MW-10b followed by wells MW-8c, MW-12a/b, and MW-17. The highest concentrations were detected at wells MW-12a/b followed by wells MW-8b and MW-10b. Examination of trends for the four higher frequency detected trace metals found an overall declining concentration trend. Notable concentration increases recently observed in well MW-9a may be related to the recent excavation associated with aggregate mining occurring up-gradient of the well.
- The deep wells (MW-8c, MW-10b, MW-12b, and MW-17) are showing the greatest water quality impacts. The shallower portion of the uppermost aquifer has the greatest water quality changes due to apparent river recharge/discharge interaction.

Groundwater quality impacts at the BI site are being observed primarily at down-gradient well groups MW-12, MW-10, and MW-8. More limited data is available for newer wells MW-16 and MW-17. Concentrations at well MW-16 are generally lower than at well MW-17. These two newer wells were installed to further delineate and characterize the groundwater quality impacts occurring north of the landfill.

## 2.2.4 Organic Constituent Detections

A review of historical data indicates that volatile organic constituents (VOCs) have been detected at several wells at the site.

VOCs have historically been detected at the following well locations:

# EXHIBIT F2

Location	Historic Volatile Organic Compound Detections
MW-8a	Toluene 0.0018 mg/l (10/20/93), 0.00561 mg/l (9/2/98).
MW-8b	Toluene 0.0010 mg/l (10/20/93), xylenes 0.0015 mg/l (10/20/93).
MW-10a	Chlorobenzene 0.0026 mg/l (10/20/93)
MW-12a	Chlorobenzene 0.001 mg/l (10/4/89), 0.0015 mg/l (10/20/93), 0.008 mg/l (10/13/96); 1,4-dichlorobenzene 0.001 mg/l (10/4/89), 0.0025 mg/l (10/20/93), 0.00138 mg/l (9/2/98); 1,3-dichlorobenzene 0.008 mg/l (9/6/90); methylene methylene chloride 0.011 (10/13/96)
MW-12b	Chlorobenzene 0.001 mg/l (10/4/89), 0.0009 (10/20/93), 0.0009 mg/l (10/13/96), 0.00211 mg/l (9/13/00); 1,4-dichlorobenzene 0.001 mg/l (10/4/89), 0.0007 mg/l (10/20/93), 0.0006 mg/l (10/13/96), 0.00149; 1,3-dichlorobenzene 0.001 mg/l (9/6/90)
MW-13	Methylene Chloride 0.017 mg/l (10/13/96)
MW-17	1,4-dichlorobenzene 0.00073 mg/l (9/13/00)

Methylene chloride detected in the fall 1996 samples from wells MW-12a and MW-13 was noted in the laboratory analytical report as a possible laboratory contaminant. The tentatively identified compound (TIC) tetrahydrofuran has been detected in well MW-12b in samples collected on 9/2/98 (0.00388 mg/l) and on 9/6/00 (0.0024 mg/l). VOCs have historically been detected in wells MW-12a/b and MW-8a/b. More recent sampling found that the 1,4-dichlorobenzene detected in wells MW-12a/b is also present in well MW-17.

More recent analysis for VOCs was completed during the fall 2010 and fall 2012 monitoring events. The results of these analyses are presented in the BI 2010 and 2012 Annual Water Quality Monitoring Reports. Chlorobenzene is typically detected at low concentrations at wells MW-8b and MW-12a/b. Toluene is typically detected at a low concentration at well MW-8a. The compound 1,4-dichlorobenzene, which historically was being detected at a decreasing number of locations over time, was not detected in during the fall 2012 event. The greatest number of VOCs (including tentatively identified compounds [TICs]) tends to be detected in the samples from wells MW-12a/b.

Analysis of semi-volatile organic compounds (semi-vols), by EPA Method 8270, was completed on a bi-annual basis from 1996 to 2004. During this period, semi-vols had historically been detected at the following well locations.

Location	Historic Semi-Volatile Organic Compound Detections
MW-8a	Di-n-octylphthalate 0.006 mg/l (10/13/96); bis(2-ethylhexyl)phthalate 0.0152 mg/l (9/2/98)
MW-8b	Di-n-octylphthalate 0.006 mg/l (10/13/96)
MW-8c	Di-n-octylphthalate 0.0091 mg/l (10/13/96)
MW-9a	Di-n-octylphthalate 0.007 mg/l (10/13/96)
MW-9b	Bis(2-ethylhexyl)phthalate 0.0162 mg/l (9/6/00)
MW-12a	Chlorobenzene 0.008 mg/l (10/13/96); di-n-octylphthalate 0.007 mg/l (10/13/96)
MW-12b	Bis(2-ethylhexyl)phthalate 0.0257 mg/l (9/2/98)
MW-14	Bis(2-ethylhexyl)adipate 0.011 mg/l (10/13/96), di-n-octylphthalate 0.012 mg/l (10/13/96),
MW-15	bis(2-ethylhexyl)adipate 0.003 mg/l (10/13/96), di-n-octylphthalate 0.006 mg/l (10/13/96)

## EXHIBIT F2

During the fall 1998 sampling event, bis(2-ethylhexyl)phthalate was detected at wells MW-8a and MW-12b. Bis(2-ethylhexyl)phthalate is a synonym for dioctyl phthalate (and chemically similar to di-n-octylphthalate), which is used as a plasticizer and may represent possible laboratory contamination (i.e., tubing) or degradation of the PVC well casing. Bis(2-ethylhexyl)phthalate was also detected by the DEQ Laboratory in every sample that they collected from the site during the fall 1998 split sampling event including their transfer and transport blanks. The DEQ did not collect a sample from well MW-9b during that event.

During the fall 2000 sampling event, several unknown compounds were detected primarily in well MW-12a. The laboratory reported the TICs as unknown compounds because poor correlation existed with associating them to any specific compound names. Further examination of the above unknown TICs by the laboratory identified them as long-chain hydrocarbons from a non-petroleum source. There were also several more peaks present but at levels below the mrl. In essence the semi-vol TIC detections may represent breakdown products of potentially naturally occurring long-chain hydrocarbon compounds.

None of the VOCs or semi-vols detected at the site has exceeded a DEQ Numerical Groundwater Standard or an EPA Primary Drinking Water Quality Standard.

### 2.2.5 River Water Quality

The 1998 GQAR Update included an analysis of groundwater discharge into the Willamette River. Groundwater discharge rates into the river were found to be negligible (less than one gallon per day) due to equilibrium conditions that exist between the surface water and the river alluvium deposit groundwater system. The results of the June 1999 slug test further supported the 1998 analysis conclusions.

An estimate of chemical loading to the river was also examined in the GQAR Update using the principle of mass balance. This analysis indicated that when considering worst-case conditions (low river stage, high groundwater discharge rate), no measurable increase in the water quality parameters is observed down river of the landfill. This is due to the high river flow volume compared with the rate of groundwater discharged from the site.

In an attempt to confirm the chemical loading analysis findings, samples of the river up and down-stream of the site were collected during the fall 2000 event river when river stage conditions are lowest and groundwater discharge to the river is greatest. Examination of the results of fall 2000 river samples indicate that the concentration of the various parameters analyzed are similar at the two locations sampled. The most notable difference were bacteria results where the up-stream river sample location had higher reported enterococcus and total coliform concentrations. Fecal coliform concentrations were similar. The detected concentrations of site-specific parameters such as bicarbonate, chloride, iron, magnesium, and sulfate at the two river sample locations were either the same or very similar. The calcium concentration at the up-stream location was slightly higher than the down-stream sample location. However, the up-stream sample concentration was qualified as an estimated value. The detected total alkalinity concentration was slightly higher in the down-river sample compared with the up-river sample. The field conductivity readings were slightly higher at the down river location whereas the laboratory conductivity reading was slightly higher in the up-stream sample.

The results of the fall event sampling of the Willamette River are consistent with the results of the groundwater discharge analysis presented in the BI GQAR Update. In a letter dated March 30, 2001, the DEQ indicated that while the up-stream and down-stream concentrations of inorganic parameter tends to support the no notable difference observation, the estimated values for the bacteria results (their hold times were exceeded) cannot be used as conclusive

# EXHIBIT F2

evidence that groundwater discharge from the site has resulted in no notable impact to the river.



## 3. GROUNDWATER MONITORING PLAN

The existing groundwater quality monitoring network at the site consists of 13 groundwater monitoring wells as described in Section 2.1. Historic and recent groundwater conditions at the site were presented in Section 2.2. Based on the information presented in Section 2, a plan for the continued use of these monitoring wells for groundwater quality compliance sampling is presented in this section. The existing site groundwater quality database is described along with procedures that will be used to analyze, review, and report water quality results.

Attachment A presents a Sampling and Analysis Plan (SAP) which provides information to guide the collection and analysis of groundwater quality samples at the BI site. The SAP describes the procedures recommended for preparing, obtaining, documenting, preserving, and shipping water quality samples collected at the BI. The SAP establishes Quality Assurance/Quality Control (QA/QC) requirements for sample acquisition and handling at the site.

### 3.1 GROUNDWATER QUALITY MONITORING POINTS

Table 1 identifies the 13 active monitoring wells that will serve as the groundwater quality monitoring network for the site. As shown on Figure 2, wells MW-8a/b/c, MW-12a/b, MW-16, and MW-17 are down-gradient compliance boundary wells. Wells MW-9a/b and inactive wells MW-13 and MW-14 are also located on the compliance boundary shown on Figure 2. Potentiometric maps and water quality data indicate that wells MW-9a/b are cross-gradient wells. Potentiometric maps have indicated that wells MW-13 and MW-14 appear to be recharged from the adjacent east slough. The 13 inactive wells will be used as piezometers. Water levels are collected from all 26 wells and used to develop potentiometric maps for the site.

All 13 active wells are capable of yielding representative groundwater quality samples from the uppermost aquifer beneath the site. The wells were evaluated for suitability and upgraded in 1997 (see Appendix E). The security casing of each well consists of steel casing with a lock protected access cap. Each well is equipped with a dedicated bladder sampling pump that has been in uses since the fall 2008 event. Dedicated sampling pumps were installed in the 12 active monitoring wells to limit the potential for cross-contamination while increasing sample collection efficiency and representativeness. Prior to the fall 2008 event, the monitoring wells were purged and sampled using a dedicated PVC bailer stored (suspended) in each active well. An exception is sample point MW-5, which is a supply well that is sampled from a tap. All well locations are currently accessible by vehicles using gravel and dirt roads or trails.

Section 13.2 of the closure permit indicates that the County shall protect and maintain each groundwater or surface water monitoring well or device so that sample representative of actual conditions can be collected. Any damage discovered shall be reported to the DEQ in writing within 14 days of the discovery, along with a description of the proposed repair or replacement measures and time schedule for completion of repair work. All monitoring well repairs, abandonments, replacements and installations must be documented in a report prepared by an Oregon registered geologist and must be submitted to the DEQ within 30 days of the action and included in the next annual environmental monitoring report.

## 3.2 MONITORING SCHEDULE

Section 10.4 of the BI closure permit identifies a semi-annual sampling schedule for environmental monitoring at the site in accordance with the approved EMP. The following compliance sample event periods are identified in the closure permit:

- Spring – March 1st through May 31st.
- Fall – September 1st through October 31st.

During the spring and fall compliance periods, groundwater quality sampling will be completed on the 13 active monitoring wells as identified on Table 3. Table 3 identifies the analytes to be sampled, the sampling frequency and schedule. Table 4 identifies the analytes or parameter included in each parameter group listed in Table 3.

As indicated on Table 3, analysis of BI Permit Parameters is completed every two years on even years during fall events (i.e., fall 2014, fall 2016). With the exception of the even year fall events, analysis of BI Indicator Parameters is completed. Table 4 identifies the analytes and parameters associated BI Permit Parameters and BI Indicator Parameters. BI Indicator Parameters were applied beginning with the fall 2011 event.

Water level measurement events from all monitoring wells at the site will also be completed during a semi-annual monitoring.

## 3.3 COMPLIANCE BOUNDARY AND CONCENTRATION LIMITS

Permit-specific concentration limits (PSCLs) proposed on October 24, 2003 were approved by the DEQ in a letter dated May 5, 2005. The following PSCLs have been established for the BI site.

Contaminant	Concentration Limit
Arsenic	0.05 mg/l
Barium	1.0 mg/l
Cadmium	0.0163 mg/l
Chromium	0.0469 mg/l
Lead	0.05 mg/l
Nitrate-N	10.0 mg/l
Selenium	0.01 mg/l
Silver	0.0140 mg/l

The above PSCLs are based on Groundwater Quality Protection Reference Levels (OAR 340-40 Table 1) or a site-specific derived concentration. The 1996 BI EMP identified compliance boundary for the site is shown on Figure 2. The GQAR Update indicated that trend analysis using time series plots and Sen’s slope estimator (Gilbert 1987) would be used to periodically to assess the trends in compliance well concentrations.

## 3.4 REVIEW OF GROUNDWATER QUALITY RESULTS

The existing BI groundwater quality database is in Microsoft Access format and includes groundwater quality data, dating back to April 1985. As new site water quality data is obtained, electronic data deliverables (EDDs) from the laboratory are directly uploaded into the database. This database update methodology increases data transfer efficiency and

## EXHIBIT F2

reduces data entry errors. Templates and queries have been developed that can provide various types of data reports and formats.

The analysis and evaluation of water quality data collected from BI is completed in the following manner. A review of field and laboratory data is initially completed, upon receipt of the data from the laboratory, to identify and address data that: 1) did not meet QA/QC control objectives, 2) represents a significant change in water quality, or 3) exceeds a primary groundwater, drinking water quality standard, or a PSCL.

### 3.4.1 Routine Event Data Review Action Criteria

Section 11.4 of the closure permit indicates that if there is a significant change in water quality, then the County shall notify the DEQ within 10 days of the receipt of the laboratory data. Dependent upon the data review findings, a resampling event may be required as described in this section.

The following actions shall be taken based on this data review:

- Data indicates there is no significant change (below primary numerical groundwater reference levels, primary drinking water quality standards, or PSCLs: → continue groundwater monitoring with next scheduled event.
- Data indicates a significant change in water quality at any monitoring point: → notify the DEQ within 10 days of receipt of laboratory results and perform resampling within 15 days.
- Data is above a PSCL: → notify the DEQ within 10 days of receipt of laboratory results and perform resampling within 15 days.

Note if this is a known release previously confirmed to the DEQ in writing, then resampling is not required.

Examples of a significant change in water quality include:

- Detection of a volatile organic constituent (VOC) or other hazardous constituent not detected in the background monitoring point (well MW-15) and previously not reported.
- Exceedance of a Table 1 value listed in OAR 340-40-020 unless the background monitoring point (well MW-15) is above these numerical limits and the exceedance has previously been reported.
- Exceedance of a primary EPA Primary Drinking Water Standard that has previously not been reported.

Note that established permit specific concentration limits and compliance points are listed in Section 3.3.

### 3.4.2 Resampling Event Data Review Action Criteria

As indicated in Section 11.5 of the closure permit, in the case where a routine data review indicates that a resampling event needs to be completed, the data from the resampling event shall be reviewed upon receipt and responded to in the following manner:

- If the resampling results do not confirm the routine results, then:
  1. Continue with routine monitoring.

2. Discuss the data from the routine sampling event and the resampling event in the next Annual Water Quality Monitoring Report.
- If the resampling results confirm that a significant change in water quality has occurred, as noted in the routine results:
    1. Notify the DEQ within 10 days of receipt of the laboratory data or within 60 days of the sample date (whichever occurs first).
    2. Submit a plan within 30 days (unless another time period is authorized) for developing an assessment program with the DEQ.

## 3.5 DATA ANALYSIS AND EVALUATION

This section describes procedures that will be used to evaluate data quality (data QA/QC) and data analysis using statistical methods.

### 3.5.1 Data QA/QC

A QA/QC review will be completed for each sampling event and will be summarized in a QA/QC summary report that will accompany all data presentation reports. The QA/QC summary report will present the following information: project and sample information; a quality assurance summary; a review of analytical methods and holding times; and a review of laboratory and field quality control samples. Data exclusions from statistical consideration and/or analysis will be identified based on the QA/QC review. Data presentation reports (i.e., Annual Water Quality Monitoring Reports) will also include a review of field activities or observations that may have had an influence on the representativeness of water quality data collected from the site.

### 3.5.2 Data Presentation and Analysis

Water quality data from the site will be tabulated by sample location and parameter. The summary data tables will be organized in a manner consistent with the parameter groups listed on Table 4. Each table will present chemical data for that parameter for each monitoring point in chronological order (i.e., for each sample point the most recent data is presented on the bottom row). Tables organized in this manner facilitate the review and statistical analysis of data.

The following formats will be used to present data collected from the BI site, including: potentiometric contour maps, time series plots, trilinear plots, and Stiff diagrams. Note that analysis of BI Indicator Parameters does not allow for development of trilinear plots or Stiff diagrams.

The Sen's slope estimator has been used in the past to evaluate trends in the compliance well data as noted in Section 2.2.2 and represents an accepted DEQ statistics method. EPA's March 2009 Statistical analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance is now considered to provide current recommended and approved statistical analysis methodologies. For trend tests, the Unified Guidance identifies three primary methods: (1) linear regression be used to identify a linear trend and estimate its magnitude; (2) Mann-Kendall test provides a method for identifying trends; and (3) the Theil-Sen trend line method can be used to gauge trend of magnitude.

As noted in Section 2.2, groundwater concentrations at BI vary notably over time due seasonal variability and in response to other geochemical changes. As a consequence, time series plots for BI show a lot of variability in groundwater quality data over time. Some of

## EXHIBIT F2

this variability is seasonal while some variability does not appear to be seasonally related. The variability at a given well is not necessarily consistent for all parameters or locations or at similar locations but different depths. For example, a well could show a notable concentration increase of ammonia and total dissolved solids while showing, at the same time, a notable decrease in sodium and potassium. An adjacent well screened slightly deeper may show different conditions. The extent of data variability at the site can make it difficult to characterize whether a given parameter is actually increasing or decreasing over time.

In response to the presence of notably variable groundwater concentration conditions, review of BI time series plots has consisted of examining short-term plots, consisting of 5 years of most recent data [10 sample data sets], along with review of long-term plots (consisting up to more than 25 years of data) to provide context for the short-term plots. A best fit line using linear regression is applied to the 10 sample data set and used to assist in examining the overall recent linear trend of the data.

As needed, summary statistics can also be completed including: sample size, average, median, standard deviation, interquartile range, standardized skewness, standardized kurtosis, and interquartile range of parameter detections. All nondetects will be replaced with a value that is 1/2 of the reported method detection limit (MDL). The summary statistics will be computed using either Microsoft Excel, an Excel statistics add-on package such as Analyz-it, Statgraphics, or a comparable statistical software package.

Data evaluation will also include a comprehensive comparison of groundwater quality sample results to the following applicable water quality standard and site-specific concentration limits:

- State of Oregon Numerical Groundwater Quality Reference and Guidance Levels (OAR 340-40-020 Tables 1 through 3).
- EPA National Primary Drinking Water Regulations.
- Permit Specific Concentration Limits listed in Section 3.3.

These water quality standards are presented on Table 4.

### 3.6 REPORTING

Reporting of environmental data includes the submittal of Annual Water Quality Monitoring Reports and the results of split-sampling events. These reporting requirements are addressed in this section.

#### 3.6.1 Annual Water Quality Monitoring Report

As indicated in Section 12.2 of the closure permit, an Annual Water Quality Monitoring Report (AWQMR) is to be submitted prior to March 15th of each calendar year for the duration of the closure permit. The AWQMR will address environmental monitoring activities, results, and findings from the previous year. Whenever possible, the report needs to be completed as a two-sided document. To reduce physical size of the report and reduce paper usage, report appendices can be presented as electronic files contained on a compact disc attached to the report's back inside cover page. Two copies of the report, stamped by an Oregon registered geologist or engineering geologist, are to be submitted to the DEQ.

The AWQMR is to include a statement of compliance, a one-page cover letter that presents a concise comparison of the analytical results with the monitoring standards identified above in Section 3.5.2. Specifically, the statement of compliance letter will:

- Compare the analytical results with the relevant monitoring standards (PSCLs).
- State whether or not federal or state standards were exceeded for the relevant media.
- State whether or not a significant change in water quality has occurred.

Examples of significant change in water quality are provided in Section 3.4.1.

As indicated in Section 12.4 of the closure permit, the AWQMR needs to include the following information:

- An executive summary.
- Site background and recent site activity information.
- A summary presentation of all environmental monitoring performed during the past year.
- A summary presentation of data validity (i.e., review of holding times, comparison of blanks and duplicates, major cation/anion balance for each groundwater sample collected, identification of data problems or discrepancies, field QA/QC issues, and laboratory compliance with QA/QC standards) and identification of data problems.
- Summary tables of all analytical results by sampling location organized by the parameter groups as described in Section 3.5.2.
- Itemization of any activities resulting from the exceedance of a relevant standard or significant change in water quality. Examples include resampling events, submittal of a Preliminary Assessment or an Assessment Monitoring Report.
- Presentation of water level data and groundwater flow direction using contour maps, tables, and graphs.
- Updated time-series plots and other completed statistical analysis as described in Section 3.5.2.
- Copies of all field data sheets, laboratory analytical reports, and chain-of-custody documents completed for the year being reported.
- Copies of all monitoring well repairs, abandonments, replacements, and installations that occurred at the site during the reported year.
- A summary of new or proposed activities at the site.

Note that application of the BI Indicator Parameters does not allow for completion of cation/anion balances or the generation of Stiff and Piper diagrams.

Copies of the AWQMR are to be submitted to the following address:

Oregon Department of Environmental Quality  
Manager – Western Region Solid Waste Program  
750 Front Street NE, Suite 120  
Salem, Oregon 97301-1039

### **3.6.2 DEQ Laboratory Split Sampling Report**

The BI closure permit does not contain specifics split sampling event dates but indicates in Section 10.3 that split sampling with DEQ shall occur when requested. If requested, scheduling the event with the DEQ Lab must occur at least 45 days prior to the sampling event.

## EXHIBIT F2

In the event of a DEQ split sampling event, the following information will be submitted to the DEQ laboratory, located in Portland, Oregon, within 90 days of the split-sampling event:

- Copy of all information pertinent to the sample collection, handling, transport and storage, including field notes.
- Site map showing groundwater flow directions and contours.
- Copies of all laboratory analytical data, QA/QC reports, and any additional data specifically requested by the DEQ laboratory.

The address for the DEQ laboratory is:

Oregon Department of Environmental Quality  
Laboratory Division, Groundwater Monitoring Section  
3150 NE 229th Avenue, Suite 150  
Hillsboro, Oregon 97124  
(503) 693-5700

### 3.7 REDUCTION IN MONITORING

The County may petition for a reduction in the sampling frequency, a reduction in the number of locations to be sampled, or the elimination of selected monitoring parameters for the site environment monitoring program. A demonstration would need to be presented to the DEQ's satisfaction that, for each monitoring point or parameter in consideration, sufficient samples have been analyzed to allow for adequate assessment of the data. Adequate justification for all proposed reductions in sampling frequency and parameters will need to be provided to the DEQ.

## 4. REFERENCES

- American Society for Testing and Materials (ASTM) 1996, Provisional Standard Guide for Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs. ASTM PS 64-96.
- Bela, James L. 1981. Geology of the Rickreall, Salem West, Monmouth, and Sidney 7½' Quadrangles, Marion, Polk, and Linn Counties, Oregon. Issue by State of Oregon Department of Geology and Mineral Industries, Geological Map Series GMS-18.
- Foxworthy, B.L. 1970. Hydrologic Conditions and Artificial Recharge through a well in the Salem Heights Area of Salem, Oregon: U.S. Geological Survey Water-Supply Paper 1594-F.
- Oregon Department of Environmental Quality (DEQ). 1996. Solid Waste Guidance Municipal Solid Waste Landfills; September 1, 1996. Updated versions of the guidance document is presented on the DEQ's homepage ([www.deq.state.or.us/wmc/solwaste/swguide/](http://www.deq.state.or.us/wmc/solwaste/swguide/)) can also be referenced.
- Parametrix, Inc. 1996. Environmental Monitoring Plan, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, April 19, 1996.
- Parametrix, Inc. 1996. Groundwater Quality Assessment Report, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, March 28, 1996.
- Parametrix, Inc. 1997a. Monitoring Well Evaluation Plan, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, June 16, 1997.
- Parametrix, Inc. 1997b. Monitoring Well Upgrade Report, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, December 8, 1997.
- Parametrix, Inc. 1998. Groundwater Quality Assessment Report Update, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, April 13, 1998.
- Parametrix, Inc. 2001. Environmental Monitoring Plan, Brown's Island Landfill; prepared for Marion County Department of Solid Waste Management, April 26, 2001 update.
- Sweet, Edwards & Associates, Inc. 1987. Brown's Island Landfill, Proposed Waste Boundary Adjustment and Post-Closure Monitoring. Unpublished report prepared for Marion County.
- U.S Environmental Protection Agency (EPA). 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, Office of Resource Conservation and Recovery. EPA 530-R-09-007. March 2009. U.S. Environmental Protection Agency, Washington D.C.

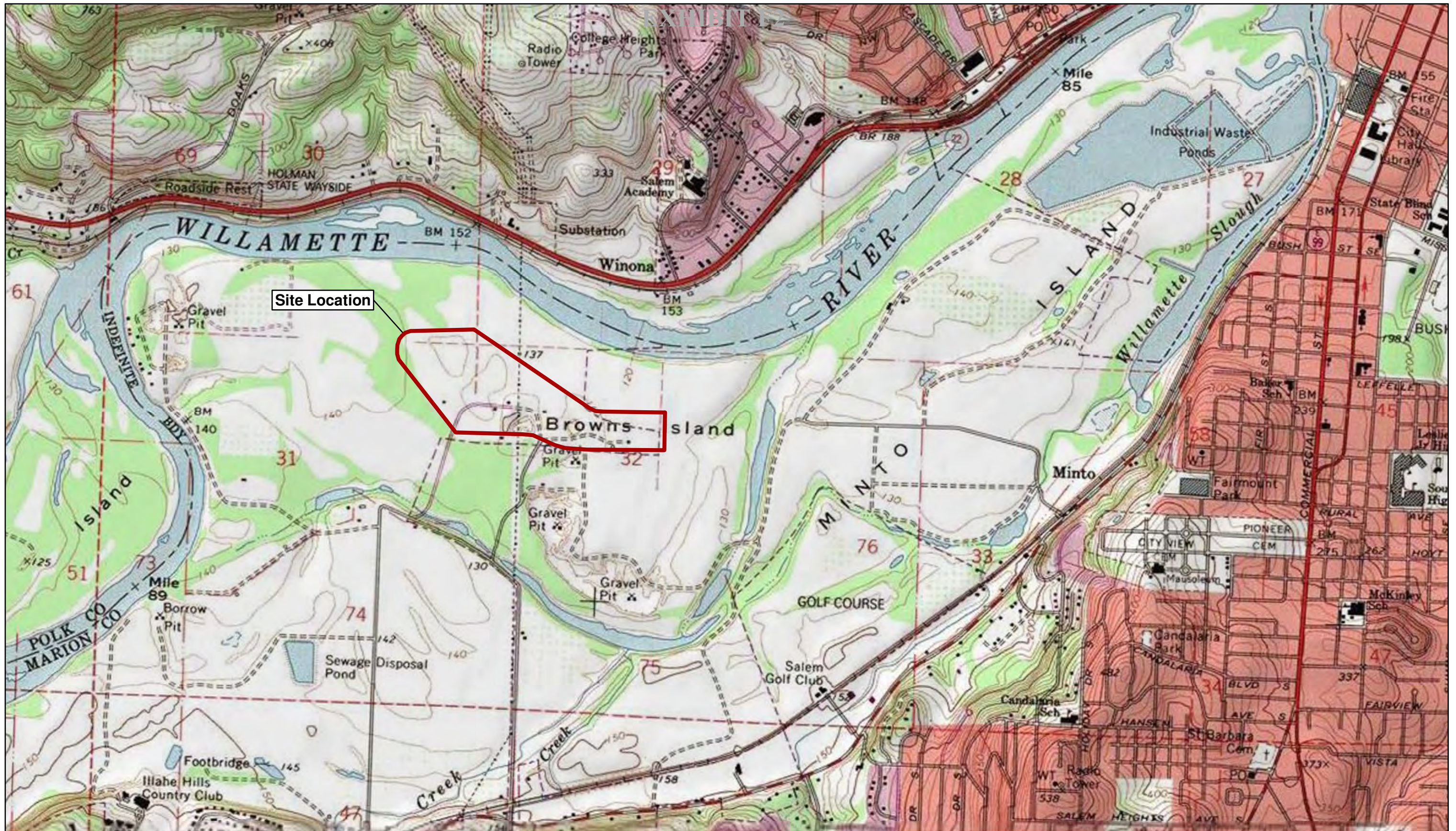


## EXHIBIT F2

- U.S Environmental Protection Agency (EPA). 1993. Solid Waste Disposal Facility Criteria, Technical Manual. EPA 530-R-93-017. U.S. Environmental Protection Agency, Washington D.C.
- U.S. Environmental Protection Agency (EPA). 1992. Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities. Addendum to Interim Final Guidance. Office of Solid Waste, Permits and State Programs Division, U.S. EPA, Washington, D.C.
- U.S Environmental Protection Agency (EPA). 1989. Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities. Interim Final Guidance. Office of Solid Waste, Waste Management Division, U.S. EPA, Washington, D.C. EPA/530-SW-89-026.
- U.S Environmental Protection Agency (EPA). 1986. Test methods for evaluating solid waste, 3rd edition, update III. U.S. Environmental Protection Agency. Washington, D.C.
- Woodward, D.G, Gannett, M. W., and Vaccaro, J.J. 1998. Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington. Regional Aquifer-System Analysis – Puget-Willamette Lowland. U.S. Geological Survey Professional Paper 1424-B.



EXHIBIT



Parametrix DATE: March 1, 2011 FILE: BrownsIsland\_SiteLocation.mxd

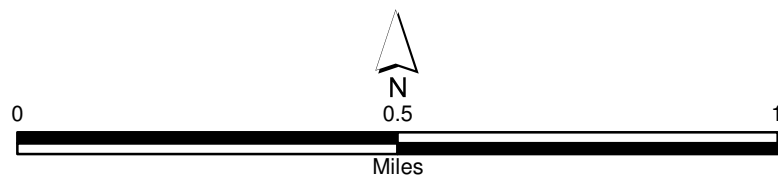


Figure 1  
Site Location

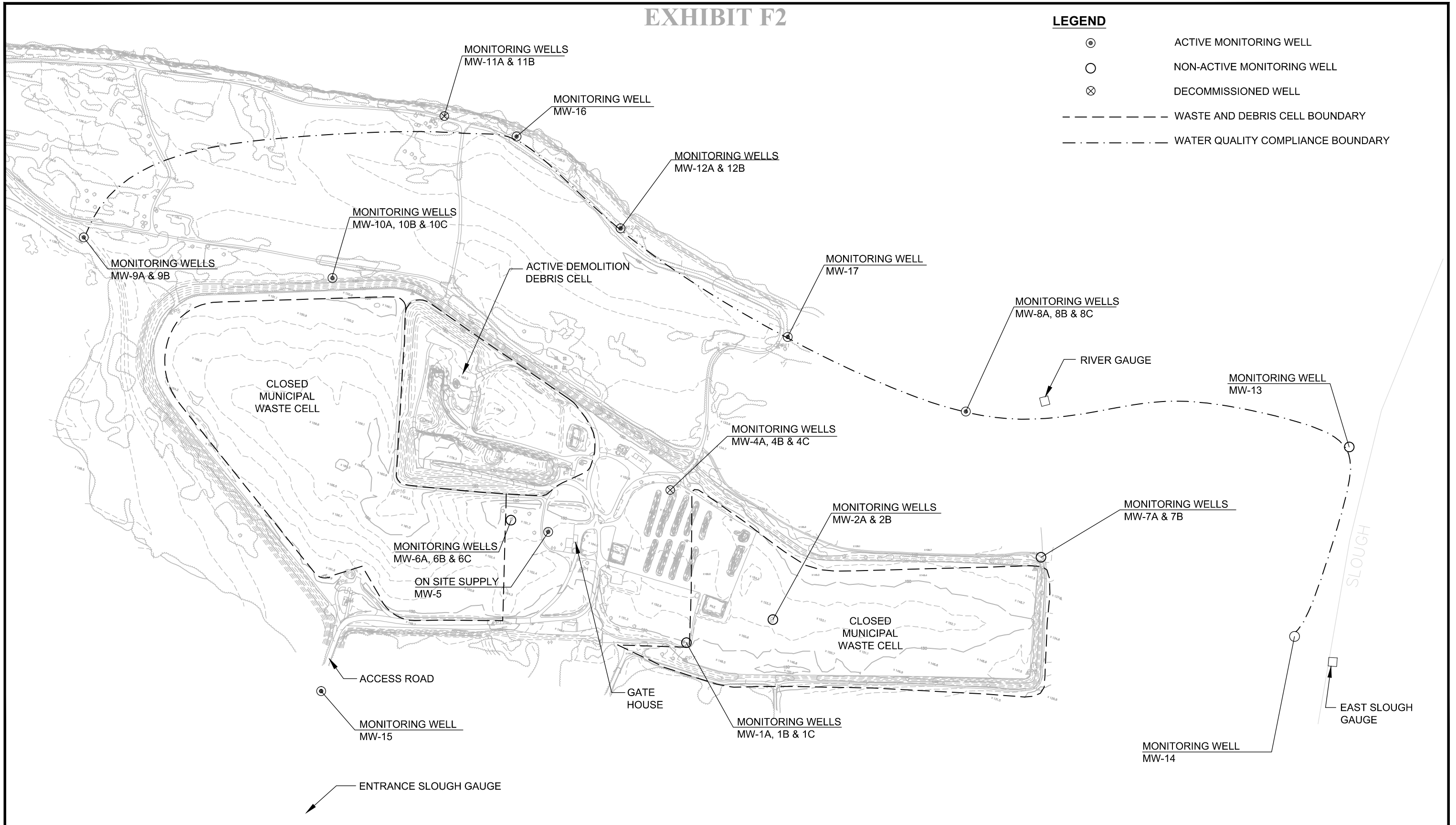
Annual Water Quality  
Monitoring Report  
Brown's Island Landfill



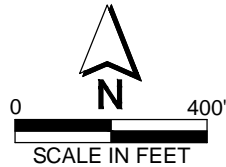
# EXHIBIT F2

## LEGEND

- ⊙ ACTIVE MONITORING WELL
- NON-ACTIVE MONITORING WELL
- ⊗ DECOMMISSIONED WELL
- - - WASTE AND DEBRIS CELL BOUNDARY
- · - · - WATER QUALITY COMPLIANCE BOUNDARY



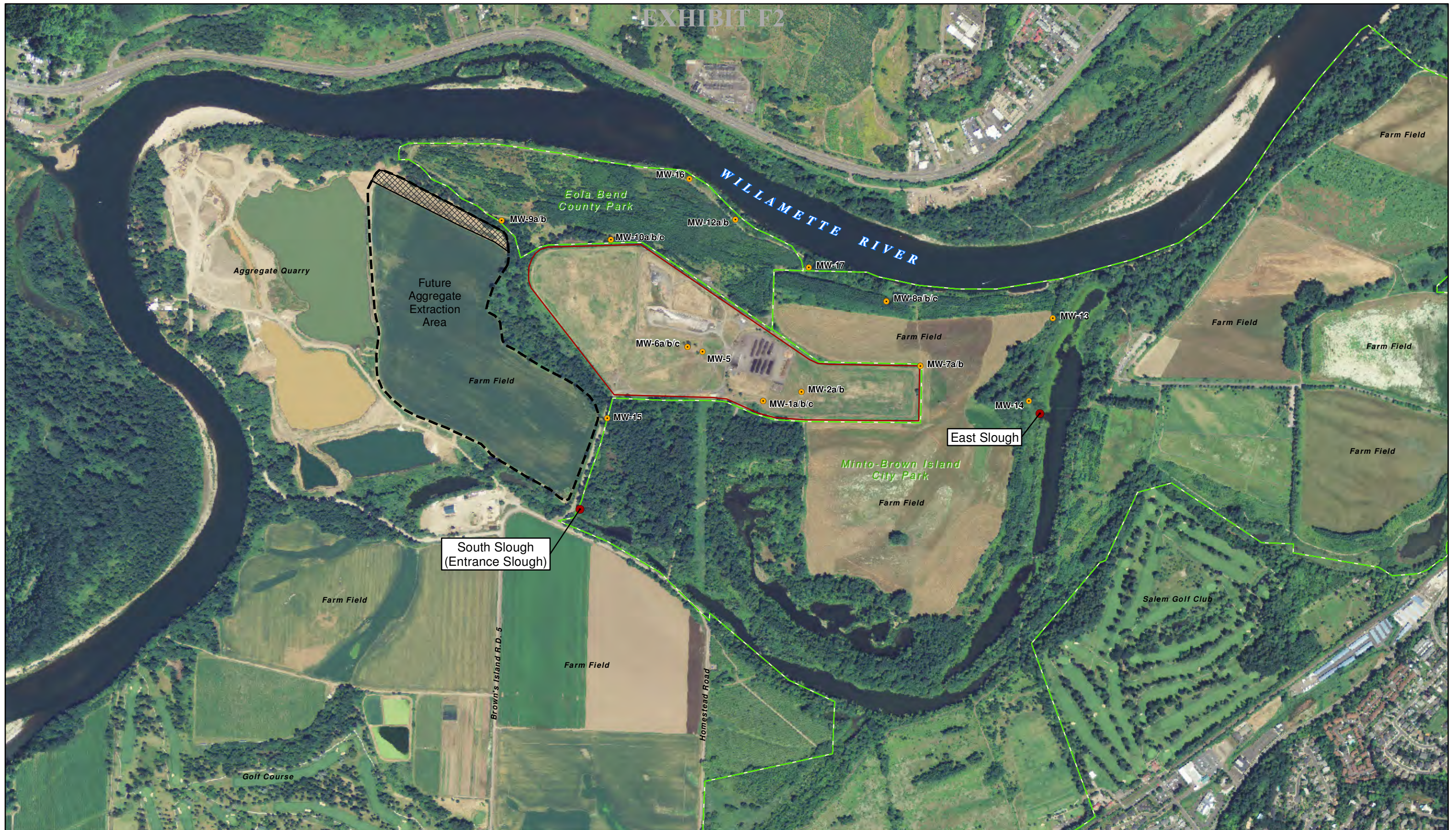
Parametrix DATE: Oct 19, 2012 FILE: PO2063007F-91



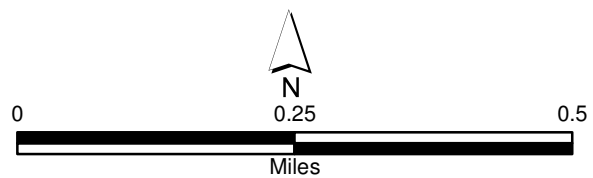
**Figure 2**  
**Facility Map**  
**Annual Water Quality Monitoring Report**  
 BROWN'S ISLAND LANFILL  
 MARION COUNTY, OREGON



EXHIBIT F2



Parametrix DATE: March 3, 2011 FILE: BrownsIsland\_AerialSiteMap.mxd



- Site Location
- Future Aggregate Extraction Area
- Recent Excavated Area
- Monitoring Well
- Surface Water Elevation Monitoring Point
- Park Boundary

**Figure 3  
Aerial Site Map**

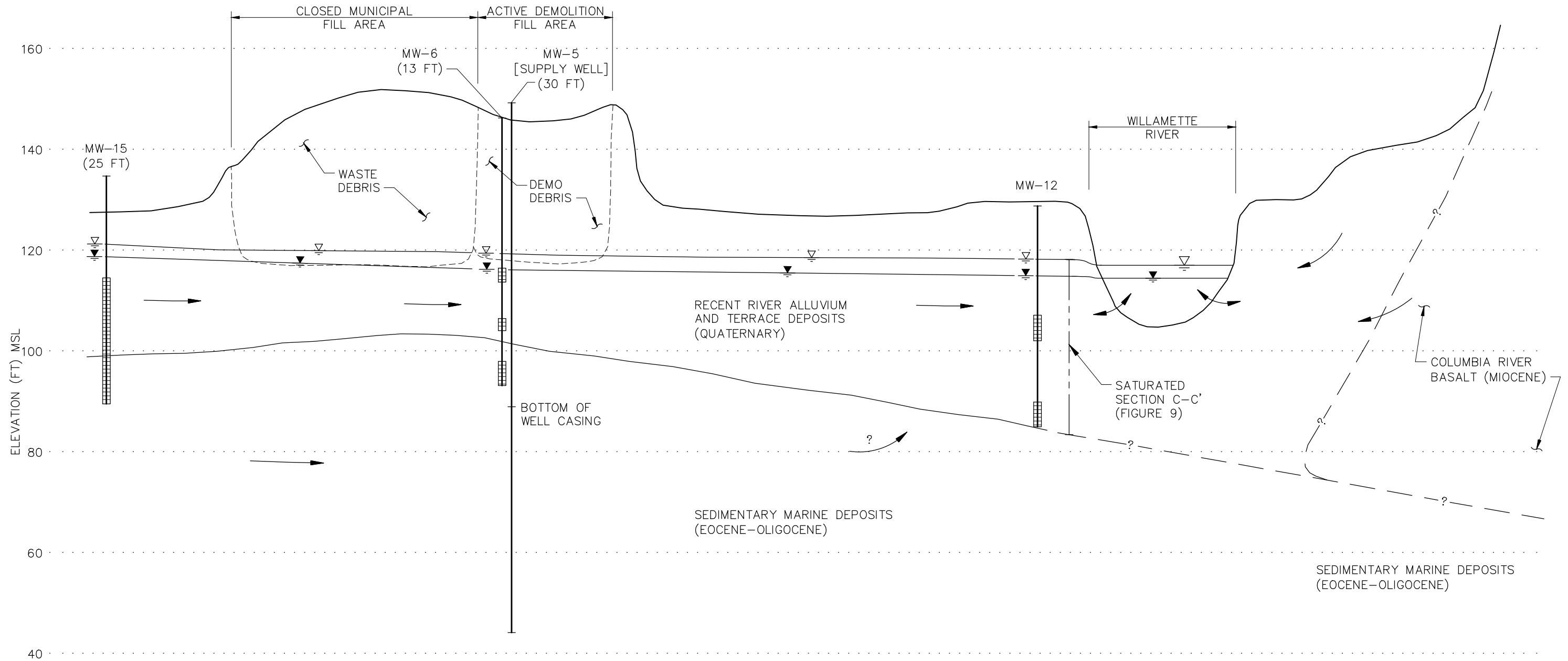
Annual Water Quality  
Monitoring Report  
Browns Island Landfill



# EXHIBIT F2

SOUTH

NORTH



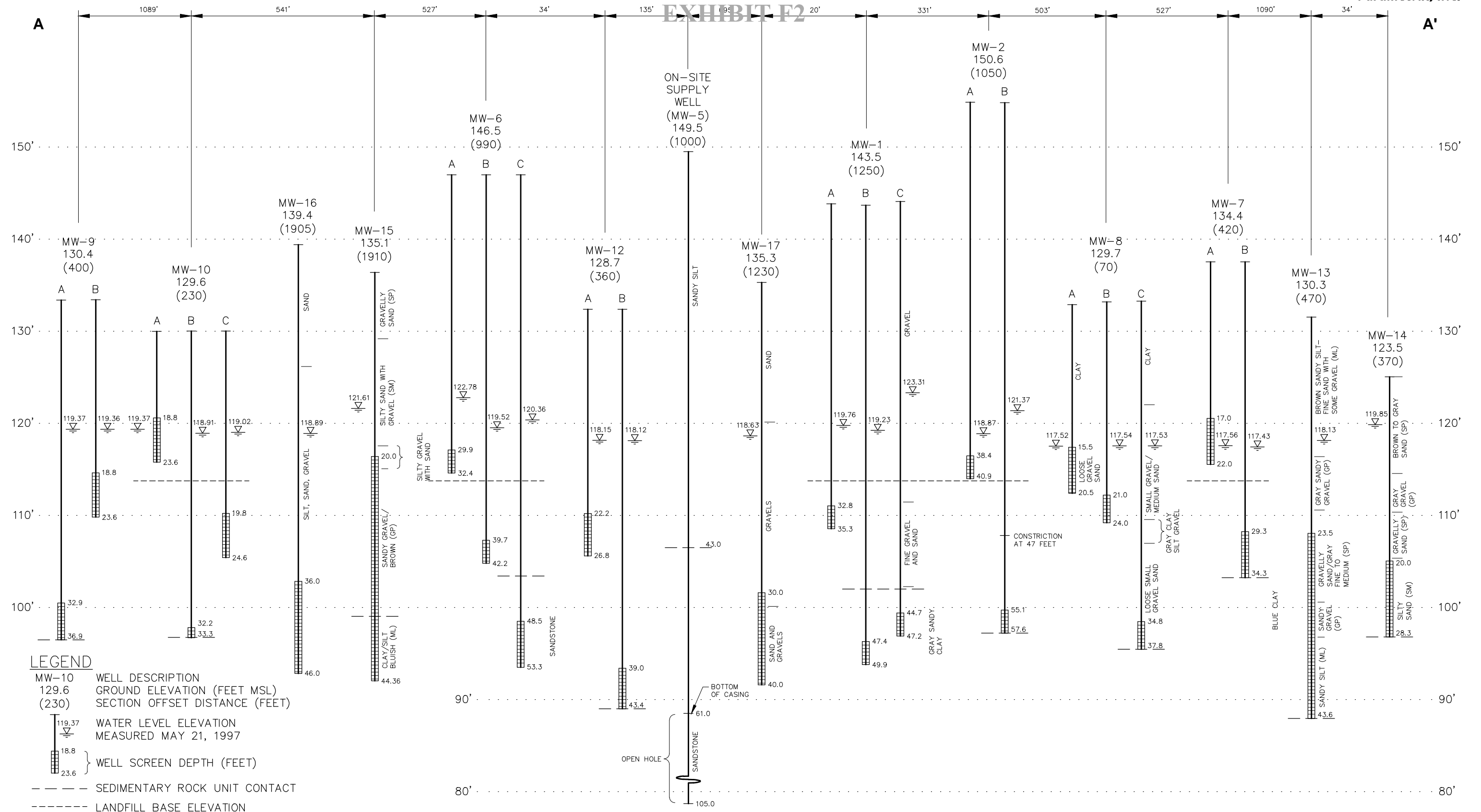
### LEGEND

- GROUNDWATER FLOW DIRECTION
- ▽ PIEZOMETRIC SURFACE BASED ON MAY 21, 1997 MEASUREMENTS
- ▽ PIEZOMETRIC SURFACE BASED ON SEPTEMBER 3, 1997 MEASUREMENTS

FILE: P02063007F-99  
DATE: 02/14/13

SCALE: 1"=250' HORIZ  
1"=20' VERT

**Figure 4**  
**North/South Cross-Section**  
BROWNS ISLAND LANDFILL  
MARION COUNTY, OREGON



**Figure 5**  
**Well Cross-Section A-A'**  
**Environmental Monitoring Plan Update**  
BROWNS ISLAND LANDFILL  
MARION COUNTY, OREGON

## EXHIBIT F2

**Table 1: Monitoring Well Summary Data  
Sampling and Analysis Plan  
Browns Island Landfill**

### Active Monitoring Wells

Well ID	Date Installed	Well Log	Construction Type	Well Depth (from top of PVC - ft)	Top of PVC Casing Elevation (ft)	Screen Length (ft)	Screen interval (ft below top of PVC)
MW-5	1/5/1969	yes	supply	105	153.84	none	61-105
MW-8a	10/16/1975	yes	single	20.47	136.72	5	15.3 - 20.3
MW-8b/c	10/15/1975	yes	double	23.90/37.72	136.88/136.62	3/3	23-26/32-35
MW-9a/b	3/76-7/79	no	double	37.08/23.78	136.98/137.02	4.0/4.9	32.9-36.9/18.8-23.9
MW-10b/c	3/76-7/79	no	double	33.42/24.70	134.78/134.94	1.1/4.8	32.2-33.3/19.8-24.6
MW-12a/b	3/76-7/79	no	double	26.90/43.51	136.17/135.83	4.6/4.4	22.2-26.8/39.0-43.4
MW-15	10/31/1986	yes	single	44.36	140.24	20	20-40
MW-16	11/11/1998	yes	single	48.77	141.92	10	36/46
MW-17	11/10/1998	yes	single	42.38	137.81	10	30/40

### Inactive Monitoring Wells

Well ID	Date Installed	Well Log	Construction Type	Well Depth (ft)	Top of PVC Casing Elevation (ft)	Screen Length (ft)	Screen interval (ft below top of PVC)
MW-1a/b/c	5/8-5/21/73	yes	triple	40.67/47.17/51.33	151.75/152.01/152.16	2.5/2.5/2.5	38.2-40.6/44.7-47.1/48.8-51.3
MW-2a/b	5/22-23/73	yes	double	41.75/57.5	158.63/158.68	2.5/2.5	39.2-41.7/55.0-57.5
MW-6a/b/c	5/23-5/31/73	yes	triple	33.3/43.33/54.3	151.89/151.89/151.90	5/5/4	28.3-33.3/38.3-43.3/50.3-54.3
MW-7a	10/13/1973	yes	single	22.0	141.36	5	15-20
MW-7b	10/8/1973	yes	single	34.3	141.90	5	30-35
MW-10a	3/76-7/79	no	single	14.32	134.78	4.8	9.4-14.2
MW-13	10/29/1986	yes	single	43.55	135.31	20	21/41
MW-14	10/30/1986	yes	single	28.25	128.85	5	21/26

### Abandoned Monitoring Wells

Well ID	Date Installed	Well Log	Construction Type	Well Depth (ft)	Date Abandoned
MW-4a/b/c	4/16-5/7/73	yes	triple	40/48/62	7/29/99-8/2/99
MW-11a/b	3/76-7/79	no	double	15.08/21.31	9/8/1997

**TABLE 2: SAMPLE LOCATION SUMMARY - 1994 thru 2000**  
**ENVIRONMENTAL MONITORING PLAN UPDATE**  
**BROWNS ISLAND LANDFILL**

# EXHIBIT F2

WELL ID	Well 1A	Well 1B	Well 1C	Well 2A	Well 2B	Well 3	Well 4A	Well 4B	Well 4C	Well 5	Well 6A	Well 6B	Well 6C	Well 7A	Well 7B	Well 8A	Well 8B	Well 8C	Well 9A	Well 9B	Well 10A	Well 10B	Well 10C	Well 11A	Well 11B	Well 12A	Well 12B	Well 13	Well 14	Well 15	Well 16	Well 17	River Up	River Down	QA Sample			
5/2/1974	X	X	X	X	X	X	X	X	X	X	X	X	X	X																								
9/11/1974	X	X	X		X	X	X	X	X	X	X	X	X	X																								
12/30/1974	X	X	X	X	X	X	X	X	X	X																												
3/10/1975	X	X	X	X	X	X	X	X	X	X																												
7/9/1975	X	X	X	X	X	X	X	X	X	X	X	X																										
9/9/1975	X	X	X		X	X	X	X	X	X	X	X																										
3/9/1976		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
4/13/1976	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
5/24/1976	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
6/23/1976	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
7/27/1976	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
9/23/1976	X	X	X		X	X	X	X	X	X	X	X	X	X	X																							
7/11/1977	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X																			
3/6/1978	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X																			
9/18/1978	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X																			
5/21/1979	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X																			
9/10/1979	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X																			
10/7/1980	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X																			
5/27/1981	X	X	X				X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
7/7/1982	X	X	X											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
9/22/1982	X	X												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
5/11/1983	X	X												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 9B	
9/8/1983	X	X		X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
5/2/1984	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
10/31/1984	X	X		X										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 12A	
4/17/1985	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 12B	
11/7/1985	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 9B	
6/3/1986	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 10C	
10/29/1986														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12/30/1986																																						SEA Data/No Dup.
4/22/1987	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 13A	
11/12/1987	X	X	X		X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 13A	
4/6/1988														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 15A	
9/7/1988														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 8B	
5/2/1989														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 8A	
10/4/1989									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5	
4/11/1990														X	X																							Well 15C
4/12/1990										X				X	X	X											X	X	X	X								Well 5
9/5/1990										X				X	X												X											Well 5
9/6/1990														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4/18/1991									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5 & 15	
10/8/1991									X					X	X											X	X	X	X	X	X	X	X	X	X	X	X	Well 5
10/9/1991														X	X	X									X	X	X											Well 10B
5/13/1992														X	X	X										X	X	X	X									Well 8B
5/14/1992									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5	
6/4/1992																																					X	
10/5/1992														X	X	X										X	X	X	X	X	X	X	X	X	X	X	X	Well 14B
10/6/1992									X					X	X										X	X												Well 10B
4/7/1993														X	X	X																						Well 8A
4/8/1993									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5	
10/20/1993									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5
4/11/1994														X	X	X																						Well 8C
4/12/1994									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5	
9/13/1994									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 15
3/7/1995									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 13A	
3/27/1996														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 10B	
10/3/1996									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 12A	
5/22/1997		X							X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 8C & 10B
9/3/1997														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 9A & 12A	
5/28/1998									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 5 & 8C	
9/2/1998									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 12A	
5/26/1999									X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Well 16	
9/21/1999									X					X	X	X	X	X																				



## EXHIBIT F2

**TABLE 3: WATER QUALITY SAMPLE LOCATIONS, FREQUENCY, AND SCHEDULE  
ENVIRONMENTAL MONITORING PLAN  
BROWNS ISLAND LANDFILL**

Locations	Analytes *	Frequency	Schedule
<b>Alluvium wells:</b> <u>Shallow:</u> MW-8a.  <u>Intermediate:</u> MW-8b, MW-9b, MW-10c, MW-12a, and MW-15.  <u>Deep:</u> MW-8c, MW-9a, MW-10b, MW-12b, MW-16, and MW-17.	Group 1a Group 1b Group 2a	Semi-annual	Spring and Fall
	Group 2b Group 3	Bi-annual	Every two years in Fall beginning in 2006
<b>Marine Sedimentary Rock wells:</b>  MW-5 (on-site supply well)	Group 1a Group 1b Group 2a	Semi-annual	Spring and Fall
	Group 2b Group 3	Bi-annual	Every two years in Fall beginning in 2006
<b>Piezometers:</b>  MW-1a/b/c, MW-2a/b, MW-6a/b/c, MW-7a/b, MW-10a, MW-13, and MW-14.	Water levels	Semi-annual: all monitoring wells	Spring and Fall

NOTES:

\* See Table 2, Water Quality Monitoring Parameters, for analytes/parameters included in each parameter group. BI Indicator Parameter list is applied except during even year Fall events (i.e., Fall 2012, Fall 2014, etc.) when the BI Permit Parameter list is applied.

The semi-annual compliance monitoring periods are:

Spring: March 1<sup>st</sup> through May 31<sup>st</sup>.

Fall: September 1<sup>st</sup> through October 31<sup>st</sup>.

**TABLE 4: WATER QUALITY MONITORING PARAMETERS  
ENVIRONMENTAL MONITORING PLAN  
BROWNS ISLAND LANDFILL**

# EXHIBIT F2

BI INDICATOR PARAMETERS	BI PERMIT PARAMETERS	METHOD	METHOD DESCRIPTION	METHOD REPORTING LEVEL (mg/L)	DEQ REFERENCE LEVELS <sup>d</sup> (mg/L)	DEQ GUIDANCE LEVELS <sup>e</sup> (mg/L)	EPA DRINKING WATER STD <sup>f</sup> (mg/L)
<b>GROUP 1a: FIELD INDICATOR PARAMETERS</b>							
ELEVATION OF WATER LEVEL	ELEVATION OF WATER LEVEL	FIELD	Electric Probe				
pH	pH	FIELD	Reference Electrode Probe			6.5 to 8.5 su	
TEMPERATURE	TEMPERATURE	FIELD	Temperature Probe				
SPECIFIC CONDUCTANCE	SPECIFIC CONDUCTANCE	FIELD	Conductivity Probe				
DISSOLVED OXYGEN	DISSOLVED OXYGEN	FIELD	Metal Cathode Probe				
REDOX POTENTIAL (Eh)	REDOX POTENTIAL (Eh)	FIELD	Platinum Band Sensor Probe				
<b>GROUP 1b: LABORATORY INDICATOR PARAMETERS</b>							
	HARDNESS (as CaCO <sub>3</sub> )	6020 <sup>a</sup>	ICP-MS	2.00			
TOTAL ALKALINITY (as CaCO <sub>3</sub> )	TOTAL ALKALINITY (as CaCO <sub>3</sub> )	310.1 <sup>b</sup>	Titrimetric	10.0			
TOTAL DISSOLVED SOLIDS (TDS)	TOTAL DISSOLVED SOLIDS (TDS)	160.1 <sup>b</sup>	Gravimetric	10.0		500	
TOTAL SUSPENDED SOLIDS (TSS)	TOTAL SUSPENDED SOLIDS (TSS)	160.1 <sup>b</sup>	Gravimetric	10.0			
	CHEMICAL OXYGEN DEMAND (COD)	410.4 <sup>b</sup>	Spectrophotometric	5.00			
	TOTAL ORGANIC CARBON (TOC)	415.1 <sup>b</sup>	UV, Persulfate Oxidation-IR	1.00			
<b>GROUP 2a: COMMON ANIONS AND CATIONS</b>							
CALCIUM (Ca)	CALCIUM (Ca)	200.7 <sup>b</sup>	ICP-MS	0.050			
	MAGNESIUM (Mg)	200.7 <sup>b</sup>	ICP-MS	0.002			
	SODIUM (Na)	200.7 <sup>b</sup>	ICP-MS	1.00			
	POTASSIUM (K)	200.7 <sup>b</sup>	ICP-MS	1.00			
IRON (Fe)	IRON (Fe)	200.7 <sup>b</sup>	ICP-MS	0.0250		0.3	
MANGANESE (Mn)	MANGANESE (Mn)	200.7 <sup>b</sup>	ICP-MS	0.00200		0.05	
AMMONIA-NITROGEN (NH <sub>3</sub> -N)	AMMONIA-NITROGEN (NH <sub>3</sub> -N)	350.3 <sup>b</sup>	Electrode	0.100			
	BICARBONATE ALKALINITY (HCO <sub>3</sub> )	310.1 <sup>b</sup>	Titrimetric	10.0			
SULFATE (SO <sub>4</sub> )	SULFATE (SO <sub>4</sub> )	300.0 <sup>b</sup>	Ion Chromatography	1.00		250	
CHLORIDE (Cl)	CHLORIDE (Cl)	325.3 <sup>b</sup>	Ion Chromatography	0.500		250	
NITRATE (NO <sub>3</sub> -N)	NITRATE (NO <sub>3</sub> -N)	353.3 <sup>b</sup>	Ion Chromatography	0.100	10.0		10
	SILICA (Si)	370.1 <sup>b</sup>	Spectrophotometric Reduction	0.250			
<b>GROUP 2b: TRACE METALS</b>							
	ARSENIC (As)	6020 <sup>a</sup>	ICP-MS	0.00100	0.05		0.05
	BARIUM (Ba)	6020 <sup>a</sup>	ICP-MS	0.00100	1.0		2
	CADMIUM (Cd)	6020 <sup>a</sup>	ICP-MS	0.00100	0.01		0.005
	CHROMIUM (Cr)	6020 <sup>a</sup>	ICP-MS	0.00200	0.05		0.1
	COBALT (Co)	6020 <sup>a</sup>	ICP-MS	0.00100			
	LEAD (Pb)	6020 <sup>a</sup>	ICP-MS	0.00100	0.05		0.015****
	NICKEL (Ni)	6020 <sup>a</sup>	ICP-MS	0.00200			
	SELENIUM (Se)	6020 <sup>a</sup>	ICP-MS	0.00100	0.01		0.05
	SILVER (Ag)	6020 <sup>a</sup>	ICP-MS	0.00100	0.05		0.1
<b>GROUP 3: VOLATILE ORGANIC CONSTITUENTS</b>							
	VOLATILE ORGANIC CONSTITUENTS	8260 <sup>a</sup>	Gas Chromatography/Mass Spect	0.50-1.0 ug/L			

<sup>a</sup> DISSOLVED CONCENTRATIONS. SAMPLES MUST BE FIELD-FILTERED.

<sup>b</sup> TEST METHODS FOR EVALUATING SOLID WASTE - PHYSICAL/CHEMICAL METHODS. 3rd edition. EPA SW-846 (November 1990).

<sup>c</sup> METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES. EPA-600/4-79-020 (revised March 1983).

<sup>d</sup> DEQ NUMERICAL GROUNDWATER QUALITY REFERENCE LEVELS (HEALTH BASED). OAR 340-040-080 (January 1990).

<sup>e</sup> DEQ NUMERICAL GROUNDWATER QUALITY GUIDANCE LEVELS (NONHEALTH BASED). OAR 340-040-080 (January 1990).

<sup>f</sup> EPA NATIONAL PRIMARY DRINKING WATER STANDARDS. EPA 816-F-02-013 July 2002.

\*\*\*\* EPA ACTION LEVELS.

ICP-MS: Inductively Coupled Plasma-Mass Spectrometry

TRACE METALS - TOTAL CONCENTRATIONS IF TSS <100 mg/L; BOTH TOTAL AND DISSOLVED CONCENTRATIONS IF TSS >100 mg/L.

# **EXHIBIT F2**

## **APPENDIX A**

**Solid Waste Disposal Site Closure Permit  
Number 255**

# **EXHIBIT F2**

## **APPENDIX B**

**Monitoring Well Logs  
1997 Well Evaluation and Upgrade Reports**

# **EXHIBIT F2**

## **APPENDIX C**

**Well Logs on WRD Record - Sections 29 thru 32**

# EXHIBIT F2

## APPENDIX D

Property Owners and Zoning within ½-mile of the Site

# **EXHIBIT F2**

## **APPENDIX E**

**Nitrate Investigation – 2007 and 2008**

# **EXHIBIT F2**

## **ATTACHMENT A**

### **Sampling and Analysis Plan**



# EXHIBIT G - REQUEST FOR PROPOSALS



## MARION COUNTY

### REQUEST FOR PROPOSALS ENVIRONMENTAL MONITORING AND REPORTING

**Marion County #: PW1027-21**

**Oregon Buys #:**

**Release Date: November 9, 2021**

**Proposals Due Date: 4:00 p.m. on December 14, 2021**

**Refer Questions to:**

Tim Beaver

Phone number: (503) 365-3100

[tbeaver@co.marion.or.us](mailto:tbeaver@co.marion.or.us)

**Submit Proposals to:**

[PO\\_Contracts@co.marion.or.us](mailto:PO_Contracts@co.marion.or.us)

Electronic copies of this RFP and attachments, if any, can be obtained from the OREGON BUYS website [oregonbuys.gov](http://oregonbuys.gov) and view the Marion County Opportunity Number listed above.

# EXHIBIT G

## Table of Contents

1. Introduction
2. Background
3. Contract Term
4. Schedule of Events
5. Scope of Work
6. Mandatory Pre-Proposal Conference
7. Instructions to Proposers
8. Contract Form
9. Evaluation
10. Award Notice and Acceptance Period
11. Protest and Appeals
12. Terms and Conditions
13. Attachments and Exhibits
14. Proposal Submission Checklist for Proposers

# EXHIBIT G

## 1. INTRODUCTION

Marion County Public Works Department (County) is currently seeking environmental monitoring and reporting services. The County is seeking proposals from individuals, firms, teams or consultants, hereafter called “proposer(s),” with demonstrated experience in environmental monitoring and reporting per the Oregon Department of Environmental Quality’s (DEQ) environmental monitoring guidelines in relation to solid waste and landfills, and proposes to engage the successful Proposer for the following services:

County is soliciting proposals for professional consulting services to perform Environmental Monitoring and Reporting in accordance with the attached Environmental Monitoring Plans (EMPs) for the North Marion County Disposal Facility (NMCDF) and the Brown’s Island Landfill (BI) as provided in Exhibits 2 and 3, respectively.

All firms submitting proposals are referred to as proposers in this document; after negotiations, the awarded Proposer will be designated as Contractor.

## 2. BACKGROUND

Located in the heart of the Mid-Willamette Valley, Marion County has a population of 333,950, stretches from the Willamette River to the Cascade Mountains and encompasses nearly 1,200 square miles. Marion County has 20 cities, including the Oregon’s capital, Salem. The Marion County government organization is headed by an elected Board of Commissioners and has 15 departments, seven departments of which are headed by elected officials.

### North Marion County Disposal Facility (NMCDF)

The NMCDF, formerly known as the Woodburn Landfill, is located in Marion County approximately three miles northwest of Woodburn, Oregon. The site is situated in the French Prairie region of the northern Willamette Valley and has been in operation since September 24, 1974. The facility currently provides the following waste disposal and recycling functions: waste transfer, ash monofilling, material recycling, and backup landfill capability.

Marion County is the owner, permittee and operator of the scales, transfer station, backup landfill, material recycling, ash monofill cell and the leachate collection and disposal system at the NMCDF.

The solid waste disposal portion of the site is permitted under the Department of Environmental Quality (DEQ) Solid Waste Disposal Facility Permit Number 240, issued December 29, 2015. Permit Number 240 Expires November 30, 2025.

The Recycling and Transfer Station is permitted under the DEQ Solid Waste Disposal Site Permit Number 1348, issued March 28, 2018. Permit Number 1348 expires March 15, 2028. Permit Number 1348 regulates the operation of the Recycling and Transfer Station only. No monitoring requirements are specified in this permit.

# EXHIBIT G

The County shall be responsible for performing all sampling and analysis as required by the National Pollution Discharge Elimination System (NPDES) Permit and DEQ methane gas collection system permit.

## Browns Island Landfill

The Brown's Island Landfill is located in Marion County approximately 1.5 miles west of Salem, Oregon. The site is situated on Brown's Island, a Quaternary (Holocene) river alluvium deposit that is bordered by the Willamette River on its north and west sides, and by unnamed interconnecting sloughs on its south and east sides. The landfill complex (total area of approximately 87 acres) is enclosed within a flood protection berm that is elevated approximately two feet higher than the 100-year flood level.

Marion County is the owner, permittee and operator of the Browns Island Landfill, Demolition Landfill and Compost Facility.

The Brown's Island Landfill operated as a municipal solid waste disposal facility for the City of Salem and the surrounding Marion County area from April 1967 until September 1986. Landfilling began in the central portion of the site in 1967 and expanded eastward onto City and County land in the mid to late 1970s. From 1979 through 1986, landfill expansion was toward the west, onto adjacent private (former Trussell) property, now owned by the County.

The Oregon Department of Environmental Quality (ODEQ) granted final closure approval in a letter dated September 8, 1987. Closure of the municipal solid waste landfill and the associated environmental monitoring is regulated under ODEQ Permit Number 255. Permit Number 255 was issued December 20, 2016 and expires on September 30, 2025.

When use of the site as a municipal solid waste landfill was terminated, there remained an unfilled area (a former gravel pit) of approximately eight acres located near the north central portion of the landfill. This unfilled area, originally bordered on the north by the protection berm and by completed areas on all other sides, is currently being filled with construction and demolition debris under Solid Waste Disposal Site Permit No. 399.

Permit Number 399 regulates the operation of the construction and demolition waste landfill only. No monitoring requirements are specified in this permit.

A compost facility was constructed and permitted at the site in September 1999. The facility consists of a five-acre asphalt pad that is used for composting operations. The Browns Island Compost Facility (BICF) was designed to receive and process up to 5,000 tons of yard debris material per year. A stormwater collection and management system and a water supply system have been developed for the facility. No environmental monitoring is specified or required in this permit.

The County shall be responsible for performing all sampling and analysis as required by the compost facility operations permit.

## Available Reports and Information

# EXHIBIT G

Copies of the Environmental Monitoring Plans (EMPs) for the North Marion County Disposal Facility (NMCDF) and the Brown's Island Landfill (BI) are provided as Exhibits 2 and 3 of this Request For Proposals (RFP). Digital copies of historical documentation for each site, such as Annual Environmental Monitoring Reports, NPDES Water Quality Monitoring Reports, and permitting, are available upon request. The County will provide this information. Proposers may also schedule a site visit at one or both of the sites (by appointment only). Requests for documentation and scheduling MUST be made by contacting Roxanne Toepfer by phone at (503) 365-3127 or by email at rtoepfer@co.marion.or.us. CONTRACT TERM

The Contract is anticipated to start in July, 2022. The Contract term shall be for five (5) years. The parties may agree to extend the term of the Contract up to a maximum of eight (8) years.

### 3. SCHEDULE OF EVENTS

EVENT	DATE
Optional pre-proposal conference 11:00 a.m.	November 18, 2021
Questions and Clarifications due to the contact on the cover page of the RFP no later than 4:00 p.m.	November 30, 2021
Answers to questions posted on OREGON BUYS website	December 7, 2021
RFP Protests Period Ends	7 calendar days prior to RFP Closing
Proposals are due no later than 4:00 p.m. at the email address listed on the cover page of the RFP. Late submittals will not be accepted.	December 14, 2021
Notice of Intent to Award sent to Proposers (approximate)	December 31, 2021
Notice of Intent to Award Protest Ends	7 days from Notice of Intent to Award
Contract Execution (approximate)	July 1, 2022

The County reserves the right, at its sole discretion, to adjust this schedule as it deems necessary.

### 4. SCOPE OF WORK

Proposers responding to this RFP must be capable of performing the following tasks and services:

- a. Provide all equipment and labor to perform the required Environmental Monitoring and Sampling, Analysis and Reporting for the North Marion County Disposal Facility and Browns Island Landfill as required by the site specific Environmental Monitoring Plans and ODEQ permits.
- b. Provide Laboratory Analyses of Samples

## EXHIBIT G

- c. Provide Re-sampling, if necessary
- d. Provide ODEQ Notification of sampling events
- e. Notify and Assist in ODEQ Split Sampling Events
- f. Administer and Maintain Existing Database of Environmental Monitoring Data
- g. Maintain and revise the Environmental Monitoring Plans as required by permit. Both EMPs will require periodic updating as required or upon renewal of the permits.
- h. Provide Statistical Evaluation of Analyses
- i. Provide Groundwater Contour Maps, site maps and diagrams as required.
- j. Provide Semi-annual Exceedance Reports
- k. Prepare and provide a cover letter and Annual Environmental Monitoring Reports (AEMR) for both sites to Marion County for submittal to ODEQ.
- l. Provide technical assistance to the County as required in addressing Environmental Monitoring and Reporting issues.
- m. If required, generate and submit to Marion County semiannual Exceedance Reports, listing exceedances of primary drinking water standards, secondary drinking water standards, local limits, DEQ trigger levels, or other benchmark for all sample points. Report shall be delivered to Marion County within 30 days of reported laboratory results.

Proposers responding to this RFP shall meet the following minimum qualifications:

- a. The Contractor's Project Manager shall be a Registered Professional Geologist in the State of Oregon, with experience in administering, sampling, analyzing and reporting for at least 3 landfill sites in Oregon.
- b. Contractors Project Manager shall have a minimum of 7 years experience performing these types of services and or similar environmental monitoring and hydrogeology related activities.
- c. The Contractor shall update both BI and NMCDF Environmental Monitoring Plans to reflect all monitoring changes, for recordkeeping purposes and compliance with ODEQ requirements.
- d. The Contractor shall maintain and update both the BI and NMCDF Water Quality Monitoring Databases after each sampling event as required.
- e. Provide four hard copies of the AEMR, of which two copies shall be submitted to ODEQ by the County. Provide a digital copy of all reports, tables and figures.

# EXHIBIT G

- f. Contractor shall provide a list of hourly rates for staff and equipment involved with this type of project for unspecified future work in their proposal.
- g. Contractor should provide a list of rates for all analytical services and a copy of the Quality Control / Quality Assurance program in their proposal.
- h. Please note that the Contractor shall not be responsible for NPDES, Compost Operations sampling or Methane Gas sampling requirements, except for minor information updates and data insertion into the Environmental Monitoring Reports and Plans.
- i. The County shall provide the Contractor with site topographical maps (AutoCAD) for use in generating required maps.

## 5. **PRE-PROPOSAL CONFERENCE**

Optional Pre-Proposal Conference:

An optional pre-proposal conference is scheduled at the time and date set forth in Section 4: Schedule of Events, and located at Marion County Public Works, Building 1, 5155 Silverton Road NE, Salem, OR 97305. Potential proposers may ask questions during the conference, however, statements made by the County at the conference are not binding upon the County unless confirmed by a written addendum.

Attendees may also join virtually via Zoom. Meeting details for virtual attendance below:

Topic: RFP for Environmental Monitoring - Pre-Proposal Conference  
Time: Nov 18, 2021 11:00 AM Pacific Time (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/83665391640?pwd=MUhhMMzB2VWxKaUhvRm9ycW1udlN2dz09>

Meeting ID: 836 6539 1640

Passcode: 981047

Dial by your location:

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 408 638 0968 US (San Jose)

+1 669 900 6833 US (San Jose)

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

+1 646 876 9923 US (New York)

## 6. **INSTRUCTIONS TO PROPOSERS**

Proposals are due at the County no later than the time and date set forth in the Section 4: Schedule of Events. Proposals will be considered time-stamped and received by the County

# EXHIBIT G

when they are received in the email inbox listed on the cover page. To assure that your Proposal receives priority treatment, please mark the email subject line as follows:

## **PW1027-21 RFP for Environmental Monitoring and Reporting**

Proposers must include their name and address and contact information in the body of the email. It is the Proposer's responsibility to ensure that proposals are received prior to the stated submission deadline and email address. Pursuant to MCPCR 20-0460, The county shall not consider late offers, withdrawals or modifications, except as permitted in sections 20-0470 or 20-0261.

The proposal must include information responsive to items (a) through (h) set forth below. The proposal may not exceed a total of 30 single-sided, 8.5" x 11" numbered pages. Proposals shall be Microsoft 2003 compatible or searchable Adobe format and shall not be more than 50MB. The cover letter, resumes and other required documents are excluded from the total page count. Resumes must be included in an appendix to the proposal. Proposers must complete and submit Attachment 1: Proposal Form.

Proposers must include the following as part of their proposal:

- a. **Cover Letter.** The proposal must be submitted with a cover letter describing the proposer's interest and commitment to the proposed project. The letter must include the name, title, address and telephone number of the individual to whom correspondence and other contacts should be directed during the selection process. The person authorized by the proposer to negotiate a contract with the County must sign the cover letter.
- b. **Approach and Management Plan.** Describe the approach and management plan for providing the services. Include an organizational chart showing the proposed relationships among proposer staff, County staff and any other parties that may have a significant role in the delivery of this program.
- c. **Qualifications and Experience.** Provide the qualifications and experience of the key team member(s) who will work on the project. Emphasize the specific qualifications and experience from projects similar to this project for the key team members. Key team members are expected to be committed for the duration of the project. Replacement of key team members will not be permitted without prior consultation with and approval of the County.
- d. **Staffing Plan.** Provide a staffing plan and an estimate of the total hours, detailed by position, required for the project tasks as outlined. Discuss the workload for all key team members and their capacity to perform the requested services for the project, according to your proposed schedule.
- e. **Work Plan and Schedule.** Describe how you will perform each task of the project, identify deliverables for each task and provide a schedule. The work plan should be in sufficient detail to demonstrate a clear understanding of the project. Discuss the approach for completing the requested services for the project deadlines. The schedule should show the expected sequence of tasks and include durations for the performance of each task,



# EXHIBIT G

milestones, submittal dates and review periods for each submittal. The project is expected to commence no later than July 1, 2022.

- f. **Cost Proposal.** The Cost Proposal shall include: (a) the total dollar amount requested to complete the project, (b) any other resources, including in-kind, that will support the proposed project, (c) the number of anticipated hours and rate of the project manager and key team members inclusive of all services, expenses and fees (i.e., Payroll expenses – hours/rate/title, Admin, Overhead, etc.). The estimated level of hours for other staff can be summarized in general categories. Proposer must submit Cost Proposal using Attachment 4: Cost Proposal Submission Form.
- g. **Cost Control.** Provide information on how you will control project costs to ensure all work is completed within the negotiated budget for the project. Include the name and title of the individual responsible for cost control.
- h. **References.** Provide at least three (3) references (names, email addresses and current phone numbers) from recent projects similar in scope and size. Include a brief description of each project associated with the reference, and the role of the respective team member(s) who would be assigned to the project. Proposer must submit references using Attachment 3: Reference Form.
- i. **Additional Relevant Information.** The proposer may submit additional relevant information that may be helpful in the selection process (not to exceed the equivalent of two (2) single-sided pages). Additional relevant information counts towards the 30 page proposal maximum.

## 7. CONTRACT FORM

By submitting a proposal, proposer agrees to comply with the requirements of the RFP, including the terms and conditions of the Sample Contract for Services (Exhibit 1). Proposer shall review the attached Contract for Services and note exceptions. Unless proposer notes exceptions in its proposal, the County intends to enter into a Contract for Services with the successful proposer substantially in the form set forth in Contract for Services (Exhibit 1). It may be possible to negotiate some provisions of the final Contract for Services; however, many provisions cannot be changed. Proposer is cautioned that the County believes modifications to the standard provisions constitute increased risk and increased cost to the County. Therefore, the County will consider the Scope of requested exceptions in the evaluation of proposals.

Any proposal that is conditioned upon the County's acceptance of any other terms and conditions may be rejected. Any subsequent negotiated changes are subject to prior approval of the County's Legal Counsel.

In the event that the parties do not reach mutually agreeable terms, the County may terminate negotiations and commence negotiations with the next highest-ranking proposer.

## 8. EVALUATION

# EXHIBIT G

a. **Minimum Responsiveness.** In order to be responsive, each proposal will be reviewed for minimum responsiveness. Failure to meet minimum responsiveness may result in rejection of the proposal. Each proposal must comply with Section 7: Instructions to Proposers and include the following to be considered minimally responsive:

- Cover Letter
- Approach and Management Plan
- Qualifications and Experience
- Staffing Plan
- Work Plan and Schedule
- Cost Control
- Attachment 1: Proposal Form
- Attachment 3: Reference Form
- Attachment 4: Cost Proposal Submission Form

b. **Evaluation Committee.** A County Evaluation Committee (CEC) will evaluate all responsive proposals. The CEC will be composed of County staff and other parties that may have relevant expertise or experience. The CEC will score and recommend proposals in accordance with the evaluation criteria set forth in this RFP. Evaluation of the proposals shall be within the sole judgment and discretion of the CEC.

c. **Categories.** The evaluation criteria and their respective weights are as follows:

CATEGORIES	MAXIMUM POINTS POSSIBLE
General Qualifications and Experience	30
Scope of Work/Program Description	30
Cost Proposal	30
Total Points Possible	90
Interview (optional)	30
Grand Total	120

d. **Interviews.** Proposers may need to attend an interview. The project manager and any key team members should attend the interview. The determination as to the need for interviews, evaluation criteria, the location, order and schedule of the interviews is at the sole discretion of the County. The interview panel may include representatives from the County and other agencies, but the specific composition of the panel will not be revealed prior to the interviews. The proposer must bear all presentation costs incurred to attend.

e. **Best Value.** The County will select the proposal that presents the best value and is most advantageous to the County and the public. Accordingly, the County may not necessarily award the proposer with the lowest price proposal if doing so would not be in the overall best interest of the County. The County reserves the right to expand or reduce the proposed scope of work during the contract negotiations based on budget constraints and to award to a single or multiple proposers.

# EXHIBIT G

## 9. AWARD NOTICE AND ACCEPTANCE PERIOD

- a. After the evaluation of proposals and final consideration of all available pertinent information, the County will either reject all proposals or issue a written notice of intent to award the contract. The notice shall identify the apparent best evaluated proposal and the notice shall be provided to all proposers submitting a timely proposal. The notice shall not create any rights, interests, or claims of entitlement in the apparent best evaluated proposer.
- b. The apparent best evaluated proposer should be prepared to enter into a contract with the County which shall be substantially the same as the Contract for Services in Exhibit 1 to this RFP. Notwithstanding, the County reserves the right to add terms and conditions, deemed to be in the best interest of the County, during final contract negotiations.
- c. If a proposer fails to promptly sign and return the contract drawn pursuant to this RFP and final contract negotiations, the County may cancel the award and award the contract to the next best evaluated proposer.

## 10. PROTEST AND APPEALS

A proposer may protest the award of a contract or the intent to award a contract, whichever comes first, if the conditions set forth in ORS 279B.410(1) are satisfied. The protest must be submitted via email to the Contracts and Procurement Manager at [cschlag@marion.or.us](mailto:cschlag@marion.or.us) within seven (7) days after issuance of the notice of intent to award the contract. Please mark the email subject line "Protest PW1027-21 RFP for Environmental Monitoring and Reporting."

All letters of protest shall clearly identify the reasons and basis for the protest. The Contracts and Procurement Manager will issue a written disposition in a timely manner as set forth in ORS 279B.410(4), which shall include the reason for the action taken and the process for appealing the decision. A proposer must file a written protest with the County and exhaust all administrative remedies before seeking judicial review of the County's contract award decision.

## 11. TERMS AND CONDITIONS

- a. The Marion County Public Contracting Rules, found at <http://www.co.marion.or.us/FIN/Pages/contracts.aspx>, govern this RFP.
- b. ***RFP Amendment, Cancellation and Right of Rejection.***
  - i. The County reserves the unilateral right to amend this RFP in writing at any time by posting the addendum on the OREGON BUYS website. The County may extend the deadline for submission of proposals by written addendum. Proposers are responsible to view the website periodically for any addendum to the RFP. Proposers shall respond to the final written RFP, its exhibits and attachments, and all addenda. The County also reserves the right, in its sole discretion, to reject any and all proposals or to cancel or reissue the RFP.
  - ii. The County reserves the right, in its sole discretion, to waive minor informalities in proposals provided such action is in the best interest of the County. Where the

# EXHIBIT G

County waives minor informalities in proposals, such waiver does not modify the RFP requirements or excuse the applicant from full compliance with the RFP. Notwithstanding any minor variance, the County may hold any proposal to strict compliance with the RFP.

- c. **Confidentiality.** The County will retain a master copy of each proposal to this RFP, which becomes public record after the notice of intent to award unless the proposal or specific parts of the proposal can be shown to be exempt by law under ORS Chapter 192. If a proposer believes that any portion of its proposal contains any information that is a trade secret under ORS 192.311-431 or otherwise is exempt from disclosure under the Oregon Public Records Law, that proposer shall complete and submit the Attachment 2: Trade Secret Form and a fully redacted version of its proposal.

Proposer is cautioned that cost information generally is not considered a trade secret under Oregon Public Records Law and identifying the proposal as confidential, in whole or in part, as exempt from disclosure is not acceptable. County advises each proposer to consult with its own legal counsel regarding disclosure issues. If proposer fails to identify the portions of the proposal that proposer claims are exempt from disclosure, proposer has waived any future claim of non-disclosure of that information.

- d. **Proposer Responsible for Incurred Costs.** The County shall not be liable for any expenses incurred by proposer in both preparing and submitting its proposal or contract negotiation process, if any.
- e. **Cooperative Purchasing.** Pursuant to ORS 279A.205 thru 279A.215, other public agencies within the State of Oregon may use the purchase agreement resulting from this Request for Proposals unless the Proposer expressly notes in their proposal that the prices quoted are available to the County only. The condition of such use by other agencies is that any such agency must make and pursue contact, purchase order, delivery arrangements, and all contractual remedies directly with the successful Proposer; the County accepts no responsibility for performance by either the successful Proposer or such other agency using this agreement. With such condition, the County consents to such use by any other public agency within the State of Oregon.

## 12. ATTACHMENTS AND EXHIBITS

Attachment 1: Proposal Form

Attachment 2: Trade Secret Form

Attachment 3: Reference Form

Attachment 4: Cost Proposal Submission Form

Exhibit 1: County Contract for Services

Exhibit 2: North Marion County Disposal Facility EMP

Exhibit 3: Brown's Island Landfill EMP

Exhibit 4: North Marion County Disposal Facility 2020 Annual Environmental Monitoring Report

Exhibit 5: Brown's Island Landfill 2020 Annual Groundwater Quality Monitoring Report

# EXHIBIT G

## 13. **PROPOSAL SUBMISSION CHECKLIST FOR PROPOSERS**

- Cover Letter
- Approach and Management Plan
- Qualifications and Experience
- Staffing Plan
- Work Plan and Schedule
- Cost Control
- Attachment 1: Proposal Form
- Attachment 2: Trade Secret Form (optional)
- Attachment 3: Reference Form
- Attachment 4: Cost Proposal Submission Form

# EXHIBIT G

## Attachment 1. Proposal Form

OFFEROR NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ EMAIL: \_\_\_\_\_ WEB SITE: \_\_\_\_\_

TAXPAYER ID NUMBER: \_\_\_\_\_ DATE/STATE OF INCORPORATION: \_\_\_\_\_

BUSINESS DESIGNATION:  Corporation  Sole Proprietor  Partnership  
 S Corporation  Non-Profit  Government  
 Other: \_\_\_\_\_

CERTIFICATION/LICENSE NUMBER: \_\_\_\_\_

The undersigned further acknowledges, attests and certifies individually and on behalf of the Proposer that:

1. That this proposal is, in all respects, fair and without fraud; that it is made without collusion with any official of the county; and that the proposal is made without any collusion with any person making another proposal on this Contract.
2. Information and prices included in this proposal shall remain valid for ninety (90) days after the proposal due date or until a Contract is approved, whichever comes first.
3. The Proposer acknowledges receipt of all Addenda issued under the RFP.
4. The Proposer certifies that it does not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, handicap, financial ability, age or other non-job-related factors as per ORS 659 and USC 42 2000e.
5. The Proposer, acting through its authorized representative, has read and understands all RFP instructions, specifications, and terms and conditions contained within the RFP and all Addenda, if any;
6. The Proposer agrees to and shall comply with, all requirements, specifications and terms and conditions contained within the RFP, including all Addenda, if any;
7. The proposal submitted is in response to the specific language contained in the RFP, and Proposer has made no assumptions based upon either (a) verbal or written statements not contained in the RFP, or (b) any previously-issued RFP, if any.
8. The Proposer agrees that if awarded the Contract, Proposer shall be authorized to do business in the State of Oregon at the time of the award;
9. The signatory of this Proposal Form is a duly authorized representative of the Proposer, has been authorized by Proposer to make all representations, attestations, and certifications contained in this proposal document and all Addenda, if any, issued, and to execute this proposal document on behalf of Proposer.
10. By signature below, the undersigned Authorized Representative hereby certifies on behalf of Proposer that all contents of this Proposal Form and the submitted proposal are truthful, complete and accurate. Failure to provide information required by the RFP may ultimately result in rejection of the proposal.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS** - The Offeror certifies to the best of its knowledge and belief that neither it nor any of its principals:

1. Are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from submitting bids or proposals by any federal, state or local entity, department or agency;

# EXHIBIT G

2. Have within a five-year period preceding the date of this certification been convicted of fraud or any other criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) contract, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are presently indicted for or otherwise criminally charged with commission of any of the offenses enumerated in item number 2 of this certification;
4. Have, within a five-year period preceding the date of this certification had a judgment entered against contractor or its principals arising out of the performance of a public or private contract;
5. Have pending in any state or federal court any litigation in which there is a claim against contractor or any of its principals arising out of the performance of a public or private contract; and
6. Have within a five-year period preceding the date of this certification had one or more public contracts (federal, state, or local) terminated for any reason related to contract performance.

**Where Offeror is unable to certify to any of the statements in this certification, Offeror shall attach an explanation to their offer. The inability to certify to all of the statements may not necessarily preclude Offeror from award of a contract under this procurement.**

IF THE PROPOSAL IS MADE BY A JOINT VENTURE, IT SHALL BE EXECUTED BY EACH PARTICIPANT OF THE JOINT VENTURE.

THIS OFFER SHALL BE SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE PROPOSER; ANY ALTERATIONS OR ERASURES TO THE OFFER SHALL BE INITIALED IN INK BY THE UNDERSIGNED AUTHORIZED REPRESENTATIVE.

SIGNATURE OF PROPOSER'S DULY AUTHORIZED REPRESENTATIVE FOR ALL SECTIONS:

Authorized Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Contact Person (Type or Print): \_\_\_\_\_

Telephone Number: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

**The Offeror will notify the County representative on the cover page of this RFP within 30 days of any change in the information provided on this form.**

# EXHIBIT G

## Attachment 2: Trade Secret Form

1. I am an authorized representative of the Proposer, I have knowledge of the Request for Proposals referenced herein, and I have full authority from the Proposer to submit this Trade Secret Form and accept the responsibilities stated herein.
2. I am aware that the Proposer has submitted a Proposal, dated on or about December 14, 2021 (the "Proposal"), to Marion County in response to Request for Proposals PW1027-21 RFP for Environmental Monitoring and Reporting and I am familiar with the contents of the RFP and Proposal.
3. I have read and am familiar with the provisions of Oregon's Public Records Law, Oregon Revised Statutes ("ORS") 192.311 through 192.431, and the Uniform Trade Secrets Act as adopted by the State of Oregon, which is set forth in ORS 646.461 through ORS 646.475. I understand that the Proposal is a public record held by a public body and is subject to disclosure under the Oregon Public Records Law unless specifically exempt from disclosure under that law.
4. I have reviewed the information contained in the Proposal. The Proposer believes the information listed in Exhibit 2 is exempt from public disclosure (collectively, the "Exempt Information"), which is incorporated herein by this reference. It is my opinion that the Exempt Information constitutes "Trade Secrets" under either the Oregon Public Records Law or the Uniform Trade Secrets Act as adopted in Oregon because that information is either:
  - A. A formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information that:
    - i. is not patented,
    - ii. is known only to certain individuals within the Proposer's organization and that is used in a business the Proposer conducts,
    - iii. has actual or potential commercial value, and
    - iv. gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.
  - or
  - B. Information, including a drawing, cost data, customer list, formula, pattern, compilation, program, device, method, technique or process that:
    - i. Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
    - ii. Is the subject of efforts by the Proposer that are reasonable under the circumstances to maintain its secrecy.
5. I understand that disclosure of the information referenced in Exhibit 2 may depend on official or judicial determinations made in accordance with the Public Records Law.

---

Authorized Representative Signature

Proposer identifies the following information as exempt from public disclosure:



# EXHIBIT G

## Attachment 3: Reference Form

Proposer must provide references that can be contacted regarding the quality of workmanship and service provided to current and past customers.

### ***Project Reference #1***

Name of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Project Date: \_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_\_\_

Name of Contact Person #1: \_\_\_\_\_

Telephone Number for Contact Person #1: \_\_\_\_\_

Email Address for Contact Person #1: \_\_\_\_\_

### ***Project Reference #2***

Name of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Project Date: \_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_\_\_

Name of Contact Person #1: \_\_\_\_\_

Telephone Number for Contact Person #1: \_\_\_\_\_

Email Address for Contact Person #1: \_\_\_\_\_

### ***Project Reference #3***

Name of Project: \_\_\_\_\_

Project Location: \_\_\_\_\_

Project Date: \_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_\_\_

Name of Contact Person #1: \_\_\_\_\_

Telephone Number for Contact Person #1: \_\_\_\_\_

Email Address for Contact Person #1: \_\_\_\_\_

The references will be used to confirm the selection rather than as an evaluation criterion. However, if several proposers are close in the final evaluation, references may be used to select the best evaluated proposer.

# EXHIBIT G

## **Attachment 4: Cost Proposal Submission Form**

Include in proposal a detailed breakdown of project costs and billable rates, fee schedule for equipment, personnel and laboratory costs.

# EXHIBIT G

## Exhibit 1: County Contract for Services

### MARION COUNTY CONTRACT FOR SERVICES

This contract is between Marion County (a political subdivision of the State of Oregon) hereinafter called County, and [Insert Name], [a/an Corporation, non-profit, etc.] hereinafter called Contractor.

Contractor agrees to perform, and County agrees to pay for, the services and deliverables described in Exhibit A (the “Work”).

**1. TERM.** This Contract is effective on the date it has been signed by all parties and all required County approvals have been obtained. This Contract expires on **June 30, 2027**. The parties may extend the term of this Contract provided that the total Contract term does not extend beyond June 30, 2030.

**2. CONSIDERATION.**

A. The maximum, not-to-exceed compensation payable to Contractor under this Contract, which includes any allowable expenses, is \$[insert amount]. County will not pay Contractor any amount in excess of the not-to-exceed compensation of this Contract for completing the Work, and will not pay for Work performed before the date this Contract becomes effective or after the termination of this Contract. If the maximum compensation is increased by amendment of this Contract, the amendment must be fully effective before Contractor performs Work subject to the amendment.

B. Interim payments to Contractor shall be made in accordance with the payment schedule and requirements in Exhibit A.

**3. COMPLIANCE WITH STATUTES AND RULES.**

A. County and the Contractor agree to comply with the provisions of this contract and all applicable federal, state, and local statutes and rules.

Unless otherwise specified, responsibility for all taxes, assessment, and any other charges imposed by law upon employers shall be the sole responsibility of the Contractor. Failure of the Contractor or the County to comply with the provisions of this contract and all applicable federal, state, and local statutes and rules shall be cause for termination of this contract as specified in sections concerning recovery of funds and termination.

County’s performance under this Contract is conditioned upon Contractor's compliance with the obligations intended for contractors under ORS 279B.220, 279B.225 (if applicable to this Contract), 279B.230 and 279B.235 (if applicable to this Contract), which are incorporated by reference herein.

B. Contractor must, throughout the duration of this Contract and any extensions, comply with all tax laws of this state and all applicable tax laws of any political subdivision of this state. For the purposes of this Section, “tax laws” includes all the provisions described in subsection 27. C. (i) through (iv) of this Contract.

i. Any violation of subsection B of this section shall constitute a material breach of this Contract. Further, any violation of Contractor’s warranty, in subsection 27.3 of this Contract, that Contractor has complied with the tax laws of this state and the applicable tax laws of any political subdivision of this state also shall constitute a material breach of this Contract. Any violation shall entitle the County

# EXHIBIT G

to terminate this Contract, to pursue and recover any and all damages that arise from the breach and the termination of this Contract, and to pursue any or all of the remedies available under this Contract, at law, or in equity, including but not limited to:

- a. Termination of this Contract, in whole or in part;
- b. Exercise of the right of setoff, and withholding of amounts otherwise due and owing to Contractor, in an amount equal to State's setoff right, without penalty; and
- c. Initiation of an action or proceeding for damages, specific performance, declaratory or injunctive relief. The County shall be entitled to recover any and all damages suffered as the result of Contractor's breach of this Contract, including but not limited to direct, indirect, incidental and consequential damages, costs of cure, and costs incurred in securing replacement Services.

C. These remedies are cumulative to the extent the remedies are not inconsistent, and the County may pursue any remedy or remedies singly, collectively, successively, or in any order whatsoever.

D. Subject to the provision of Section 13 below, Contractor accepts any and all liability for any adverse effects originating from any Change in Law.

**4. CIVIL RIGHTS, REHABILITATION ACT, AMERICANS WITH DISABILITIES ACT and TITLE VI OF THE CIVIL RIGHTS ACT.** Contractor agrees to comply with the Civil Rights Act of 1964, and 1991, Americans with Disabilities Act of 1990, and Section 504 of the Rehabilitation Act of 1973, and Title VI as implemented by 45 CFR 80 and 84 which states in part, No qualified person shall on the basis of disability, race, color, or national origin be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity which received or benefits from federal financial assistance.

**5. TIME IS OF THE ESSENCE.** Contractor agrees that time is of the essence in the performance of this Contract.

**6. FORCE MAJEURE.** Neither County nor Contractor shall be responsible for any failure to perform or for any delay in the performance of any obligation under this Contract caused by fire, riot, acts of God, terrorism, war, or any other cause which is beyond the breaching party's reasonable control. Contractor shall, however, make all reasonable efforts to remove or eliminate the cause of Contractor's delay or breach and shall, upon the cessation of the cause, continue performing under this Contract. County may terminate this Contract upon written notice to Contractor after reasonably determining that the delay or breach will likely prevent successful performance of this Contract.

**7. FUNDING MODIFICATION.**

A. County may reduce or terminate this contract when state or federal funds are reduced or eliminated by providing written notice to the respective parties.

B. In the event the Board of Commissioners of the County reduces, changes, eliminates, or otherwise modifies the funding for any of the services identified, the Contractor agrees to abide by any such decision including termination of service.

# EXHIBIT G

## **8. RECOVERY OF FUNDS.**

Expenditures of the Contractor may be charged to this contract only if they (1) are in payment of services performed under this contract, (2) conform to applicable state and federal regulations and statutes, and (3) are in payment of an obligation incurred during the contract period.

Any County funds spent for purposes not authorized by this contract and payments by the County in excess of authorized expenditures shall be deducted from future payments or refunded to the County no later than thirty (30) days after notice of unauthorized expenditure or notice of excess payment.

Contractor shall be responsible to repay for prior contract period excess payments and un-recovered advanced payments provided by the County. Repayment of prior period obligations shall be made to the County in a manner agreed on.

## **9. ACCESS TO RECORDS.**

A. Contractor shall permit authorized representatives of the County, State of Oregon, or the applicable audit agencies of the U.S. Government to review the records of the Contractor as they relate to the contract services in order to satisfy audit or program evaluation purposes deemed necessary by the County and permitted by law.

B. Contractor agrees to establish and maintain financial records, which indicate the number of hours of work provided, and other appropriate records pertinent to this contract shall be retained for a minimum of three (3) years after the end of the contract period. If there are unresolved audit questions at the end of the three-year period, the records must be maintained until the questions are resolved.

**10. REPORTING REQUIREMENTS.** Contractor shall provide County with periodic reports at the frequency and with the information prescribed by County. Further, at any time, County has the right to demand adequate assurances that the services provided by Contractor shall be in accordance with the Contract. Such reports provided by the Contractor shall be supported by documentation in Contractor's possession from third parties to the extent as applicable.

## **11. CONFIDENTIALITY OF RECORDS.**

A. Contractor shall not use, release or disclose any information concerning any employee, client, applicant or person doing business with the County for any purpose not directly connected with the administration of County's or the Contractor's responsibilities under this Contract except upon written consent of the County, and if applicable, the employee, client, applicant or person.

B. Contractor shall ensure that its agents, employees, officers and subcontractors with access to County and Contractor records understand and comply with this confidential provision.

C. If Contractor receives or transmits protected health information, Contractor shall enter into a Business Associate Agreement with County, which shall become part of this Contract, if attached hereto.

D. Client records shall be kept confidential in accordance with ORS 179.505, 45 CFR 205.50 and 42 CFR Part 2 as applicable.

## **12. INDEMNIFICATION AND INSURANCE.**

A. Contractor shall defend, save, indemnify, and hold harmless the County, its officers, agents, and employees from and against all claims, suits, actions, losses, damages, liabilities, costs and expenses of any nature whatsoever, including attorney fees, resulting from, arising out of, or relating to the activities of Contractor or its officers, employees, subcontractors, or agents under this Contract. Contractor shall

# EXHIBIT G

have control of the defense and settlement of any claim that is subject to this section. However, neither Contractor nor any attorney engaged by Contractor shall defend the claim in the name of either County or any department of County, nor purport to act as legal representative of either County or any of its departments, without first receiving from County Legal Counsel authority to act as legal counsel for the County, nor shall Contractor settle any claim on behalf of County without the approval of County Legal Counsel. County may, at its election and expense, assume its own defense and settlement.

B. Contractor shall obtain the insurance required under section 23 prior to performing under this Contract and shall maintain the required insurance throughout the duration of this Contract and all warranty periods.

C. County, pursuant to applicable provisions of ORS 30.260 to 30.300, maintains a self-insurance program that provides property damage and personal injury coverage.

### **13. EARLY TERMINATION.** This Contract may be terminated as follows:

A. County and Contractor, by mutual written agreement, may terminate this Contract at any time.

B. County in its sole discretion may terminate this Contract for any reason on 30 days written notice to Contractor.

C. Either County or Contractor may terminate this Contract in the event of a breach of the Contract by the other. Prior to such termination the party seeking termination shall give to the other party written notice of the breach and intent to terminate. If the party committing the breach has not entirely cured the breach within 15 days of the date of the notice, then the party giving the notice may terminate the Contract at any time thereafter by giving a written notice of termination.

D. Notwithstanding section 13C, County may terminate this Contract immediately by written notice to Contractor upon denial, suspension, revocation or non-renewal of any license, permit or certificate that Contractor must hold to provide services under this Contract.

### **14. PAYMENT ON EARLY TERMINATION.** Upon termination pursuant to section 13, payment shall be made as follows:

A. If terminated under 13A or 13B for the convenience of the County, the County shall pay Contractor for Work performed prior to the termination date if such Work was performed in accordance with the Contract. County shall not be liable for direct, indirect or consequential damages. Termination shall not result in a waiver of any other claim County may have against Contractor.

B. If terminated under 13C by the Contractor due to a breach by the County, then the County shall pay the Contractor for Work performed prior to the termination date if such Work was performed in accordance with the Contract.

C. If terminated under 13C or 13D by the County due to a breach by the Contractor, then the County shall pay the Contractor for Work performed prior to the termination date provided such Work was performed in accordance with the Contract less any setoff to which the County is entitled.

### **15. INDEPENDENT CONTRACTOR.**

A. The Contractor is a separate and independently established business, retains sole and absolute discretion over the manner and means of carrying out the Contractor's activities and responsibilities for the purpose of implementing the provisions of this contract, and maintains the appropriate license/certifications, if required under Oregon Law. This contract shall not be construed as creating an agency, partnership, joint venture, employment relationship or any other relationship between the parties

# EXHIBIT G

other than that of independent parties. The Contractor is acting as an “independent contractor” and is not an employee of County, and accepts full responsibility for taxes or other obligations associated with payment for services under this contract. As an “independent contractor”, Contractor will not receive any benefits normally accruing to County employees unless required by applicable law. Furthermore, Contractor is free to contract with other parties for the duration of the contract.

B. **SUBCONTRACTING/NONASSIGNMENT.** No portion of the Contract may be contracted or assigned to any other individual, firm or entity without the express and prior approval of the County.

**16. GOVERNING LAW AND VENUE.** This Contract shall be governed by the laws of the State of Oregon. Any action commenced in connection with this Contract shall be in the Circuit Court of Marion County. All rights and remedies of the County shall be cumulative and may be exercised successively or concurrently. The foregoing is without limitation to or waiver of any other rights or remedies of the County according to law.

**17. OWNERSHIP AND USE OF DOCUMENTS.** All documents, or other material submitted to the County by Contractor shall become the sole and exclusive property of the County. All material prepared by Contractor under this Contract may be subject to Oregon’s Public Records Laws.

**18. NO THIRD PARTY BENEFICIARIES.**

A. County and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms.

B. Nothing in this contract gives or provides any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name in this Contract and expressly described as intended beneficiaries of this Contract.

**19. SUCCESSORS IN INTEREST.** The provisions of this Contract shall be binding upon and inure to the benefit of the parties and their successors and approved assigns.

**20. MERGER CLAUSE.** This Contract and the attached exhibits constitute the entire agreement between the parties.

A. All understandings and agreements between the parties and representations by either party concerning this Contract are contained in this Contract.

B. No waiver, consent, modification or change in the terms of this Contract shall bind either party unless in writing signed by both parties.

C. Any written waiver, consent, modification or change shall be effective only in the specific instance and for the specific purpose given.

**21. WAIVER.** The failure of any Party to enforce any provision of this Contract shall not constitute a waiver by that Party or any other provision. Waiver of any default under this

# EXHIBIT G

Contract by any Party shall not be deemed to be a waiver of any subsequent default or a modification of the provisions of this Contract.

**22. REMEDIES.** In the event of breach of this Contract, the Parties shall have the following remedies:

A. If terminated under 13C by County due to a breach by the Contractor, the County may complete the Work either itself, by agreement with another Contractor, or by a combination thereof. If the cost of completing the Work exceeds the remaining unpaid balance of the total compensation provided under this Contract, then the Contractor shall pay to the County the amount of the reasonable excess.

B. In addition to the remedies in sections 13 and 14 for a breach by the Contractor, County also shall be entitled to any other equitable and legal remedies that are available.

C. If County breaches this Contract, Contractor's remedy shall be limited to termination of the Contract and receipt of Contract payments to which Contractor is entitled.

**23. INSURANCE.**

A. **REQUIRED INSURANCE.** Contractor shall obtain at Contractor's expense the insurance specified in this section prior to performing under this Contract and shall maintain it in full force and at its own expense throughout the duration of this Contract and all warranty periods. Contractor shall obtain the following insurance from insurance companies or entities that are authorized to transact the business of insurance and issue coverage in Oregon and that are acceptable to County:

i. **WORKERS COMPENSATION.** All employers, including Contractor, that employ subject workers, as defined in ORS 656.027, shall comply with ORS 656.017 and shall provide workers' compensation insurance coverage for those workers, unless they meet the requirement for an exemption under ORS 656.126(2). Contractor shall require and ensure that each of its subcontractors complies with these requirements.

ii. **PROFESSIONAL LIABILITY.** Covering any damages caused by an error, omission or any negligent acts related to the services to be provided under this Contract. Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

**Required by County**    **Not required by County.**

\$1,000,000 Per occurrence limit for any single claimant; and

\$2,000,000 Per occurrence limit for multiple claimants

Exclusion Approved by Risk Manager

iii. **CYBER LIABILITY.** Covering network security, breach of data, and coverage for regulatory fines and fees imposed against County due to failures in products and services provided under this Contract. Cyber Liability coverage must include errors, omissions, negligent acts, denial of service, media liability (including software copyright), dishonesty, fraudulent or criminal acts by a person or persons whether identified or not, intellectual property infringement, computer system attacks, unauthorized access and use of computer system, regulatory actions, and contractual liability.

**Required by County**    **Not required by County.**

\$2,000,000 Per occurrence limit for any single claimant; and

\$5,000,000 Per occurrence limit for multiple claimants

Exclusion Approved by Risk Manager



# EXHIBIT G

iv. COMMERCIAL GENERAL LIABILITY. Covering bodily injury, death and property damage in a form and with coverages that are satisfactory to the County. This insurance shall include personal injury liability, products and completed operations. Coverage shall be written on an occurrence basis. Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

Required by County  Not required by County.

**Bodily Injury/Death:**

- \$1,000,000 Per occurrence limit for any single claimant; and
- \$2,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Risk Manager
- \$500,000 Per occurrence limit for any single claimant
- \$1,000,000 Per occurrence limit for multiple claimant

v. Automobile Liability Insurance. Covering all owned, non-owned, or hired vehicles. This coverage may be written in combination with the Commercial General Liability Insurance (with separate limits for “Commercial General Liability” and “Automobile Liability”). Contractor shall provide proof of insurance of not less than the following amounts as determined by the County:

Required by County  Not required by County.

**Bodily Injury/Death:**

- Oregon Financial Responsibility Law, ORS 806.060 (\$25,000 property damage/\$50,000 bodily injury \$5,000 personal injury).
- \$500,000 Per occurrence limit for any single claimant; and
- \$1,000,000 Per occurrence limit for multiple claimants
- Exclusion Approved by Risk Manager

B. ADDITIONAL INSURED. The Commercial General Liability insurance required under this Contract shall include Marion County, its officers, employees and agents as Additional Insureds but only with respect to Contractor's activities to be performed under this Contract. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

C. NOTICE OF CANCELLATION OR CHANGE. There shall be no cancellation, material change, potential exhaustion of aggregate limits or non-renewal of insurance coverage(s) without 30 days written notice from this Contractor or its insurer(s) to County. Any failure to comply with the reporting provisions of this clause shall constitute a material breach of Contract and shall be grounds for immediate termination of this Contract by County.

D. CERTIFICATE(S) OF INSURANCE. Contractor shall provide to County Certificate(s) of Insurance for all required insurance before delivering any Goods and performing any Services required under this Contract. The Certificate(s) must specify all entities and individuals who are endorsed on the policy as Additional Insured (or Loss Payees). Contractor shall pay for all deductibles, self-insured retention and self-insurance, if any.

**24. NOTICE.** Except as otherwise expressly provided in this contract, any communications between the parties hereto or notices to be given hereunder shall be given in writing, to Contractor or County at the address or number set forth below or to such other addresses or

# EXHIBIT G

numbers as either party may hereafter indicate in writing. Delivery may be by personal delivery, or mailing the same, postage prepaid.

A. Any communication or notice by personal delivery shall be deemed delivered when actually given to the designated person or representative.

B. Any communication or notice mailed shall be deemed delivered five (5) days after mailing. Any notice under this Contract shall be mailed by first class postage delivered to:

To Contractor:

[contractor]

[address]

[city, state zip]

To County:

Contracts and Procurement Manager

555 Court Street NE, Suite 5232

P.O. Box 14500

Salem, Oregon 97309

Fax No. 503-588-5237

**25. SURVIVAL.** All rights and obligations shall cease upon termination or expiration of this Contract, except for the rights and obligations set forth in sections 2, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25 and 26.

**26. SEVERABILITY.** If any term or provision of this Contract is declared illegal or in conflict with any law by a court of competent jurisdiction, the validity of the remaining terms and provisions that shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular term or provision held to be invalid.

**27. CONTRACTOR'S REPRESENTATIONS AND WARRANTIES.** Contractor represents and warrants to the County that:

A. Contractor has the power and authority to enter into and perform this Contract.

B. This Contract, when executed and delivered, is a valid and binding obligation of Contractor, enforceable in accordance with its terms.

C. Contractor (to the best of Contractor's knowledge, after due inquiry), for a period of no fewer than six calendar years preceding the date of closing of proposals for this Contract, faithfully has complied with:

i. All tax laws of this state, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318;

ii. Any tax provisions imposed by a political subdivision of this state that applied to Contractor, to Contractor's property, operations, receipts, or income, or to Contractor's performance of or compensation for any work performed by Contractor;

iii. Any tax provisions imposed by a political subdivision of this state that applied to Contractor, or to goods, services, or property, whether tangible or intangible, provided by Contractor; and

iv. Any rules, regulations, charter provisions, or ordinances that implemented or enforced any of the foregoing tax laws or provisions.

# EXHIBIT G

D. Any Goods, Items, Equipment, Components, Hardware, Software, or Intellectual Property Rights delivered or granted to the County under this Contract, and Contractor's Services rendered in the performance of Contractor's obligations under this Contract, shall be provided to the County free and clear of any and all restrictions on or conditions of use, transfer, modification, or assignment, and shall be free and clear of any and all liens, claims, mortgages, security interests, liabilities, charges, and encumbrances of any kind.

**28. CERTIFICATIONS AND SIGNATURE.** THIS CONTRACT MUST BE SIGNED IN INK BY AN AUTHORIZED REPRESENTATIVE OF Contractor. The undersigned certifies under penalty of perjury both individually and on behalf of Contractor is a duly authorized representative of Contractor, has been authorized by Contractor to make all representations, attestations, and certifications contained in this Contract and to execute this Contract on behalf of Contractor.

**MARION COUNTY SIGNATURE  
BOARD OF COMMISSIONERS:**

\_\_\_\_\_  
Chair Date

\_\_\_\_\_  
Commissioner Date

\_\_\_\_\_  
Commissioner Date

Authorized Signature: \_\_\_\_\_  
Department Director or designee Date

Authorized Signature: \_\_\_\_\_  
Chief Administrative Officer Date

Reviewed by Signature: \_\_\_\_\_  
Marion County Legal Counsel Date

Reviewed by Signature: \_\_\_\_\_  
Marion County Contracts & Procurement Date

**[CONTRACTOR] SIGNATURE**

Authorized Signature: \_\_\_\_\_  
Date

Title: \_\_\_\_\_

# EXHIBIT G

## EXHIBIT A STATEMENT OF WORK

1. **STATEMENT OF SERVICES.** Contractor shall perform Services as described below.

A. GENERAL INFORMATION. *(Insert project background information, County objectives and any other general information that may be helpful to describe the context of this contractual relationship. This information may come from your solicitation document.)*

B. REQUIRED SERVICES, DELIVERABLES AND DELIVERY SCHEDULE.

*(Describe specific services to be performed,*

*deliverables to be provided,*

*Goods to be delivered,*

*the delivery schedule for the services,*

*deliverables and Goods, including documents and reports, if any, to be created and delivered as part of the services.*

*An individual reading the Contract must be able to easily answer the following questions:*

a. *Who is purchasing?*

b. *Who is selling?*

c. *What is being purchased?*

d. *How much is being purchased?*

e. *When will it be delivered?*

f. *How much will be paid and what is the payment method?*

g. *When will payment be made?*

*Be specific, clear, concise and complete when describing the intended performance obligations of the parties).*

C. SPECIAL REQUIREMENTS. *(Insert: special terms and conditions applicable to this Contract.) [OPTION:]*

Contractor shall be solely responsible for and shall have control over the means, methods, techniques, sequences and procedures of performing the work, subject to the plans and specifications under this Contract and shall be solely responsible for the errors and omissions of its employees, subcontractors and agents.

Contractor has the skill and knowledge possessed by well-informed members of its industry, trade or profession and Contractor will apply that skill and knowledge with care and diligence and perform

# EXHIBIT G

Services in a timely, professional and workmanlike manner in accordance with standards applicable to Contractor's industry, trade or profession.

## **OPTION FOR REQUIREMENT THAT CONTRACTOR PROVIDE KEY PERSONS:**

i. KEY PERSONS. Contractor and County agree that each individual specified below is an individual whose special qualifications and involvement in Contractor's performance of Services form part of the basis of agreement between the parties for this Contract and is an individual through whom Contractor shall provide to County the expertise, experience, judgment, and personal attention required to perform Services ("Key Person"). Each of the following is a Key Person under this Contract:

**[List name, title, identify the specific services each Key Person is required to perform under this Contract.]**

Neither Contractor nor any Key Person of Contractor shall delegate performance of Services that any Key Person is required to perform under this Contract to others without first obtaining County's written consent. Further, Contractor shall not, without first obtaining County's prior written consent, re-assign or transfer any Key Person to other duties or positions so that the Key Person is no longer available to provide County with that Key Person's expertise, experience, judgment, and personal attention. If Contractor requests County to approve a re-assignment or transfer of a Key Person, County shall have the right to interview, review the qualifications of, and approve or disapprove the proposed replacement(s) for the Key Person. Any individual County approves as a replacement for a Key Person is deemed a Key Person under this Contract.

**2. COMPENSATION.** The total amount available for payment to Contractor under Exhibit A, section 2.A and for authorized reimbursement to Contractor under Exhibit A, section 2.C is \$\_\_\_\_\_. **[NOTE: THIS AMOUNT SHOULD EQUAL THE TOTAL AMOUNT PAYABLE UNDER EX. A, SECTION 2.A PLUS THE TOTAL AMOUNT AUTHORIZED FOR REIMBURSEMENT UNDER EX. A, SECTION 2.C AND THE AMOUNT IDENTIFIED UNDER 2. COMPENSATION.]**

A. METHOD OF PAYMENT FOR SERVICES. **[OPTION 1 - FIXED PRICE FOR EVERYTHING:** County shall pay Contractor \$\_\_\_\_\_ for completing all Services and delivering all Goods required under this Contract.]

**[OPTION 2 - FIXED PRICE PER DELIVERABLE AND GOODS:** County shall pay Contractor the amounts specified for each of the following deliverables and Goods that County has accepted: (CLEARLY SPECIFY DELIVERABLE AND FIXED AMOUNT FOR THAT DELIVERABLE)]

**[OPTION 3 - HOURLY RATE UP TO MAXIMUM AMOUNT:** County shall pay Contractor \$\_\_\_\_\_ per hour up to but not in excess of \$\_\_\_\_\_ for completing all Services required under this Contract.]

**[OPTION 4 - COMBINATION FIXED PRICE AND HOURLY RATE:** County shall pay Contractor \$\_\_\_\_\_ for \_\_\_\_\_. County shall pay Contractor \$\_\_\_\_\_ per hour up to but not in excess of \$\_\_\_\_\_ for \_\_\_\_\_.]

B. BASIS OF PAYMENT FOR SERVICES. **OPTION 1** - Full completion. County shall pay Contractor all amounts due under this Contract in one payment upon County's approval of Contractor's invoice to County but only after County has determined that Contractor has completed, and County has

# EXHIBIT G

accepted, all Services; and Contractor has delivered and County has accepted all Goods required under this Contract.

**OPTION 2** - Milestone progress payments for completed Services. County shall pay Contractor all amounts due for Services completed and accepted by County and for Goods delivered and accepted by County at the following milestones after County's approval of Contractor's invoice to County for those Services and Goods: (list payment milestones)

**OPTION 3** - Monthly progress payments for completed Services. County shall pay Contractor monthly progress payments upon County's approval of Contractor's invoice submitted to County for completed Services and delivered Goods, but only after County has determined that Contractor has completed, and County has accepted the completed Services and County has accepted the delivered goods

C. EXPENSE REIMBURSEMENT. **OPTION 1: No Expense Reimbursement** - County will not reimburse Contractor for any expenses under this Contract.

**OPTION 2:** County will reimburse Contractor for the following expenses incurred only when the expenses are essential to the discharge of, and within the course and scope of, Contractor's obligations under this Contract.

Total for Reimbursable Expenses. The total amount available to reimburse Contractor for expenses authorized for reimbursement under this Exhibit A, section 2.C is \$ [REDACTED].

D. GENERAL PAYMENT PROVISIONS. Notwithstanding any other payment provision of this contract, failure of the Contractor to submit required reports when due, or failure to perform or document the performance of contracted services, may result in withholding of payments under this contract. Such withholding of payment for cause shall begin thirty (30) days after written notice is given by the County to the Contractor, and shall continue until the Contractor submits required reports, performs required services or establishes, to the County's satisfaction, that such failure arose out of causes beyond the control, and without the fault or negligence of the Contractor.

E. INVOICES. Contractor shall send all invoices to County's Contract Administrator at the address specified below or to any other address as County may indicate in writing to Contractor.

**Marion County**  
**Attn: ES Operations Supervisor**  
**5155 Silverton Road NE**  
**Salem, OR 97305**

# EXHIBIT H - SCS Engineers Proposal

**SCS ENGINEERS**

Environmental Consultants & Contractors

December 14, 2021  
File No. 040180221.00

Mr. Tim Beaver  
Marion County Public Works – Environmental Services  
5155 Silverton Road NE  
Salem, OR 97305

Subject: Marion County Request for Proposals – Environmental Monitoring and Reporting  
Marion County #: PW1027-21; Oregon Buys#: S-C25102-00001235

Dear Mr. Beaver:

SCS Engineers (SCS) appreciates the opportunity to submit our proposal to Marion County Public Works Department, Environmental Services (the County), to provide environmental monitoring and reporting services at your North Marion County Disposal Facility (NMCDF) and Browns Island Landfill (BIL). Our proposal contains the information you requested in your request for proposal (RFP) dated November 10, 2021.

Over the last eight years, your landfill compliance needs have been served by our reliable and cost-effective environmental monitoring and reporting. We have also strived to provide you with responsive service, above and beyond the original scope of work, to assist in special projects to keep your systems running and safe. As the County has faced aging landfill gas and leachate handling systems, we have appreciated the opportunity to provide you with our specialized expertise and advice to assist in planning and decision making, as well as providing services to keep your current systems operational.

We are committed to continue this level of service with many of the same people that have supported the County over the last eight years. We have gained valuable institutional knowledge working on your facilities, backed by experience working on many other landfills in the Pacific Northwest. We hope to continue this relationship with you over the next five years, providing the same consistent, high quality monitoring and reporting you have come to expect, as well as assisting you with various other needs as may arise.

As you are aware, many new landfill regulatory challenges are likely to develop during the next few years. We believe our active involvement in state and federal rule-making as technical advisory team members, reviewers, and commenters allow us to serve our clients proactively and effectively in preparing for and implementing new requirements. It also helps us advise our clients regarding the effects and costs of new requirements on ongoing and future operations. This is the sort of additional expertise we bring to the County to help meet your needs.

Again, thank you for the opportunity to support the County during the past 8 years, and for the opportunity to propose to continue serving you and the people of Marion County.



Mr. Tim Beaver  
December 14, 2021  
Page 2

## EXHIBIT H

Please feel free to contact us if you have any questions or require additional information.

Sincerely,



Barbara E. Lary, RG (Primary Contact)  
Project Manager  
BLary@scsengineers.com  
971-284-1297



Gregory D. Helland, RG (Authorized Representative)  
Vice President/NW Business Unit Director  
GHelland@scsengineers.com  
425-289-5446

BEL/SL

Encl: SCS Proposal



# EXHIBIT H

## Marion County RFP for Environmental Monitoring and Reporting PW# 1027-21

Oregon Buys #: S-C25102-00001235



Marion County  
Tim Beaver  
5155 Silverton Road NE  
Salem, Oregon 97305  
503-365-3100

**SCS ENGINEERS**

040180221 | December 14, 2021

15940 SW 72<sup>nd</sup> Avenue  
Portland, OR 97224  
503-639-9201

## 1.0 INTRODUCTION

SCS Engineers (SCS) appreciates the opportunity to submit this proposal to Marion County Public Works, Environmental Services (the County), to provide environmental monitoring and reporting services at its North Marion County Disposal Facility (NMCDF) and Browns Island Landfill (BIL). The awarded contract will be for 5 years beginning 2022 through 2027. SCS prepared this proposal in response to the County's request for proposal (RFP) dated November 10, 2021, and RFP Addendum 1 dated November 19, 2021. Our proposal contains the information requested in the RFP, PW1027-21 and is organized as outlined in Section 6 of the RFP. This proposal is consistent with the requirements of the RFP and also includes the following:

- Attachment 1 – Signed Marion County Proposal Form and Trade Secret Form
- Attachment 2 – Resumes of Project Team Members
- Attachment 3 – Marion County Reference Form
- Attachment 4 – Proposal Cost Table and SCS Fee Schedule
- Attachment 5 – ALS Environmental (ALS) List of Analytical Testing Fees and Quality Assurance Manual

This proposal outlines your needs for maintaining compliance at both the NMCDF and the BIL landfills and how we believe SCS can continue to assist the County in successfully managing the NMCDF and BIL monitoring projects.

Environmental monitoring and reporting are an integral part of maintaining landfills and SCS has made this a major portion of our consulting practice in the Pacific Northwest. We have an extensive portfolio of landfill monitoring projects, and we believe that the County can benefit from our experience on those other sites. In addition, our past 8 years of experience working with the County on these particular landfills has added a significant insight and project specific knowledge base. SCS can therefore deliver efficiencies to the County credibly and at a carefully considered and practical cost. Highlighted below are key capabilities of the SCS Portland office that will allow us to successfully implement the monitoring projects and contribute to a successful partnership with the County:

**Experienced project team.** SCS staff proposed for this project are currently conducting the environmental monitoring and management for NMCDF and BIL. In addition, we manage and perform environmental monitoring programs at numerous active and closed landfill sites in the Pacific Northwest region for public and private entities, including six landfills regulated by the Oregon Department of Environmental Quality (DEQ). Our work at these sites closely parallels the work conducted on the County sites.

**Strong Knowledge of DEQ and Federal Solid Waste Regulations.** SCS has extensive knowledge of Oregon and federal solid waste regulations pertaining to environmental monitoring requirements, and we have developed strong working relationships with the DEQ's Solid Waste staff. This knowledge and experience will allow us to effectively represent the County in negotiations with the DEQ to resolve technical or regulatory issues related to the monitoring programs or development of updated environmental monitoring plans (EMPs).

**Innovative and cost-effective solutions.** SCS is continually pursuing ways to provide our clients with more efficient and cost-effective service. This can be as simple as combining tasks when onsite to save time and money or as complex as analyzing analytical data from groundwater monitoring and negotiating a shorter list of analytes for future

# EXHIBIT H

monitoring. This can also mean providing related field services on short notice, including operations and maintenance support or consultation on leachate and landfill gas management.

## 2.0 APPROACH AND MANAGEMENT PLAN

SCS's goal is to provide the County with high-quality and cost-effective management and implementation of the NMCDF and BIL monitoring projects in a manner that meets all permit-specified and regulatory compliance requirements. To achieve this goal, SCS plans to utilize our past eight years of experience managing NMCDF and BIL monitoring projects, as well as similar experience with other Northwest landfill sites for which we are currently performing on-going monitoring services. We feel confident that this experience will continue to enhance the overall efficiency of managing the County's landfill environmental projects.

An important premise of our management approach is that we will be managing and coordinating all tasks from our Portland, Oregon, office, utilizing a small project team with defined roles and controlled execution of tasks. With the majority of our management, technical and field team in Portland, project communication, responsiveness, and administration will be greatly enhanced. This approach has been the cornerstone for the success SCS staff has consistently demonstrated on all of our Northwest landfill contract sites. The approach includes the following elements:

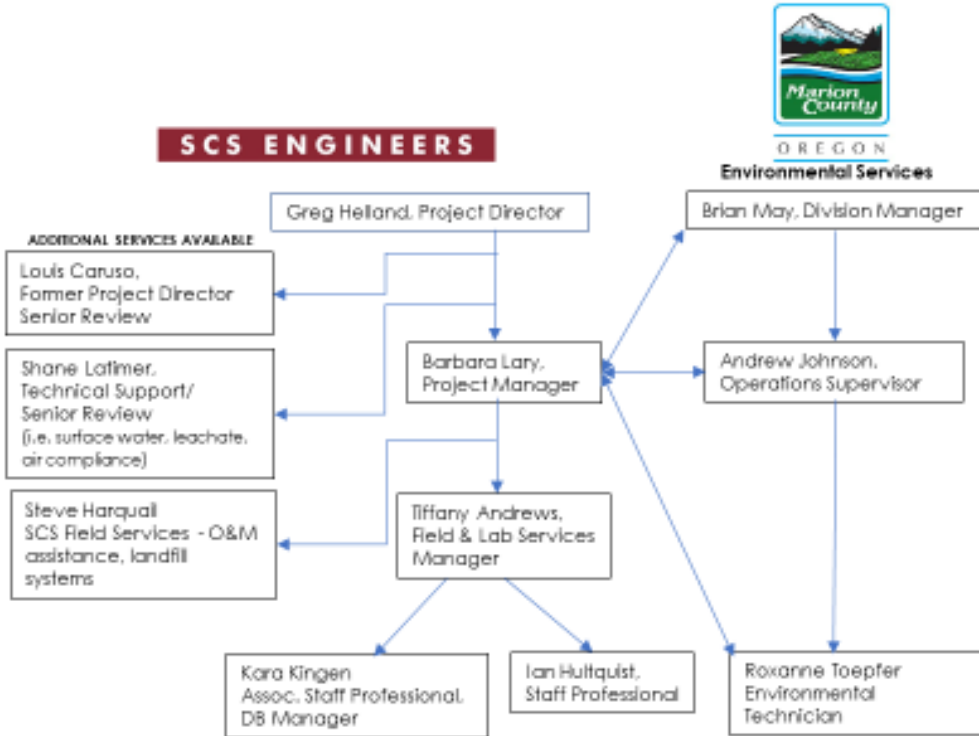
- Timely and effective communication with clients during all phases of the project.
- Utilization of experienced SCS personnel and commitment of key personnel for the entire project.
- Strict adherence to all regulatory monitoring and reporting notification and deliverable deadlines, including verification resampling, if required.
- Timely review of laboratory analytical data and communication of the results with the client.
- Consistent and continuous application of project-specific QA/QC programs.

### Organizational Chart

As shown in the organizational chart below, Ms. Barb Lary will be the point of contact for the County. However, anyone on the team is available to respond to concerns or questions that come up. The advantage SCS brings to the project is a relatively small local team to conduct the routine monitoring and reporting, yet landfill experts from across the company are available to advise and provide the necessary services when needed. SCS also has a local team from SCS Field Services that can provide support and assistance when routine and non-routine issues arise onsite.

# EXHIBIT H

Exhibit 1. SCS Engineers and Marion County Organization Chart



## Health and Safety

The effective management of health and safety (H&S) is not only a legal obligation but ensures a safe work environment and minimizes potential liability exposures for the County and SCS and all parties involved. Safety is an integral part of how we do business, and we have adopted a comprehensive plan and policies to carry out that philosophy. SCS will carry forward these policies in performing all monitoring activities at the NMCDF and BIL sites. Our proposed scope of work includes updating the site-specific health and safety plan for each site.

SCS implements a corporate-level Health and Safety Program intended to minimize injury and/or illness in the workplace. The H&S Program is guided by an Injury and Illness Prevention Plan (IIPP) that outlines policies that SCS follows to comply with federal occupational H&S guidelines (e.g., 29 Code of Federal Regulations [CFR] 1904, 1910 and 1926), and describes the procedures and programs to be implemented throughout SCS to reduce loss from accidents or injuries at SCS project locations. For fieldwork, the program provides overall guidance and necessitates site-specific H&S requirements that must be tailored to each project. A copy of the IIPP can be provided to the County upon request.

# EXHIBIT H

All SCS personnel proposed for onsite field work activities have all the required H&S training (including 40-hour HAZWOPER training and 8-hour refresher training), with no additional training required at the time this proposal is being submitted.

## **Quality Assurance / Quality Control (QA/QC)**

QA/QC is a continuous process at SCS and is implemented to ensure client success in all aspects of the project. Our project team has a shared commitment to provide the very best service. In 2009 SCS adopted its updated Quality Management System (QMS) program which clearly communicates that every employee is to strive to produce the best product, ensure the work they do is done correctly, that the work is checked internally and errors are corrected promptly. Our QMS program is reviewed and updated on an annual basis.

The SCS Project Manager has day-to-day responsibility for QC of work products. Although day-to-day QC responsibilities may be delegated to other qualified members of the project team, the Project Manager is primarily responsible for QC. The Project Manager, along with the SCS Project Director, is responsible for the quality of project work and associated external/internal documents.

## **3.0 QUALIFICATIONS AND EXPERIENCE**

### **3.1 FIRM QUALIFICATIONS**

SCS is a private, employee-owned environmental consulting/solid waste engineering firm. Founded in 1970, SCS employs about 1000 professional and support staff in more than 50 offices throughout the United States. We have found that a more local presence – living and working in or near the communities we serve - is key to our clients' success. Our staff includes planners and geographers; civil, environmental, mechanical, and geotechnical engineers; scientists, including biologists, economists, geologists, toxicologists, etc.; and field technicians.

A nationally recognized leader in solid waste management services, SCS has been ranked as one of the top two solid waste consulting firms by Engineering News Record (ENR) since 2003, and SCS has consistently ranked in ENR's Top 20 firms excelling in the Wastewater, Sewerage and Waste, Site Assessment and Compliance categories – success that we credit to our clients and employees. The rankings reflect SCS's position and experience in the solid waste market in North America and our focus on placing the success of our clients as a top priority.

SCS provides a full range of environmental and management services to our solid waste clients, from initial program design and implementation to monitoring and evaluation. Further, we provide fully integrated solid waste engineering, planning, operations, and maintenance consulting services with experience at hundreds of landfill facilities throughout the United States, including dozens of active and closed facilities throughout the Northwest. SCS is among a very small selection of specialized firms that can honestly convey that, "we are a solid waste company." We offer not only technical expertise, but also the economic and regulatory experience to help program managers develop effective, efficient, integrated waste management programs while keeping an eye on the bottom line.

Exhibit 2 (following page) summarizes SCS's Pacific Northwest environmental compliance monitoring and groundwater related experience.

# EXHIBIT H

Exhibit 2. SCS Compliance Monitoring and Related Experience Matrix

Landfill/Location	Compliance Monitoring and Reporting	Regulatory Support	Hydrogeologic Services <sup>1</sup>	Environmental Planning and Permitting <sup>2</sup>	Engineering Design <sup>3</sup>	Construction Management	Operational Support	Leachate Management	Landfill Gas Design and O&M	General Field Services	Closure/Post-Closure Financial Assurance
North Marion County Disposal Facility Marion County, Oregon	X	X	X				X			X	
Brown's Island Landfill Salem, Oregon	X	X	X								
Dry Creek Landfill (Rogue Disposal) Medford, Oregon		X		X	X		X		X	X	
Roseburg Landfill (Douglas County) Roseburg, Oregon	X	X	X	X	X		X	X	X	X	
Coffin Butte Landfill (Republic) Corvallis, Oregon		X		X	X						
Finley Buttes Regional Landfill (WCI) Boardman, Oregon	X	X	X		X	X	X			X	
Wasco County Landfill (WCI) The Dalles, Oregon	X	X	X	X	X	X			X	X	
Hillsboro Landfill (WM) Hillsboro, Oregon	X	X	X	X	X					X	
Riverbend Landfill (WM) McMinnville, Oregon	X	X	X	X	X				X	X	
Columbia Ridge Landfill & Recycling (WM) Arlington, Oregon	X	X	X	X	X	X					
Chemical Waste Management of the NW Arlington, Oregon	X	X	X	X							
Greater Wenatchee Regional Landfill (WM) East Wenatchee, WA	X	X	X	X	X	X				X	
Olympic View Sanitary Landfill Port Orchard, Washington	X	X	X	X	X	X		X	X	X	
Hanessville Landfill Kitsap County, Washington	X	X	X		X				X	X	
LRI Landfill (WCI) Puyallup, Washington	X	X	X		X		X	X	X	X	X
Purdy Landfill (WCI) Pierce County, Washington	X	X	X		X		X		X	X	X
Hidden Valley Landfill Pierce County Washington	X	X	X		X		X		X	X	X
Island County Landfill Coupeville, Washington	X	X	X		X				X	X	X
Closed Lechner Landfill (Clark Co.) Vancouver, Washington	X	X	X	X	X	X	X		X	X	X
City of Bellevue (Eastgate) Landfill Bellevue, Washington	X	X	X		X	X			X	X	

<sup>1</sup> Includes site characterization studies in support of lateral expansion, groundwater contamination studies, and monitoring well/LFG probe installations



# EXHIBIT H

<sup>2</sup> Includes land use planning; wetland delineation, permitting, mitigation design, and monitoring; floodplain management; Endangered Species Act compliance; NEPA compliance; permitting for landfill expansions and closures; construction permit (e. g. for a flare).

<sup>3</sup> Includes engineering design for cell construction, leachate management, stormwater management, or closure systems (i.e., cap).

## 3.2 SCS PACIFIC NORTHWEST QUALIFICATIONS

Descriptions of our qualifications and experience related to environmental compliance monitoring and other engineering/technical support services are provided in the following sections.

### Environmental Compliance Monitoring

SCS's Pacific Northwest staff, including the team members described herein, have extensive experience performing environmental compliance monitoring and associated data management, evaluation, and reporting for numerous landfill facilities in Oregon, Washington and Alaska. Our work at these sites parallels the project requirements of the RFP and includes: (1) monitoring groundwater, leachate, landfill gas (LFG), surface water, stormwater, and greenhouse gas (GHG), (2) overseeing and managing laboratory testing, (3) database management to compile, store, and evaluate groundwater elevation and quality data, (4) performing statistical evaluation and quality assurance/quality control (QA/QC) review of laboratory data, (5) preparing monitoring reports for submittal to regulatory agencies, and (6) verifying compliance with regulatory agency monitoring and reporting deadlines and results-triggered follow-up activities. SCS's extensive and on-going experience in preparing annual and semiannual environmental monitoring reports for 18 Northwest landfill sites (including nine Oregon landfills) provides us with a clear understanding of DEQ reporting requirements and expectations.

Our extensive portfolio of environmental monitoring contracts at Pacific Northwest landfill facilities has provided SCS with an in-depth understanding of compliance requirements specified in regulatory agency permits and site-specific monitoring plans. Specific to Oregon, SCS staff in the Portland office have developed an excellent reputation with DEQ managers in the solid waste program. Our extensive knowledge of state and federal solid waste regulations, combined with our working relationships with DEQ personnel, have allowed us to effectively represent our clients and ensure that regulatory strategies pertaining to compliance monitoring are technically sound and cost effective. This has been a keystone to our success in performing and managing landfill compliance monitoring projects in Oregon and throughout the Pacific Northwest.

### Environmental Monitoring Program Evaluations and EMP Development

The SCS Portland staff has prepared DEQ-approved EMPs for seven Oregon landfill facilities (Hillsboro and Riverbend Landfills under the jurisdiction of the DEQ Northwest Region, Finley Buttes, Wasco County, Chem Waste Management and Columbia Ridge Landfills under the jurisdiction of the DEQ Eastern Region and Roseburg Landfill under the jurisdiction of DEQ Southwest Region). The EMPs incorporated regulatory strategies approved by the DEQ to reduce monitoring, analytical, and reporting requirements (described below), ultimately reducing monitoring program costs at these facilities. The EMPs also included associated groundwater monitoring plans, leachate and secondary collection system monitoring plans, landfill gas management plans, and sampling and analysis plans (SAPs).

SCS's Vice President and former Portland office manager, Louis Caruso, was involved in a DEQ-sponsored advisory group chartered with developing guidance for detection and assessment

## EXHIBIT H

monitoring at active and closed municipal solid waste (MSW) and construction and demolition debris (C&D) landfills in Oregon. The task force members included DEQ solid waste division hydrogeologists, municipal and private landfill operators, and select environmental consultants. The outcome of this effort resulted in issuance of the DEQ's May 2011 Internal Management Directive (IMD) for developing concentration limits at permitted solid waste and land quality facilities. SCS project staff has successfully applied the DEQ guidance and federal guidance (EPA's 2009 Unified Guidance document) for developing long-term monitoring parameters and statistically derived concentration limits at the Oregon landfill facilities mentioned above, as presented in their DEQ-approved EMPs.

SCS is experienced in developing concentration limits, including permit-specific concentration limits (PSCLs) and site-specific limits (SSLs), using an intrawell statistical approach that utilizes historical analytical data for compliance and/or detection wells as background groundwater quality data to establish prediction limits. Intrawell analysis is typically more effective than interwell (upgradient-to-downgradient) analysis because it eliminates the spatial variability of natural groundwater chemistry. This strategy could potentially be applied at the BIL where groundwater chemical concentrations vary notably over time due to seasonal variations and in response to other geochemical changes, making it difficult to characterize whether parameter concentrations are actually increasing or decreasing. SCS utilizes the computer program DUMPStat™ to perform statistical analysis (Sen's Test) of concentration trends for inorganic parameters in groundwater. SCS utilizes these groundwater data evaluation methods for several of its Pacific Northwest landfill monitoring projects.

For the County facilities, we offer the following observations:

- BIL's current EMP identifies PSCLs for select inorganic parameters that are also primarily based on established state or federal water quality standards. The EMP indicates that the extent of groundwater data variability at the site can make it difficult to characterize increasing or decreasing parameter concentration trends. Given these conditions, there may be opportunities to develop alternative data evaluation methods that could be incorporated into the updated EMP to better assess potential changes in groundwater quality at BIL. Options could include evaluating whether statistically derived concentration (prediction) limits are feasible for select wells or using limited data sets (considering to the fact that there are existing impacts to groundwater), or developing alternative trend analysis using DUMPStat™.
- Based on the existing EMP for the NMCDF prepared in 2013, it appears that long-term monitoring parameters and well network modifications have been previously approved by the DEQ, and remedial action concentration limits (RACLs) for select parameters are established in the Record of Decision (ROD). However, the EMP does not describe the details or methods used to incorporate these modifications into the groundwater monitoring programs, and the RACLs for inorganic parameters are based on established state or federal water quality standards. There may be opportunities to reduce the groundwater monitoring program (and ultimately costs) for NMCDF, particularly with respect to reducing the comprehensive biennial list of NMCDF permit parameters or the overall number of detection wells required to be sampled. Additional opportunities include evaluating the feasibility of establishing statistically-derived PSCLs or SSLs for select wells and parameters to better assess potential changes in groundwater quality. Based on our experience negotiating reporting requirements for our clients, SCS also believes there may also be opportunities to reduce redundant data presentation (ultimately reducing costs) in the annual environmental monitoring report, including some tables and trend plots.



# EXHIBIT H

The upcoming permit renewals in 2025 will likely include preparing updated EMPs for BIL and NMCDF, and present an opportune time to thoroughly evaluate the EMPs and propose revisions that are supported by the data. To assist the County through this process, the SCS project team would draw on its experience working closely with DEQ Solid Waste staff to incorporate these types of modifications into DEQ-approved EMPs.

## 4.0 STAFFING PLAN

### 4.1 PROPOSED TEAM MEMBERS

SCS will provide project, technical, and data management and reporting primarily with staff already familiar with both landfills. Additional field and office support are always available from our Bellevue, Washington office and can be utilized if needed, to eliminate any potential field or reporting schedule conflicts. The SCS project team members are committed to providing the County with the technical expertise necessary to successfully complete this project in a cost-effective, responsive, and timely manner. The project team can also draw on the expertise of other environmental professionals within SCS both in the Northwest and nationally if needed.

Brief biographies of the proposed SCS project team members are provided below. Expanded resumes of key personnel are provided in Attachment 2.

**Ms. Barbara Lary, RG - Project Manager** is a registered geologist in Oregon and Washington with 25 years of diverse environmental experience for public and private clients. Ms Lary is currently managing seven landfills, five of which are located in Oregon. She has worked on a wide range of solid waste (landfill) related projects, including environmental monitoring/reporting, site characterizations, and installation of compliance monitoring network wells at many sites across Oregon and Washington. Ms. Lary has also been involved in all aspects of environmental due diligence, soil and groundwater investigations, remediation, and hydrogeology projects. This experience has included small- and large-scale projects involving a broad range of investigation techniques for sampling various environmental media such as sediments, groundwater, soil, soil-gas, and air to address a variety of contaminants.

Ms Lary will serve as SCS's Project Manager, responsible for communicating project status to the County and developing and managing project budgets, budget tracking and invoicing, client communications, quality control, schedule tracking, oversee and assist preparation of reports, and attend project meetings. These activities are consistent with Ms. Lary's professional background and past/current project experience.

**Ms. Tiffany Andrews – Environmental Scientist** has 15 years of experience working as an environmental scientist and field technician on a variety of projects sites, including landfills, industrial hazardous waste facilities, and petroleum impacted sites. She routinely coordinates and performs multi-media (groundwater, leachate, stormwater, and LFG) environmental monitoring at many of the landfill projects managed out of SCS's Portland office. Her project experience includes multi-media sampling using a variety of methods and procedures, including low-flow purge sampling, PFAS sampling, oversight for well installations and abandonments, remediation system installation and O&M, site assessment, and tank cleaning and inspections.

Ms. Andrews will primarily be involved with coordination of environmental field monitoring and laboratory coordination, reviewing field and laboratory documentation for completeness and accuracy, and data evaluation. She will also provide critical backup for fieldwork support to

## EXHIBIT H

eliminate potential field scheduling conflicts. These activities are consistent with the work she currently performs for the SCS Portland office landfill projects.

**Mr. Ian Hultquist – Environmental Scientist** has four years of experience working as an environmental scientist and environmental sampling technician with experience working on a diverse range of project sites, including EPA superfund sites, military bases, petroleum impacted sites, hazardous waste facilities and landfills. He routinely coordinates and performs multi-media (groundwater, leachate, stormwater, and LFG) environmental monitoring at many of the landfill projects managed out of SCS's Portland office. His project experience includes multi-media sampling using a variety of methods and procedures, including extensive experience with low-flow purge and standard purge sampling methods.

Mr. Hultquist will be responsible for coordinating and performing field environmental monitoring activities. These activities are consistent with the work he currently performs for the SCS Portland office landfill projects.

**Ms. Kara Kingen – Environmental Scientist** has 1 year of experience working as an environmental scientist and environmental sampling technician for the SCS Portland office. She routinely coordinates and performs multi-media (groundwater, leachate, stormwater, and LFG) environmental monitoring at many of the landfill projects managed out of SCS's Portland office. Her project experience includes multi-media sampling using a variety of methods and procedures, including extensive experience with low-flow purge sampling methods.

Ms Kingen will be responsible for coordinating and performing field environmental monitoring activities. She will also be responsible for updating and maintaining the existing Access databases for BIL and NMCDF, and for using the database information for preparing supplemental information for the various reports. These activities are consistent with the work she currently performs for the SCS Portland office landfill projects.

**Mr. Greg Helland, RG, LG, LHG - Project Director** with SCS, is a registered geologist in Oregon and a licensed hydrogeologist in Washington. He originally joined SCS in 1986.

During his tenure, Mr. Helland has developed project and management experience related to site characterization, environmental monitoring, environmental compliance, operations and maintenance (O&M), hazardous waste management, remediation and construction management, permitting, and human health and ecological risk assessment. Mr. Helland serves as the SCS Project Director for several investigation, compliance and remediation projects in the Northwest. The sites include landfills, commercial properties and brownfields. As Project Director, he provides overall project quality review, contracting and management support, and regular client communication support. Mr. Helland also ensures that appropriate project staffing is provided and maintained, coordinating with other SCS offices, as needed, to access needed resources.

Mr. Helland has served as the Business Unit Director for SCS's Northwest operations since 2008. In this role, he has overall responsibility for the administration, execution and management of all SCS solid waste and environmental services projects in the Northwest. Mr. Helland is responsible for ensuring the appropriate staff is assigned to projects, that regular project reviews are completed, that the client is kept apprised of progress and any changes, and that the client's expectations are satisfied.

Mr. Helland will provide the senior review for the annual monitoring reports and the project in general. He is available to consult with the county whenever needed on items of concern.

# EXHIBIT H

**Mr. Louis Caruso -LG, LHG – Senior Project Review** has over 25 years of experience in conducting and managing geologic/hydrogeologic investigations, environmental monitoring programs, and soil and groundwater contamination studies at active and closed solid waste landfills and industrial facilities in Oregon, Washington, California, and Alaska. He has served as Client Manager for several of SCS's Pacific Northwest landfill clients in the past and holds the institutional knowledge for these sites. He has worked on a wide range of solid waste related projects at closed and active MSW and C&D landfills in the Northwest, including all of the Oregon landfills previously mentioned in this proposal. These include preparing EMPs, performing site characterization studies for landfill lateral expansions, preliminary assessments, RI/FS, MTCA groundwater investigations, LFG-related contaminant investigations, and designing/installing compliance monitoring networks.

Mr Caruso is familiar with the County landfills and will continue to advise and be a resource regarding historical site and landfill operations. He will be available for senior review of project documents.

**Dr. Shane Latimer - SCS Portland Office Manager and Technical Support** - Dr. Latimer is an environmental planner with over 25 years of experience in solid waste facility planning, permitting, and compliance. Dr. Latimer's main technical focus will be stormwater management and air quality compliance, but may provide expertise in land use planning, natural resource permitting, and other environmental permitting and compliance, as needed (e.g., wetlands, water quality, Endangered Species Act (ESA) and National Environmental Policy Act (NEPA) compliance). He has a solid understanding of landfill engineering concepts and practices and is adept at working collaboratively with engineering professionals to ensure optimum balance between environmental and engineering constraints. Dr. Latimer is an active member of the SWANA Beaver Chapter (includes Oregon, SW Washington, and Idaho).

Dr Latimer will provide technical support, as he has in the past, and will provide senior technical and quality review on project documents when needed.

## 4.2 PROPOSED LABORATORY

SCS proposes to use ALS Environmental (ALS) based in Kelso, Washington, for analytical testing services. The basis and rationale for our selection are provided below. ALS's updated (2021) Quality Assurance Manual is provided with this proposal in Attachment 5.

SCS evaluated two laboratories for this proposal, both local laboratories that would eliminate the need to ship samples long distance. SCS recommends using a local laboratory to minimize the potential for sample damage, delayed shipping or sample loss during shipping. Additionally, using a local laboratory will facilitate meeting the 48-hour hold time for nitrate testing. Furthermore, it is SCS's intention to use only one laboratory for both projects. It is our experience that cost and technical efficiencies can be realized by using only one laboratory, particularly with respect to reviewing and evaluating analytical data based on consistent testing procedures and results from one laboratory.

SCS obtained bids from ALS and APEX, both of which are local, highly qualified, Oregon-accredited laboratories. SCS team members have extensive experience working with both laboratories for solid waste and other types of environmental projects. ALS was selected as the proposed laboratory based on their lower pricing (by about \$300,000) for the 5-year contract period.

## 5.0 WORK PLAN AND SCHEDULE

SCS's understanding of the project requirements and proposed scope of work for the NMCDF and BIL monitoring projects is based on (1) our eight years of experience supporting the County at the two facilities, (2) information provided in the RFP, and (3) our relevant and extensive experience managing and conducting environmental monitoring programs at solid waste landfills in the Pacific Northwest. The proposed scopes of work for the NMCDF and BIL projects are presented in this section as Tasks 1 and 2, respectively, with subtasks for each that describe in detail anticipated activities based on our understanding of the project requirements and our previous experience. The environmental monitoring and analytical programs are summarized in Exhibit 3 on the following page. Since the number of samples and schedule for the routine monitoring do not change from year to year, this yearly schedule is valid for all five years.

The analytical testing is the same from year to year, with the exception of the fall in even numbered years. During that monitoring even, the Tier 3 detection wells will have additional analytical which includes the complete list of trace total metals and volatile organic compounds (VOCs). If TSS is less than 100 milligrams per liter (mg/L) then just the totals. If TSS is greater than 100 mg/L, then total and dissolved.

When a split sampling event with DEQ is required, the number of wells and analytical testing will remain the same as listed below. Additional effort is required to coordinate the schedule, conducting the split sampling and then forwarding the data when to DEQ after receiving final analytical reports.

# EXHIBIT H

Exhibit 3. Summary of Scope of Work – 2022 – 2027 Environmental Monitoring and Reporting

Task No.	Task Description	2022 - 2027		
		# Samples	Frequency	
1.1	<b>North Marion County Disposal Facility Spring and Fall Field Sampling Events</b>			
	Willamette Silt Tier 1 Detection Wells	7 wells	semiannual	
	Willamette Silt Tier 2 Detection Wells	6 wells	semiannual	
	Willamette Silt Tier 3 Detection Wells*	6 wells	annual	
	Troutdale Formation Wells	6 wells	semiannual	
	1973 Landfill Site Wells	1 well	annual	
	Surface Water Locations	4 samples	semiannual	
		1 sample	annual	
	Leachate/LDS Sampling Locations	9 samples	semiannual	
	<b>Laboratory Analysis</b>	45 groundwater samples/yr		
9 surface water samples/yr				
18 leachate/LDS samples/yr				
QA/QC samples/yr: 12 field duplicates, 5 trip blanks				
2.1	<b>Browns Island Landfill Spring and Fall Field Sampling Events</b>			
	Shallow Alluvium Wells	1 well	semiannual	
	Intermediate Alluvium Wells	5 wells	semiannual	
	Deep Alluvium Wells	6 wells	semiannual	
	Marine Sedimentary Rock Wells	1 well	semiannual	
	<b>Laboratory Analysis</b>	26 groundwater samples/yr		
		QA/QC samples/yr: 4 field duplicates; 1 trip blank		
1.2/2.2	<b>Data Management, Review, and Regulatory Evaluation</b>	Scope of work consistent each monitoring year.		
1.3/2.3	<b>DEQ Split Sampling Events and Reporting</b>	Assumes two DEQ split sampling events per site during the 5-year contract period (dates unspecified).		
1.4/2.4	<b>Annual Environmental Monitoring Report</b>	Scope of work consistent each monitoring year.		
1.5/2.5	<b>Environmental Monitoring Plan Update</b>	Update as needed.		
1.6/2.6	<b>Project Management</b>	Scope of work consistent each monitoring year.		

\*During even numbered years, during the fall event, additional analyses (Group 2b and 3) are required to be collected from the Tier 3 detection wells.

Tasks are described in detail in the following sections.

# EXHIBIT H

## Task 1 – North Marion County Disposal Facility

The NMCDF is owned by the County, who is the permittee of the facility and operates the scales, transfer station, backup landfill, material recycling, ash monofill cell, and leachate collection system at NMCDF. The facility has been in operation since 1974. The solid waste disposal portion of the facility is regulated under DEQ Solid Waste Disposal Permit (SWDP) 240, which expires on November 30, 2025. In addition to the SWDP, a ROD was negotiated with DEQ in January 1999 in response to detections of select VOCs and inorganic constituents in Willamette Silt groundwater that exceeded state and federal water quality standards (maximum contaminant levels [MCL]). Investigations performed in response to these water quality issues concluded that the constituents of concern (COCs) were associated with the trench and construction and demolition (C&D) landfills, and not with the ash monofill cells. The ROD established trigger levels for select COCs and required notification requirements to DEQ if the trigger levels are exceeded. The current environmental monitoring program for NMCDF incorporates monitoring, data evaluation, reporting, and notification required as part of the ROD and SWDP. The existing EMP for the NMCDF is dated June 2013, and SCS understands that an updated EMP may need to be submitted to the DEQ upon renewal of the SWDP in 2025.

As required by the RFP, the proposed scope of work presented below addresses field monitoring of groundwater, surface water, and leachate and hydraulic control system liquids.

### Subtasks 1.1 – Spring and Fall Field Sampling Events

- Conduct semi-annual sampling beginning with the second event in 2022. Based on past events, this will occur in October or November 2022. First monitoring events each year will likely occur in April or May.
- Provide written notification to the DEQ and the County at least 10 days before starting each monitoring event.
- Coordinate sample bottle order and other logistics with ALS at least two weeks prior to an upcoming sampling event.
- Measure groundwater levels in all monitoring wells and piezometers at the NMCDF, the former Land Application Area, and the 1973 Landfill Site.
- Collect groundwater samples at the locations and frequencies specified in the EMP (Table 2 of the Sampling and Analysis Plan) and detailed in the attached Table 2. All of the monitoring wells contain dedicated bladder pumps or dedicated bailers (for wells with low yield). The traditional purge method (i.e., removal of three casing volumes of water) is used to sample the wells, as specified in the EMP. Field procedures consist of the following: (1) calibrating field meters daily and as needed during the course of sampling each day; (2) monitoring water quality field parameters during purging; (3) documenting data on field data sampling sheets; (4) sampling wells using the dedicated pumps and bailers while wearing new, clean, disposable nitrile gloves; (5) properly decontaminating non-dedicated equipment (e.g. water level probe) prior to use in each well; and (6) collecting samples in laboratory-supplied containers, and proper storage and transfer of samples following chain-of-custody procedures.



# EXHIBIT H

- Collect surface water samples at four locations (SC-1 through SC-4) semiannually, and at location SC-73 annually. Samples will be collected by carefully immersing sample containers directly into Senecal Creek.
- Perform inspection of the leachate control management system in accordance with the procedures described in the Leachate Control Management Plan (LCMP). Also, collect semiannual samples from the following: leachate from two primary leachate collection and removal system (LCRS) sampling points (Cell 3/FM and LL-1), liquid from six secondary leak detection system (LDS) monitoring points (LDS-1 through LDS-6), and one liquid sample from the hydraulic control outfall (Drain-1). Sampling will be performed in accordance with procedures described in the LCMP.
- Collect QA/QC samples consisting of field duplicate samples (1 per day of sampling) and trip blanks (1 per cooler if VOC containers are collected), consistent with the EMP. This protocol will apply for each media sampled (i.e., groundwater, surface water, and leachate). Equipment blanks are not planned to be collected since all groundwater monitoring wells are equipped with dedicated bailers or bladder pumps.
- Submit the groundwater, surface water, and leachate system samples to ALS for analysis. SCS will coordinate with ALS to ensure testing is performed in accordance with the requirements of the EMP, ROD, and SWDP.

SCS will perform verification resampling if necessary and as approved by the County. However, costs for verification resampling are not included in this proposal due to the unpredictable schedule and level of effort required for this task. RFP Addendum 1 indicates that costs outside the scope of work, such as verification resampling, will be covered under a separate fund and kept separate from the following scope of work and costs presented in this RFP.

## **Subtask 1.2 – Data Management, Review, and Regulatory Evaluation**

SCS plans to continue to use the field and laboratory data review and tracking process it has successfully used for the County and other landfill monitoring projects. The process includes timely review of the analytical data to meet DEQ requirements for reporting exceedances of regulatory trigger levels and for conducting verification resampling.

- Coordinate analytical laboratory testing of groundwater and quality control samples with ALS to ensure testing requirements in accordance with the EMP are met. If necessary, based on preliminary results, a data quality review (DQR) will be requested of ALS to formally review results that differ from historical results or that exceed certain regulatory requirements or QC criteria. This is the first line of investigation after an anomalous result is detected. For each DQR, the laboratory will prepare a formal written response explaining the discrepancy, and the response will be included in its final laboratory report.
- Maintain records of field and laboratory documentation and QA/QC activities. SCS will receive from ALS electronic data deliverables (EDDs) of laboratory data that will be directly downloaded to the existing Microsoft Access database. The database will be maintained and updated by SCS after each monitoring event.

## EXHIBIT H

- Perform QA/QC review and regulatory evaluation of analytical data in accordance with Section 5 (Review and Reporting of Water Quality Results) of the Water Quality Monitoring Plan. Results of the QA/QC review will be included in the annual monitoring report. The purpose of the regulatory review is to determine if a significant change in water quality has occurred and to evaluate whether confirmation resampling is necessary.
- Provide an email summary (exceedance report) to the County presenting results of the data review and regulatory evaluation, including recommendations for resampling if warranted. This will be provided to the County within 30 days of receiving laboratory results.

### **Subtask 1.3 – DEQ Split Sampling and Reporting**

The SWDP and EMP do not specify a schedule for DEQ sampling events; however, it is assumed that two DEQ split sampling events will occur during the 5-year contract period, as specified in the RFP.

This task includes additional field coordination with the DEQ (with 45-day notification if possible) and ALS that are not part of the routine field monitoring events, and preparation of a report documenting the DEQ split sampling field activities and laboratory analytical results. The report will be submitted to the DEQ within 90 days after the split sampling event is completed, as required by the SWDP. Consistent with the SWDP requirements, the split sampling report will include the following:

- Copies of field documentation including field sampling data sheets and chain-of-custody records.
- Laboratory analytical reports and QA/QC provided in electronic format on a CD.
- SCS's QA/QC review of the laboratory and field data.
- A groundwater contour map prepared using water-level data collected as part of the split-sampling event.

### **Subtask 1.4 – Annual Environmental Monitoring Report**

Prepare an annual environmental monitoring report (AEMR) for submittal to the DEQ by February 1 of each year. The AEMR will include, at a minimum, those elements described in Section 5 of the Water Quality Monitoring Plan and Sections 18.4 and 18.5 of the SWDP, including a statement of compliance. A draft copy of the AEMR will be submitted to the County for internal review and comment. After incorporating the County's review comments, four final report copies and an electronic copy will be submitted to the County.

### **Subtask 1.5 – Environmental Monitoring Plan Update**

The RFP indicates that the consultant will revise (update) the existing EMP to reflect all monitoring changes in compliance with the permit (SWDP). The SWDP expires in November 2025. Given that the existing EMP for the NMCDF was last updated in 2013, it is likely that the DEQ will require an updated EMP upon renewal of the permit. SCS has included this task as specified in the RFP.

It is uncertain at this time what the renewed SWDP may require in terms of updating the EMP. If there are no major changes to the monitoring program, SCS anticipates that only minor revisions



# EXHIBIT H

would be required by the DEQ to reflect any monitoring program modifications. This task therefore assumes that the updated EMP will retain the basic structure, format, and content of the existing EMP, and limited coordination if any with the DEQ will be required. A draft copy of the EMP will be submitted to the County for internal review and comment. After incorporating the County's review comments, four final copies and an electronic copy will be submitted to the County. Given that limited revisions are anticipated, this task assumes that DEQ comments of the updated EMP will be minor and funds are not included in the proposed project budget for responding to DEQ comments.

There may be opportunities to optimize the environmental monitoring program (and ultimately reduce costs) for NMCDF, the details of which could be proposed or presented in the updated EMP. The level of effort to incorporate these types of modifications to the EMP cannot be estimated at this time. SCS would therefore request additional funds from the County if it elects to explore these potential opportunities that would require more substantive changes to the EMP.

## **Subtask 1.6 – Project Management and Meetings**

This task involves coordinating and managing project activities and performing project administrative services. Tasks include scheduling and overseeing monitoring, non-routine client or regulatory correspondence, maintaining communications with the County, DEQ, and ALS, preparing and reviewing invoices, and reviewing laboratory invoices. This task also includes funds for providing technical assistance and recommendations to the County as needed to address monitoring or reporting issues that may arise.

## **Task 2 – Browns Island Landfill**

The BIL operated as an MSW landfill for the city of Salem and the surrounding Marion County area from April 1967 to September 1986. The last phase of expansion of the landfill, from 1979 and 1986, was to the west onto property now owned by the County. DEQ granted final closure of the MSW landfill in September 1987 and the associated environmental monitoring and reporting is regulated under DEQ Closure Permit 255, which expires on September 30, 2025. An unfilled area, which remained after the MSW landfill stopped operating, is currently being filled with C&D debris under SWDP 399. This permit regulates only the C&D portion of the landfill and does not require environmental monitoring. A compost facility was constructed and permitted at the site in September 1999. No environmental monitoring is specified or required by the compost facility permit.

There are known groundwater quality impacts at BIL, occurring primarily at wells located downgradient of landfill areas. The most recent annual environmental monitoring report indicates stable or decreasing trends in the downgradient monitoring wells.

Only groundwater is required to be monitored pursuant to BIL's closure permit.

### **Subtasks 2.1 – Spring and Fall Field Sampling Events**

- Conduct semi-annual sampling beginning with the second event in 2022. Based on past events, this will occur in August or September 2022. First monitoring events each year will likely occur in February or March.
- Provide written notification to the DEQ and the County at least 10 days before starting each monitoring event.

# EXHIBIT H

- Coordinate sample bottle order and other logistics with ALS at least two weeks prior to the monitoring event.
- Measure groundwater levels in all monitoring wells and piezometers at BIL, and at three surface water measurement points within the nearby slough and the Willamette River.
- Collect groundwater samples at the locations and frequencies specified in the EMP (Table 3 of the EMP) and detailed in the attached Table 2. The monitoring wells contain dedicated bladder pumps and the wells are sampled using low-flow purge methods. The on-site water supply well (MW-5) is purged and sampled at the spigot. Field procedures will consist of the following: (1) monitoring water quality field parameters during purging; (2) documenting data on field data sampling sheets; (3) calibrating field meters daily and as needed during the course of sampling each day; (4) sampling wells using the dedicated pumps while wearing new, clean, disposable nitrile gloves; (5) properly decontaminating non-dedicated equipment (e.g. water level probe) prior to use in each well; and (6) collecting samples in laboratory-supplied containers, and proper storage and transfer of samples following chain-of-custody procedures.
- Collect quality assurance/quality control (QA/QC) samples consisting of field duplicate samples (1 per day of sampling) and trip blanks (1 per cooler if VOC containers are collected), consistent with the EMP. Equipment blanks are not planned to be collected since all of the groundwater monitoring wells are equipped with dedicated bladder pumps.
- Submit the groundwater samples to ALS for analysis. SCS will coordinate with ALS to ensure testing is performed in accordance with the requirements of the EMP and closure permit.

Costs for verification resampling are not included in this proposal but will be addressed as needed through separate task orders, as previously described above for the NMCDF in Subtask 1.1.

## **Subtask 2.2 – Data Management, Review, and Regulatory Evaluation**

This task will be performed as previously described in more detail above under Subtask 1.2. QA/QC review and regulatory evaluation of the BIL analytical data will be performed in accordance with Sections 3.4 and 3.5 of the EMP. An email summary (exceedance report) would be sent to the County presenting results of the data review and regulatory evaluation, including recommendations for resampling if warranted, within 30 days of receiving laboratory results

## **Subtask 2.3 – DEQ Split Sampling and Reporting**

This task will be performed as previously described in detail above under Subtask 1.3.

## **Subtask 2.4 – Annual Water Quality Monitoring Report**

Prepare an annual water quality monitoring report (AWQMR) for submittal to the DEQ by March 15 of each year. The AWQMR will include, at a minimum, those elements described in Section 3.6 of the EMP and Section 12.4 of the closure permit, including a statement of compliance. Draft and final copies of the report will be provided to the County as previously described above under Section 2.4.

# EXHIBIT H

## Subtask 2.5 – Environmental Monitoring Plan Update

The existing EMP is dated March 18, 2013, and SCS understands that an updated EMP may need to be submitted to the DEQ upon renewal of the closure permit in 2025. As described above for the NMCDF, SCS assumes that a minimal amount of effort will be required to update this document if there are no major changes onsite or with the monitoring program, as part of the permit renewal.

If the County would like to explore opportunities to further reduce the environmental monitoring program (and ultimately costs) for BIL, the details of which could be proposed or presented in the updated EMP. The level of effort to incorporate these types of modifications to the EMP cannot be estimated at this time. SCS would therefore request additional funds from the County if it elects to explore these potential opportunities that would require more substantive changes to the EMP.

## Subtask 2.6 – Project Management and Meetings

This would include similar tasks to those described above in detail under Subtask 1.6.

## ASSUMPTIONS

SCS considered the following assumptions, if not otherwise mentioned above, for developing the estimated prices for the NMCDF and BIL monitoring projects.

- A daily vehicle usage rate of \$120/day will be used. The County will maintain vehicular access to the monitoring locations.
- A bladder pump controller and air compressor owned by the County will be provided to SCS to facilitate groundwater sampling at both sites. The County will be responsible for maintenance of this equipment.
- Disposable and consumable items (such as 0.45-micron filters, gloves, ice, tubing) and monitoring equipment (such as a multi-parameter water quality meter and flow through cell) necessary for environmental sampling are included in the project budget.
- Well purge water will be disposed on the ground away from each well. Our estimated costs do not include management and disposal of purge water.
- Two DEQ split sampling events will be performed for each site during the 5-year contract period. DEQ split sampling events will not result in any additional wells sampled or parameters tested beyond what is required as part of the routine monitoring programs.

## 6.0 COSTS AND COST CONTROL

A detailed cost estimate is provided in attachment 4 (Table 4-1) and is divided into tasks 1 and 2 as shown in Section 5 above, along with all the subtasks. We used our eight years of experience to determine the amount of time required to do each of the tasks. The labor hours and expenses are based on being familiar with both sites and their requirements and peculiarities. The costs are calculated for the 5-year duration of the contract, using current rates and fees for all five years. As stated in Addendum 1 to the RFP, a yearly escalation rate will be negotiated after awarding the contract.

# EXHIBIT H

For future consideration, the laboratory costs for the NMCDF are high relative to similar landfills in Oregon. Based on our limited evaluation, there may be opportunities to reduce the groundwater monitoring program (and both labor and laboratory costs) for NMCDF, particularly with respect to reducing the comprehensive biennial list of NMCDF permit parameters or the overall number of detection wells required to be sampled. Additional opportunities include evaluating the feasibility of establishing statistically-derived permit-specific concentration levels (PSCLs) or site-specific levels (SSLs) for select wells and parameters to better assess potential changes in groundwater quality. These costs could be reduced if the updated EMP included the necessary analysis and request for reduced list of analytes.

The project manager will be the person to institute cost controls for the project through a monthly review of all charges and expenses. Costs will be tracked by tasks as outlined in this proposal and a summary table will be included with each monthly invoice. The summary table will include the current charges, amount of the budget that has been spent per task to date, how much of the task has been completed and how much of the budget remains for each task. In addition, each invoice will be accompanied with a summary of the tasks that were completed and covered by the charges for that month. The project director will check in at least twice a year to review the budgets with the project manager.

The project manager will discuss with the County any extra tasks that are required, such as resampling, that are outside the scope of work outlined here. A cost estimate will be provided so that extra funds can be allocated and approved before any work is begun. The County can request SCS assistance on additional tasks or projects as needed. A scope of work will be outlined, a cost estimate provided by the project manager and written approval received from the County before proceeding. The fee schedule provided in Attachment 4 will be used when estimating costs. All extra work will be included on the monthly invoices and described in the summary table and list of tasks.

Total cost for the 5 years of work with the SCS rate schedule provided for the first year and pricing provided by ALS Laboratory for the chemical analysis is **\$576,418**. Detailed costs, hours and personnel are shown in Table 4-1 in Attachment 4.

## 7.0 EXCEPTIONS TO THE CONTRACT

There was one section where the language would need to be adjusted in the contract. SCS is a professional services consulting firm. Professional liability insurance provisions require that the insured's indemnity be related to a breach of the professional standard of care for its performance. SCS requests that Section 12 of the final contract incorporate this requirement in order to ensure that the underwriter will not reject coverage.

# EXHIBIT H

Attachment 1  
Signed Marion County Proposal Form  
and Trade Secret Form

# EXHIBIT H

## Attachment 1. Proposal Form

OFFEROR NAME: SCS Engineers

ADDRESS: 15940 SW 72nd Avenue, Portland, Oregon 97224\_

TELEPHONE NUMBER: 503-639-9201 EMAIL: \_BLary@scsengineers.com WEB SITE: www.scsengineers.com

TAXPAYER ID NUMBER: \_54-0913440\_\_ DATE/STATE OF INCORPORATION: \_February 18, 1972, Virginia\_\_\_\_

BUSINESS DESIGNATION:  Corporation  Sole Proprietor  Partnership  
 S Corporation  Non-Profit  Government  
 Other: \_\_\_\_\_

CERTIFICATION/LICENSE NUMBER: \_\_Business license #: 012645

The undersigned further acknowledges, attests and certifies individually and on behalf of the Proposer that:

1. That this proposal is, in all respects, fair and without fraud; that it is made without collusion with any official of the county; and that the proposal is made without any collusion with any person making another proposal on this Contract.
2. Information and prices included in this proposal shall remain valid for ninety (90) days after the proposal due date or until a Contract is approved, whichever comes first.
3. The Proposer acknowledges receipt of all Addenda issued under the RFP.
4. The Proposer certifies that it does not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, handicap, financial ability, age or other non-job-related factors as per ORS 659 and USC 42 2000e.
5. The Proposer, acting through its authorized representative, has read and understands all RFP instructions, specifications, and terms and conditions contained within the RFP and all Addenda, if any;
6. The Proposer agrees to and shall comply with, all requirements, specifications and terms and conditions contained within the RFP, including all Addenda, if any;
7. The proposal submitted is in response to the specific language contained in the RFP, and Proposer has made no assumptions based upon either (a) verbal or written statements not contained in the RFP, or (b) any previously-issued RFP, if any.
8. The Proposer agrees that if awarded the Contract, Proposer shall be authorized to do business in the State of Oregon at the time of the award;
9. The signatory of this Proposal Form is a duly authorized representative of the Proposer, has been authorized by Proposer to make all representations, attestations, and certifications contained in this proposal document and all Addenda, if any, issued, and to execute this proposal document on behalf of Proposer.
10. By signature below, the undersigned Authorized Representative hereby certifies on behalf of Proposer that all contents of this Proposal Form and the submitted proposal are truthful, complete and accurate. Failure to provide information required by the RFP may ultimately result in rejection of the proposal.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS** - The Offeror certifies to the best of its knowledge and belief that neither it nor any of its principals:

1. Are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from submitting bids or proposals by any federal, state or local entity, department or agency;

# EXHIBIT H

2. Have within a five-year period preceding the date of this certification been convicted of fraud or any other criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) contract, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are presently indicted for or otherwise criminally charged with commission of any of the offenses enumerated in item number 2 of this certification;
4. Have, within a five-year period preceding the date of this certification had a judgment entered against contractor or its principals arising out of the performance of a public or private contract;
5. Have pending in any state or federal court any litigation in which there is a claim against contractor or any of its principals arising out of the performance of a public or private contract; and
6. Have within a five-year period preceding the date of this certification had one or more public contracts (federal, state, or local) terminated for any reason related to contract performance.

**Where Offeror is unable to certify to any of the statements in this certification, Offeror shall attach an explanation to their offer. The inability to certify to all of the statements may not necessarily preclude Offeror from award of a contract under this procurement.**

IF THE PROPOSAL IS MADE BY A JOINT VENTURE, IT SHALL BE EXECUTED BY EACH PARTICIPANT OF THE JOINT VENTURE.

THIS OFFER SHALL BE SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE PROPOSER; ANY ALTERATIONS OR ERASURES TO THE OFFER SHALL BE INITIALED IN INK BY THE UNDERSIGNED AUTHORIZED REPRESENTATIVE.

SIGNATURE OF PROPOSER'S DULY AUTHORIZED REPRESENTATIVE FOR ALL SECTIONS:

Authorized Signature: \_\_\_\_\_

 12/13/2021 Print

Name: Gregory D. Helland, RG

Title: Vice President, NW Business Unit Director

Contact Person (Type or Print): Barbara E. Lary

Telephone Number: (971) 284-1297\_\_

Email: BLary@scsengineers.com

**The Offeror will notify the County representative on the cover page of this RFP within 30 days of any change in the information provided on this form.**

December 14, 2021  
File No. 040180221

MEMORANDUM

TO: Contracts, Marion County, Oregon

FROM: Gregory D. Helland, RG, NW Business Unit Director;  
Barbara E. Lary, RG, Project Manager

SUBJECT: Regarding Litigation and Claims against SCS Engineers

In any given time period, SCS Engineers typically has ongoing legal matters involving workers compensation, automobile accidents, client bankruptcies, small collection actions, insurance claims and reimbursements, and other minor matters. None of these matters is considered material to the company nor to the Marion County Environmental Monitoring and Reporting contract.






# EXHIBIT H

## Attachment 2: Trade Secret Form

1. I am an authorized representative of the Proposer, I have knowledge of the Request for Proposals referenced herein, and I have full authority from the Proposer to submit this Trade Secret Form and accept the responsibilities stated herein.
2. I am aware that the Proposer has submitted a Proposal, dated on or about December 14, 2021 (the "Proposal"), to Marion County in response to Request for Proposals PW1027-21 RFP for Environmental Monitoring and Reporting and I am familiar with the contents of the RFP and Proposal.
3. I have read and am familiar with the provisions of Oregon's Public Records Law, Oregon Revised Statutes ("ORS") 192.311 through 192.431, and the Uniform Trade Secrets Act as adopted by the State of Oregon, which is set forth in ORS 646.461 through ORS 646.475. I understand that the Proposal is a public record held by a public body and is subject to disclosure under the Oregon Public Records Law unless specifically exempt from disclosure under that law.
4. I have reviewed the information contained in the Proposal. The Proposer believes the information listed in Exhibit 2 is exempt from public disclosure (collectively, the "Exempt Information"), which is incorporated herein by this reference. It is my opinion that the Exempt Information constitutes "Trade Secrets" under either the Oregon Public Records Law or the Uniform Trade Secrets Act as adopted in Oregon because that information is either:
  - A. A formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information that:
    - i. is not patented,
    - ii. is known only to certain individuals within the Proposer's organization and that is used in a business the Proposer conducts,
    - iii. has actual or potential commercial value, and
    - iv. gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.
  - or
  - B. Information, including a drawing, cost data, customer list, formula, pattern, compilation, program, device, method, technique or process that:
    - i. Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
    - ii. Is the subject of efforts by the Proposer that are reasonable under the circumstances to maintain its secrecy.
5. I understand that disclosure of the information referenced in Exhibit 2 may depend on official or judicial determinations made in accordance with the Public Records Law.

  
Authorized Representative Signature

Proposer identifies the following information as exempt from public disclosure:

# EXHIBIT H

## Attachment 2 Resumes of Project Team Members

BARBARA LARY, R.G., L.G.

## Education

MS – Engineering Geology, Purdue University, 1993  
MSEd- Science Education, Purdue University, 1987  
BS – Geology, Indiana University, 1984



## Professional Licenses

Registered Geologist – Oregon  
Licensed Geologist - Washington

## Specialty Certifications

HAZWOPER 40-Hour

## Professional Affiliations

National Ground Water Association

## Professional Experience

Ms. Barbara Lary is a senior geologist and project manager with over 25 years of experience in environmental site assessments, site investigations, site remediation and environmental monitoring. Ms Lary's experience in the field has resulted in a broad base of knowledge in sampling various environmental media including soil, groundwater, surface water, sediments, soil gas, indoor and outdoor air, and various solid and liquid waste products. Her experience has included Phase I and Phase II environmental site assessments on properties used for agriculture, single and multi-family residences, dry cleaners, fuel stations, chemical production, large manufacturing, metal coating facilities, transportation, mining, landfills, and lumber mills for both private and municipal clients.

As a project manager, Ms. Lary has experience from start to finish with projects, including creating a scope of work and associated cost estimate, obtaining necessary permits for drilling, coordinating subcontractors and field crews, and communicating with regulators and clients regarding ongoing work and sampling results. Her experience has included developing field sampling plans, project quality assurance plans, health and safety plans, project work plans, data review and management, regulatory review and preparation of technical reports. She has also managed site remediation projects and the decommissioning of remediation systems, underground storage tanks and monitoring wells. She has conducted large drilling programs, managed surface water sampling and conducted stream surveys.

Chemical contamination encountered in both soil and groundwater has included petroleum, heavy metals, dioxins/furans, pesticides, herbicides, PCBs, and solvents. Notable projects that Ms. Lary has been involved in are described below.

## Landfills

**County Landfill Monitoring and Reporting, Southwest Oregon.** Project manager for groundwater monitoring program at three county-owned landfills, including a municipal waste incinerator and landfill, a construction waste landfill and a closed landfill. Ms. Lary managed the semi-annual groundwater monitoring, annual evaluation of incinerator ashes, and annual reporting for the three landfills, coordinating with the county and DEQ.

**Abandoned Landfill at a Former Military Training Facility, SW Washington.** Project manager for groundwater monitoring program at a former military base used for ordinance training. Site issues included unexploded ordinance clearance and environmental impacts from improper disposal of chemicals in a landfill. Created a site database for groundwater monitoring data and converted all wells to dedicated pumps to save on the long-term groundwater monitoring costs.

## Site Investigation and Remediation

**Former Pharmaceuticals Manufacturing Facility, Portland, Oregon.** Field manager for large site involved in volatile organic compounds impacting groundwater, resulting from illegal dumping of liquid wastes into an abandoned drywell. Following an extensive investigation, the interim remedial action selected was electrical resistive heating, with over 50 electrodes installed in the ground. Ms. Lary's duties included conducting additional site characterization following treatment, replacement of monitoring well network (due to destruction during heating), submitting an Interim Remedial Action Measure Report and managing closure groundwater monitoring. The site received a no further action finding from DEQ in October 2005.

**Electric Heater Manufacturer, Vancouver, Washington.** Field manager for large manufacturing site with chlorinated solvent impacts to groundwater, both onsite and offsite into a residential neighborhood. Field efforts included installation of monitoring well network throughout the neighborhood, including several multiport wells for groundwater sampling at five depths through one well; installation of recirculating wells used to apply potassium permanganate treatment to ground water; and conducting soil gas and indoor air sampling to screen for possible human health impacts. Indoor air results required subsequent installation of residential soil vapor treatment systems on select properties.

**RI/FS, Former Insecticide and Herbicide Manufacturing Facility, Portland, Oregon.** Field geologist with specific responsibilities including development of work plans, drilling specifications, and field sampling plans. Contaminates of concern included insecticides, herbicides, dioxins/furans, phenols, volatile organic compounds and metals. Ms. Lary oversaw extensive drilling programs both onsite and offsite, which included supervising sonic drilling crews, logging subsurface materials, soil sampling, and groundwater sampling. Her responsibilities included onsite health and safety training, coordinating contractors and managing investigative derived waste.

**Operating Dry Cleaner, Hubbard, Oregon.** Ms. Lary managed this project under a DEQ services contract, funded by the state dry cleaners' program. Ms. Lary reviewed site environmental history, including environmental activities conducted by others, and wrote a work plan designed to provide the needed information for site closure. Following work plan approval, Ms. Lary conducted the additional soil and ground water sampling, reviewed current and historical data and conducted a health risk screening, documented final conditions at the site and obtained a "no further action" finding for the site.

## TIFFANY M. ANDREWS

**Education**

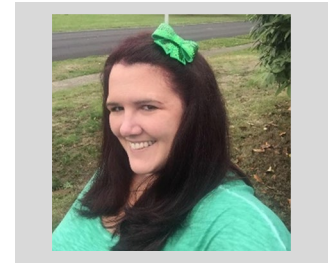
BS, Biology, Northland College, 2002

**Professional Affiliations**

Solid Waste Association of North America – Beaver Chapter

**Professional Experience**

Ms. Andrews, a Project Scientist with SCS Engineers, has twelve years of experience focused on environmental consulting services for solid waste facilities throughout the Northwest (Oregon, Washington, and Alaska). Her project experience includes coordinating, performing and managing compliance monitoring services; preparing cost estimates for environmental monitoring proposals; compiling, reviewing and interpreting monitoring data; and preparing and writing reports for several closed and active municipal solid waste (MSW) and construction and demolition debris (C&D) landfills. She also assists in managing and maintaining the historical analytical database for several solid waste landfills using the computer software program DUMPStat (Downgradient Upgradient Monitoring Program Statistics). DUMPStat is used to perform statistical analysis on the historical analytical database. Additionally, she currently assists with projects involving wastewater and storm water monitoring and reporting for several National Pollutant Discharge Elimination System (NPDES) permitted facilities in the Northwest. Ms. Andrews' previous experience includes two years working on petroleum impacted sites.



*Andrews, Tiffany*

**Solid Waste Landfill Projects at SCS**

**Landfill Environmental Monitoring Projects:** Lechner Landfill (Vancouver, Washington); Brown's Island Landfill (Salem, Oregon); North Marion County Disposal Facility (Woodburn, Oregon); Capitol Disposal Landfill (Juneau, Alaska); Chemical Waste Management of the Northwest (Arlington, OR); Columbia Ridge Landfill and Recycling Center (Arlington, OR); Graham Road Recycling and Disposal Facility (Medical Lake, WA); Greater Wenatchee Regional Landfill (East Wenatchee, WA); Hillsboro Landfill (Hillsboro, OR); Riverbend Landfill (McMinnville, OR); Finley Buttes Regional Landfill (Boardman, OR); and Wasco County Landfill (The Dalles, OR).

- Since 2009, coordinated and performed the site's Oregon Department of Environmental Quality (DEQ) and Washington Department of Ecology (Ecology)-mandated multi-media environmental monitoring, data evaluation, and reporting programs, consistent with requirements specified in the sites' solid waste disposal permits and EMPs. Environmental monitoring activities include measuring water levels in site monitoring wells and collecting samples of groundwater, surface water, liquid (from the leachate control and recovery system [LCRS] and leachate secondary containment system [LSCS]), and PFAS sampling of both groundwater and LCRS. Data management and evaluation activities include (1) tracking the laboratory analysis and reporting process, (2) performing quality assurance/control review of laboratory results, (3) resolving data quality issues with the laboratory, and (4) performing regulatory review of groundwater analytical results. Preparation of monitoring reports presenting and evaluating the results of groundwater (including hydrogeologic data), surface water, liquid (from the LCRS and LSCS systems), and LFG monitoring.

**Closed Lechner Landfill, Clark County, Washington.** Coordinated and performed oversight of groundwater monitoring, data evaluation, and reporting program. Coordinated and assisted in preparation of quarterly and annual monitoring reports.

**Marion County Department of Public Works, Environmental Monitoring and Reporting, North Marion County Disposal Facility, Woodburn, OR, and Browns Island Landfill, Salem, OR.** Field Manager for 5-year contract to provide environmental monitoring and report services. Monitoring events are consistent with the sites' Environmental Monitoring Plans (EMPs) and include groundwater elevation surveys, landfill gas monitoring, groundwater and leachate sampling, and laboratory data management and review. Project Manager for coordination and implementation of monitoring well network modifications to evaluate groundwater intrusion into leachate secondary leak detection system.

**Waste Connections, Inc., Environmental Monitoring and Reporting, Wasco County Landfill, The Dalles, OR.** Project specialist with primary or support responsibility for data management, interpretation, and report preparation for the performance of semiannual environmental monitoring at the Wasco County Landfill in The Dalles, OR. Monitoring events are consistent with the site's Environmental Monitoring Plan (EMP) and include groundwater elevation surveys, landfill gas monitoring, groundwater and leachate sampling, and laboratory data management and review.

**Waste Connections, Inc., Environmental Monitoring and Reporting, Finley Buttes Regional Landfill, Boardman, OR.** Project specialist with primary or support responsibility for data management, interpretation, and report preparation for the performance of semiannual environmental monitoring at the Finley Buttes Landfill in Boardman, OR. Monitoring events are consistent with the site's Environmental Monitoring Plan (EMP) and include groundwater elevation surveys, landfill gas monitoring, groundwater and leachate sampling, and laboratory data management and review.

#### Project Experience Prior to Joining SCS in October 2009

**Groundwater Sampling and Field Management:** Large portfolio of petroleum sites in Oregon and Washington. Responsibilities included (1) organizing, scheduling, performing, and managing fieldwork for groundwater monitoring activities, (2) conducted monthly observations and maintenances of air sparging remediation system, (3) assisting with the installation, removal, and repair of remediation systems, (4) scoping and managing subcontractors, and (5) managing and upholding health and safety procedures and standards.



IAN MICHAEL HULTQUIST

## Education

BS – Environmental Science; Water Science and Resources, Oregon State University, 2017

## Specialty Certifications

OSHA 40 Hour HAZWOPER Training

## Professional Experience

Mr. Hultquist has four years of experience in the environmental field as an environmental sampling technician and environmental scientist on many different projects including EPA superfund sites, military bases, Phase II Environmental Site Assessments, petroleum impacted sites, fuel storage facilities, chemical manufacturing facilities, aggregate facilities, hazardous waste facilities, and active and closed landfills. His project experience includes multi-media (groundwater, leachate, stormwater, LFG, and soil) sampling using a variety of methods, procedures, and equipment, including extensive experience with low-flow purge and standard purge sampling methods. He routinely coordinates and performs multi-media environmental monitoring at WM, WCI, and municipal landfill projects out of SCS's Portland Office.

## Solid Waste Landfill Projects at SCS

**Landfill Environmental Monitoring Projects:** Landfill Environmental Monitoring Projects: Graham Road Recycling and Disposal Facility (Medical Lake, WA); Greater Wenatchee Regional Landfill (East Wenatchee, WA); Riverbend Landfill (McMinnville, OR); Hillsboro Landfill (Hillsboro, OR); Capitol Disposal Landfill (Juneau, Alaska); Chemical Waste Management of the Northwest (Arlington, OR); Columbia Ridge Commercial Landfill & Recycling (Arlington, OR); Wasco County Landfill (The Dalles, OR); Finley Buttes Regional landfill (Boardman, OR); North Marion County Disposal Facility (Woodburn, OR); Brown's Island Demolition Landfill (Salem, OR); and Leichner Brother's Landfill (Vancouver, WA).

- Coordinates and performs multi-media (groundwater, leachate, leakage detection liquids, and landfill gas) environmental monitoring consistent with Oregon Department of Environmental Quality (DEQ) and Washington Department of Ecology (Ecology) requirements and in accordance with the sites-specific solid waste disposal permits and environmental monitoring plans (EMPs). Environmental monitoring activities include measuring water levels in site monitoring wells, collecting samples of ground water, surface water, and liquid (from the leachate collection and leak detection systems) samples, performing Surface Emission Monitoring, and landfill gas surveys. Also assists with data management, including performing quality assurance/control review of laboratory results and resolving data quality issues with the laboratory.

## Work History

- 2020-Present. Staff Professional, SCS Engineers, Portland, Oregon
- 2017-2020. Environmental Sampling Technician, Confluence Environmental, Inc. Sacramento, California

KARA KINGEN

## Education

BS – Geology, Portland State University, 2018

MS – Geology, Portland State University, 2021

## Specialty Certifications

OSHA 40 Hour HAZWOPER Training

Oregon Geologist in Training (GIT)

## Professional Experience

Ms. Kingen has worked in a wide range of geologic industries, ranging from engineering geology to environmental geology. She routinely performs multi-media (groundwater, leachate, stormwater, and LFG) environmental monitoring at many of the WM, WCI, and municipal landfill projects managed out of SCS's Portland office. Her previous project experience includes database design and implementation using MS Access, R, and ArcGIS products.

## Solid Waste Landfill Projects at SCS

**Landfill Environmental Monitoring Projects:** Landfill Environmental Monitoring Projects: Graham Road Recycling and Disposal Facility (Medical Lake, WA); Greater Wenatchee Regional Landfill (East Wenatchee, WA); Riverbend Landfill (McMinnville, OR); Hillsboro Landfill (Hillsboro, OR); Capitol Disposal Landfill (Juneau, Alaska); Chemical Waste Management of the Northwest (Arlington, OR); Columbia Ridge Commercial Landfill & Recycling (Arlington, OR); Wasco County Landfill (The Dalles, OR); Finley Buttes Regional landfill (Boardman, OR); North Marion County Disposal Facility (Woodburn, OR); Brown's Island Demolition Landfill (Salem, OR); and Leichner Brother's Landfill (Vancouver, WA).

- Performs multi-media (groundwater, leachate, leakage detection liquids, and landfill gas) environmental monitoring consistent with Oregon Department of Environmental Quality (DEQ) and Washington Department of Ecology (Ecology) requirements and in accordance with the sites-specific solid waste disposal permits and environmental monitoring plans (EMPs). Environmental monitoring activities include measuring water levels in site monitoring wells, collecting samples of ground water, surface water, and liquid (from the leachate collection and leak detection systems) samples, performing Surface Emission Monitoring, and landfill gas surveys. Also assists with data management, including performing quality assurance/control review of laboratory results and resolving data quality issues with the laboratory.

## Work History

- 2021-Present. Associate Staff Geologist, SCS Engineers, Portland, Oregon
- 2020-2021. Geologist, City of Portland Bureau of Development Services, Portland, Oregon
- 2019-2019. Engineering Geologist, Washington Department of Transportation, Tumwater, Washington



GREGORY D. HELLAND, LHG, RG

### Education

BA – Geology, Distributive Sciences, Gustavus Adolphus College, 1983

MS Courses – Hydrogeology and Contaminant Hydrogeology, California State University at Los Angeles, 1988

### Professional Licenses

Licensed Geologist/Hydrogeologist - Washington

Registered Geologist –Oregon

### Specialty Certifications

Department of Ecology UST Site Assessment and Decommissioner's Supervisor Licenses, 1992

### Professional Affiliations

National Ground Water Association

Northwest Geological Society

### Professional Experience

As an SCS Vice President and the Northwest Region Business Unit Director, Mr. Helland has overall responsibility for the administration, execution and management of all SCS solid waste and environmental services projects in the Northwest. Mr. Helland originally joined SCS in 1986. He has served as the Business Unit Director for SCS's Northwest operations since 2008.

Mr. Helland has management and project experience related to environmental monitoring, operations and maintenance (O&M), hazardous waste characterization, remediation and construction management, permitting, and risk assessment. His project experience has included active and closed MSW landfills in the Pacific Northwest, Alaska and British Columbia.

#### Landfill Investigation and Compliance

**Island County, WA, Coupeville Landfill.** Project Director for comprehensive services related to the detection of volatile organic compounds in monitoring wells at the Coupeville Landfill. SCS's work has involved upgrading the existing monitoring network, implementing quarterly groundwater and landfill gas sampling, and hydrogeologic characterization and engineering evaluation aimed at assessing the extent, source, and significance of the detected contaminants.

**Waste Management, Olympic View Sanitary Landfill (OVSL).** Project Director for ongoing environmental monitoring at the closed Olympic View Sanitary Landfill (OVSL) in Port Orchard, WA. Tasks involve monitoring and reporting for groundwater, landfill gas, leachate, and stormwater, including updating the sampling and analysis plan (SAP). Previous work involved completing an expanded Remedial Investigation (RI), repair and upgrade of the groundwater monitoring network, and expansion of the landfill gas extraction and monitoring system.



*Helland,  
Gregory*

**Metro Vancouver, Appeal Hearing Support, British Columbia Landfill.** Project Director for technical support related to an appeal hearing contesting the installation of a groundwater pump and treat system at a British Columbia landfill. The project work included review of numerous technical documents, evaluating operational practices, reviewing monitoring data, and preparing technical reports arguing against the cited basis for the pump and treat system.

**Pierce County Recycling, Composting, and Disposal (PCRCD dba LRI), LRI Landfill, Graham Washington.** Project Director for comprehensive engineering and environmental services for the LRI Landfill. Since 2010, project assignments include: LFG Services (LFG control system evaluation, design, CQA, field monitoring, and reporting); Air Compliance and Greenhouse Gas (GHG) Reporting Services (NSPS and Startup, Shutdown, and Malfunction (SSM) Plan reports, GHG Monitoring Plan and GHG emission reports); Environmental Monitoring and Reporting (monitoring of leachate, groundwater, and a leak detection system, and review of weekly and quarterly surface water monitoring); Landfill Cell Expansion Design and CQA (design drawings and project manuals to complete cell expansion projects, CQA services, engineer-of record, and Documentation Report); and, Landfill Cell Closure Engineering (design drawings and a project manual, CQA during construction, engineer-of record, and Documentation Report).

**Clark County, WA, Leichner Landfill.** Project Director for comprehensive Operation, Maintenance and Monitoring (OM&M) services for the closed Leichner Landfill. Project activities include routine compliance monitoring of groundwater, stormwater and LFG, O&M of the LFG collection and destruction system, construction work to assist with stormwater management, regular participation in the County-led oversight committee meetings, and monthly and annual compliance reporting.

#### Brownfields

**Principal Real Estate Investors, Bridgeport Village Development.** Project Director for the oversight of a commercial retail development on an old demolition debris landfill. As part of this work SCS reviewed the site characterization and design of methane building protection systems and methane monitoring systems. SCS identified site characterization deficiencies as part of our review. Limited site characterization was the basis for the design and construction of the methane mitigation systems.

**CenterCal Properties LLC, Redevelopment Feasibility Evaluation, Rossman Landfill.** Project Director for a comprehensive data review for the closed Rossman Landfill in Oregon City, OR. The project served to evaluate environmental issues associated with the proposed redevelopment of the former municipal solid waste (MSW) landfill. The project involved review of recent monitoring reports and permit conditions. Based on the available monitoring information, and the conceptual development plans, initial cost information related to landfill gas collection and building protection was developed.

#### Solid Waste Engineering

**Southern Idaho Solid Waste, Milner Butter Landfill, Burley, ID.** Project Director for the engineering activities performed for Southern Idaho Solid Waste (SISW). SCS provides design engineering and construction services related to cell expansion and closure tasks at the Milner Butte Landfill. Since 1991, SCS has performed 19 individual tasks within the SISW footprint and at the Milner Butte Landfill. SCS has recently prepared construction drawings and specifications for the approved alternate cover system for Cells 1, 2, and 3. SCS also prepared drawings and specifications for the construction of the Cells 4 and 5 liner system and managed the construction quality assurance (CQA). Design-build of the GCCS was performed by SCS Engineers and SCS Field Services.

SHANE LATIMER, PhD, CSE

### Education

Postdoctoral Fellow, Environmental Toxicology,  
Tulane University, 1994–1995

PhD, Ecology, Tulane University, 1994

BS, Biology (Botany), Southern Oregon State College, 1989



### Specialty Certifications

Certified Senior Ecologist (CSE)  
Ecological Society of America (since 2002)  
HAZWOPER 40-Hour

### Professional Affiliations

Solid Waste Association of North America (SWANA)  
- Beaver Chapter (Local Chapter)

Ecological Society of America

### Professional Experience

Dr. Shane Latimer is an environmental planner, ecologist, and toxicologist with over 30 years of experience in environmental assessment, planning, permitting, and implementation. His specialty is developing projects that challenge the interface between the built and natural environment, such as solid waste facilities, oil and gas infrastructure, mines, sewage treatment facilities, and similar developments. These projects often require careful assessments of alternatives, impacts, and opportunities to successfully navigate the applicable public regulatory processes (e.g., NEPA, local land use, etc.) and ensure environmental integrity. Dr. Latimer has a thorough understanding of engineering concepts and practices and is adept at working collaboratively with engineers and other professionals to ensure an optimum balance between environmental and engineering constraints.

Dr. Latimer's work during the last 25 years has mainly been focused on planning, permitting, and environmental compliance for solid waste facilities in Oregon and Washington. These include five regional landfill expansions, and work on 14 active landfills, 9 closed landfills, and 32 transfer stations. As such, Dr. Latimer is familiar with most elements of solid waste facility planning, development, operation, closure, and post-closure.

Areas of expertise include site evaluation and constraints analysis; state and local land use permitting; floodplain assessment and permitting; stormwater planning and permitting; wetland and water quality assessment and permitting; wetland and riparian restoration; ecological risk assessment; compliance with the National Environmental Policy Act (NEPA), the Endangered Species Act, and other federal acts;

Other areas of management and technical expertise include cultural resources assessment (historic and pre-historic), floodplain management (floodplain permitting and FEMA Conditional/Letters of Map Revision), Environmental Site Assessment, chemical fate and transport, water rights, wildlife and wildlife hazard management (e.g., airport conflicts, nuisance wildlife, etc.), and forest management.

Dr. Latimer is an adjunct professor at Portland State University, where he develops and teaches environmental permitting and project management workshops for professionals. Dr. Latimer also regularly serves on state and local regulatory technical advisory committees.

## SELECT PROJECT EXPERIENCE

The following is a short list of projects selected from a larger catalog to show variety and depth of work across the solid waste practice area. Additional project descriptions can be provided, on request.

### Environmental Planning and Compliance - Solid Waste

Dr. Latimer has managed successful projects for over 50 solid waste facilities in the Pacific Northwest and California, as well as several in other states and abroad. Projects mainly involve facility planning, permitting, and compliance; some have included site aesthetics (e.g., landscape design), LEED Certification, and Wildlife Habitat Certification.

**Valley Landfills, Inc. (Republic Services), Coffin Butte Landfill Wetlands Projects, Corvallis, Oregon.** Project Manager. Provided assistance with environmental and land use permitting. We prepared a comprehensive wetland delineation for all landfill properties and provided permitting and compensatory mitigation for 16 acres of wetland fill and removal. Mitigation design included restoring former wetlands and enhancing highly degraded wetlands to a wet prairie/ash forest community. Included preparation of a Biological Assessment for Nelson's checkermallow (*Sidalcea nelsoniana*), a federally *Endangered* plant species, which has led to local recovery of the species. Other consultation included management of required cultural resources studies, stormwater permitting and facility design, and assistance with landfill cell closure (soil preparation, plant species selection, planting, etc.), construction quality control, and other environmental and land use permitting. 1995-Present.

**Waste Management, Inc., Riverbend Landfill Expansion, McMinnville, Oregon.** Project Manager. Assisting Waste Management with expansion and management of their McMinnville facility. Assisted in several land use processes, most recently to obtain a comprehensive plan amendment and zone change approval to convert approximately 90 acres from Public Works Safety (PWS) to Exclusive Farm Use (EFU) to accommodate landfill expansion. Work included assistance with developing land use site design, comprehensive evaluation of regional alternative disposal sites and methods, permit application narratives, and preparation of a floodplain development plan application. Included expert testimony at multiple hearings and community meetings. Other managed work products included updated wetland delineation reporting, ESA compliance, cultural resource survey and assessment, and assistance with landfill and related engineering planning and designs. Additional ongoing work includes assistance with soil management, stormwater management, hydrogeofluvial assessments, floodplain management (including management of a FEMA-approved Conditional Letter of Map Revision [CLOMR] and subsequent LOMR), and designs for more than 40 acres of wetland and riparian restoration. Preparation of environmental and landfill permit applications included significant NEPA compliance components, including cultural resources, landfill gas-to-energy plant development, etc.). 1997-Present

## Recent Publications

Latimer, S. 2018. Integrated planning and permitting enables project success. *Natural Gas & Electricity* 34/10, ©2018 Wiley Periodicals, Inc. May 2018.

# EXHIBIT H

## Attachment 3 Marion County Reference Form

# EXHIBIT H

## Attachment 3: Reference Form

Proposer must provide references that can be contacted regarding the quality of workmanship and service provided to current and past customers.

### ***Project Reference #1***

Name of Project: Wasco County Landfill and Finley Buttes Regional Landfill  
Project Location: \_The Dalles, OR and Boardman, OR, respectively\_\_\_\_\_

Project Date: \_\_\_\_\_2008 through the present\_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_Waste Connections\_\_\_\_\_

Name of Contact Person #1: Yuta Naganuma, Regional Engineer\_\_\_\_\_

Telephone Number for Contact Person #1: \_360-216-9263\_\_\_\_\_

Email Address for Contact Person #1: \_\_\_yuta.naganuma@wasteconnections.com\_\_\_\_\_

### ***Project Reference #2***

Name of Project: \_\_Closed Leichner Landfill\_\_\_\_\_

Project Location: \_\_Clark County, Washington\_\_\_\_\_

Project Date: \_\_\_\_\_2011 through the present\_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_Clark County Public Works\_\_\_\_\_

Name of Contact Person #1: \_\_\_\_\_Mike Davis\_\_\_\_\_

Telephone Number for Contact Person #1: \_\_\_\_\_360-397-6118\_\_\_\_\_

Email Address for Contact Person #1: \_\_\_\_\_mike.davis@clark.wa.gov\_\_\_\_\_

### ***Project Reference #3***

Name of Project: \_\_Roseburg Landfill\_\_\_\_\_

Project Location: \_Douglas County, Oregon\_\_\_\_\_

Project Date: \_\_\_\_\_2017 through the present\_\_\_\_\_

Firm Name for Contact Person #1: \_\_\_\_\_, Douglas County Solid Waste Department \_\_\_\_\_

Name of Contact Person #1: Gabe Forrester, Solid Waste Manager\_\_\_\_\_

Telephone Number for Contact Person #1: \_\_541-440-4485\_\_\_\_\_

Email Address for Contact Person #1: \_\_gjforres@co.douglas.or.us\_\_\_\_\_

The references will be used to confirm the selection rather than as an evaluation criterion. However, if several proposers are close in the final evaluation, references may be used to select the best evaluated proposer.

# EXHIBIT H

## Attachment 4

### Proposal Cost Table and SCS Fee Schedule

# EXHIBIT H

**Table 4-1 Breakdown of Estimated Project Costs, 2021 through 2027 Environmental Monitoring and Reporting**

			TASK 1 - NORTH MARION COUNTY DISPOSAL FACILITY														TASK 2 - BROWNS ISLAND LANDFILL												5 year TOTALS			
			Subtask 1.1		Subtask 1.2		Subtask 1.3		Subtask 1.4		Subtask 1.5		Subtask 1.6		Subtask 2.1		Subtask 2.2		Subtask 2.3		Subtask 2.4		Subtask 2.5		Subtask 2.6							
			Spring and Fall Field Sampling Events <sup>1</sup>		Data Mgmt, Review, and Reg. Eval.		DEQ Split Sampling Events and Reporting		Annual Environmental Monitoring Report		Environmental Monitoring Plan Update		Project Management		Task 1 Subtotals		Spring and Fall Field Sampling Events <sup>2</sup>		Data Mgmt, Review, and Reg. Eval.		DEQ Split Sampling Events and Reporting		Annual Water Quality Monitoring Report		Environmental Monitoring Plan Update		Project Management				Task 2 Subtotals	
NAME	CATEGORY	RATE *	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost	Hrs.	Cost				
Helland	Project Director	\$210	0	\$0	15	\$3,150	0	\$0	25	\$5,250	4	\$840	10	\$2,100	54	\$11,340	0	\$0	10	\$2,100	0	\$0	10	\$2,100	4	\$840	10	\$2,100	34	\$7,140	88	\$18,480
Lary	Project Manager	\$170	10	\$1,700	60	\$10,200	10	\$1,700	150	\$25,500	20	\$3,400	60	\$10,200	310	\$52,700	10	\$1,700	20	\$3,400	10	\$1,700	130	\$22,100	12	\$2,040	50	\$8,500	232	\$39,440	542	\$92,140
Andrews	Project Professional	\$120	25	\$3,000	20	\$2,400	10	\$1,200	50	\$6,000	0	\$0	0	\$0	105	\$12,600	20	\$2,400	10	\$1,200	10	\$1,200	25	\$3,000	0	\$0	0	\$0	65	\$7,800	170	\$20,400
Graber (DB Management)	Staff Professional	\$94	0	\$0	50	\$4,700	0	\$0	125	\$11,750	10	\$940	0	\$0	185	\$17,390	0	\$0	50	\$4,700	0	\$0	55	\$5,170	8	\$752	0	\$0	113	\$10,622	298	\$28,012
Hultquist	Staff Professional	\$92	160	\$14,720	100	\$9,200	20	\$1,840	120	\$11,040	8	\$736	0	\$0	408	\$37,536	30	\$2,760	80	\$7,360	20	\$1,840	10	\$920	4	\$368	0	\$0	144	\$13,248	552	\$50,784
Kingen	Associate Staff Professional	\$90	620	\$55,800	0	\$0	20	\$1,800	0	\$0	0	\$0	0	\$0	640	\$57,600	320	\$28,800	40	\$3,600	20	\$1,800	90	\$8,100	0	\$0	0	\$0	470	\$42,300	1110	\$99,900
CADD	Designer/Drafter	\$102	0	\$0	0	\$0	4	\$408	40	\$4,080	8	\$816	0	\$0	52	\$5,304	0	\$0	0	\$0	4	\$408	25	\$2,550	6	\$612	0	\$0	35	\$3,570	87	\$8,874
Admin	Administrative	\$78	10	\$780	0	\$0	2	\$156	30	\$2,340	4	\$312	60	\$4,680	106	\$8,268	10	\$780	5	\$390	2	\$156	10	\$780	4	\$312	50	\$3,900	81	\$6,318	187	\$14,586
<b>SCS Personnel Labor</b>			<b>825</b>	<b>\$76,000</b>	<b>245</b>	<b>\$29,650</b>	<b>66</b>	<b>\$7,104</b>	<b>540</b>	<b>\$65,960</b>	<b>54</b>	<b>\$7,044</b>	<b>130</b>	<b>\$16,980</b>	<b>1,860</b>	<b>\$202,738</b>	<b>390</b>	<b>\$36,440</b>	<b>215</b>	<b>\$22,750</b>	<b>66</b>	<b>\$7,104</b>	<b>355</b>	<b>\$44,720</b>	<b>38</b>	<b>\$4,924</b>	<b>110</b>	<b>\$14,500</b>	<b>1,174</b>	<b>\$130,438</b>	<b>3,034</b>	<b>\$333,176</b>
Travel, Equipment, Shipping			\$15,775		\$0		\$910		\$375		\$75		\$125		\$17,260		\$12,350		\$0		\$435		\$375		\$75		\$125		\$13,360		\$30,620	
Laboratory Costs <sup>3</sup>			\$171,158		\$0		\$0		\$0		\$0		\$0		\$171,158		\$34,800		\$0		\$0		\$0		\$0		\$0		\$34,800		\$205,958	
Other Expenses (2.0% Communication fee) <sup>4</sup>			\$1,520		\$593		\$142		\$1,319		\$141		\$340		\$4,055		\$729		\$455		\$142		\$894		\$98		\$290		\$2,609		\$6,664	
<b>SCS Expenses</b>			<b>\$188,453</b>		<b>\$593</b>		<b>\$1,052</b>		<b>\$1,694</b>		<b>\$216</b>		<b>\$465</b>		<b>\$192,473</b>		<b>\$47,879</b>		<b>\$455</b>		<b>\$577</b>		<b>\$1,269</b>		<b>\$173</b>		<b>\$415</b>		<b>\$50,769</b>		<b>\$243,242</b>	
<b>TOTAL PROJECT COSTS</b>			<b>\$264,453</b>		<b>\$30,243</b>		<b>\$8,156</b>		<b>\$67,654</b>		<b>\$7,260</b>		<b>\$17,445</b>		<b>\$395,211</b>		<b>\$84,319</b>		<b>\$23,205</b>		<b>\$7,681</b>		<b>\$45,989</b>		<b>\$5,097</b>		<b>\$14,915</b>		<b>\$181,207</b>		<b>\$576,418</b>	

**NOTES:**  
<sup>1</sup> Includes annual or semiannual monitoring of groundwater, surface water, and leachate management system leachate and liquids. Landfill gas and stormwater monitoring will be performed by Marion County.  
<sup>2</sup> Includes semiannual monitoring of groundwater.  
<sup>3</sup> The proposed contract laboratory for both sites is ALS Environmental based in Kelso, Washington. Laboratory costs include a 6 percent markup fee.  
<sup>4</sup> Includes postage, usual express mail, and long distance communication charges for telephone, telefaxes, and facsimiles, applied for each subtask at a rate of 2 % of direct labor costs.  
\* Labor rate is for the initial year and used to calculate all five years of costs. An escalation rate will be negotiated following contract award.



July 1, 2022

**FEE SCHEDULE**

<b>Personnel</b>	<b>Rate/Hour</b>
Project Director	\$210
Project Manager	170
Senior Project Professional	150
Project Professional	120
Staff Professional II	103
Staff Professional I	94
Associate Staff Professional	90
Designer Drafter	102
Senior Technician	102
Technician	85
Secretarial/Administrative	78

<b>Environmental Monitoring Equipment</b>	<b>Rate/Day</b>
Auto/Truck Mileage	\$120
PPE – Level D (per week)	40
Misc. expenses such as Decon Supplies	20
Water Quality Meter (multi-parameter) with Flow-Through Cell (per week)	250
Disposable Bailer	20
Sampling Filters	25
Water Level Indicator	25

**General Terms:**

1. Rates for principals of the firm are negotiated on a project-specific basis and range from \$180 to \$250 per hour depending on experience and qualifications.
2. Scheduled labor rates include overhead, administration and profit. Costs for job-related employee travel and subsistence, and for equipment and supplies are billed at actual cost plus a 15 percent administrative fee. Charges for reproduction, telephone, fax, etc. are included in a communications fee.
3. Costs for outside consultants and subcontractors are billed at actual cost plus a 6 percent administrative fee.
4. Reduced rates for weekly equipment and vehicle use will apply if applicable. Charges for field equipment and instruments not listed above will be in accordance with SCS' Field Equipment Rental Rates Schedule in effect at the time the work is performed plus a 15 percent administrative fee.



5. Invoices will be prepared monthly or more frequently for work in progress unless otherwise agreed. Invoices are due and payable upon receipt. Invoices not paid within 30 days are subject to a service charge of 1.5 percent per month on the unpaid balance.

6. Payment of SCS invoices for services performed will not be contingent upon the client's receipt of payment from other parties, unless otherwise agreed in writing. Client agrees to pay legal costs, including attorney's fees, incurred by SCS in collecting any amounts past due and owing on client's account.

7. For special situations, such as expert court testimony and limited consultation, hourly rates will be on an individually negotiated basis.

# EXHIBIT H

## Attachment 5 ALS Environmental List of Analytical Testing Fees and Quality Assurance Manual



ALS Environmental  
 1317 South 13th Avenue  
 Kelso, WA 98626  
 Ph. 1-360-577-7222  
 Fax 1-360-636-1068

# EXHIBIT H

Quote No.: 50971  
 Quote Name: North Marion Co & Browns Island LF

Attention: Barbara Lary  
 Company: SCS Engineers  
 Address: 15940 SW 72nd Ave  
 Portland, OR 97224  
 Ph. 503-430-3028  
 Fax 503-684-6948  
 Email: blary@scsengineers.com

Project: North Marion Co & Browns Island LF  
 Project Chemist: Howard Holmes(howard.holmes@alsglobal.com)  
 Sales Representative: Todd Poyfair(Todd.Poyfair@alsglobal.com)

Date Revised: 11/23/2021

Expires on: 11/22/22

Project Notes: 5 yr contract 2022-2026

## Analytical Services

### Water

Test Description	QTY	TAT'	Unit Price	TAT Surcharge	Adj Unit Price	Extended Price	Test Comments
Dissolved Chloride Anion by Ion Chromatography - 300.0	1	15 Day-B	14.00	0%	14.00	14.00	
Nitrite Anion by Ion Chromatography - 300.0	1	15 Day-B	14.00	0%	14.00	14.00	
Nitrate as Nitrogen, Dissolved - 300.0	1	15 Day-B	14.00	0%	14.00	14.00	
Dissolved Sulfate Anion by Ion Chromatography - 300.0	1	15 Day-B	14.00	0%	14.00	14.00	
Total Cyanide by Semi-Automated Colorimetry - 335.4	1	15 Day-B	34.00	0%	34.00	34.00	
Volatile Organic Compounds by GC/MS - 8260C	1	15 Day-B	75.00	0%	75.00	75.00	
Total Organic Halides (TOX) - 9020B	1	15 Day-B	90.00	0%	90.00	90.00	
Cation-Anion Balance Calculation 20th Ed. - SM 1030 E1	1	15 Day-B	5.00	0%	5.00	5.00	
Alkalinity Titration 20th Ed. - SM 2320 B	1	15 Day-B	15.00	0%	15.00	15.00	
Bicarbonate Alkalinity, Dissolved - SM 2320 B	1	15 Day-B	15.00	0%	15.00	15.00	
Carbonate Alkalinity, Dissolved - SM 2320 B	1	15 Day-B	15.00	0%	15.00	15.00	
Hardness by ICP-AES Calculation 20th Ed. - SM 2340 B	1	15 Day-B	5.00	0%	5.00	5.00	
Conductivity 20th Ed. - SM 2510 B	1	15 Day-B	10.00	0%	10.00	10.00	
Biochemical Oxygen Demand - SM 5210 B	1	15 Day-B	42.00	0%	42.00	42.00	
Chemical Oxygen Demand - SM 5220 C	1	15 Day-B	30.00	0%	30.00	30.00	
Dissolved Ammonia - 350.1	1	15 Day-B	24.00	0%	24.00	24.00	
Dissolved Metals (2) - 6010C	1	15 Day-B	25.00	0%	25.00	25.00	Ca,Na
Dissolved Metals (3) - 6010C	1	15 Day-B	35.00	0%	35.00	35.00	Ca,Fe,Mn
Dissolved Metals (6) - 6010C	1	15 Day-B	50.00	0%	50.00	50.00	Ca,Mg,Na,K,Fe,Mn
Dissolved Silica - SM 4500-SiO2 C	1	15 Day-B	25.00	0%	25.00	25.00	
Dissolved Trace Metals (15) - 6020A	1	15 Day-B	95.00	0%	95.00	95.00	Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Ni,Se,Ag,Tl,V,Zn
Dissolved Trace Metals (7) - 6020A	1	15 Day-B	55.00	0%	55.00	55.00	As,Ba,Cd,Cu,Pb,Ni,Zn
Dissolved Trace Metals (9) - 6020A	1	15 Day-B	65.00	0%	65.00	65.00	As,Ba,Cd,Cr,Co,Pb,Ni,Se,Ag
E. Coli - SM 9223 B	1	15 Day-B	30.00	0%	30.00	30.00	
Fecal Coliform - SM 9221 E	1	15 Day-B	30.00	0%	30.00	30.00	
ortho-phosphorus - 365.3	1	15 Day-B	20.00	0%	20.00	20.00	
pH value - SM 4500-H+ B	1	15 Day-B	8.00	0%	8.00	8.00	
TCLP RCRA 8 - 6020B, 7470A, EPA 1311	1	15 Day-B	180.00	0%	180.00	180.00	
Total Coliform - SM 9221 B	1	15 Day-B	30.00	0%	30.00	30.00	



# EXHIBIT H

Quote No: 50971  
 Quote Name: North Marion Co & Browns Island LF

Attention: Barbara Lary  
 Company: SCS Engineers  
 Address: 15940 SW 72nd Ave  
 Portland, OR 97224  
 Ph. 503-430-3028  
 Fax 503-684-6948  
 Email: blary@scsengineers.com

ALS Environmental  
 1317 South 13th Avenue  
 Kelso, WA 98626  
 Ph. 1-360-577-7222  
 Fax 1-360-636-1068

Project: North Marion Co & Browns Island LF  
 Project Chemist: Howard Holmes(howard.holmes@alsglobal.com)  
 Sales Representative: Todd Poyfair(Todd.Poyfair@alsglobal.com)

Date Revised: 11/23/2021

Expires on: 11/22/22

## Analytical Services

### Water

Test Description	QTY	TAT <sup>1</sup>	Unit Price	TAT Surcharge	Adj Unit Price	Extended Price	Test Comments
Total Dissolved Solids - SM 2540 C	1	15 Day-B	14.00	0%	14.00	14.00	
Total Kjeldahl Nitrogen - ASTM D1426-93B	1	15 Day-B	30.00	0%	30.00	30.00	
Total Organic Carbon - SM 5310 C	1	15 Day-B	38.00	0%	38.00	38.00	
Total Phosphorus - 365.3	1	15 Day-B	27.00	0%	27.00	27.00	
Total Suspended Solids - SM 2540 D	1	15 Day-B	14.00	0%	14.00	14.00	
Total Trace Metals (15) - 6020A	1	15 Day-B	95.00	0%	95.00	95.00	Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Ni,Se,Ag,Tl,V,Zn
Total Trace Metals (7) - 6020A	1	15 Day-B	55.00	0%	55.00	55.00	As,Ba,Cd,Cu,Pb,Ni,Zn
Total Trace Metals (9) - 6020A	1	15 Day-B	65.00	0%	65.00	65.00	As,Ba,Cd,Cr,Co,Pb,Ni,Se,Ag

<sup>1</sup> Turn around time: Values ending in '-B' are measured in business days and values ending in '-C' are measured in calendar days.

Deliverables: Tier II  
 Quality Assurance Plan: LAB QAP  
 Data Qualifiers: Lab Standard  
 EDD: Yes

Subtotals	
Analytical Services:	1,402.00
Other Charges:	0.00
Applicable Tax:	0.00

**Total:** 1,402.00

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost ground shipping method. Costs for expedited delivery to meet Client's need will be at Client's expense.



## General

These Terms and Conditions encompass the mutual promises and covenants that shall act as the basis of the agreement ("Agreement") of the parties between ALS Group USA, Corp. dba ALS Environmental (hereinafter referred to as ("LAB") with a corporate business office located at 10450 Stancliff Road, Suite 210, Houston, Texas 77099 and \_\_\_\_\_, (hereinafter referred to as "Client"). CLIENT and Lab may be referred to in their individual capacity as "Party" or collectively as "Parties." Upon the placement of an order for analysis from the CLIENT, CLIENT represents that its placement of an Order for analysis of Sample(s) constitutes acceptance of the terms and conditions as delineated in this Agreement by the Client provided CLIENT has received a copy of the Terms and Conditions of this Agreement via email, facsimile or other medium of communication.

**Provision of Services;** LAB will provide the services described in the accompanying tender, quotation, work order, letter, fax or email ("Services").

Where applicable, LAB will use analytical methodologies which are in substantial conformity with certified and/or other recognized applicable methodologies, exercising the same degree of skill, care and diligence that would be exercised by professional service providers in similar circumstances. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

The Client acknowledges that it is the Client's sole responsibility to make its own assessment of the suitability for any purpose of the Services, detection limits and confidence intervals inherent in LAB's standard testing methodology, the LAB Report and its contents. It is necessary for LAB to assume that the paperwork submitted with a sample describes the testing protocol desired. Any changes to this protocol must be submitted to LAB in writing. LAB is in no way responsible for analytical method choice unless LAB is informed of all project aspects. If the Client requires the Services to be performed by specific test method, or requires detection limits and/or confidence intervals different to those inherent in LAB's standard testing methodology, then the Client must instruct LAB of such a variation prior to LAB performing the Services.

LAB reserves the right to refuse acceptance of delivery of any sample(s) or to revoke acceptance of delivery of any sample(s) which in the sole judgement of LAB is of unsuitable volume, may pose a risk in handling, transporting or processing for any health, safety, environmental or other reason due to the potential presence of any hazardous substance which may or may not be disclosed to Lab, or has been delivered to LAB more than seventy-two hours after sampling or after half of the recommended holding time for the analysis has lapsed. Prior to LAB's acceptance of any sample or revocation of acceptance, the risk of loss of or damage to such sample remains with the CLIENT. Samples are accepted by LAB when receipt is hereby acknowledged on chain of custody documentation.

LAB may delegate the performance of all or part of the Services to a qualified laboratory within the ALS Group USA umbrella. In the event LAB seeks to assign all or a part of the Services to a third party laboratory unaffiliated with ALS Group USA, LAB will contact CLIENT for prior written approval.

**Sample Handling:** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation by a LAB employee. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost ground shipping method. Any other shipment arrangements or overnight shipping requirements will be at Client's expense. Client is responsible for the cost of shipping samples to the laboratory. Storage time of samples will be subject to requirements under applicable recognized regulations or methods.

When extended or special storage conditions are required, samples are held without analysis, or special disposal procedures are necessary, LAB may add storage and disposal fees to the final invoice. LAB also reserves the right to bill the Client for sample or shipping containers provided but not returned. In addition, CLIENT agrees that any sampled delivered will be preceded and/or accompanied by written disclosure of the presence of any hazardous substances known or suspected by CLIENT.

**Fees and Payment:** Payment terms are 30 days from the date of invoice (**Due Date**). Any variance from the standard payment terms must be stipulated separately in writing.

All prices quoted by LAB are exclusive of sales, use or other taxes, unless stated otherwise.

CLIENT agrees that it shall comply with all payment terms, and seventy-two hours after receipt of posting of payment, CLIENT shall own all information (subject to the provisions contained thereof addressing Confidential Information and Intellectual Property) generated by LAB in the conduct of Services, and have the right to use date without payment of additional compensation to LAB for same, except as herein specifically provided. CLIENT shall not use LAB's name or trademark in any marketing material, reporting materials, press releases or in any other manner whatsoever and shall not attribute to LAB any tests result, tolerance or specification derived from LAB's data without prior written consent.

Compensation for Services performed will be based on the current LAB Analytical Fee Schedule, or on quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. Prorated fees may be charged if project is terminated before completion.

**Warranty: LAB MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICES, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL SUCH WARRANTIES OF ANY KIND ARE HEREBY DISCLAIMED. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT, IN NO EVENT WILL LAB BE LIABLE TO CLIENT FOR ANY LOSS OF PROFITS, LOSS OF USE, BUSINESS INTERRUPTION, COSTS OF COVER OR PUNITIVE, EXEMPLARY, TREBLE, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND IN CONNECTION WITH OR ARISING OUT OF THE PERFORMANCE OF THIS AGREEMENT, WHETHER ALLEGED AS A BREACH OF CONTRACT OR TORTIOUS CONDUCT, INCLUDING BUT NOT LIMITED TO NEGLIGENCE.**

Each Party hereby covenants that as a condition precedent to making or bringing any claim, cause of action or demand for any purpose, such Party will provide written notice to the other Party as provided in this Agreement and allow the other Party ten days after receipt of such notice to cure any alleged deficiency.

**Mutual Indemnification:** The parties hereby release and indemnify and shall continue to release and indemnify the respective entity, its officers, employees and agents from and against all actions, claims (actual or threatened), proceedings or demands (including any costs and expenses in defending or servicing same) which may be brought against it or them, in respect of any loss (including Consequential Loss), death, injury, illness or damage to persons or property, and whether direct or indirect and in respect of any breach of any industrial or intellectual property rights, howsoever arising out of the use of, reliance on, or benefit of, the Services or any Report, except to the extent that the loss, death, injury, illness or damage to persons or property was directly caused by the negligence, willful acts or omissions of LAB, Client or its employees.

The Indemnified Party shall be entitled, at its option, to control the defense of and settlement of any claim on which it is liable or perceived as liable, provided that the Indemnifying party shall reasonably and in good faith with respect to all matters relating to the settlement or disposition of the Claim as the Claim relates to the Indemnified Party. The Indemnified Parties shall cooperate in the investigation, defense and settlement of any Claim and shall provide prompt written notice to the Indemnifying Party of any such Claim or reasonably expected claim. Prompt notice shall be defined as written notice provided to the other no later than five (5) business days of receipt or knowledge of such Claim. Failure of the Indemnified Party to provide such prompt written notice shall not relieve the Indemnifying Party of its obligations hereunder unless the Indemnifying Party is prejudiced by such delay. An Indemnified Party shall have the right to retain its own separate legal counsel at its own defense.

If the Indemnifying Party fails or wrongly refuses to defend or settle any Claims, then the Indemnified Party will, upon written notice to the Indemnifying Party, have the right to defend



## EXHIBIT H Terms and Conditions

or settle (and control the defense of) such Claims. In such case, the Indemnifying Party shall cooperate, at its own expense, with the Indemnified Party and its counsel in the defense and settlement of such Claims and shall pay, as they become due, all costs, damages and reasonable legal fees incurred.

No settlement or compromise of any Claim subject to the indemnification provisions will be binding on either Party without such Party's written consent, which shall not be reasonably withheld, delayed or conditioned. Neither Party will admit fault on behalf of the other Party without the prior written consent of that Party.

**Insurance.** Both Parties represent that they maintain, with financially sound and reputable insurers, insurance coverage (including worker's compensation coverage and comprehensive liability coverage with contractual liability) with respect to the conduct of its activities hereunder against loss from such risks in sufficient amounts to support its obligations hereunder. Each Party agrees, upon request of the other Party, to provide the other Party with a Certificate of Insurance evidencing such coverage. Neither party shall cause its insurer to cancel or make a material change in its insurance policy without providing a thirty day written notice to the other Party. Each Party shall maintain Commercial General Liability (both Bodily Injury and Property Damage) Insurance including contractual liability to cover the liabilities assumed in this Contract. The policy territory coverage shall include all areas where Services are performed. Policy limits must not be less than \$2,000,000 combine single limit per occurrence and \$5,000,000 aggregate coverage and Professional liability insurance limits of \$5,000,000.

**Termination:** Parties may suspend or terminate its obligations under this Agreement if (a) monies payable are outstanding 60 days or more (unless otherwise agreed) after the date of invoice; (b) upon thirty calendar days' written notice if the other Party is in material breach and fails to cure the material breach within such ten day period after receipt of original notice of breach; (c) by giving the Party 60 days written notice of intention to terminate; (iv) immediately, in the event of a filing of a petition in bankruptcy or an assignment for the benefit of creditors, or upon other action taken or suffered, voluntarily or involuntarily, under State or Federal law for the benefit of debtors which is dismissed immediately within thirty days thereafter; or (v) immediately if Party engages in Conduct which is injurious to the other party or acts in gross neglect or gross or willful misconduct that directly relates to the business of the other Party.

In the event of termination, LAB is entitled to be paid for all work performed before the date of termination and for any unavoidable commitments entered into by LAB before the date of termination.

**Intellectual Property:** Any invention, processes, know-how, secrets, improvements, other intellectual properties and assets, including but not limited to analytical methods, procedures and techniques, procedural manuals, personnel data, financial information, computer technical expertise and software which has been independently developed by LAB independent of this Agreement, and any improvements, modifications, upgrades or other changes thereto are the sole and exclusive property of LAB and Client shall obtain no right, title or interest therein except as expressly provided. LAB at all times retains the right to use any general "know how", techniques, ideas, concepts, algorithms or other knowledge acquired or developed during the performance of this Agreement.

**Confidential Information:** Neither Party will disclose Confidential Information of the other party to any third party without the prior written consent of the other party, unless required by law.

Confidential Information means all information in relation to a disclosing party, its business, operations, trade secrets (technical or non-technical data) or other information relating to a party that derives economic value from not being generally known or readily accessible, products, processes, customers, suppliers or contractors which is or might reasonably be considered by the disclosing party to be confidential, including all technical data, formulae, specifications, diagrams, plans, drawings, sketches, designs, business plans and reports, business methods and systems, business records, production information, unpublished financial accounts and reports, discount and supply agreements, subcontractor lists, customer lists. Confidential information shall not include information known to the public at time of disclosure; after disclosure becomes part of public domain through no fault of receiving Party; comes from a third party legally entitled to disclose it; independently developed by or on behalf of receiving Party as evidenced in its written records; was in possession of receiving Party at time of disclosure and receiving Party can prove the information was in its possession; or, as required by law, provided that the disclosing Party is given reasonable advance written notice so as to permit a protective order with respect to such information.

**Force Majeure** Neither Party will be liable or deemed to be in default under this Agreement for any interruption of service, delay, failure of performance to the extent caused by acts of God or other uncontrollable circumstances, including but not limited to: fire; natural disaster; storms; shortages of power; labor strikes; civil disturbances or acts of war (whether declared or undeclared); public health emergency; government orders or regulations that prevent or make performance under this Contract unlawful; or other circumstances which are beyond the reasonable control of the performing Party. In the event any force majeure event delay's a Party's performance for more than thirty calendar days following written notice of such, the other Party may terminate this Agreement immediately upon written notice from such Party.

**Waiver.** Any waiver or delay in enforcing any term or condition hereof must be in writing and signed by both Parties. A waiver of any of the terms and condition of this Agreement will not be construed as a continuing waiver of the same term or condition, or a waiver of any other term or condition thereof.

**Savings Clause.** Although it is expressly understood and agreed that although Parties consider the provisions contained in this Agreement to be reasonable, if any provision contained in this Agreement is found by any court of competent jurisdiction to be invalid or unreasonable for any reason, then the provisions herein contained shall nevertheless remain effective, but shall be deemed amended as may be considered to be reasonable by such court, and as so amended, shall be enforced. Further, each provision of this Agreement is intended to be severable. If any term or provision is held to be invalid, void or unenforceable by a court of competent jurisdiction for any reason whatsoever, such ruling shall not affect the validity of the remainder of this Agreement.

**Governing Law.** This Agreement will be construed in accordance with and governed by the laws of the State of Texas, without regard for the provisions thereof regarding choice of laws. All actions and proceedings relating to or arising out of the subject matter hereof will be maintained exclusively in the county or district court located in Harris County, Texas, and each of the Parties hereby irrevocably waives any objection which such Party may now or hereafter have in bringing of any such action or proceeding with respect to this agreement in any jurisdiction set forth above.

**Attorneys' Fees and Costs.** If any action or proceeding is commenced to enforce or interpret any of the terms or conditions of this Agreement or the performance thereof, including the collection of any payments due hereunder, the prevailing party will be entitled to recover all reasonable attorneys' fees, costs and expenses. If LAB is requested to respond to any mandatory orders for the production of documents or witnesses on CLIENT's behalf regarding work performed by LAB, CLIENT agrees to pay all costs and expenses incurred by LAB not reimbursed by others in responding to such order, including attorney's fees, staff time at current billing rates and reproduction expenses.

**Remedies Cumulative.** No remedy set forth in this Agreement or otherwise conferred upon or reserved to any party shall be considered exclusive of any other remedy to any party, but shall be distinct, separate and cumulative and may be exercised from time to time as often as occasion may arise or deem expedient.

**Authorization; Enforceability.** Each of the Parties represents and warrants that the execution and delivery of this agreement has been duly authorized by all necessary corporate actions and no other corporate actions are necessary, and that this Agreement constitutes the valid and binding obligations of such Party, shall be executed by an Officer of the entity with power to bind the Party in this Agreement, and is enforceable in accordance with its terms.

**Independent Contractors.** In the performance of all obligations hereunder, Parties are independent contractors and the relationship between them will not constitute a partnership, joint venture or agency. Neither Party has any authority to make statements, representations or commitments of any kind on behalf of the other Party, or to take any binding action on behalf of the other Party without the prior written consent of such Party. Neither party will withhold or in any way be responsible for the payment of any federal, state or local income or occupational tax, FICA taxes, unemployment compensation, workers compensation contribution, or any other payments for or on behalf of the other Party or any person on the payroll of such Party.

**Assignment.** Neither Party may assign, delegate or otherwise transfer its rights, duties, interests or obligations without the prior written consent of the other Party.

**Counterparts.** This Agreement, and any amendments hereto, may be executed by facsimile/electronic signature and in multiple counterparts, each of which will be deemed an original but all of which together constitute one and the same instrument.

**Survival.** In addition to any specific survival references in this Agreement, any terms or obligations that may by nature would be expected to survive the termination or expiration of this Agreement shall survive.

**Entire Agreement; Amendment.** This Agreement, including any and all exhibits, purchase orders and work orders attached hereto, constitutes the entire agreement between the Parties and supersedes all prior discussions, negotiations and agreements, whether oral or written, and none of the Parties will be bound by any conditions, definitions, understanding, warranties or representations other than as expressly stated or referred to herein; provided however, that the existing confidentiality agreement between the Parties shall remain in full force and effect notwithstanding the Parties' execution of this Agreement. The Parties expressly agree that they have not relied on any statement, representation or promise, whether oral or



# EXHIBIT H Terms and Conditions

written, that is not contained in this Agreement. Parties further agree that each has had access to all facts underlying this Agreement and has relied upon its own reasonable judgment in deciding to enter this Agreement. This Agreement may not be supplemented, altered, amended, modified or revoked except by written agreement signed by both Parties.

**ALS Group USA, Corp dba ALS Environmental**

By: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**CLIENT:** \_\_\_\_\_  
By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_  
Address: \_\_\_\_\_

---



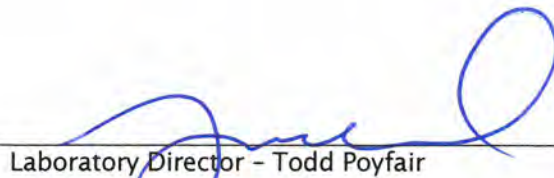


## Quality Assurance Manual

DOCUMENT ID: ALKLS-QAM, REV. 29.0

ALS ENVIRONMENTAL - KELSO FACILITY  
1317 SOUTH 13TH AVENUE  
KELSO, WA 98626  
360-577-7222 (TEL)  
360-636-1068 (FAX)  
WWW.ALSGLOBAL.COM

Approved By:

  
Laboratory Director - Todd Poyfair

Date:

7/12/21

Approved By:

  
Quality Assurance Manager - Kurt Clarkson

Date:

7/12/21

Approved By:

  
Metals/Inorganics Manager - Jeff Coronado

Date:

7/12/21

Approved By:

  
Organics/Extractions Manager - Jonathon Walter

Date:

7/12/2021



## Table of Contents

1. Scope
2. Normative References
3. Terms and Definitions
4. General Requirements
  - 4.1 Impartiality
  - 4.2 Confidentiality
5. Structural Requirements
6. Resources Requirements
  - 6.1 General
  - 6.2 Personnel
  - 6.3 Facilities and Environmental Conditions
  - 6.4 Equipment
  - 6.5 Metrological traceability
  - 6.6 Externally provided products and services
7. Process Requirements
  - 7.1 Review of Requests Tenders and Contracts
  - 7.2 Selection, Verification, and Validation of Methods
  - 7.3 Sampling
  - 7.4 Handling of Test or Calibration Items
  - 7.5 Technical Records
  - 7.6 Evaluation of Measurement Uncertainty
  - 7.7 Ensuring the Validity of Results
  - 7.8 Reporting of Results
  - 7.9 Complaints
  - 7.10 Nonconforming Work
  - 7.11 Control of Data and Information Management
8. Management System Requirements
  - 8.1 Options
  - 8.2 Management System Documentation
  - 8.3 Control of Management System Documents
  - 8.4 Control of Records
  - 8.5 Actions to address Risks and Opportunities
  - 8.6 Improvement
  - 8.7 Corrective Actions
  - 8.8 Internal Audits
  - 8.9 Management Review
9. Change History
10. Appendices



Cross Reference Table (ISO 17025:2017 to TNI Volume 1:2016)

**QUALITY ASSURANCE MANUAL - CROSS REFERENCE TABLE**

QAM, ISO/IEC 17025		TNI Volume 1, 2016
1	Scope	M2 1.2
2	Normative reference	M2 2.0
3	Terms and definitions	M2 3.0
4	General Requirements	M2 4.1
4.1	Impartiality	NA
4.2	Confidentiality	M2 4.2
5	Structural requirements	M2 4.1
6	Resource requirements	M2 4.0
6.1	General	M2 4.1.5
6.2	Personnel	M2 4.1.5, 5.2
6.3	Facilities and environmental conditions	M2 5.3
6.4	Equipment	M2 5.5
6.5	Metrological traceability	M2 5.6
6.6	Externally provided products and services	M2 5.10.6
7	Process requirements	M2 4.0
7.1	Review of requests, tenders and contracts	M2 4.4
7.2	Selection, verification and validation of methods	M2 5.4
7.3	Sampling	M2 5.4
7.4	Handling of test or calibration items	M2 5.5.6
7.5	Technical records	M2 4.13.2
7.6	Evaluation of measurement uncertainty	M2 5.4.6
7.7	Ensuring the validity of results	M2 5.9
7.8	Reporting of results	M2 5.10
7.9	Complaints	M2 4.8
7.10	Nonconforming work	M2 4.9
7.11	Control of data and information management	M2 5.4.7
8	Management system requirements	M2 4.0
8.1	Options	M2 4.0
8.2	Management system documentation (Option A)	M2 4.2
8.3	Control of management system documents (Option A)	M2 4.3
8.4	Control records (Option A)	M2 4.13
8.5	Actions to address risks and opportunities (Option A)	NA
8.6	Improvement (Option A)	M2 4.10
8.7	Corrective Actions (Option A)	M2 4.11
8.8	Internal Audits (Option A)	M2 4.14
8.9	Management Reviews (Option A)	M2 4.15

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 4 of 75

## 1. Scope

This Quality Assurance Manual (QAM) describes the policies, procedures and accountabilities established by the Laboratory of ALS Environmental (ALS) to ensure that the test results reported from analysis of air, water, soil, waste, and other matrices are reliable and of known and documented quality. This document describes the quality assurance and quality control procedures followed to generate reliable analytical data.

This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

ALS maintains certifications pertaining to various commercial and government entities. Each certification requires that the laboratory continue to perform at levels specified by the programs issuing certification. Program requirements can be rigorous; they include performance evaluations as well as annual audits of the laboratory to verify compliance.

### Quality Assurance Policy

ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of the Various States, United States Environmental Protection Agency (USEPA), TNI Volume 1 2009/2016 and ISO 17025: 2017.

ALS corporate management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM and other client and project related requirements.

ALS management reviews its operations on an ongoing basis and seeks input from staff and clients to make improvements.

It is the policy of ALS that all employees be familiar with all quality documentation.

### Quality System

This QAM and SOPs referenced in this document comprise the ALS management system. This management system includes all quality assurance policies and quality control procedures.

Although verbal communication with employees is essential, written and visual communication through email and computer systems is the cornerstone of effective communication at ALS. Computer workstations throughout the lab provide access to LIMS, Procedures and email systems. All information essential for effective and consistent communication of analytical requirements and details affecting quality is available through these computerized systems.

### Ethics and Data Integrity

It is the policy of ALS to perform work for clients in the most efficient manner possible, avoiding waste of resources. It is the role of both ALS management and employees to ensure that work for clients is performed most efficiently and effectively by properly utilizing ALS purchased materials, equipment, and the time and ability of personnel.

ALS policy on waste, fraud, and abuse is described in ALS SOP *Laboratory Ethics and Data Integrity* (CE-GEN-001). It is the policy of ALS to generate accurate and reliable data in accordance with contractual and regulatory requirements. As stated in the ALS policies manual, any undue pressure applied to employees in the performance of their duties must be reported as per procedures for reporting listed in ALS SOP CE-GEN-001. It is against ALS policy to improperly manipulate or falsify data or to engage in any other

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 5 of 75

unethical conduct as defined in ALS Corporate SOP CE-GEN-001. ALS provides mandatory initial and annual refresher training for all employees on SOP CE-GEN-001.

Data integrity training is provided as a formal part of new employee orientation and a refresher is given annually for all employees as detailed in the Ethics and Data Integrity corporate SOP CE-GEN-001. Key topics covered are the organizational objective and its relationship to the critical need for honesty and full disclosure in all analytical reporting, record keeping, and reporting data integrity issues. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring and data integrity procedures. Training topics also cover examples of improper actions, legal and liability implications (company and personal), causes, prevention, awareness, and reporting options. Computer security is also included, covering ALS computing security awareness, passwords and access, and related topics. Employees are required to understand that any infractions of the laboratory data integrity procedures shall result in a detailed investigation that could lead to very serious consequences including immediate termination, or civil/criminal prosecution. Evidence of training is maintained by the QA Department. See Appendix C for a copy of the ALS Ethics and Integrity Agreement.

In order to maintain compliance with the requirement to conduct and document ethics and data integrity training annually for all employees, data integrity training will be assigned on the first work day of the calendar year through the ALStar program. This will allow for completion of the training and the proper documentation within the assigned 60 day period. Any employee that does not complete the required data integrity training by the end of the 60 day assigned completion period will be removed from normal laboratory operations until the requirement is met to complete the required annual training by the end of the calendar year.

The pertinent ALS Project Manager must approve deviations from contractual requirements. The Project Manager obtains approval for any such deviations, either in writing or by phone (documented in a phone log) from pertinent contract authorities. In addition, ALS requires that deviations from contractual requirements that might affect data quality be reported to clients. Any employee who knowingly manipulates and/or falsifies data or documents or engages in any unethical conduct is subject to immediate release from employment.

ALS employees who are aware of, or reasonably suspicious of, any case of data manipulation, falsification of data, waste of resources, or other unethical practice or misconduct shall notify any manager. Under the direction of the laboratory director, every allegation of unethical conduct will be fully investigated.

## 2. Normative References

ALS relies primarily upon the most current EPA approved revisions of the references listed below for methodologies used in the laboratory. Procedures contained in these references are acceptable for use only after the lab has demonstrated and documented adequate performance with the method such as method detection limit studies, precision and accuracy studies, proficiency sample analysis, and linear calibration range studies. These studies are then routinely verified as long as the methods are in use in the laboratory.

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 6 of 75

ISO/IEC 17025:2017, *General Requirements for the Competence of Testing and Calibration Laboratories*.

TNI 2009 and 2016, VOLUME 1, *Management and Technical Requirements for Laboratories Performing Environmental Analysis*.

DoD/DOE QSM, *Department of Defense (DoD), Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories*.

ISO/IEC Guide 99, *International Vocabulary of Metrology — Basic and General Concepts and Associated Terms (VIM1)*.

ISO/IEC 17000, *Conformity Assessment — Vocabulary and General Principles*.

*Methods for Chemical Analysis of Water and Wastes*, U.S. Environmental Protection Agency, EPA/600/4-79/020, Revised 1983.

*Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, 18th edition, 20th Edition, 21st Edition, 22nd edition, on-line.

*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA SW-846, Third Edition, 1986, Updates I, II, IIA, IIB, III, IIIA, IIIB, IV, IVA, and IVB.

40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*.

40 CFR Part 141, *National Primary Drinking Water Regulations*.

*Methods for the Determination of Organic Compounds in Drinking Water*, EPA 600/4-88/039, Rev. July 1991; Supplement I, EPA 600/4-90/020, July 1990; Supplement II, EPA 600/R-92/129, August 1992; Supplement III, EPA-600/R-95/131, August 1995.

*Methods for the Determination of Inorganic Substances in Environmental Samples*, EPA 600/R-93/100, August 1993.

*Methods for the Determination of Metals in Environmental Samples*, Supplement EPA 600/4-88/039, Rev. July 1991; Supplement I, EPA 600/R-94/111, July 1990; Supplement II, EPA 600/R-92/129, August 1992.

*Methods for the Determination of Organic and Inorganic Compounds in Drinking Water*, Volume 1, EPA815-R-00-014.

Annual Book of ASTM Standards.

### 3. Terms and Definitions

- Impartiality - presence of objectivity.
- Complaint - expression of dissatisfaction by any person or organization to a laboratory (3.6), relating to the activities or results of that laboratory, where a response is expected.
- Inter-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions.
- Intra-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items within the same laboratory in accordance with predetermined conditions.
- Proficiency testing - evaluation of participant performance against pre-established criteria by means of inter-laboratory comparisons.
- Laboratory - body that performs one or more of the following activities:
  - testing;



	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 7 of 75

- calibration;
- sampling, associated with subsequent testing or calibration
- Decision rule - rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement.
- Verification - provision of objective evidence that a given item fulfills specified requirements.
- Validation - verification, where the specified requirements are adequate for an intended use.

## 4. General Requirements

### 4.1 Impartiality

All employees are required to enter into the following agreements:

- **Code of Conduct Agreement**

Provides a framework for decisions and actions in relation to conduct in employment. The agreement covers a wide range of topics including personal and professional behavior, conflicts of interest, gifts, confidentiality, legal compliance, security of information, among others. The code of conduct agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Confidentiality Agreement**

Describes policies for identifying and protecting information owned by ALS and its customers, and for keeping this information in confidence. The confidentiality agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Ethics and Data Integrity Agreement**

Provided to the employee as part of the hiring and induction process, and reviewed during periodic ethics refresher training. This is coordinated between the Human Resources and Quality Assurance (QA) departments. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed. All employees are required to take annual ethics and data integrity refresher training.

In addition to the agreements, project managers act as a firewall to insulate the analysts from clients so that the lab personnel have no contact with clients. Lab IDs are assigned to samples and used throughout preparation and analysis to make the samples ambiguous to lab personnel. Together these agreements and procedures ensure freedom from undue internal and external commercial, financial, and other pressures or influences that could adversely affect the quality of work. They protect customers' confidential information and ALS' proprietary rights. They ensure avoidance of activities that could diminish confidence in the competence, impartiality, judgment or integrity of any ALS laboratory and staff.

It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This and the peer review of all data will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results, opinions and interpretation of data is outside the scope of the laboratory activities.

### 4.2 Confidentiality

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 8 of 75

All employees signed confidentiality statement upon employment. These are maintained by Human Resources (HR).

Documents provided to the laboratory are held in strict confidence by project management staff. Documents pertaining to quality assurance and analytical requirements are reviewed with appropriate managers and staff through the project specific meetings and LIMS. Project related information provided by clients is securely archived using procedures described in the SOP *Data Archiving* (ADM-ARCH).

The transmittal of final results is specified by clients and follows those requirements unless specific changes are made by the ALS Project Manager assigned to the client/project. Client communication procedures and documentation requirements are listed in SOP *Project Management* (ADM-PCM).

## 5. Structural Requirements

5.1 The laboratory, a legal entity, is part of ALS USA Corp and the Laboratory Director reports to the General Managers, Life Sciences, USA. There are other support functions such as human resources, accounting, safety oversight and computer systems that are provided to the laboratory by corporate entities but none of which is responsible for managing laboratory activities. The support functions of this laboratory involved with testing and services are under the direction of the laboratory director.

### 5.1.1 Limitation of Liability

Notwithstanding any other provision herein, ALS's liability and Client's exclusive remedy for any cause of action arising hereunder, whether based on contract, negligence, or any other cause of action, shall be limited to the compensation received by ALS from the Customer for the services rendered therewith. All claims, including negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by ALS within ninety (90) days after ALS's completion of the services provided.

### 5.1.2 Transfer of Ownership

In the event of a transfer of ownership of the laboratory, the new owner will agree in writing, which shall be either stipulated in a purchase agreement or as a separate record retention document, that the current records shall be maintained for a period of not less than ten (10) years.

### 5.1.3 Laboratory Closure

In the event of a laboratory closure, the current owner/management will notify in writing all Customers for whom the laboratory performed sample analysis within the last ten (10) years that the laboratory will be closing. This letter will instruct the Customers to contact the laboratory to provide instructions on how previous records are to be transferred to the Customer's care.

5.2 The responsibility for this laboratory under the direction of the laboratory director. Key employees in the management systems are identified in section 5.5.

5.3 This laboratory performs a full range of inorganic and organic analyses using EPA SW-846 methods, EPA drinking water methods per 40CFR141, EPA Clean Water Methods per 40CFR136, AWWA Standard Methods current approved methods, and Accreditation agency or State Approved Methodologies;. This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.





5.4 ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of various states, United States Environmental Protection Agency (USEPA), TNI Volume 1 2009 or 2016 and ISO 17025: 2017.

5.5 **Org Chart and Key personnel** - see Appendix B.

5.5.1 **ALS Laboratory Director**, The Laboratory Director is responsible to ensure:

- Implementation of quality policy and applicable standards.
- Employees have sufficient experience and training to perform QAM related duties and procedures.
- That the necessary facilities and equipment are available to meet the commitments of the laboratory.
- Sample handling, instrument calibration, sample analysis, and related activities are conducted and documented as described in this QAM, its related Standard Operating Procedures (SOPs), and its referenced methods.
- That routine QC samples are prepared, analyzed, and reviewed as required by this QAM.
- That at regular intervals audits are conducted and documented to assess compliance with this QAM.
- That corrective action is initiated and completed to remedy discrepancies or problems identified in any laboratory process.
- Management review of all processes and procedures associated with the management system.
- In the absence of the Laboratory Director, either the Metals Technical Director or Client Service Manager will assume the above responsibilities. This will require assistance from corporate leadership.

5.5.2 **Quality Assurance Manager**, The Quality Assurance Manager reports directly to the laboratory Director and is responsible to:

- Ensure implementation of quality policy and applicable standards.
- Understand, monitor and evaluate the quality assurance (QA) and quality control (QC) activities described in this QAM and its references, reporting deficiencies and identifying resource requirements to the Laboratory Director.
- Conduct and document an annual internal audit of laboratory procedures to ensure compliance with this QAM and its references.
- Conduct an annual update of this QAM and review or update laboratory Standard Operating Procedures (SOPs).
- Arrange for the analysis of Proficiency Testing (PT) samples and maintains training records of demonstration of competency (DOC).
- Maintain a record of ongoing personnel training for QAM related activities, reporting training deficiencies to the Laboratory Director.
- Maintain the laboratory documentation of nonconformance, corrective action, preventive action, and improvement programs.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 10 of 75

- In the absence of the QA Manager, the Laboratory Director shall assume the above responsibilities. This may require assistance from the corporate Quality Improvement Manager, especially in the event of a prolonged absence.

5.5.3 **Technical Managers (Organic & Inorganic)**, The managers of these operations report directly to the Laboratory Director and are responsible to:

- Ensure implementation of quality policy and applicable standards.
- Read, understand and follow this QAM with its references.
- Ensure that method development projects meet the requirements specified in this QAM.
- Ensure that each set of reported results meets the requirements specified in this QAM and meets the client's requirements as defined in the applicable project requirements.
- Ensure that personnel are trained, authorized and utilized effectively.
- Ensure that facilities and equipment are maintained and utilized effectively.
- Ensure that supplies are available and utilized effectively.
- Immediately report technical and quality problems to the Laboratory Director or Quality Assurance Manager.
- In the event of a prolonged absence of the Organic or Inorganic manager, Supervisors within the department that possess the required qualifications and experience will assume the above responsibilities.

5.5.4 **Project Managers**, Project Managers report directly to the Client Services Manager. Project Managers are responsible to:

- Ensure implementation of quality policy and applicable standards.
- Complete and distribute project related information for each project before the laboratory starts work on the project.
- Immediately communicate to the laboratory changes made to projects in progress and document these changes as appropriate.
- Respond to client requests for information and coordinate responses to client audits.
- Ensure StarLIMS work orders are reviewed and meet client project requirements before release to the laboratory.
- Perform an initial review of results for large projects to verify that data reports submitted to the client meet all project requirements.
- Operate as approved signatories for laboratory reports.

5.5.5 **Support Management** (Computers, Client Services, Health and Safety) are responsible to:

- Ensure implementation of quality policy and applicable standards.
- Read, understand and follow this QAM with its references.
- Ensure that procedures are followed and meets the client's requirements as defined in the applicable project requirements.



- Ensure that personnel are trained, authorized and utilized effectively.
- Ensure that facilities and equipment are maintained and utilized effectively.
- Ensure that supplies are available and utilized effectively.
- Immediately report technical and quality problems to the Laboratory Director or Quality Assurance Manager.
- Training staff to comply with all processes.

5.6 It is the responsibility of all technical and support staff to comply with all procedures and be familiar with current quality systems and policies as established by management. At ALS, improvement of the quality systems and preventive action is effected through an ongoing systems review by management using input from all staff. ALS actively seeks employee and client input for improvements through surveys and questionnaires. Internally ALS maintains a process improvement website for employees to provide suggestions for improvements. For clients, ALS surveys and gains feedback on services provided. This input to management is provided from the corporate level. To comply with these requirements all staff are responsible but not limited to the following:

- Follow project requirements as delineated by project managers to ensure analyses and commitments, including TAT, are performed as requested.
- Develop knowledge and understanding of the QAM requirements under which samples are handled and tested.
- Notify managers and Quality Assurance personnel when QA problems arise.
- Follow Quality Assurance requirements as outlined in the QAM and SOPs.
- Follow appropriate channels regarding modification of existing SOPs.
- Maintain accurate electronic and written records.
- Ensure that applicable data are included in each process in accordance with applicable SOPs.
- Record all nonconformance.
- Follow appropriate protocols when the handling and testing does not meet acceptance criteria.
- Apply integrity and professional judgment when dealing with analytical processes and laboratory operations.

5.7 Although verbal communication with employees is essential, written and visual communication through email and computer systems is the cornerstone of effective communication at ALS. Computer workstations throughout the lab provide access to LIMS, ALS Portals, Instruments used for testing, Policies and Procedures, and Email. All information essential for effective and consistent communication of analytical requirements, client requirements and details affecting quality are available through these computerized systems.

ALS management is committed to improvements of the management systems through compliance with its own policies and procedures. ALS management ensures improvements are made to the management systems and also ensures data integrity is maintained.

## 6. Resources Requirements

### 6.1 General



6.1.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM.

## 6.2 Personnel

6.2.1 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results is outside the scope of the laboratory activities. The ALS laboratory employs sufficient personnel to complete required chemical and radiochemical analyses and support activities.

6.2.2 The ALS training program specified in the SOP *Employee Training and Orientation* (ADM-TRAIN) includes quality training, technical training, safety training, and other training as described in this QAM. ALS managers are responsible to ensure that all staff training is initiated, completed, verified, and documented.

The specific training and experience of laboratory personnel is documented in individual training files maintained in accordance with ADM-TRAIN and includes records of analytical proficiency through the analysis of QC and PT samples.

Job Descriptions include requirements for education, qualification, training, technical knowledge, skills and experience. Job descriptions are maintained by the corporate Human Resource Department.

6.2.3 All ALS staff assigned to perform tasks affecting or relating to testing receives training relative to pertinent areas of responsibility, both prior to performing work on client samples and on an ongoing basis. Such training comes from internal and external sources.

6.2.4 Laboratory personnel resources needed to carry out their duties. See 5.6.

6.2.5 The laboratory procedure *Employee Training and Orientation* (ADM-TRAIN), includes the following and records are retained for:

- Determining the competence requirements.
- Selection of personnel.
- Training of personnel.
- Supervision of personnel.
- Authorization of personnel.
- Monitoring competence of personnel.

6.2.6 It is the responsibility of Technical and Support Management to authorize staff to perform specific laboratory activities. These tasks include testing methods, peer review and authorization to report results. Records are retained for the pertinent authorizations by the Quality Assurance department.

## 6.3 Facilities and Environmental conditions

6.3.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM.

6.3.2 Records are maintained for the requirements and conditions necessary for method and regulatory compliance in the facility.

6.3.3 Records are retained with analytical data for monitoring and control of environmental conditions to relevant method and regulatory specifications.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 13 of 75

6.3.4 See Appendix D for floor plan.

To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access, except at the main business entrance and sample receiving entrance; these are open only during normal business hours and monitored by the receptionist at the business entrance and Sample Receipt Technicians at the sample receiving entrance. All non-employees are required to sign in with the receptionist at the main entrance.

Laboratory areas are segregated by HVAC systems to contain contamination and to eliminate potential contamination from specific laboratory areas that require low ambient chemical background levels for successful analysis.

Each area in the laboratory has adequate lighting, conditions and bench space for instrumentation and for the processes assigned to that area.

Laboratory reagent water is prepared and maintained using any combination of deionization, reverse osmosis, purging and UV radiation. See SOP *Operation and Maintenance of Laboratory reagent Water Systems* (FAC-WATER).

Fume hoods have visual indicators to ensure flow is maintained during use and are performance tested semi-annually.

All safety inspection records are kept on file for a minimum of five years.

6.3.5 Laboratory activities outside the facility are limited to sample pick-up and sample collection. Field service activities are not included in our laboratory scopes of accreditation/certification.

**6.4 Equipment**

6.4.1 A comprehensive list of instrumentation and support equipment utilized at ALS is included in Appendix E. Redundant instruments are maintained for particular analyses.

6.4.2 Laboratory equipment items such as analytical balances, pipettes, and thermometers are verified against reference standards. Laboratory reference weights and thermometers are certified by ISO accredited vendors against ISO or National Metrology Institute (NMI) traceable standards. Support equipment is maintained in proper working order and verified daily or prior to use. Support equipment is calibrated or verified as described by the SOPs *Documenting Laboratory Balance and Check Weight Verification* (ADM-BAL) and *Checking Volumetric Labware* (ADM-VOLWARE).

In the event that equipment is sent outside of the laboratory, such as a NIST thermometer, for calibration, the device shall be inspected by the laboratory prior to being put into use. If found to be of the appropriate quality per the SOP and functioning properly, the Certificate of Calibration will be maintained on file.

6.4.3 Routine maintenance is performed on laboratory instruments and equipment according to manufacturer recommendations. Maintenance is provided under warranty, through service contracts, and by ALS in-house personnel. The ALS approach to preventive maintenance is described in each analytical SOP. Records of routine maintenance and emergency maintenance are kept with the instruments or on the ALS server in hardcopy or electronic maintenance logbooks.

- a) Maintenance logs contain general information about the instrument, such as the name of the manufacturer, instrument model, serial number, date of purchase, date placed into service, current instrument



- location, condition when received (e.g., new, used, reconditioned), and information concerning any service contracts maintained. They also contain information concerning any routine maintenance done by ALS personnel. Information concerning maintenance should include a brief description of the maintenance performed, the frequency required, the date performed, and the initials of personnel performing the maintenance and any comments concerning the procedure. Also to be entered in or to be stored with the log is information concerning repairs done by ALS personnel or instrument manufacturers. This information should include the date of servicing, the initials of personnel performing the service, record of why it was done and the results of the servicing relative to instrument performance. The individual logbooks are located on the server or in the laboratory with the instruments to which they pertain along with copies of manufacturer's instructions, where available. Records shall be retrievable for review and archived according to required procedures. See *Records Management Policy*, (ADM-RCRDS).
- b) It is the responsibility of the technical managers to determine the effect, if any, of an instrument defect on previous results. If an effect has been determined to have impacted the validity of any sample results, the corrective action procedure is followed. See *Nonconformance and Corrective Action Procedures* (ADM-NCAR).
- 6.4.4 All instruments are calibrated or verified before use, using reference materials with traceability established. Specific calibration requirements are detailed in the method or analytical SOP.
- a) Initial calibrations are verified for accuracy by analysis of a second source standard. This is a check standard prepared from a reference material procured from a different source than that used for the calibration. When a different source is not available or cost prohibitive, a second lot of material from the same vendor is acceptable as long as the original source used to prepare the standards is not the same.
- b) All initial calibrations are verified by analysis of continuing calibration standards and/or QC check samples. These are method or SOP specified calibration standards that are analyzed at specific frequencies as established by the method. The amount of analyte recovered is compared to the acceptance criteria of the method. Acceptable recoveries verify the stability of the calibration and lack of instrument drift throughout the analysis. Analysts perform trend analysis by monitoring instrument response and QC each day of analysis. If the acceptance criteria are not met, or sensitivity is determined to be changing, method specific corrective action must be taken. (See analytical SOPs).
- 6.4.5 The instrument manuals are provided in electronic format usually in the software programs, CDs, and available on network drives. Software is controlled through licensing and is the responsibility of computer support to maintain licenses required.
- 6.4.6 Testing instruments are calibrated as per method, regulatory and verification procedures listed in SOPs. Support equipment has verification and calibration frequencies specified in SOPs.
- 6.4.7 Calibration program. See 6.4.4





STANDARD OPERATING PROCEDURE ALS   Environmental - Kelso	Quality Assurance Manual
	ALKLS-QAM, Rev. 29.0
	Effective: 7/16/2021
	Page 15 of 75

- 6.4.8 Calibration and verification period are designated in support equipment and analytical method SOPs. This equipment is labeled with calibration or verification dates.
- 6.4.9 Equipment that has been subjected to overloading or mishandling, gives questionable results, or has been shown to be defective or outside specified requirements, is taken out of service. It shall be recalibrated and not returned to service until it has been verified to perform correctly. The laboratory shall examine the effect of the defect or deviation from specified requirements and shall initiate the nonconformance process as outlined in *Nonconformance and Corrective Action Procedures* (ADM-NCAR).
- 6.4.10 Support equipment is verified on the day of use and calibration verification is required on analytical instruments as per method, program and SOP requirements.
- 6.4.11 All reference materials ordered by ALS have available documentation of purity, traceability and uncertainty.
- 6.4.12 Passing verification criteria ensures that unintended adjustment of equipment is identified.
- 6.4.13 Records of instruments are retained and include specifications, manufacturer, serial numbers, identification, software version, location, status and the date of purchase. The majority of firmware has no impact on laboratory activities. There are some instruments in which the firmware is the software and can affect the laboratory operations. These instruments are usually small like pH meters, conductivity meters and auto-titrators. If an instrument does not have typical software to load and firmware is used to generate results, then the firmware version must be entered in the instruments record log and any updates to the firmware will be noted in the instrument maintenance log.
- 6.4.14 Records of calibration, maintenance, reference materials used, calibration checks or verifications are kept with analytical data.

## 6.5 Metrological Traceability

6.5.1 All measurements made by the laboratory required an unbroken chain to NMI, Reference Standards or Reference Materials.

6.5.2 Reference Standards and Reference Materials

a) Reference Standards

Reference standards used by the laboratory are calibrated at determined intervals by outside vendors for the following equipment. These reference standards are maintained under the control of QA personnel and are used for verifying intermediate materials used by the laboratory. Quality Assurance is responsible for maintaining records and schedules of calibration.

Intermediate checks are used in the laboratory to verify performance of support equipment and are verified to traceable reference standards. Records of such verifications are retained by Quality Assurance. See SOP *Documenting Laboratory Balance and Check Weight Verification*. (ADM-BAL).

b) Reference Materials

Reference materials used at ALS must be of the grade or quality specified by the pertinent analytical procedure or methodology.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 16 of 75

Purchased reference materials must be traceable to a National Metrology Institute (NMI) or equivalent national or international standards where possible.

#### 6.5.3 Reference Standards are calibrated by vendors certified to ISO 17025: 2017.

Reference Materials are purchased, whenever possible. ALS uses reference materials from Guide 34 or ISO 17034 accredited vendors.

Second source reference materials are purchased and used in the testing process as an independent verification of primary reference materials. The secondary reference material does not require accredited vendors.

- a) The reference standards used are those specified in the reagent sections of the respective analytical SOP.
- b) If reference materials from Guide 34 or ISO 17034 accredited vendors are not available, reference standards of the best purity and quality from a reputable supplier may be used. Determination is made by the laboratory with careful study and consideration of the chemically pure substances available.
- c) All purchased reference standards are received and verified for accuracy against the invoice. They are transferred to the appropriate department where they are entered into the standards logbooks which may be either hardcopy or electronic.
- d) Certificates of Analysis are either maintained by the ordering department. The CoA may be archived either in hardcopy, or preferably electronically.
- e) All purchased reference standards are received and verified for accuracy against what was ordered. The standards are entered into the inventory control system. The certificate of Analysis is saved by the department in either electronic or hardcopy format.
- f) Any standard reference material which is past its expiration date is removed from analytical use. Expired standards may be used for research purposes only and must be kept separate from standards used for the routine analysis of samples.

#### 6.5.4 Reagents

The quality level of reagents and materials (grade, traceability, etc.) required is specified in analytical SOPs. Department supervisors ensure that the proper materials are purchased. Inspection and verification of material ordered is performed at the time of receipt by receiving personnel. The receiving staff labels the material with the date received. Expiration dates are assigned as appropriate for the material. Storage conditions and expiration dates are specified in the analytical SOP. *Quality of Reagents and Standards* (ADM-REAG) and *Reagent and Standards Login and Tracking* (ADM-RLT) provides default expiration requirements. Supplies and services that are critical in maintaining the quality of laboratory testing are procured from pre-approved vendors. The policy and procedure for purchasing and procurement are described in *SOP Procurement and Control of Laboratory Services and Supplies* (ADM-PROC).

Receipt procedures include technical review of the purchase order/request to verify that what was received is identical to the item ordered. Verification that the chemical or reagent purchased is of the correct purity and traceability is performed by comparison of the acquired reagent to reagent listed in the *SOP Reagent and Standards Login and Tracking* (ADM-RLT).





Each lot of chemical or reagent used is monitored and controlled for any unusual contaminants that interfere with analysis as evident in results of prescreens and/or method and reagent blanks. If a working reagent is found to be suspect, it is removed from use and traced back to the original lot number, which is then investigated. If the stock reagent is found to be the source of the problem, it is completely removed from use. Any samples contained in batches in which the suspect reagent was used for analysis will be reanalyzed if sufficient remaining sample and holding time allows, or clients will be contacted and results appropriately qualified with a sample or analyte level comment on the final report. See SOP *Reagent and Standards Login and Tracking* (ADM-RLT) for procedure to verify targeted critical reagents.

## 6.6 Externally Provided Products and Services

6.6.1 Analytical services are subcontracted when the laboratory needs to balance workload or when the requested analyses are not performed by the laboratory. Subcontracting is only done with the knowledge and approval of the client and to qualified laboratories. Subcontracting to another ALS Environmental Group laboratory is preferred over external-laboratory subcontracting. Further, subcontracting is done using capable and qualified laboratories. Established procedures are used to qualify external subcontract laboratories. These procedures are described in SOP *Qualification of Subcontract Laboratories and Internal Subcontracting Protocol* (ADM-SUBCONT).

- a) ALS advises its customers in each proposal of its intention to subcontract any portion of the testing to a third party, or non-ALS laboratory. If it is necessary to subcontract work to a non-ALS laboratory as a result of unforeseen circumstances, customers will be contacted by their project manager to gain their permission. This approval is documented by the Project Manager.
- b) Any subcontracted analysis is noted as such on ALS's final report with an identification of the appropriate subcontractor. The original subcontractor analysis report, or a true duplicate thereof, is also attached to the associated ALS laboratory report.

*Procurement and Control of Laboratory Services and Supplies* (ADM-PROC) outlines the process, evaluation, criteria and records maintained from the evaluation and reevaluation of supplies and services. Corporate personnel are responsible for vendor approval and evaluation. Records are maintained by the corporate purchasing office.

Processes are designed to ensure that materials and services purchased meet the quality specifications of ALS. Procurement and receiving services are provided at ALS by administrative personnel. Procurement and receiving quality requirements established by ALS are followed. All requisitions for purchase are approved by ALS operations management and specify 1) the level of service required or 2) the quality/specifications of material required. The receipt of materials not meeting specification in the purchase requisition require investigation.

## 7. Process Requirements

### Review of Requests Tenders and Contracts

Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. They are also responsible for the destruction of

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 18 of 75

materials provided on unsuccessful proposals and bidding opportunities. Specific procedures for client communication and required documentation are listed in the SOP *Project Management* (ADM-PCM).

### Selection, Verification, and Validation of Methods

Reference methods for environmental samples are drawn primarily from the current version of Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), Third Edition. Reference methods for water analysis are taken from Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March, 1983 with its updates, and from 40 CFR, Part 136. Methods referenced in ALS SOPs also come from ASTM guides, and from Standard Methods for the Examination of Water and Waste Water.

Reference Methods for microbiology are from Standard Methods for the Examination of Water and Wastewater.

SOPs are written for all environmental testing methods, any modified reference methods for industrial hygiene testing and any in-house developed methods. SOPs may be copies of reference methods that are not modified. All SOPs are reviewed using document control procedure. See SOP *Establishing Standard Operating Procedures* (ADM-SOP).

All analytical methods and preparatory method combinations are routinely tracked and ALS maintains statistical control limits and reporting limits. The laboratory can perform using limits provided by clients or from referenced sources in the absence of historical data. The SOP *Trending, Control Charts, and Uncertainty* (ADM-TREND) describes how control limits are established and updated.

ALS policy is that all SOPs be compliant with the reference method. In the event that several methods are referenced in an SOP, all procedures must be compliant with all referenced methods. All SOPs include a section describing changes and clarifications from the reference method. In the event that an analytical method is modified, the SOP documentation must include a description of the modification, any justification of the method modification which includes, but is not limited to, method performance and recovery data, any other supporting data, and approval from the Technical Managers, Quality Assurance Manager, and Laboratory Director. In the event that an analytical method must be modified or is modified to perform on specific sample matrices, the modification and reason must be stated in the case narrative. All modified methods will be identified on the analytical report.

The policy of ALS is to apply analytical methods that have been approved, validated, and published by government agencies, professional societies and organizations, respected private entities, and other recognized authorities. These methods have been validated for their intended use and ALS uses the demonstration of competency procedures, calibration of instruments and LOD/LOQ procedures to verify laboratory capability.

Published methods may be modified as a result of the request of the client or operational conditions prevailing in the laboratory. Operational conditions might relate to, for example, the availability of equipment or the performance of the method as determined by calibration processes, detection limits, or the results obtained for quality control samples.

Validation procedures describe three different classifications of validations for method modification. New methods, permanent modifications to a published method which will be used in subsequent laboratory determinations, and temporary

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 19 of 75

modifications applied only to immediate analytical projects. These methods are used with approval from the clients.

The essential quality control elements for modification and validation include:

Calibration - The number of levels and acceptance criteria must meet or exceed requirements of ALS analytical SOPs. Additional criteria for organic chromatography methods are included in *Calibration of Instruments for Organic Chromatographic analyses* (SOC-CAL).

QC Samples - QC samples prepared in the specific matrix, are assessed. If possible the recoveries are compared to method or historical control limits used for the reference method.

Sensitivity - Method Detection and Reporting Limit, Method Detection Limit is the lowest analyte concentration that produces a response detectable above the noise level of the system and Reporting Limit is the lowest level at which the analyte can be accurately and precisely measured. Method Detection Limits, if required, are generated. A reporting limit verification is accomplished using SOP *Performing and Documenting Method Detection Limit Studies and Establishing Limits of Detection and Quantitation* (ADM-MDL/CE-QA011).

If validation reports are required to validate methods, these reports must address the following elements and follow established testing industry protocols:

Calibration - a demonstration of a concentration range where the analyte response is proportional to concentration.

Sensitivity - Method Detection Limit is the lowest analyte concentration that produces a response detectable above the noise level of the system and Reporting Limit is the lowest level at which the analyte can be accurately and precisely measured.

Selectivity - the ability of the method to accurately measure the analyte response in the presence of all potential sample components.

Precision and Bias - Precision - the type of variability that can be expected among test results. Bias - systematic error that contributes to the difference between the mean of a large number of test results and an accepted reference value.

Robustness - the ability of the procedure to remain unaffected by small changes in parameters or matrix.

## 7.1 Sampling

In order to produce meaningful analytical data, ALS must have samples that are representative of the system from which they were taken. If the representation and integrity of the samples received in the laboratory cannot be verified due to inadequate sampling procedures, the usefulness of the analytical data produced for these samples is limited. The laboratory cannot accept responsibility for improper sampling of client-procured samples and will document the condition of the samples and analyze them as received. If an incorrect sampling procedure is suspected, the client will be notified as soon as possible by the Project Manager. ALS will postpone testing, if the holding time will not be exceeded, pending client response. Sampling instructions and acceptance criteria are made available to clients.

Where sampling, as in obtaining sample aliquots from a submitted sample, is carried out as part of the test method, the laboratory uses documented procedures as outlined in SOP *Subsampling and Compositing of Samples* (SOILPREP-ALIQUOT) to obtain a representative sub sample.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 20 of 75

## 7.2 Handling of Test or Calibration Items

Procedures for receiving, processing, and storing samples and for ensuring continuity of the chain-of-custody are detailed in the following SOPs: *Sample Receiving* (SMO-GEN) and *Sample Tracking and Internal Chain of Custody* (SMO-SCOC).

The ALS Sample Receiving area is isolated from areas of the laboratory where analyses are performed. The area is equipped with ventilation hoods and adequate bench space to ensure that the sample receiving process is safe, efficient, and not a source of cross-contamination in the laboratory.

### Sample Tracking

Sample handling in the laboratory is tracked using a computer-based Laboratory Information Management System or through the signatures on the hand-carried chain of custody documents. After samples are received by the laboratory, as described above, sample receiving personnel enter the sample information into the LIMS. See *Sample Receiving* (SMO-GEN) and *Sample Tracking and Internal Chain of custody* (SMO-SCOC).

When multiple analyses require splitting a sample, the custody documents are copied such that each split can be independently traced to its origin and appropriate entries can be entered into LIMS.

### Sample Storage and Security

Following receipt, samples are stored in accordance with analytical method requirements for storage and preservation. Water samples for organic and inorganic analysis are stored in trays and placed in refrigerators in the designated analysis laboratory. Soil samples will be forwarded to the SoilPrep group for Aliquoting. Samples to be analyzed for volatile testing are stored separately from all other samples in a refrigerator. See *Sample Receiving* (SMO-GEN) and *Sample Tracking and Internal Chain of custody* (SMO-SCOC).

To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access, except at the main business entrance and sample receiving entrance; these are open only during normal business hours and monitored by administrative personnel at the business entrance and Sample Receipt Technicians at the sample receiving entrance. All non-employees, other than those delivering samples, are required to sign in at the main entrance.

### Chain-of-Custody

In order to ensure that legally defensible data are produced at ALS, chain-of-custody procedures are established and are described in SOP *Sample Tracking and Internal Chain of Custody* (SMO-SCOC).

## 7.3 Technical Records

ALS maintains records on the most part electronically and in accordance with SOP *Records Management* (ADM-RCRDS). ALS personnel are responsible for the retention, retrieval, and disposition of final records of laboratory data and activities. This includes: data packages, analyst laboratory notebooks, instrument maintenance logs, and training records, as established by procedure.

Data Packages - All documentation which pertains to the analysis of a sample or group of samples that are being reported together must be compiled as a data package. The SOP *Report Generation* (ADM-RG) address the preparation and control of data packages.



Electronic records or scans of records that relate to the analysis of field samples are compiled into folders on network drives for storage. These data packages are generally stored electronically as per SOP *Records Management* (ADM-RCRDS). Unless specified by contract, applicable statute, or program, data packages are retained for ten years.

Laboratory Notebooks and Logbooks - Laboratory notebooks and logbooks are retained by ALS for ten years and are not released to clients. Laboratory notebooks are assigned to specific analysts or areas. If corrections are made it requires a single-line cross-out, initials and date are entered. In some instances the reason for the change should be documented.

Quality Assurance Records - Quality control sample results data are retained in LIMS. Records of internal audits, nonconformance reports, and corrective action reports are retained and stored electronically for an indefinite period on networked drives.

The Quality Assurance Manager is responsible for maintaining and retrieving all records of audits, proficiency testing results, demonstration of competency, nonconformance and corrective action records and reports. Some of these records can be internally accessed by employees on network drives.

Client-Related Information - Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. They are also responsible for the destruction of materials provided on unsuccessful proposals and bidding opportunities. Specific procedures for client communication and required documentation are listed in the SOP *Project Management* (ADM-PCM).

ALS ensures that amendments to technical records are tracked to previous versions or to original observations. Both the original and amended data and files are retained, including the date of alteration, an indication of the altered aspects and the personnel responsible for the alterations.

#### 7.4 Evaluation of Measurement Uncertainty

Uncertainty is associated with most of the results obtained in the laboratory testing conducted by ALS. It is meaningful to estimate the extent of the uncertainty associated with each result generated by the laboratory. It is also useful to recognize that this measurement of uncertainty is likely to be much less than that associated with sample collection activities.

In practice, the uncertainty of a result may arise from many possible sources. ALS has considered the relative contribution of major sources of error. The approach to estimating uncertainty adopted by the laboratory resulted in the conclusion that many sources of error are insignificant compared to the processes of sample preparation, calibration, and instrumental measurement. The uncertainty associated with the processes can be estimated from quality control data. Accordingly, ALS estimates uncertainty from data derived from quality control samples carried through the entire analytical process. A description of the uncertainty calculation is presented in SOP *Trending, Control Charts, and Uncertainty* (ADM-TREND). The estimation of uncertainty applied by ALS relates only to measurements conducted in the laboratory. Uncertainty associated with processes conducted external to the laboratory (e.g., sampling activities) are not considered.

Calculation of uncertainty may use the precision measurement values for duplicate samples when LCS or QC samples are not used in testing.

The calculation of uncertainty is not required for qualitative tests. The process is assessed for contributors to uncertainty but the calculation of uncertainty has limited value when empirical values are not available.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 22 of 75

## 7.5 Ensuring the Validity of Results

Before samples are analyzed, the analytical system must be in a controlled, reproducible state from which results of known and acceptable quality can be obtained. That state is verified through the use of Quality Control (QC) procedures intended to ensure accuracy, precision, selectivity, sensitivity, freedom from interference, and freedom from contamination. The QC procedures performed at ALS include: calibration and calibration verification; analysis and comparison of resultant data to predetermined control limits for method blanks, laboratory control samples, spiked matrix samples, duplicate matrix samples, and surrogates added to samples; analysis of performance evaluation samples; determination of Reporting Limits; and the tracking and evaluation of precision and accuracy. For specific analytical methods, other QC procedures are implemented as required by the method.

These QC procedures are performed and evaluated on a batch basis. A preparation batch must not exceed 20 field samples that are of a similar matrix type without additional method QC in the batch, unless specified differently in an SOP or reference method. The samples in a batch are processed together, through each step of the preparation and analysis, to ensure that all samples receive consistent and equal treatment. Consequently, results from the batch QC samples, not including field sample QC, are used to evaluate the results for all samples in the batch.

In general terms, instrument calibration, method quality control, and data evaluation is described in analytical SOPs.

All QC parameters set by the applicable ALS SOP or method reference shall not be exceeded without initiation of a NCAR. See *SOP Nonconformance and Corrective Action Procedures* (ADM-NCAR).

The hierarchy of quality control requirements begins with:

- Client Requirements (if specified and documented).
- Method and/or SOP requirements.
- Guidance from QAM and other general SOPs.

### Calibration and Calibration Verification

Instrument calibration is a QC measure taken to verify selectivity and sensitivity. Calibration of instruments at ALS is accomplished through the use of reference materials of the highest quality obtainable. ISO or National Metrology Institute (NMI) traceable reference materials are procured and used if they are available. When ISO or National Metrology Institute (NMI) traceable reference materials are not available, certified reference materials from government agencies or reliable vendors are used. In all cases, written records are maintained that allow all analytical results to be traced unambiguously to the reference materials used for calibration.

In general, analytical instruments are initially calibrated with standard solutions made from the reference materials at levels appropriate for the analysis. This is called the initial calibration (IC). This calibration is verified with a standard solution independently prepared from a different lot of the reference material, preferably from a different vendor. This step is called initial calibration verification or ICV. At specified intervals throughout the analytical sequence, the calibration is re-verified again through the analysis of a calibration check solution, usually the mid-point standard solution. This process is called the continuing calibration verification or CCV. If the IC, the ICV, or any CCV fails criteria in the analytical method, the system is recalibrated or the results are narrated. It is ALS' intention to only report results generated under





acceptable calibration conditions. Specific calibration procedures are found in the SOPs associated with each method of analysis.

Alternative calibration sequences or procedures will be discussed with clients.

Calibration parameters set by the applicable SOP or method reference shall not be exceeded without initiation of a NCAR.

#### Analysis of Method Blanks

The method blank (or preparation blank) contains no sample material; it is treated as a sample in every other way. It is analyzed to monitor any contamination to which the analytical batch might have been exposed during preparation and analysis. A method blank is analyzed with every analytical batch. Criteria set by the applicable ALS SOP or method reference shall not be exceeded without initiation of a NCAR.

#### Analysis of Laboratory Control Samples and QC Samples

A control sample (LCS or QC) contains the analyte(s) of interest in known concentration(s) in a laboratory matrix; it is used to monitor accuracy. It measures the success of the analysis in recovering the analyte(s) of interest from a QC matrix. Soil samples and other solid matrices are analyzed with an LCS made of clean sand or appropriate substrate spiked with the analyte(s) of interest. Water samples and other liquid matrices are analyzed with a method blank spiked with the analyte(s) of interest.

The results of the LCS are reported as percent recovery:

$$\% \text{ Recovery} = \frac{X}{K} \times 100$$

Where: X = Measured value  
K = Expected value

LCS/QC criteria set by the applicable ALS SOP or method reference shall not be exceeded without initiation of a NCAR.

#### Analysis of Spiked Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, as with industrial hygiene, dietary supplements or other samples of limited matrix amount, a duplicate LCS or QC should be analyzed in the batch.

A known concentration of the analyte(s) of interest is added to a second representative portion of a field sample to prepare a matrix spike. The matrix spike is used to determine acceptability of the method chosen on a specific field matrix. It measures the success of the analysis in recovering the analyte(s) of interest from the type of field sample matrix in the batch. A matrix spike is analyzed with every analytical batch of environmental samples. The results are reported as percent recovery.

$$\% \text{ Recovery} = \frac{(X_S - X_U)}{K} \times 100$$

Where: X<sub>s</sub> = Measured value in the spiked sample  
X<sub>u</sub> = Measured value in the unspiked sample  
K = Expected value



Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted as per client instructions.

### Analysis of Duplicate Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, as with industrial hygiene, dietary supplements or other samples of limited sample amount, a duplicate LCS or QC should be analyzed in the batch.

A duplicate matrix spike sample or duplicate matrix sample is used to monitor the precision (repeatability) of the method chosen on a field sample. If a sufficient amount of the analyte(s) of interest is present in the field sample, a matrix duplicate sample is analyzed directly. If the analyte(s) of interest are not present in a sufficient amount, two additional portions of field sample are spiked with the analyte(s) of interest to ensure that meaningful results are obtained. A pair of duplicate samples (matrix/matrix duplicate or matrix spike/matrix spike duplicate) is analyzed with every analytical batch of environmental samples. The results of the analysis of duplicate samples are reported as relative percent difference (RPD).

$$RPD = \frac{|X_1 - X_2|}{[(X_1 + X_2)/2]} \times 100$$

Where:  $|X_1 - X_2|$  = The absolute value of the difference between the two sample values  
 $[(X_1 + X_2)/2]$  = The average of the two sample values

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted as per the analytical SOP instructions, or as per client instructions for project specific requirements.

### Analysis of Surrogates Added to Samples

Surrogates are compounds similar to the analyte(s) of interest but that are known not to be present in the environment. Examples are fluorinated or deuterated homologues of the organic analyte(s) of interest. When appropriate compounds are available, their use is specified in the analytical method SOP. When surrogates are used, they are added to the calibration solutions and to each field and QC sample in the batch. Surrogate recovery is a measure of the accuracy and selectivity of the method in the sample matrix. Surrogate results are reported as percent recovery.

$$\% \text{ Recovery} = \frac{X}{K} \times 100$$

Where: X = Measured value  
K = Expected value

Surrogate criteria set by the applicable SOP or method reference on method QC samples shall not be exceeded without initiation of a NCAR.

The same criteria will be used for field samples although failure to meet these criteria will be noted in report, narrative comments, or as per client requirements.

### Reporting Limit Verification Sample(s) (RLVS)





An RLVS is a control sample that contains the analyte(s) of interest at or below the stated reporting limit(s) in an applicable QC matrix; it is used to monitor sensitivity and assess uncertainty at the reporting limit. These samples are not used for batch acceptance and should be recovered at  $\geq \frac{1}{2}$  the stated reporting limit. The analyst shall raise the reporting limit if systematic failures are apparent.

- An RLVS is required for every sample batch for environmental and industrial hygiene testing.
- Reporting limits must be at or above the lowest calibration standard.

#### Analysis of Performance Evaluation Samples (PT)

Proficiency testing (PT) samples are prepared by an authorized independent organization outside the laboratory. They are received and analyzed at regular intervals to monitor laboratory accuracy. ALS Laboratories sends the PT sample results to the independent organization, where they are evaluated and then forwarded directly from that organization to accreditation bodies as needed. PT samples are introduced into the regular sample stream of the laboratory and analyzed as routine samples by analysts who regularly perform the method. Laboratory personnel follow all instructions provided by the PT provider.

The Laboratory Director, Technical Managers or the Quality Assurance Manager can institute the analysis of additional PT samples or modify the performance evaluation program as appropriate.

The following guidelines are followed by ALS:

- Averaging results is prohibited.
- Only qualified ALS laboratory employees analyze PT samples.
- Results are not discussed with outside entities or other ALS laboratories prior to the deadline for receipt of the results.
- ALS does not subcontract to other laboratories or receive from other laboratories any PT samples.

When a PT sample result is scored as “Not Acceptable”, an NCAR is issued by the QA Manager, as per ADM-NCAR, to initiate corrective action to determine and correct any problem(s) leading to the unacceptable result.

Participation in Proficiency Testing programs provides the laboratory with evidence of correlation of results with other laboratories and national standards. A four year proficiency testing schedule is maintained by the QA Manager as required by the DoD QSM.

When no commercial Proficiency Testing (PT) sample is available for an analyte that is routinely reported by ALS to a client, the QA Department will use demonstration of capabilities (DOCs) to monitor and evaluate the precision and accuracy of the analytical procedure against defined acceptance criteria documented in the Standard Operating Procedure.

#### Tracking and Evaluation of Accuracy and Precision

When evaluating batch QC the analyst makes a sequence of decisions before reporting sample results regarding calibration, the method blank, LCS, surrogate recovery, matrix spike, and matrix spike duplicate recovery results.

Assessment of the accuracy of an analytical measurement is based upon the analysis of samples of known composition. ALS relies upon the analysis of LCS/QC samples to



track accuracy. The percent recovery relative to the expected value is calculated and can be plotted.

Assessment of the precision (repeatability) of an analytical measurement is based upon repeated analysis of equivalent samples of known or unknown composition. ALS relies upon the analysis of pairs of LCS/QC samples, duplicate samples, or spiked matrix samples (MS/MSD) to assess precision. The range of the pair is expressed as a relative percent difference (RPD).

Control limits for the accuracy and precision of each method are included in the analytical SOPs, and are based on set limits as indicated by the client (project specific), in the reference method or program, or as calculated using in-house data. Control limits for accuracy and precision charts are calculated assuming a normal (Gaussian) distribution of results. Historical data points are used to calculate mean values, two-standard deviation warning limits, and three-standard deviation control limits. The establishment and updating of control limits is described in *SOP Trending, Control Charts, and Uncertainty (ADM-TREND)*.

### Trending

In addition to evaluating individual batch QC results against control limits, QC results from successive batches are also evaluated for possible trends. While a trend is not necessarily an out-of-control situation in itself, it can provide an early warning of a condition that can cause the system to go out of control. *SOP Trending, Control Charts, and Uncertainty (ADM-TREND)* describes in detail the assessment of QC data in the laboratory. The following conditions are trends that may initiate action and/or monitoring.

- A series of successive points on the same side of the mean.
- A series of successive points going in the same direction.
- Two successive points between warning limits and control limits.

ALS relies on analytical staff to identify trends in analytical systems. Quality Assurance can produce control charts as needed to assess trends but this activity by QA is not preventive and is only used to verify trends exist. The occurrence of a trend does not invalidate data that are otherwise in control. However, trends do require attention to determine whether a cause can be assigned to the trend so that appropriate preventive action can be undertaken.

Long term trends in control limits are evaluated quarterly and annually by quality assurance and technical operations. See *SOP Trending, Control Charts, and Uncertainty (ADM-TREND)*.

## 7.6 Reporting of Results

ALS relies upon a system of peer review to ensure the quality of analytical reports. Peer review procedures are specified in the *SOP Laboratory Data Review Process (ADM-DREV)*. An analyst, familiar with the analytical method used to produce the results (peer reviewer), reviews each report. The peer reviewer verifies that the calibration standards, type of calibration, and sample set with associated QC samples were selected correctly. The peer reviewer also verifies any manual transcriptions and calculations. The applicable Technical Manager can perform additional technical review.

Project Managers perform an initial review of results for large projects to verify that data reports submitted to the client meet all project and client requirements.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 27 of 75

When the peer review has been completed, a final report is generated. In most situations the report is produced from LIMS. In some cases part or all of the report can be produced from the data system of the analytical instrument. The reports produced by ALS meet the following requirements:

- The report identifies the method used. If the method is modified, it is noted as “modified” in the report.
- Any abnormal sample conditions, deviation from hold time, irregularities in preservation or other situations that might affect the analytical results are noted in the report and associated with the analytical results.

The contents of the report include:

- The report title with the name, address, and telephone number of the laboratory.
- The name of the client or project and the client identification number.
- Sample description and laboratory identification number.
- The dates of sample collection, sample receipt, sample preparation, and analysis.
- The time of sample preparation and/or analysis if the required hold time for either activity is 48 hours or less.
- A method identifier for each method, including methods for preparation steps.
- The MDL or minimum reporting limit for the analytical results.
- The analytical results with qualifiers as required.
- A description of any quality control failures and deviations from the accepted method.
- The name (electronic signature) and title of the individual(s) who accept responsibility for the content of the report.
- The date the report is issued.
- Clear identification of any results generated by a subcontract laboratory.
- Page numbers and total number of pages.
- Electronic Data Deliverables (EDDs) can be developed and generated per client or agency specific specifications, and may contain a subset of components included on the final report. See SOP Report Generation (ADM-RG).

ALS does not evaluate or interpret results.

ALS does not perform calibration services.

Sampling activities are not performed by ALS.

The laboratory reports results based on the sample provided by the customer. If ALS reports to a specification it is only for the sample results and not involved with decision rules applied to the sampling site.

ALS does not make any statements concerning opinions and interpretation of results.



Amended reports of analytical results are issued to correct errors. Amended reports require the following items:

Amendments to analytical reports will only be made in supplemental documents and shall contain identification similar to "Amended".

Include the date amended or released to the client.

Amended reports shall meet all reporting and client requirements.

Amended Reports are stored with the original report, are uniquely identified, and make reference to original reports.

A peer review process is used to ensure amended results are accurate.

Any information changed in the report must have the reason for the change documented in the report.

### 7.7 Complaints

ALS has a documented process for how complaints are received and evaluated. Nonconformance or corrective actions are generated to ensure decisions and outcomes are monitored and communicated. These outcomes are reviewed by the Quality Assurance department. The SOP on handling complaints is *SOP Handling Customer Feedback* (ADM-FDBK).

### 7.8 Nonconforming Work

The ALS SOP for handling nonconformance is *SOP Nonconformance and Corrective Action Procedures* (ADM-NCAR).

This laboratory procedure shall be implemented when any aspect of its laboratory activities or results of this work do not conform to its own procedures or the agreed requirements of the customer. The procedure ensures that:

- The responsibilities and authorities for the management of nonconforming work are defined;
- Actions (including halting or repeating of work and withholding of reports, as necessary) are based upon the risk levels established by the laboratory.
- Any employee may stop work when a task cannot be performed safely or the quality of data is determined to be or could be negatively affected. Metrics utilized for work stoppage may include but are not limited to exceeding instrument or sample control limits, QC trending, instrument problems, etc. The appropriate manager shall be consulted for any work stoppage;
- An evaluation is made of the significance of the nonconforming work, including an impact analysis on previous results;
- A decision is taken on the acceptability of the nonconforming work;
- Where necessary, the customer is notified and work is recalled;
- The responsibility for authorizing the resumption of work is defined.

The laboratory retains records on all nonconformance.

Quality Assurance Manager or designee reviews all nonconformance for completeness and adds comments as necessary on the acceptance. If this evaluation determines the problem has or can reoccur or it is against the laboratories own policies or procedures the event requires a corrective action as described in section 8.7.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 29 of 75

## 7.9 Control of Data and Information Management

The laboratory has access to all data and information through the internet, intranet, network locations and hard copy.

7.9.1 All of the software used for data reduction, verification, and reporting is documented and validated by the ALS computer support staff or by the vendor from whom it is purchased. ALS software is controlled and secured according to SOP *Software Quality Assurance and Data Security* (ADM-SWQADATA). A continuing effort is made at ALS to increase the use of automated data handling, improve efficiency, and minimize human error.

Software errors are treated as a nonconformance under section 7.10 or as a corrective action under 8.7.

7.9.2 Access to ALS networks are controlled through passwords and windows security. Network drives are backed up and disaster planning is evident.

7.9.3 ALS uses offsite locations from the laboratory but internal to ALS for data storage and is managed in accordance with these procedures.

7.9.4 Access to network locations is managed with windows security and roles throughout the system.

7.9.5 Calculations and data transfers are checked using the peer review process and through documentation of computer programs by the IT staff.

## 8. Management System Requirements

### 8.1 Options

8.1.1 The laboratory has implemented **Option A** from the ISO/IEC 17025:2017 standard as a management system. The following sections 8.2 through 8.9 address the required elements of Option A. This manual addresses management systems and demonstrates compliance with this document.

### 8.2 Management System Documentation

8.2.1 This manual describes the policies and objectives of the ALS management system. The laboratory procedures describe the details on how objectives are accomplished.

8.2.2 Policies and objectives of the management system address how competence is demonstrated and assessed, how testing is objectively reviewed and how consistent operations are accomplished. These are addressed in various procedures that define the processes used.

8.2.3 Evidence of commitment is the review of the manual annually and the records of reading by all employees. Additionally, employees are assigned pertinent procedures as needed to ensure objectivity and consistency.

8.2.4 The policies are supported in this management system with references to the procedures as appropriate.

8.2.5 All employees have access to the Quality Assurance Manual and the supporting procedures.

### 8.3 Control of Management System Documents

8.3.1 SOPs and the QAM are maintained under document control procedures described in SOP *Document Control* (ADM-DOC\_CTRL). External documents, such as reference methods, accreditation policies and requirements, and reference



manuals are maintained under document control policies through the use of hardcopy and network drives. Additionally, quality assurance program documents, project plan documents, and contractual Statement of Work documents generated by a client can be designated as controlled documents at the discretion of the ALS Project Manager, Quality Assurance Manager, or the Laboratory Director.

- 8.3.2 Revisions are made to uniquely identified internal documents in accordance with SOP *Document Control* (ADM-DOC\_CTRL) and the following table. Assignments are made to the responsible ALS manager or designee to review and update SOPs applicable to the area of responsibility. At times it is also necessary to obtain approval by specific clients before written SOPs can be modified. After revision, the appropriate Manager, Quality Assurance Manager, and Laboratory Director must approve the updated SOP. Updated SOPs are then distributed on-line by the Kelso network. All obsolete copies are removed from access and stored for historical purposes.

SOP Type	Review Cycle
Environmental Testing SOPs (DoD)	12 Months
Environmental Testing SOPs (TNI ONLY)	24 Months
Management Systems SOPs	36 Months
All other SOPs	24 Months

**8.4 Control of Records**

- 8.4.1 ALS maintains records on the most part electronically and in accordance with SOP *Records Management* (ADM-RCRDS). ALS personnel are responsible for retention, retrieval, and disposition of final records of laboratory data and activities. This includes: data packages, laboratory notebooks, instrument maintenance logs, and training records.

**8.5 Data Packages**

- 8.5.1 All documentation which pertains to the analysis of a sample or group of samples that are being reported together must be compiled as a data package.
- 8.5.2 Electronic records or scans of records that relate to the analysis of field samples are compiled into folders on network drives for storage. These data packages are stored electronically as per SOP *Records Management* (ADM-RCRDS). Unless specified by contract, applicable statute, or program, data packages are retained for ten years.
- 8.5.3 Laboratory Notebooks and Logbooks  
 Laboratory notebooks and logbooks are retained by ALS for twelve years and are not released to clients. Laboratory notebooks are assigned to specific analysts, who are responsible for their maintenance. If corrections are required, a single-line cross-out, initials and date are entered.

**8.6 Quality Assurance Records**

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 31 of 75

8.6.1 Quality control sample results data are retained in LIMS. Records of internal audits, nonconformance reports, and corrective action reports are retained and stored electronically for an indefinite period on networked drives.

8.6.2 The Quality Assurance Manager is responsible for maintaining and retrieving all records of audits, proficiency testing results, demonstration of competency, nonconformance and corrective action records and reports.

Client-Related Information

8.6.3 Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. They are also responsible for the destruction of materials provided on unsuccessful proposals and bidding opportunities. Specific procedures for client communication and required documentation are listed in the SOP *Project Management* (ADM-PCM).

**8.7 Actions to Address Risks and Opportunities**

8.7.1 ALS views risk management as a key component of its corporate governance responsibilities and an essential process in achieving and mandating a viable organization. ALS is committed to enterprise wide risk management to ensure its corporate governance responsibilities are met and its strategic goals are realized.

8.7.2 Refer to ALS Limited Risk Management Policy and Framework CAR-GL-GRP-POL-007 and Risk Appetite and Tolerance Statement CAR-GL-POL-011 for details.

8.7.3 Risk is defined at ALS as the effect of uncertainty on objectives. Objectives for the organization have different attributes and aspects, such as financial, service, quality, health & safety, environmental stewardship, and are considered at different levels, such as enterprise-wide, operational, and project levels. ALS interprets risk as anything that could impact meeting its corporate strategic objectives, and believes risks can provide positive opportunities as well as having negative impacts.

8.7.4 Tools for evaluating and managing risk include routine procedures such as employee evaluations, control limits trending, RLVS data evaluation, corrective action reports, nonconforming events, SOP review, internal and external audits, and PT results.

8.7.5 Risk reporting mechanisms vary from routine reporting mechanisms and immediate action for lower risk situations to immediate notification of the ALS CEO in extreme cases.

8.7.6 Regardless of the mechanism used, the policies and tools provide a framework for categorizing, assessing, analyzing, and addressing risk, as well as monitoring and reviewing actions taken. Roles and responsibilities are defined in the relevant procedures.

8.7.7 Risk severity is evaluated during the decision making process. For each risk there is an opportunity.

8.8 Risks to our business and how we address them include:

**Chemical Exposure**

8.8.1 Failure to practice procedures as trained, issues with the facility, and poor engineering controls can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.





8.8.2 We have policies, chemical exposure training, and readily available SDS sheets. Employees are expected to offer suggestions for improvement and formally report any conditions where concern for safety is recognized.

**8.9 Explosion/Chemical Fire**

8.9.1 Improper chemical storage and usage along with lack of equipment and facility upkeep can result in loss of life, loss of property, and laboratory down time.

8.9.2 We perform inspections and training, keep an inventory of chemicals, establish storage locations, and maintain minimal quantities of chemicals.

**8.10 Supply Disruption**

8.10.1 Natural disaster and vendors unable to provide needed supplies can disrupt the business, increase expenses, and result in lost production and lost clients.

8.10.2 We maintain multiple sources for supplies, develop relationships with our vendors, and emphasize communication between analysts, managers, purchasing and vendors.

**8.11 Loss of Key Employees**

8.11.1 Resignation, leave for personal reasons or for other employment can negatively impact the business.

8.11.2 Communication, cross-training, designated backups, and having a pool of potential replacements minimizes this risk. We provide a positive atmosphere for employees and provide small perks to reward dedication.

**8.12 Computer and Instrument Issues**

8.12.1 Computer, instrument, or other IT failures can result in loss of revenue, loss of service, and loss of data.

8.12.2 We provide necessary IT resources for instruments and computers including replacing older computers, keeping related systems in good repair, and replacing when necessary. We continue to build robust data systems and make provisions for stellar back-up storage for all data.

**8.13 Reputation**

8.13.1 Falsifying test results can result in loss of credibility, loss of clients, loss of revenue, and suspension.

8.13.2 All new employees must sign an ethics agreement and have initial ethics and data integrity training. Annually, all employees must take ethics and data integrity refresher training. All data undergoes a proper peer review. We maintain a strong quality system.

**8.14 Legal Ramifications**

8.14.1 Not following workplace and environmental laws and failure to practice procedures as trained can result in license revocation, fines, and disruption of the business.

8.14.2 Targeted and ongoing training, inspections, and having established procedures minimizes this risk. We continue to follow all laws and regulations.

**8.15 Loss Time Injury**

8.15.1 Failure to practice procedures as trained and not having proper safeguards in place can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.



	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 33 of 75

8.15.2 Policies, specific task related training, targeted and ongoing training, inspections, workplace safeguards, cross training, and designated backups, minimize this risk. We continue to grow the safety program and culture.

#### 8.16 Loss of Revenue

8.16.1 Can be caused by various audit fines and contract penalties for late data resulting in loss of revenue and disruption in business.

8.16.2 Policies, specific quality training, targeted and ongoing training, inspections, workplace safeguards, and internal audits minimize this risk. We continue to perform lab operations at the highest level.

#### 8.17 Improvement

8.17.1 ALS management is committed to continually improving the effectiveness of the management and quality systems by implementing the requirements of this quality manual. ALS is also committed to improvements of the management systems through compliance with its own policies and procedures. ALS management is also committed to compliance with requirements related to current EPA CLP SOWs, DoD/DOE QSM, and other client and project related requirements. Internally ALS maintains a process improvement website for employees to provide suggestions for improvements.

8.17.2 ALS surveys clients and gains feedback on services provided. This input to management is managed at a corporate level and is reviewed monthly and during the management review processes.

#### 8.18 Corrective Actions

8.18.1 ALS Laboratory operations are governed by documented procedures, requirements, quality assurance plans, project plans, and contracts. When any operation, for any reason, does not conform to the requirements of the governing documents, the aberrant event, item, or situation must be properly documented and evaluated. In addition, appropriate corrective action must be initiated. Procedures for the documentation and resolution of corrective action are detailed in the SOP *Nonconformance and Corrective Action Procedures* (ADM-NCAR). It is the policy of ALS that any corrective action which impacts results of testing must include notification to clients.

#### 8.19 Internal Audits

8.19.1 Internal audits are conducted in accordance with SOP *Internal Audits* (ADM-AUDIT). When internal and external audits or data assessments reveal a cause for concern with the quality of the data an investigation is initiated by quality assurance personnel to determine the extent of the problem. Internal audits include examination of laboratory practice, the use of data handling systems, documentation and document control, personnel qualification and training records, procurement activities, and other systems that support and augment the laboratory analytical function. All audit findings and any event that casts doubt on the validity of the testing results requires corrective action and client notification within two weeks.

#### 8.20 Management Review

8.20.1 Review of the Management System is completed on an ongoing basis in accordance with SOP *Lab Management Review* (ADM-LABMGMT).

8.20.2 Inputs to management reviews may be kept in agenda notes and include but are not limited to:

- a) Changes in internal and external issues that are relevant to the laboratory;
- b) Fulfilment of objectives;
- c) Suitability of policies and procedures;
- d) Status of actions from previous management reviews;
- e) Outcome of recent internal audits;
- f) Corrective actions;
- g) Assessments by external bodies;
- h) Changes in the volume and type of the work or in the range of laboratory activities;
- i) Customer and personnel feedback;
- j) Complaints;
- k) Effectiveness of any implemented improvements;
- l) Adequacy of resources;
- m) Results of risk and opportunity identification;
- n) Outcome of the assurance of the validity of results; and
- o) Other relevant factors, such as monitoring activities and training.

8.20.3 The outputs from the management review shall record all decisions and actions related to at least:

- a) The effectiveness of the management system and its processes;
- b) Improvement of the laboratory activities related to the fulfilment of the requirements of this document;
- c) Provision of required resources;
- d) Any need for change.

A summary of these outputs is generated annually.

## 9. Change History

Revision Number	Effective Date	Document Editor	Description of Changes
29.0	7/16/2021	K. Clarkson	Updated QAM signatories, Organizational Charts and Key Personnel.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 35 of 75

## 10. Appendices

The documents listed in this section are dynamic; accordingly they can change without notice or revision to this QAM. Appendices are current as of the effective date of this SOP. Please contact the laboratory for the most current documents.

APPENDIX A – Data Quality Objectives and Definitions

APPENDIX B – Organization Charts and Key Personnel

APPENDIX C – Ethics and Data Integrity Agreement

APPENDIX D – Laboratory Floor Plan

APPENDIX E – Analytical & Support Equipment

APPENDIX F – Sample Preservation, Containers, and Hold Times

APPENDIX G – Standard Operating Procedures

APPENDIX H – Data Qualifiers

APPENDIX I – Master List of Controlled Documents

APPENDIX J – Laboratory Accreditations

APPENDIX K – Chain of Custody and Cooler Receipt Forms

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 36 of 75

## Appendix A

### Data Quality Objectives and Definitions

#### Data Quality Objectives

The data quality objectives discussed below ensure that data will be gathered and presented in accordance with procedures appropriate for its intended uses, and that the data will be of known and documented quality able to withstand scientific and legal scrutiny. The quality of the measurement data can be defined in terms of completeness, accuracy, precision and traceability.

**Completeness** - Completeness is defined as the percentage of measurements that are judged to be valid measurements. Factors negatively affecting completeness include the following: sample leakage or breakage in transit or during handling, missed method prescribed holding times, lost sample during laboratory analysis through accident or improper handling, improper documentation such that traceability is compromised, or rejection of sample results due to failure to conform to QC criteria specifications.

**Accuracy** - Accuracy is the measure of agreement between an analytical result and its “true” or accepted value. Deviations from a standard value represent a change in the measurement system. Potential sources of deviations include (but are not limited to) the sampling process, sample preservation, sample handling, matrix effects, sample analysis and data reduction. Sampling accuracy is typically assessed by collecting and analyzing field and trip blanks for the parameters of interest. Analytical laboratory accuracy is determined by comparing results from the analysis of laboratory control samples or check standards to their known values. Accuracy results are generally expressed as percent recovery.

**Precision** - Precision is the determination of the reproducibility of measurements under a given set of conditions, or a quantitative measure of the variability of a group of measurements compared to their average value. Precision is typically measured by analyzing field duplicates and laboratory duplicates (sample duplicate, matrix spike duplicate, check standard duplicate and/or laboratory duplicate). Precision is most frequently expressed as standard deviation, percent relative standard deviation or relative percent difference.

**Traceability** - Traceability is the extent to which reported analytical results can be substantiated by supporting documentation. Traceability documentation exists in two essential forms: those which link the quantitation process to authoritative standards and those which explicitly describe the history of each sample from collection to analysis and disposal.

#### Laboratory Quality Control Definitions

Technical personnel are responsible for complying with all quality assurance/quality control requirements that pertain to their technical functions. ALS uses the following internal quality controls to verify that the data produced by the laboratory has the required degree of accuracy and precision and is free from contamination due to laboratory processes. All samples are normally processed in preparation and analytical batches of no more than 20 samples per batch. The following quality control checks defined below are appropriate for the various methods performed in the laboratory. Individual SOPs will further define the specific checks to be analyzed with each method. Additionally, a Customer’s individual Quality Assurance Project Manual may require the laboratory to include additional checks for analysis depending on the *site* requirements.

**Method Blank** - A method blank is an analytical control consisting of all reagents, internal standards, and surrogate standards that is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background and reagent contamination contributed from the preparation or processing of the sample.

**Reagent Blank** - A reagent blank is an analyte-free sample that contains all the reagents used in a particular method. It is prepared and analyzed to determine if contamination is present at detectable levels that can be attributed to the reagents used in the process.

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 37 of 75

**Field Blank** - A field blank consists of reagent water that is transported to the sampling site, transferred from one vessel to another at the site, and preserved with the appropriate reagents. This serves as a check on reagent and environmental contamination.

**Trip Blank** - A trip blank consists of reagent water that is transported to the sampling site and returned to the laboratory without being opened. This serves as a check on sample contamination originating from sample transport, shipping, and from the site conditions. The holding time for the trip blank begins when received by the laboratory, unless otherwise specified by the client, such as the time when field samples were collected.

**Refrigerator / Storage Blank** - Refrigerator/storage blanks are placed in VOA refrigerators on a weekly basis and analyzed by GC/MS for the full Volatile Organic Analytes/Target Compound List (VOA-TCL). These blanks are used to monitor the volatile storage refrigerators for the presence of sample cross-contamination. In order to maintain continuous measurement within each refrigerator these blanks are prepared and logged into the Laboratory Information Management System (LIMS) by the Sample Custodian for specific turnaround times. This ensures that at least one blank is present in each volatile refrigerator at all times. If contamination is found the analyst is required to take corrective action to prevent the problem from affecting other stored samples. All samples associated with a positive blank will then be qualified on the analytical report. The QC Department reviews these results and maintains these files for review by regulatory agencies for a period of 10 years.

**Quality Control Reference Sample or Calibration Verification Standard (Second Source Standard)** - A QC reference sample is a sample prepared from a source other than that used for calibration at a concentration within the calibration range. It is used to verify that the calibration standards were prepared accurately. It is analyzed after every initial calibration performed in the laboratory.

**Laboratory Control Sample (LCS/LFB)** - A Laboratory Control Sample (aka Laboratory Fortified Blank) is a laboratory blank fortified at a known concentration. Aqueous and solid LCSs are analyzed using the same sample preparation, reagents, and analytical methods employed for the samples. An LCS is analyzed with each preparative or analytical batch as required by the method. It provides a measure of the accuracy of the analytical system in the absence of matrix effects.

**Surrogate Standards** - Surrogates are organic compounds which are similar to analytes of interest in chemical composition, extraction, and chromatography, but which are not normally found in environmental samples. These compounds are spiked into all blanks, calibration and check standards, samples (including duplicates and QC reference samples), and spiked samples prior to an organic analysis. Percent recoveries are calculated for each surrogate to detect problems in the sample preparation process and monitor the efficiency of the process.

**Duplicate** - A duplicate is a second aliquot of a sample that is prepared and analyzed in the same manner as the original sample in order to determine the precision of the method. Samples selected for duplicate analysis are rotated among Customer samples so that various matrix problems may be noted and/or addressed. Poor precision in a sample duplicate may indicate a problem with the sample composition and shall be reported to the Customer whose sample was used for the duplicate analysis.

**Matrix Spike/Matrix Spike Duplicate** - A matrix spike/matrix spike duplicate is the addition of a known amount of a target analyte to a sample that is subjected to the entire analytical procedure. Samples selected for matrix spiking are rotated among Customer samples so that various matrix problems may be noted and/or addressed. Poor performance in a matrix spike may indicate a problem with the sample composition and shall be reported to the Customer whose sample was used for the spike.

**Method Detection Limit (MDL)** - The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Reportable Detection Limit (RDL)** - The reportable detection limit on the laboratory report is a concentration at which the laboratory routinely reports results. The RDL may also be the method

	STANDARD OPERATING PROCEDURE	Quality Assurance Manual
	ALS   Environmental - Kelso	ALKLS-QAM, Rev. 29.0
		Effective: 7/16/2021
		Page 38 of 75

detection limit and is based on whether the Customer requires the result reported down to the MDL. It is laboratory policy to indicate on the laboratory report when the method detection limit is used as the RDL.

**Common Laboratory Contaminants** - Some common laboratory contaminants include: methylene chloride, acetone, 2-Butanone, hexane, phthalates, aluminum, and zinc. These analytes are sometimes seen in laboratory blanks due to their use in the processing of samples. When blank contamination occurs it is required that samples associated with these blanks be reprocessed. However, if reprocessing cannot occur due to lack of sample, holding time issues, or Customer turnaround time a comment will be placed on the analytical report defining the problem.

**Internal Standard (IS)** - A known amount of standard added to a test portion of a sample as a reference for evaluating and controlling the precision and bias of the applied analytical method (NELAP).

**Minimum Reporting Level (MRL)** - Minimum Reporting Levels represent an estimate of the lowest concentration of a compound that can be quantitatively measured by a group of experienced drinking water laboratories.

**Detection Limit (DL) for DoD** - The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. At the DL, the false positive rate (Type I error) is 1%.

**Limit of Detection (LOD) for DoD** - The smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

**Limit of Quantitation (LOQ) for DoD** - The lowest concentration that produces a quantitative result within specified limits of precision and bias. For DoD projects, the LOQ shall be set at or above the concentration of the lowest initial calibration standard.

**Holding Times** - Samples are prepared and analyzed within method prescribed holding times per SOP 19-Sample Preservation Protocol and the appropriate method SOP. Holding time is the time from sampling until the start of analysis unless otherwise specified by a project QAPP. The date and time of sampling documented on the chain of custody establishes the time zero. If the holding time is specified to be measured in hours, then each hour is measured from the minute the sample was collected in 60-minute intervals. When the maximum allowable holding time is expressed in days, the holding time is based on calendar day measured from time zero, the date the sample was collected. The first day of holding time is not passed until midnight of the day after the sample was collected. Holding times for analysis include any necessary re-analysis due to instrument failure or analyst error that does not yield useful data. If sample re-analysis is necessary due to sample matrix, such as a dilution or matrix spike failure due to matrix interference, the holding time still applies. A comment is added to the final report stating that further analysis was required past hold time. The sampling time must be documented on the chain of custody form by the Customer.

**Turn Around Time** - Turnaround time is the time from receipt of samples to the transmittal of analytical data by mail, electronically or facsimile. The day the chain-of-custody is signed by the sample custodian is day zero in the turnaround time. Samples results will be due by the close of business on the last day of the turnaround time unless alternate arrangements have been made with the laboratory. The turnaround time is based on working business days, excluding weekends and holidays.



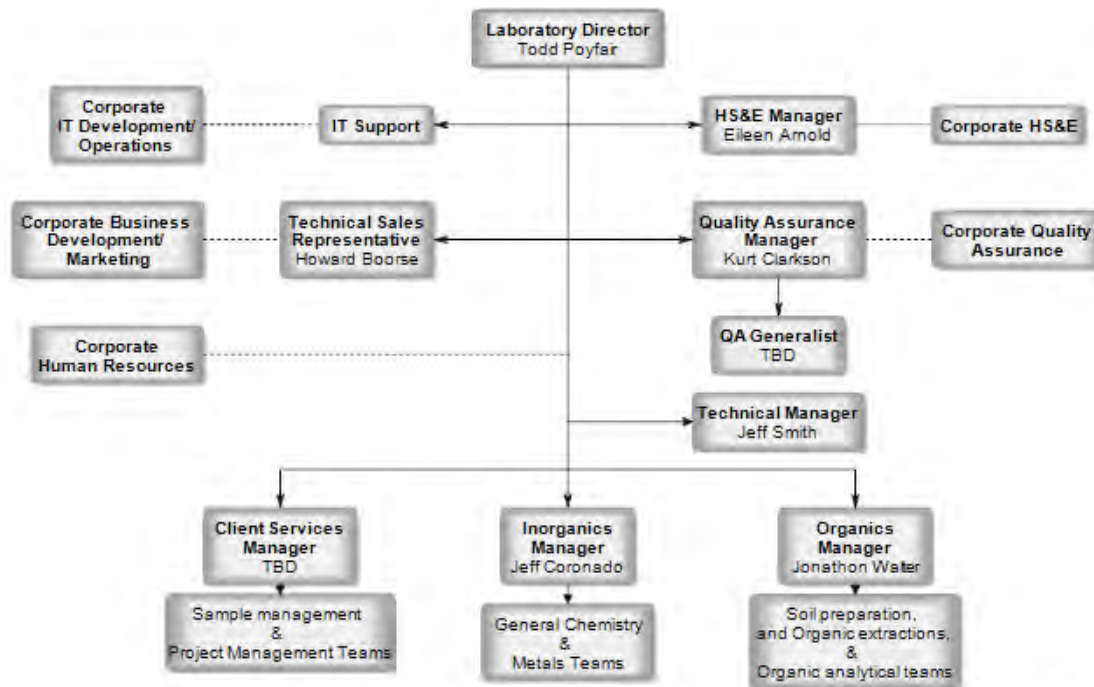
Appendix B

Organizational Charts and Key Personnel



# Kelso, WA Laboratory Organizational Chart

June 29, 2021



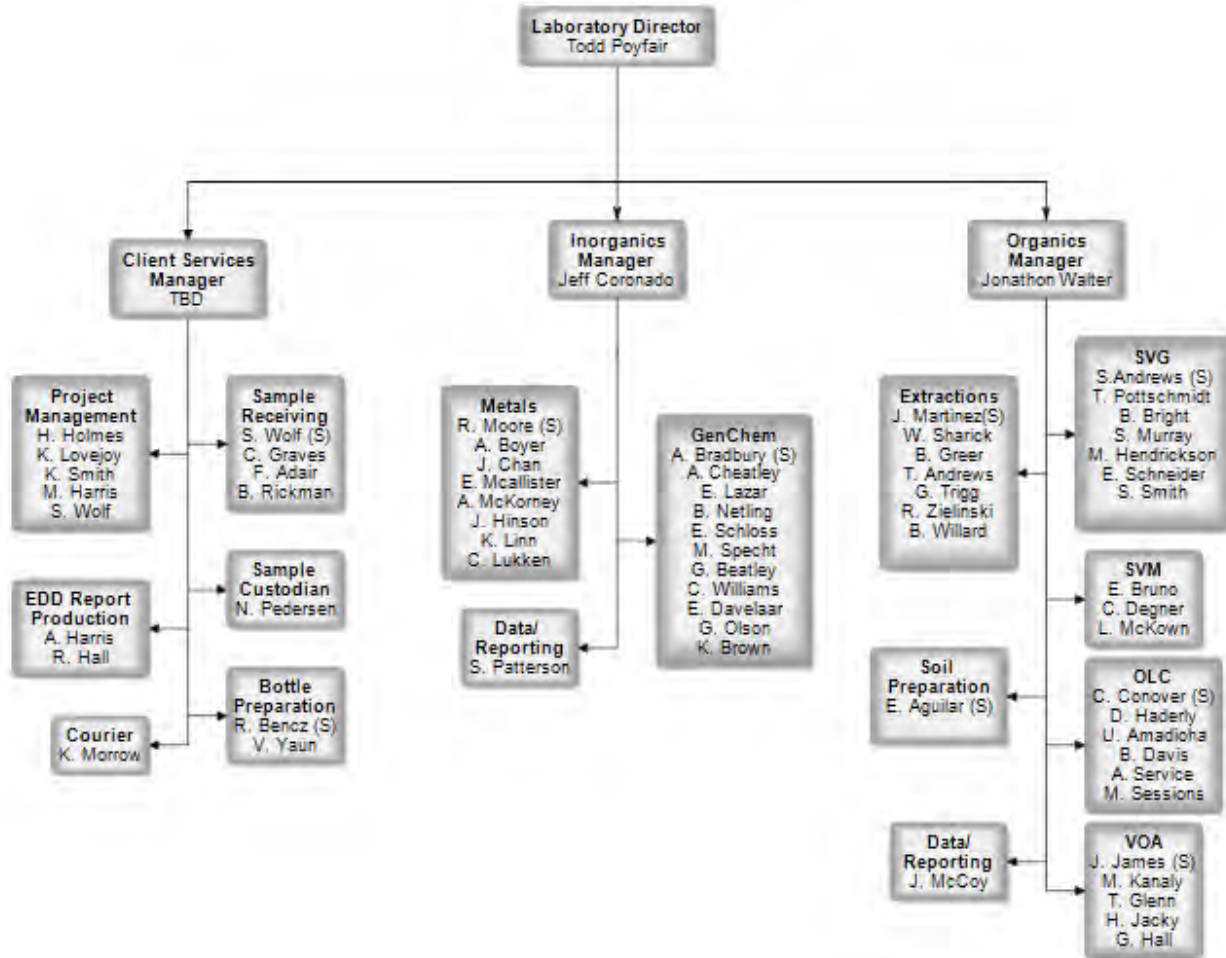
Revised 6/29/2021





# Kelso, WA Laboratory Organizational Chart

June 29, 2021



Revised 6/29/2021





ALS Group USA, Corp.  
10450 Stancliff Road, Suite 210  
Houston, TX 77099  
T+1 281 530 5656 F+1 281 530 5887

# TODD POYFAIR

Laboratory Director, 2021 - Present  
Kelso Laboratory

Responsible for all phases of laboratory operations at the Kelso Laboratory, including project planning, budgeting and quality assurance. Primary duties include the direct management and operational oversight of the Kelso laboratory and all department managers.

## PREVIOUS EXPERIENCE

Client Services Manager 2020 - 2021  
Kelso Laboratory

Management of the Client Services Departments: Project Management, Electronic Data Deliverables & Report Production, Sample Management, Sample Control, Bottle Preparation, General Lab Receiving & Shipping, and Courier Services.

Organics Manager, 2017 - 2020  
Kelso Laboratory

Oversee the operation of the Volatiles, Semi-volatiles, and OLC laboratories. Responsibilities included organizing and prioritizing workload, training and development of staff, working with PMs on client-specific project requirements, workload coordination, method development efforts and resource allocation.

Technical Scientific and Business Development Representative, 2012-2017  
ALS Group USA, Corp.  
Kelso, WA

Corporate IT Director / Vice President 2010-2012  
Kelso, WA  
Columbia Analytical Services  
Phoenix, AZ

Laboratory Director / Vice President 2008-2010  
Columbia Analytical Services  
Phoenix, AZ

Responsible for all phases of laboratory operations at the Phoenix and Tucson Laboratories, including project planning, budgeting and quality assurance. Primary duties include the direct management and operational oversight of the Kelso laboratory and all department managers.

Department Manager 1993-2009  
Columbia Analytical Services  
Kelso, WA

## EDUCATION

Portland State University  
BS Chemistry  
BA Foreign Language/German  
1990/1991

## ADDITIONAL EXPERIENCE

Laboratory Manager  
04/1993 - 09/2008  
Columbia Analytical Services, Kelso, WA

Chemist, Project Manager  
08/1991 - 09/2008  
Columbia Analytical Services, Kelso, WA



ALS Group USA, Corp.  
10450 Stancliff Road, Suite 210  
Houston, TX 77099  
T +1 281 530 5656 F +1 281 530 5887

# Kurt Clarkson

QA Manager 2020 - Present  
ALS-Kelso

Responsible for maintaining the quality systems and ensuring data integrity standards are implemented for the Kelso Laboratory. This includes upholding the requirements of analytical certifications, maintaining QA documents (QA Manual, SOPs, and QA records), coordinating PE/PT testing, conducting internal audits, and acting as a primary point of contact for external audits.

Additional current responsibilities: Safety Committee member, 2017-Present

## Previous Experience

Senior Project Manager, 2017-2020  
ALS Environmental, Kelso  
Kelso, WA

Responsible for technical project management, ensuring overall data quality and compliance with customer requirements. Provide technical support to clients regarding laboratory application to projects including regulatory interpretation assistance, as well as project organization of work.

Additional positions held at ALS-Kelso:  
Client Services Manager, 2016-2017  
Project Manager 2, 2015-2016

## Positions held prior to ALS Environmental, Kelso:

Client Services Manager, 2013-2015  
Western Environmental Testing Laboratory  
Sparks, Nevada

Client Services Manager, 2012-2013  
STAT Analysis  
Chicago, IL

Project Manager/Chemist Analyst, 2008-2011  
SGS  
Anchorage, AK

## EDUCATION

Walden University -  
Minneapolis, MN  
Doctorate in Business  
Administration (candidate)  
-graduation date 2022

University of Alaska  
Anchorage -  
Anchorage, AK  
Master's in Business  
Administration - MBA  
2011

University of Nevada Reno -  
Reno, NV  
Bachelors in Biology  
2007

University of Nevada Reno -  
Reno, NV  
Bachelors in Business  
2002



ALS Group USA, Corp.  
 1317 S. 13<sup>th</sup> Avenue  
 Kelso, WA 98626  
 T +1 360 577 7222 F +1 360 636 1068

# JEFF CORONADO

**Manager - Specialty Laboratory Area, Metals Department Manager, 1992 - Present, General Chemistry Department Manager, 2017 - Present, Kelso Laboratory**

Management of the Kelso General Chemistry and Metals Departments with a staff of 28 and annual revenues in excess of \$5 million. Responsible for data quality and timeliness, revenues, expenses, workload coordination, method development efforts, and resource allocation. Participation in multiple LIMS development teams responsible for defining the ALS product.

## PREVIOUS EXPERIENCE

**Supervisor, GFAA Laboratory, 1989-1992**  
 Columbia Analytical Services, Inc.  
 Kelso, WA

Responsibilities included supervision of metals analysis by graphite furnace atomic absorption following SW 846 and EPA CLP methodologies. Duties include workload scheduling, data review, instrument maintenance, personnel training and evaluation.

## EDUCATION

Western Washington  
 University -  
 Bellingham, WA  
**BS Chemistry**  
 1988

Western Washington  
 University - Bellingham, WA  
**BA Business  
 Administration**  
 1985

**Winter Conference on  
 Plasma Spectrochemistry  
 - Tucson, AZ, 2012**

**LC/ICP-MS Training  
 Course - PerkinElmer,  
 2008**

**Field Immunoassay  
 Training Course - EnSys  
 Inc., 1995**

**Winter Conference on  
 Plasma Spectrochemistry  
 - San Diego, CA, 1994**

**ICP-MS Training Course -  
 VG-Elemental, 1992**





ALS Group USA, Corp.  
 1317 S. 13<sup>th</sup> Avenue  
 Kelso, WA 98626  
 T +1 360 577 7222 F +1 360 636 1068

## Jonathon Walter

**Organics Manager**  
 ALS Environmental, Kelso Laboratory  
 Mar 2020 - Present

Responsible for directing the organic sample preparation teams and organic instrumentation teams. Responsible for ensuring that ALS quality systems and data integrity standards are followed. Manage workflow for departments ensuring client needs are met and working with PCs on special projects. Responsible for development of employees, method development efforts, quality and timeliness of data to clients.

### PREVIOUS EXPERIENCE

**Sample Preparation Manager**  
 ALS Environmental, Kelso Laboratory  
 June 2018 - Mar 2020

Responsible for directing the sample preparation teams, organic extractions and soil prep. Responsible for ensuring that ALS quality systems and data integrity standards are followed. Manage workflow for departments ensuring client needs are met and working with PCs on special projects. Responsible for development of employees, method development efforts, quality and timeliness of samples to labs.

**Laboratory Manager**  
 Analytical Resources, Inc.  
 Feb 2018 - Jun 2018

Plan and implement the overall laboratory policies, procedures, and services for each division. Ensure efficient and effective departmental operations, as well that departments follow industry standards and safety regulations. Provide input to strategic decisions for the company. Train supervisors in leading their respective sections, including coaching and mentoring supervisors to become better leaders.

**Organic Extraction Laboratory Supervisor**  
 Analytical Resources, Inc.  
 Oct 2016 - Feb 2018

Oversee the preparation of samples for semi-volatile, polynuclear aromatic hydrocarbons, chlorinated pesticides, chlorinated phenols, PCBs, PCB congeners, and extractable petroleum hydrocarbons. Responsible for ensuring deadlines are met, all extraction methods and daily QA/QC practices are upheld, scheduling and training employees, along with maintaining the budget and supplies for the lab section.

**GC/GC-MS Analyst/HRGCMS Analyst**  
 Analytical Resources, Inc.  
 Aug 2012 - Nov 2016

Analyzed TPHG, TPHD, SVOA, VOA, Dioxin by GC, GCMS, HRGCMS. Processed, reported and peer reviewed data for all analysis and performed maintenance as needed on instruments.

**Dioxin Laboratory Supervisor and Tech**  
 Analytical Resources, Inc.  
 Supervisor Aug 2012 - Feb 2018  
 Tech July 2010-Aug 2012

Oversee workload, interpretation of data, development of new extraction techniques and cleanups. Always ensuring all regulatory requirements are met. Responsible for the extraction and cleanup of solids, tissues and waters for Dioxin and Furan analysis by 1613, 8290, and EPA methods.

### EDUCATION

Washington State University  
 Pullman, WA  
 BS Chemistry 2008



# Eileen M. Arnold

1317 S. 13<sup>th</sup> Avenue • Kelso, WA 98626 • +1 360 577 7222



Environmental

## Education

Immaculate College,  
Immaculate, PA  
BA, Chemistry, 1977

## Health, Safety and Environmental Manager, Kelso

2020 - Present

While working for the Kelso facility, duties include incident reporting and investigation, maintenance of all safety related equipment, review of monthly safety audits, and completion of all Federal and State mandated EH&S reports.

## Previous Experience

ALS  
Kelso, WA

Health, Safety and Environmental Manager,  
Western US, '15-'20

Responsibilities include development, support and implementation of Environmental, Health and Safety policies for lab locations in the Western US, including national corporate policies for respiratory protection and hazardous waste generation.

ALS Group/ Columbia Analytical  
Services, Inc.  
Kelso, WA

Scientist IV Metals Laboratory/Kelso  
Health and Safety Officer, '94-'15

Supervisor of the Metals reporting group responsible for ensuring timely, accurate reporting of all metals reports. Responsible for updating instrument specific data, such as MDL and control limits. Analyst for the Inductively Coupled Argon Plasma (ICAP) Emission Spectrometer. This involves digestion, instrumental analysis, and report generation for environmental samples using approved EPA techniques. Also, Environmental, Health and Safety Officer.

Columbia Analytical Services, Inc.  
Kelso, WA

Project Chemist, '92-'94

Duties included technical project management and customer service. Responsible for meeting the clients' needs of timely and appropriate analyses, and to act as liaison for all client-related activities within Columbia Analytical Services, Inc.

Columbia Analytical Services, Inc.  
Kelso, WA

Scientist IV Metals Laboratory, '87-'92

Duties include the operation and maintenance of the Inductively Coupled Argon Plasma (ICAP) Emission Spectrometer. This involves digestion, instrumental analysis, and report generation for environmental samples using approved EPA techniques.

Dow Corning Corporation.  
Springfield, OR

Chemist, '86-'87

Responsibilities included ICP and atomic absorption work in silicon manufacturing. Methods development for ICP analysis of minor impurities found in silicon.

Ametek, Inc.  
Harleysville, PA

Chemist, '86-'87

Responsibilities included product research and development chemist involved in production of thin-film semiconductors for use as solar cells. Work involved AA and SEM techniques

Janbridge, Inc.  
Philadelphia, PA

Chemist, '78-'82

Responsibilities included maintaining electroplating process lines through wet chemical analysis techniques, and performed Quality Assurance testing on printed circuit boards.



## Appendix C Ethics and Data Integrity Agreement



### ETHICS AND DATA INTEGRITY AGREEMENT ALS Environmental - USA

I state that I understand the high standards of integrity required of me with regard to the duties I perform and the data I report in connection with my employment at ALS.

I agree that in the performance of my duties at ALS:

1. I shall not intentionally report data values that are not the actual values obtained;
2. I shall not intentionally report the dates, times and method citations of data analyses that are not the actual dates, times and method citations of analyses;
3. I shall not intentionally represent another individual's work as my own;
4. I shall not intentionally report data values that do not meet established quality control criteria as set forth in the Method and/or Standard Operating Procedures, or as defined by company policy.
5. I agree to inform ALS of any accidental or intentional reporting of non-authentic data by other employees.
6. I have read this ethics and data integrity agreement and understand that failure to comply with the conditions stated above will result in disciplinary action, up to and including termination.
7. I agree to adhere to the following protocols and principals of ethical conduct in my work at ALS. All work assigned to me will be performed using ALS approved methods and procedures and in compliance with the quality assurance protocols defined in the ALS Quality System.
8. I will not intentionally falsify nor improperly manipulate any sample or QC data in any manner. Furthermore, I will not modify data values unless the modification can be technically justified through a measurable analytical process or method acceptable to ALS. All such modifications and their justification will be clearly and thoroughly documented in the raw data and appropriate laboratory record, and will include my initials or signature and the date.
9. I will not make false statements to, or seek to otherwise deceive ALS staff, managers or clients. I will not knowingly, through acts of commission, omission, erasure or destruction, improperly report any test results or conclusions, be they for client samples, QC samples, or standards.
10. I will not condone any accidental or intentional reporting of unauthentic data by other ALS staff and will immediately report such occurrences to my Supervisor, Lab Director, Quality Assurance Manager, or Human Resources. I understand that failure to report such occurrences may subject me to immediate discipline, including termination.





11. If a supervisor, manager, director or other member of the ALS leadership group requests me to engage in or perform an activity that I feel is compromising data validity or defensibility, I have the right to not comply with the request. I also have the right to appeal this action through an ALS local Quality Staff, Corporate Quality Assurance or Human Resources.
12. I understand that if my job includes supervisory responsibilities, I will not instruct, request or direct any subordinate to perform any unethical or non-defensible laboratory practice. Nor will I discourage, intimidate or inhibit a staff member who may choose to appropriately appeal my supervisory instruction, request or directive that may be perceived to be improper, nor retaliate against those who do so.
13. I understand that employees who report violations of this policy will be kept free from intimidation and recrimination arising from such reporting.

I have read, and understand the above policy and realize that failure to adhere to it may result in disciplinary action, up to and including termination. Compliance with this policy will be strictly enforced with all personnel employed by the company.

Employee Name \_\_\_\_\_

Signature \_\_\_\_\_

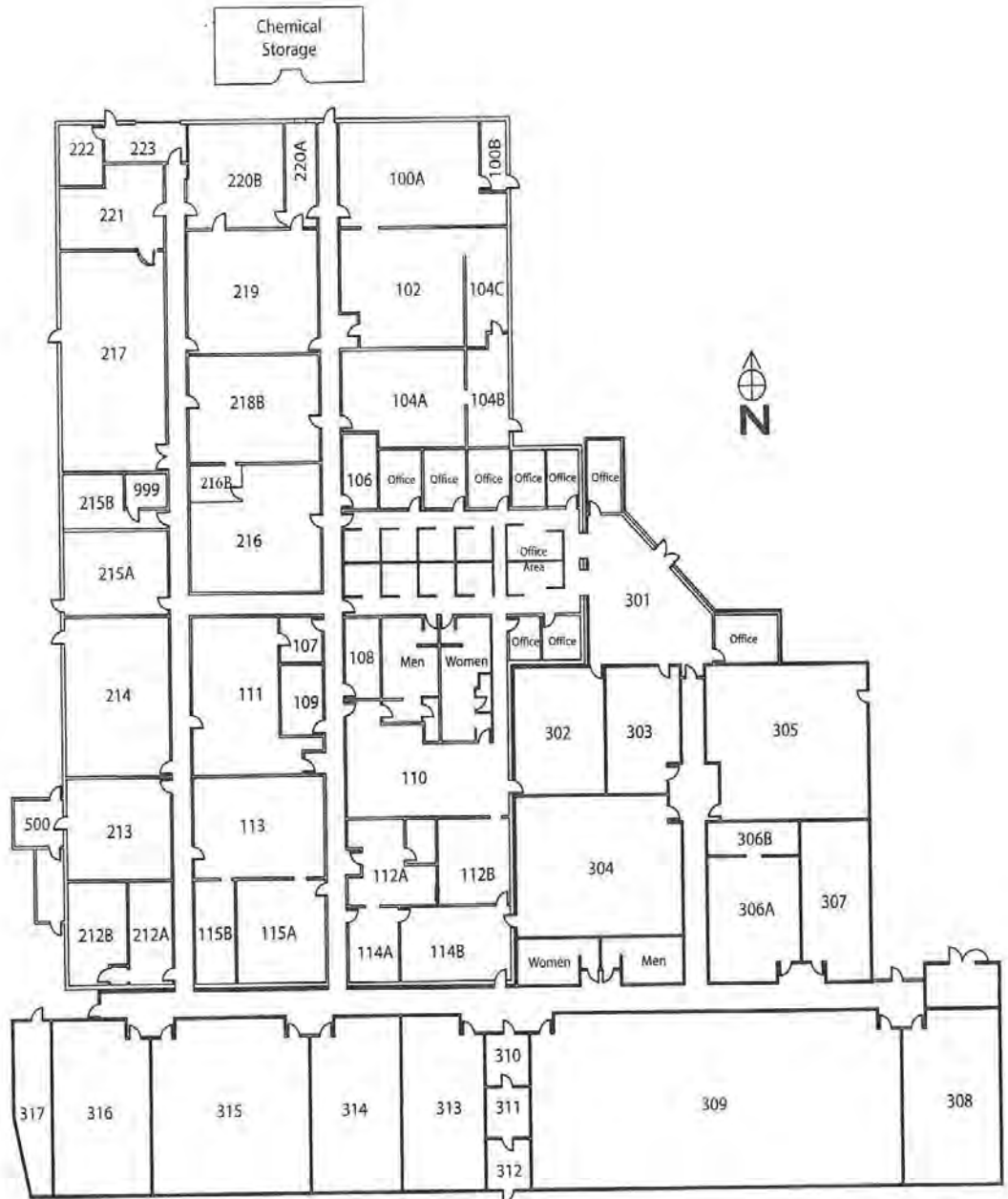
ALS Location \_\_\_\_\_

Date \_\_\_\_\_



### Appendix D Laboratory Floor Plan

- 100A SVO-GC INSTRUMENT LAB
- 100B ELECTRICAL ROOM
- 102A SVO-GC OFFICE
- 104A VOA
- 104B SVG/SVM OFFICE
- 104C SVO-GC INSTRUMENT
- 106 DI WATER ROOM
- 107 OVEN ROOM
- 108 TCLP LAB
- 109 STOCK ROOM/ SAFETY SUPPLY
- 111 GENERAL CHEMISTRY LAB
- 110 LUNCHROOM
- 112A GENERAL CHEMISTRY LAB
- 112B COPY CENTER
- 113 METALS / ICP-MS LAB
- 114A GRAIN SIZE LAB
- 114B TOTAL SOLIDS/PREP LAB
- 115A METALS / ICP-OES LAB
- 115B METALS OFFICE
- 212A METALS / HYDRIDE, MERCURY
- 212B LOW LEVEL MERCURY LAB
- 213A GENERAL CHEMISTRY LAB
- 214 GENERAL CHEMISTRY LAB
- 215A GENERAL CHEMISTRY LAB
- 215B IT
- 216 WIP FILES / VOA OFFICE
- 216B VOA PREP
- 217 SAMPLE STORAGE
- 218 VOA
- 219 SVO-GCMS INSTRUMENT LAB
- 220A SVO-GCMS OFFICE
- 220B SVO-GCMS PREP LAB
- 221 SAMPLE CONTROL OFFICES
- 222 PURCHASING
- 223 RECEIVING
- 301 MAIN OFFICE AREA
- 302 TRAINING ROOM
- 303 CONFERENCE ROOM
- 304 SOIL PREP
- 305 SAMPLE MANAGEMENT OFFICE
- 306 MICROBIOLOGY
- 306B MICROBIOLOGY
- 307 OLC INSTRUMENTS
- 308 OLC PREP LAB
- 309 ORGANIC EXTRACTIONS LAB
- 310 Maintenance/ COM room
- 311 ELECTRICAL ROOM
- 312 FIRE ROOM
- 313 DISHWASHING
- 314 METALS LOW LEVEL PREP LAB
- 315 METALS DIGESTIONS
- 316 TISSUE PREP LAB
- 317 BOILER ROOM
- 500 MAINTENANCE ROOM







**Appendix E**  
**Analytical and Support Equipment**

GENERAL CHEMISTRY/WATER CHEMISTRY LABORATORY			
Equipment Description	Year Acquired	Manufacturer or Laboratory Maintained (MM/LM)	# of Trained Operators
Analytical Balances (10): Sartorius, Mettler, Ohaus, Fisher scientific	1990-2011	LM	13
Autoclave - Market Forge Sterilmatic	1988	LM	5
Autoclave – Tutnauer	2010	LM	3
Autotitrator – Thermo Orion 500	2007	LM	3
Calorimeters (2): Parr 1241 EA Adiabatic	1987	LM	2
Parr 6300 Isoparabolic	2005	LM	2
Centrifuge – Beckman Coulter	2019	LM	13
Colony Counter - Quebec Darkfield	1988	LM	5
Conductivity Meter (1): YSI Model 3200	2004	LM	3
Digestion Systems (4): COD (2)	1989	LM	3
Kjeldahl, Lachat 46-place (1)	1999	LM	2
Skalar Micro Digester, 120 place (1)	2016	LM	2
Dissolved Oxygen Meter (2) - YSI Model 5000 & 5100	1988, 1991	LM	4
Distillation apparatus - Easy Still (2), Simple Dist (1)	2000	LM	3
Drying Ovens (6): Shel-Lab and VWR models	1990-2010	LM	13
Flash Point Tester (1): Petroleum Systems Services	2005	LM	2
Flow-Injection Analyzers (2): Bran-Leubbe	2002	LM	3
Lachat 8500	2007	LM	3
Ion Chromatographs (3) Thermo/Dionex ICS-2000	2006	LM	3
Thermo/Dionex ICS-1600	2009	LM	3
Thermo/Dionex ICS-1600	2015	LM	3
Meters (ISE and pH) (5) Orion Star A211	2019	LM	3
Orion Star A214	2016	LM	13
Orion Dual Star	2016	LM	13
VWR Symphony (2)	2004, 2013		
Microscope - Olympus	1988	LM	1
Muffle Furnace- Sybron Thermolyne Model F-A1730	1991	LM	13
Total Organic Carbon (TOC) Analyzers (4)			



Coulemetrics Model 5012	1997	LM	3
Teledyne Tekmar Fusion 1	2009	LM	2
Analytik Jena 2500	2013	LM	3
Total Organic Halogen (TOX) Analyzers (3):			
Mitsubishi TOX-100 (2)	2001	LM	3
Mitsubishi AOX-200	2015	LM	3
Turbidimeter - Hach Model 2100N	1996	LM	5
UV-Visible Spectrophotometers (1):			
Perkin Elmer Lambda 25	2008	LM	6
Vacuum Pumps (3):			
Welch Duo-Seal Model 1376	1990	LM	13
Busch R-5 Series Single Stage	1991	LM	13
Chem Star 1402N-01	2011	LM	13
Water Baths/Incubators (9):			
Various Fisher Scientific and VWR Models	1986 - 2009	LM	13
Drill Press – Craftsman	2012	-	4
<b>SOIL PREP</b>			
<b>Equipment Description</b>	<b>Year Acquired</b>	<b>Manufacturer or Laboratory Maintained (MM/LM)</b>	<b># of Trained Operators</b>
Analytical Balance (12)			
Mettler AE200	1999-2015	MM	5
Sartorius Quintix, Practum	2016-2019	MM	5
Shatter Box (2):			
GP 1000	1989	LM	5
SPEX 8530	2011	LM	5
Sieve Shakers (1):			
WS Tyler - RX 86	1991	LM	5
Thomas-Wiley Laboratory Mill, Model 4	1989	LM	5
Milkshaker (1)			
Hamilton Beach	2010	LM	4
Blender (1)			
Warin Laboratory	2013	LM	5
<b>METALS LABORATORY</b>			
<b>Equipment Description</b>	<b>Year Acquired</b>	<b>Manufacturer or Laboratory Maintained (MM/LM)</b>	<b># of Trained Operators</b>
Analytical Balance (9)			
Mettler AE 200 analytical balance	1988-2018	MM	12
Various Mettler, Sartorius, and Ohaus models			
Atomic Absorption Spectrophotometers (3):			
CETAC Mercury Analyzer M-6100	2010	LM	3
Buck AA Spectrophotometer Model 205 (2)	2008/2015	LM	3
Atomic Fluorescence Spectrophotometer (2)			
Brooks-Rand Model III	2005	LM	3



Brooks-Rand Merx	2014	LM	3
Centrifuge - IEC Model Clinical Centrifuge	1990	LM	12
Drying Oven - VWR Model 1370F	1990	LM	12
Freeze Dryers (1) - Labconco	2010	LM	5
Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) (2)			
Thermo Scientific Model iCAP 6500	2007	MM	3
Thermo Scientific Model iCAP 6500	2012	MM	3
Inductively Coupled Plasma Mass Spectrometers (ICP-MS) (4):			
Agilent 7700	2014	MM	2
Agilent 7800	2016	MM	2
Nexion Model 300D	2011	MM	2
Muffle Furnace (2) - Thermolyne Furnatrol - 53600	1991, 2005	LM	5
Shaker - Burrell Wrist Action Model 75	1990	LM	12
TCLP Extractors (3)	1989, 2002	LM	5
<b>SEMIVOLATILE ORGANICS SAMPLE PREPARATION LABORATORY</b>			
<b>Equipment Description</b>	<b>Year Acquired</b>	<b>Manufacturer or Laboratory Maintained (MM/LM)</b>	<b># of Trained Operators</b>
Analytical Balance (3)			
Mettler PM480, AG204, AE240	1999 - 2015	MM	12
Ohaus Explorer Pro	2016	MM	12
Centrifuge – Beckman Coulter Avanti J-15R	2019	LM	7
Drying Ovens (2)			
Fisher Model 655G	1991	LM	8
VWR Model 1305U	1999	LM	8
Evaporators/concentrators			
Organomation N-Evap (7)	1990-2010	LM	6
Organomation S-Evap (10)	1990-2010	LM	7
Biotage Turbovap (2)	2013 - 2016	LM	6
Extractor Heaters: Lab-Line Multi-Unit for Soxhlet and Continuous Liquid-Liquid Extractions (78)	1987-2007	LM	7
Solids Extractors:			
Sonic Bath VWR	1994	LM	5
Sonic Horn (4)	1994	LM	4
Soxtherm	2000	LM	3
Gerhardt (4)	2008	LM	3
OI Analytical (5)			
Extractors, TCLP (8):			
Millipore TCLP Zero Headspace Extractors (10)	1992-2011	LM	4
TCLP 12 position Extractor/Tumbler (2)	1989-2011	LM	4



Gel Permeation Chromatography (GPC) (4) J2 Scientific AccuPrep (3) Gilson (1)	2005, 2010 2013	LM LM	4 4
Muffle Furnace (2)	2006, 2009	LM	2
Solid Phase Extractors (8) – Horizon SPE-Dex 4790	2003-2008	LM	3
Microwave Extractor – Mars 6 (2)	2014, 2019	LM	4
Edmund Buhler 3-Storey top frame VKS 'Shaker table' (1)	2016	LM	5

**GC SEMIVOLATILE ORGANICS INSTRUMENT LABORATORY**

Equipment Description	Year Acquired	Manufacturer or Laboratory Maintained (MM/LM)	# of Trained Operators
Gas Chromatographs (16): Agilent 6890 GC with Agilent 7683 Autosampler and Dual ECD Detectors (6)	2001, 2005, 2007, 2011	LM	5
Agilent 6890 GC with Agilent 7683 Autosampler and Dual FPD Detectors (1)	2003	LM	4
Agilent 7890A Dual ECD Detectors Agilent 7683B autosampler (4)	2010 - 2014	LM	5
Hewlett-Packard 5890 GC with HP 7673 Autosampler and FID Detector (1)	1995	LM	4
Agilent 6890 with Dual FID Detectors and Agilent 7873 Autosampler (4)	2001, 2005	LM	4
Agilent 7890A Dual NPD Detectors and Agilent 7683B autosampler (1)	2012	LM	1

**GC/MS SEMIVOLATILE ORGANICS INSTRUMENT LABORATORY**

Equipment Description	Year Acquired	Manufacturer or Laboratory Maintained (MM/LM)	# of Trained Operators
Analytical Balance - Mettler AB 104-S	2000	MM	6
Semivolatile GC/MS Systems (10): Agilent 6890/5973 with ATAS Optic2 LVI and HP 7673 Autosampler (2)	1997, 2001	LM	5
Agilent 5890/5970 with HP 7673 Autosampler	1990	LM	5
Agilent 5890/5972 with ATAS Optic2 LVI and HP 7673 Autosampler (1)	1994	LM	5
Agilent 6890/5973 with ATAS Optic3 LVI and HP 7683 Autosampler (1)	2005	LM	5
Agilent 6890/5973 with Agilent PTV Injector and 7683 Autosampler (1)	2007	LM	5
Agilent 7890A/5975C with Agilent 7693 Autosampler (4)	2010 - 2011	LM	5
Semivolatile GC/MS/MS (2): Waters Quattro Micro GC Micromass with Agilent 6890, Agilent PTV Injector, 7683B	2008	MM	2



Autosampler Agilent 7010B Triple Quad with Agilent 7890B, Agilent PTV Injector, 7693 Autosampler	2018	MM	2
<b>HPLC LABORATORY</b>			
<b>Equipment Description</b>	<b>Year Acquired</b>	<b>Manufacturer or Laboratory Maintained (MM/LM)</b>	<b># of Trained Operators</b>
Analytical Balance – (2) Mettler AT250 Mettler AB104-S		MM MM	8 8
Drying Oven – Binder ED53		LM	8
Evaporator – Bitage Turbo Vap LV	2016	LM	8
Centrifuge (2) Beckman Coulter Allegra 6 Eppendorf 5415C		LM LM	8 8
Ultrasonic Bath (2) VWR Symphony 5.7 L VWR Symphony 20.8 L		LM LM	8 8
High-Performance Liquid Chromatographs (3): Agilent 1260 Infinity with Diode Array UV Detector	2011	LM	4
High-Performance LC/MS (4) AB Sciex API 5000 LC/MS/MS with 2x Shimadzu LC-20AD HPLC pumps and SIL-20AC autosampler AB Sciex Triple-Quad 5500 and with 2x Shimadzu LC-20AD HPLC pumps and SIL-20AC autosampler Shimadzu LCMS-8050 with 2x LC-30AD UHPLC pumps and SIL-30AC MP autosampler (2)	2008  2011  2016	MM  MM  MM	4  4  4
<b>VOLATILE ORGANICS LABORATORY</b>			
<b>Equipment Description</b>	<b>Year Acquired</b>	<b>Manufacturer or Laboratory Maintained (MM/LM)</b>	<b># of Trained Operators</b>
Analytical Balance - Mettler PE 160	1989	MM	5
Fisher Vortex Mixer	1989	LM	5
Drying Ovens (1): Boekel 107801	1989	LM	5
Sonic Water Bath - Branson Model 2200	1989	LM	5
Volatile GC/MS Systems (8): Agilent 5890/5970 Tekmar 3000 Purge and Trap Concentrator Dynatech ARCHON 5100 Autosampler Agilent 6890/5973 Tekmar 3100 Purge and Trap Concentrator Encon Centurion Autosampler Agilent 6890/5973	1989 1995 1996 2001 2001 2001 2005	LM LM LM LM LM LM LM	5  5  5  5



Tekmar Velocity Purge and Trap Concentrator	2005	LM	
Tekmar Aquatech Autosampler	2005	LM	
Agilent 7980A/5975C (2)	2010, 2011	LM	5
Teledyne Tekmar-Atomx	2010, 2011	LM	
Agilent 6890/5973	2013	LM	5
Encon Evolution Purge and Trap Concentrator	2013	LM	
Encon Centurion Autosampler	2013	LM	
Agilent 7890/5977A	2014	LM	5
Encon Evolution Purge and Trap Concentrator	2014	LM	
Encon Centurion Autosampler	2014	LM	
Agilent 7890B/5977B	2016	LM	5
Teledyne Tekmar Atomx	2016	LM	
Agilent 7890 GC with FID			
Encon Evolution Purge and Trap Concentrator	2013	LM	3
Encon Centurion Autosampler			
Agilent 7890 GC with FID	2013		
Encon Evolution Purge and Trap Concentrator	2016	LM	3
Encon Centurion Autosampler			
<b>AUTOMATED DATA PROCESSING EQUIPMENT</b>			
Equipment Description	Year Acquired	Manufacturer or Laboratory Maintained (MM/LM)	# of Trained Operators
1 - WAN: LIMS Sample Manager using Oracle 11gR2 Enterprise RDBMS running on Red Hat Enterprise Linux Advanced Server v.6.6 platform connected via DMVPN circuits (100 Mbps)	2013	LM	NA
1 - Network Server for reporting and data acquisition running Windows Server 2008 R2 with a 1.4 TB capacity, 1 - Application server running Windows Server 2008 R2	2012	LM	NA
Approximately 90+ HP (3015, 4000, 4014, 4050, 4200, 4250, 4300), Dell 1720dn, and Lexmark M5155 printers.	2010 - 2015	LM	NA
Approximately 220+ Dell/HP PC workstations running Windows XP/Windows 7 on LAN connected via 100BT/1GigE network	2010 - 2015	LM	NA
Microsoft Office 2013 Professional as the base office application suite for all PC workstations. Some systems using Microsoft Office 2003/2007/2010	1996 - 2014	LM	NA
E-mail via Office365.com with webmail via Outlook Web Access. Microsoft Outlook 2013 is standard email client, with some using Outlook 2010	2011 - 2014	LM	NA
Facsimile Machines - Brother 4750e, Brother 2920, and Brother 1860	2005 - 2008	LM	NA
Copier/Scanners - BizHub 283, BizHub 600, BizHub 601 (2), BizHub 654, BizHUB754e (2), BizHub 951, BizHub 1050.	2005 - 2015	LM	NA

Thru-Put, MARRS, Stealth, Harold, Blackbird, EDDGE, CASLIMS, & LabCoat reporting software systems.	1998 - 2014	LM	NA
Data processing terminals (79) - EnviroQuant, Target, Saturn, MassHunter, Chromeleon, MassLynx, Insight.	1996 - 2016	LM	NA





**Appendix F**  
**Sample Preservation, Containers, and Hold Times**

DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
<b>Bacterial Tests</b>				
Coliform, Colilert (SM 9223)	W, DW	P, Bottle or Bag	Cool, 4°C, 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <sup>d</sup>	6-24 hours <sup>e</sup>
Coliform, Fecal and Total (SM 9221, 9222D)	W, S, DW	P,G	Cool, 4°C, 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <sup>d</sup>	6-24 hours <sup>e</sup>
Enterococci (Enterolert)	W	P	Cool, 4°C, 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <sup>d</sup>	8 hours
<b>Inorganic Tests</b>				
Acidity (SM 2310B)	W	P,G	Cool, 4°C	14 days <sup>EPA</sup>
Alkalinity (SM 2320B)	W, DW	P,G	Cool, 4°C	14 days <sup>EPA</sup>
Ammonia (SM 4500 NH <sub>3</sub> )	W, DW	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Biochemical Oxygen Demand(SM 5210B)	W	P,G	Cool, 4°C	48 hours
Chemical Oxygen Demand (SM 5220C)	W	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Chloride (EPA 300.0)	W, DW	P,G	Cool, 4°C	28 days
Chloride (EPA 9056)	W, S	P,G	Cool, 4°C	28 days
Chlorine, Total Residual (SM 4500 Cl F)	W, S	P,G	Cool, 4°C	24 hours
Chlorophyll-A (SM 11200H)	W	G Amber	Cool, 4°C	48 hours
Chromium VI (EPA 7196A)	W	P,G	Cool, 4°C	24 hours
Color (SM 2120B)	W, DW	P,G	Cool, 4°C	48 hours
Cyanide, Total and Amenable to Chlorination (EPA 335.4, 9010, 9012, Kelada-01) (SM 4500 CN E,G)	W, S, DW	P,G	Cool, 4°C, NaOH to pH>12, plus 0.6 g Ascorbic Acid	14 days
Cyanide, Weak Acid Dissociable (SM 4500 CN I)	W, S	P,G	Cool, 4°C, NaOH to pH >12	14 days
Ferrous Iron (ALS SOP)	W, D	G Amber	Cool, 4°C	24 hours
Fluoride (EPA 300.0, 9056, SM 4500 F-C)	W, S	P,G	Cool, 4°C	28 days
Formaldehyde (ASTM D6303)	W	G Amber	Cool, 4°C	48 hours



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Hardness (SM 2340 C)	W, DW	P,G	HNO <sub>3</sub> to pH<2	6 months
Hydrogen Ion (pH) (SM 4500 H <sup>+</sup> B)	W, DW	P,G	Cool, 4°C	Analyze immediately
Kjeldahl and Organic Nitrogen (ASTM D3590-89)	W	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Nitrate (EPA 300.0)	W, DW	P,G	Cool, 4°C	48 hours
Nitrate (EPA 9056)	W, S	P,G	Cool, 4°C	48 hours
Nitrate-Nitrite (EPA 353.2)	W, DW	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Nitrite (EPA 300.0)	W, DW	P,G	Cool, 4°C	48 hours
Nitrite (EPA 353.2)	W, S	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	48 hours
Nitrite (EPA 9056)	W, S	P,G	Cool, 4°C	48 hours
Nitrocellulose	S	G	Cool, 4°C	28 days
Oil and Grease, Hexane Extractable Material (EPA 1664)	W	G, Teflon Lined Cap	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> or HCL to pH<2	28 days
Organic Carbon, Total (9060 & SM 5310 C)	W	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Organic Carbon, Total (ASTM-D4129)	S	P,G	Cool, 4°C	28 days
Organic Halogens, Adsorbable (EPA 1650B)	W	G, Teflon Lined Cap	Cool, 4°C, HNO <sub>3</sub> to pH<2	6 months
Organic Halogens, Total (EPA 9020)	W	G, Teflon Lined Cap	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2, No headspace	28 days
Orthophosphate (SM 4500 P- E)	W, DW	P,G	Cool, 4°C	48 hours
Oxygen, Dissolved (Probe) (SM 4500 O G)	W, DW	G, Bottle and Top	None Required	24 hours
Oxygen, Dissolved (Winkler)	W, DW	G, Bottle and Top	Fix on Site and Store in Dark	8 hours
Phenolics, Total (EPA 420.1, 9056)	W, S	G Amber	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<4	28 days
Phosphorus, Total (EPA 365.3)	W	P,G	Cool, 4°C, H <sub>2</sub> SO <sub>4</sub> to pH<2	28 days
Residue, Filterable (TDS) (SM 2540 C)	W	P,G	Cool, 4°C	7 days
Residue, Nonfilterable (TSS) (SM 2540 D)	W	P,G	Cool, 4°C	7 days
Residue, Settleable (SM 2540 F)	W	P,G	Cool, 4°C	48 hours



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Residue, Total (SM 2540 B)	W	P,G	Cool, 4°C	7 days
Residue, Volatile (EPA 160.4)	W	P,G	Cool, 4°C	7 days
Silica (SM 4500 SiO <sub>2</sub> C)	W	P Only	Cool, 4°C	28 days
Specific Conductance (SM 2510 B)	W, DW	P,G	Cool, 4°C	28 days
Sulfate (EPA 300.0)	W, DW	P,G	Cool, 4°C	28 days
Sulfate (EPA 9056)	W, S	P,G	Cool, 4°C	28 days
Sulfide (9030/934)	W, S	P,G	Cool, 4°C, Add Zinc Acetate, plus Sodium Hydroxide to pH>9	7 days
Sulfide (SM 4500 S <sub>2</sub> D)	W	P,G	Cool, 4°C, Add Zinc Acetate, plus Sodium Hydroxide to pH>9	7 days
Sulfide (SM 4500 S <sub>2</sub> F)	W	P,G	Cool, 4°C, Add Zinc Acetate, plus Sodium Hydroxide to pH>9	7 days
Sulfite (SM 4500 SO <sub>3</sub> B)	W	P,G	Cool, 4°C	24 hours
Sulfides, Acid Volatile	S	G	Cool, 4°C	14 days
Surfactants (MBAS) (SM 5540 C)	W	P,G	Cool, 4°C	48 hours
Tannin and Lignin (SM 5550 B)	W	P,G	Cool, 4°C	28 days
Turbidity (EPA 180.1)	W, DW	P,G	Cool, 4°C	48 hours
<b>Metals</b>				
Arsenic Species 1632	W	G	HCL to pH<2, Cool < 4°C	28 days
Mercury (1631E)	W	F	Cool, 4°C, HCl or H <sub>2</sub> SO <sub>4</sub> to pH<2	90 days
Mercury (1631E)	S	F	Freeze < -15°C	1 year
Mercury (7471)	S	P,G	Cool, 4°C	28 days
Mercury (EPA 245.1, 7470, 7471)	W, DW	P,G	HNO <sub>3</sub> to pH<2	28 days
Metals (200.7, 200.8, 6010, 6020)	W, DW	P,G	HNO <sub>3</sub> to pH<2	6 months
Metals (200.7, 200.8, 6010, 6020)	S	G, Teflon Lined cap	Cool, 4°C	6 months



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Methyl Mercury 1630	W, S, T	F	HCL to pH<2	6 months
<b>Volatile Organics</b>				
Gasoline Range Organics (8015, NWTPH-Gx)	W	G, Teflon-Lined, Septum Cap	Cool, 4°C, HCl to pH<2, No headspace	14 days
Gasoline Range Organics (8015, NWTPH-Gx)	S	G, Teflon- Lined Cap	Cool, 4°C, Minimize Headspace	14 days
Purgeable Halocarbons (624, 8260)	W	G, Teflon-Lined, Septum Cap	No Residual Chlorine Present; HCl to pH<2, Cool, 4°C, No Headspace	14 days
Purgeable Halocarbons (624, 8260)	W	G, Teflon-Lined, Septum Cap	Residual Chlorine Present; 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , HCl to pH<2, Cool, 4°C	14 days
Purgeable Halocarbons (8260)	S	G, Teflon- Lined Cap	Cool, 4°C, Minimize Headspace	14 days
Purgeable Halocarbons (8260)	S	Method 5035	Terracore/Encore device, Freeze at -20°C Methanol, Cool, 4°C	48 hr. to prepare from device, 14 days after preparing.
Purgeable Halocarbons (8260)	S	Method 5035	Sodium Bisulfate Cool, 4°C	48 hr. to prepare, 14 days after preparation
Purgeable Aromatic Hydrocarbons (including BTEX and MTBE 624, 8260)	W	G, Teflon-Lined Septum Cap, No Headspace	No Residual Chlorine Present: HCl to pH<2, Cool, 4°C, No Headspace	14 days
Purgeable Aromatic Hydrocarbons (including BTEX and MTBE 624, 8260)	W	G, Teflon-Lined Septum Cap, No Headspace	Residual Chlorine Present: 10% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , HCl to pH<2, Cool, 4°C	14 days
Purgeable Aromatic Hydrocarbons (including BTEX and MTBE 624, 8260)	S	G, Teflon- Lined Cap	Cool, 4°C, Minimize Headspace	14 days
Purgeable Aromatic Hydrocarbons (including BTEX and MTBE 624, 8260)	S	Method 5035	Encore, Freeze at -20°C Methanol, Cool, 4°C	48 hr. to prepare from Encore, 14 days after preparation.
Purgeable Aromatic Hydrocarbons (including BTEX and MTBE 624, 8260)	S	Method 5035	Sodium Bisulfate, Cool, 4°C	48 hr. to prepare from Encore, 14 days after preparation



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Acrolein, Acrylonitrile, Acetonitrile (624, 8260)	W	G, Teflon - Lined Septum Cap	Adjust pH to 4-5, Cool, 4°C, No headspace	14 days
2-chloroethyl vinyl ether (8260)	W	G, Teflon - Lined Septum Cap	Cool, 4°C, Minimize Headspace	7 days
<b>Semivolatile Organics</b>				
Nonylphenols	W	G, Teflon-Lined Cap	H <sub>2</sub> SO <sub>4</sub> to pH<2, Cool, 4°C	28 days until extraction; 40 days after extraction
Organotins (ALS SOP)	W, S	G, Teflon-Lined Cap	Cool, 4°C	7 <sup>f</sup> days until extraction; 40 days after extraction
Otto Fuel	W, S	G, Teflon-Lined Cap	Cool, 4°C	7 <sup>f</sup> days until extraction; 40 days after extraction
Methanol in Process Liquid NCASI 94.03	L	G, Teflon-Lined Cap	Cool, 4°C	30 days
HAPS - Condensates NCASI 99.01		G, Teflon-Lined Cap	Cool, 4°C	14/30 days
HAPS - Impinger/Canisters NCASI 99.02			Cool, 4°C	21 days
Acrylamide by HPLC/MS/MS (ALS SOP LCP-ACRYL)	W, S	G, P	Cool, 4°C	14 days until extraction; 40 days after extraction
Carbamate Pesticides by HPLC/MS/MS (EPA 8321B)	W, S	Amber G, Teflon-Lined Cap	1.2 mL ChlorAC Buffer Cool, 4°C	7 <sup>f</sup> days until extraction; 40 days after extraction
Per- and Polyfluoroalkyl Substances (PFAS) by HPLC/MS/MS (ALS SOP LCP-PFC)	W, S	HDPE, Polypropylene	Cool, 4°C	14 days until extraction; 40 days after extraction
PBDE/PBB - ROHS GC/MS	W, S, T	G	Cool, 4°C	40 days after extraction
Pharmaceuticals & Personal Care Products (PPCP) by HPLC/MS/MS (EPA 1694)	W, S	Amber G, Teflon-Lined Cap	50 mg ascorbic acid if residual chlorine present, Cool, < 6°C	7 days until extraction; 30 days after extraction



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics) (EPA 8015)	W, S	G, Teflon-Lined Cap	Cool, 4°C	7 <sup>f</sup> days until extraction, 40 days after extraction
Alcohols and Glycols (EPA 8015)	W, S	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
Acid Extractable Semivolatile Organics (EPA 625, 8270)	W	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
Base/Neutral Extractable Semivolatile Organics (EPA 625, 8270)	W	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
Acid Extractable Semivolatile Organics (EPA 8270)	S	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	14 days until extraction; 40 days after extraction
Base/Neutral Extractable Semivolatile Organics (EPA 8270)	S	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	14 days until extraction; 40 days after extraction
Chlorinated Herbicides (EPA 8151)	W, S	G, Teflon-Lined Cap	Cool, 4°C <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
Chlorinated Phenolics (EPA 1653)	W	G, Teflon-Lined Cap	H <sub>2</sub> SO <sub>4</sub> to pH<2, Cool, 4°C <sup>g</sup>	30 days until extraction; 30 days after extraction
Polynuclear Aromatic Hydrocarbons (EPA 625, 8270)	W, S	G, Teflon-Lined Cap	Cool, 4°C, Store in Dark <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
Organochlorine Pesticides and PCBs (EPA 608, 8081, 8082, GC/MS/MS)	W, S	G, Teflon-Lined Cap	Cool, 4°C	7 <sup>f</sup> days until extraction; 40 days after extraction
Organophosphorus Pesticides (GC/MS/MS)	W, S	G, Teflon-Lined Cap	Cool, 4°C, Store in Dark <sup>g</sup>	7 <sup>f</sup> days until extraction; 40 days after extraction
<b>Drinking Water Organics</b>				
EDB, DBCP, and TCP (EPA 504.1)	W	G, Teflon-Lined Cap	Cool, 4°C, 3 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , No Headspace	14 days



DETERMINATION <sup>a</sup>	MATRIX <sup>b</sup>	CONTAINER <sup>c</sup>	PRESERVATION	HOLDING TIME
Purgeable Organics (EPA 524.2)	DW	G, Teflon-Lined, Septum cap	Ascorbic Acid, HCl to pH <sub>≤</sub> 2, Cool, 4°C, No Headspace	14 days
Per- and Polyfluoroalkyl Substances (PFAS) by HPLC/MS/MS (EPA 537 ver1.1)	DW, W	Polypropylene	1,25 g Trizma, Cool, 10°C shipment, 6°C storage	14 days until extraction; 28 days after extraction
Haloacetic Acids (EPA 552.2)	DW	G, Amber, Teflon-Lined Cap	100 mg/L NH <sub>4</sub> Cl, Cool, 4°C	14 days until extraction; 7 days after extraction
<b>Toxicity Characteristic Leaching Procedure (TCLP)</b>				
Semivolatile Organics (EPA 1311/8270)	HW	G, Teflon - Lined Cap	Sample: Cool, 4°C, Store in dark <sup>g</sup>	14 days until TCLP extraction
			TCLP extract: Cool, 4°C, Store in dark <sup>g</sup>	7 days until extraction; 40 days after extraction
Organochlorine Pesticides (EPA 1311/8081)	HW	G, Teflon Lined Cap	Sample: Cool, 4°C	14 days until TCLP extraction
			TCLP extract: Cool, 4°C	7 days until extraction; 40 days after extraction
Chlorinated Herbicides (EPA 1311/8151)	HW	G, Teflon Lined Cap	Sample: Cool, 4°C	14 days until TCLP extraction
			TCLP extract: Cool, 4°C	7 days until extraction; 40 days after extraction
Mercury (EPA 1311/7470)	HW	P,G	Sample: Cool, 4°C	28 days until extraction
			TCLP extract: HNO <sub>3</sub> to pH<2	28 days after extraction
Metals, except Mercury (EPA 1311/6010)	HW	P,G	Sample: Cool, 4°C	180 days until extraction;
			TCLP extract: HNO <sub>3</sub> to pH<2	14 days until TCLP extraction
Volatile Organics (EPA 1311/8260)	HW	G, Teflon Lined Cap	Sample: Cool, 4°C, Minimize Headspace	14 days until TCLP extraction
			Extract: Cool 4°C, HCL to pH,2, No Headspace	14 days after extraction





## Appendix G Standard Operating Procedures

SOP NAME	Reference Method	SOP Name	REV #
Data Archiving		ADM-ARCH	8
Internal Auditing		ADM-AUDIT	0
Documenting Laboratory Balance and Check Weight Verification		ADM-BAL	10
Sample Batches		ADM-BATCH	13
Handling Customer Feedback, Complaints and Queries (CCQ).		ADM-CCQ	0
Continuous Quality Improvement		ADM-CQI	0
Document Control		ADM-DOC_CTRL	1
Department of Defense Projects Laboratory Practices and Project Management – QSM 5.X	DOD QSM v5.1 & 5.0	ADM-DOD5	4
Laboratory Data Review Process		ADM-DREV	13
Contingency Plan for Laboratory Equipment Failure		ADM-ECP	6.1
Making Entries Onto Analytical Records		ADM-ENTRIES	0
New Instrument Suitability and Validation		ADM-INST	0
Laboratory Management Review		ADM-LABMGMT	1
Use of Accreditation Organization Names, Symbols, and Logos		ADM-LOGO	0
Method Development		ADM-MDEV	0
Performing and Documenting Method Detection Limit Studies and Establishing Limits of Detection and Quantitation		ADM-MDL	0
Manual Integration of Chromatographic Peaks		ADM-MI	4
Management of Change		ADM-MOC	0
Nonconformance and Corrective Action Procedures		ADM-NCAR	1.1
Preventive Action		ADM-PA	0
Project Management		ADM-PCM	16
Procurement and Control of Laboratory Services and Supplies		ADM-PROC	0
Proficiency Testing		ADM-PT	0.1
Records Management		ADM-RCRDS	0.1
Quality of Reagents and Standards		ADM-REAG	0
Data Recall		ADM-RECALL	0
Data Reporting and Report Generation		ADM-RG	10.1
Reagent and Standards Login and Tracking		ADM-RLT	7
Support Equipment Monitoring and Calibration		ADM-SEMC	15
Establishing Standard Operating Procedures		ADM-SOP	2



Qualification of Subcontract Laboratories and Internal Subcontracting Protocol		ADM-SUBCONT	0
Software Quality Assurance and Data Security		ADM-SWQADATA	1.2
Employee Training and Orientation		ADM-TRAIN	5
Trending, Control Charts, and Uncertainty		ADM-TREND	2
Checking Volumetric Labware		ADM-VOLWARE	9
Quality Assurance Manual		ALSKL-QM	28
Coliform, Fecal	SM 9221 E EPA 1680	BIO-9221FC	12
Coliform, Fecal (Membrane Filter Procedure)	SM 9222 D	BIO-9222D	6
Coliform, Total (Membrane Filter Procedure)	SM 9222 B	BIO-9222B	2
Coliform, Total	SM 9221 B	BIO-9221TC	7
Colilert® , Colilert-18®, & Colisure®	SM 9223B Colilert	BIO-9223	12
Enterolert	ASTM D6503-99 Enterolert	BIO-ENT	4
Heterotrophic Plate Count	SM 9215 B	BIO-HPC	10
Microbiology Quality Assurance and Quality Control	SM 9020	BIO-QAQC	19
Sheen Screen/Oil Degrading Microorganisms	SM 9221 C	BIO-SHEEN	4
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C	EXT-3510	14
Organic Compounds in Water by Microextraction	EPA 3511	EXT-3511	2
Continuous Liquid-Liquid Extraction	EPA 3520C	EXT-3520	19
Solid Phase Extraction	EPA 3535A	EXT-3535	8
Soxhlet Extraction	EPA 3540C	EXT-3540	13
Automated Soxhlet Extraction	EPA 3541	EXT-3541	13
Microwave Extraction	EPA 3546	EXT-3546	3
Ultrasonic Extraction	EPA 3550B	EXT-3550	15
Waste Dilution Extraction	EPA 3580A	EXT-3580	8
Silica Gel Cleanup	EPA 3630C	EXT-3630	6
Gel Permeation Chromatography	EPA 3640A	EXT-3640A	11
Removal of Sulfur Using Copper	EPA 3660B	EXT-3660	9
Sulfuric Acid Cleanup	EPA 3665A	EXT-3665	8
Carbon Cleanup	Restek #EVAN1197	EXT-CARCU	6
Diazomethane Preparation		EXT-DIAZ	10
FDA Extractives		EXT-FDAEX	4
Florasil Cleanup	EPA 3620C	EXT-FLOR	8
Organic Extractions Glassware Cleaning		EXT-GC	11
Percent Lipids in Tissues	PSEP Bligh & Dyer	EXT-LIPID	7



Extraction Method for Organotins in Sediments, Water, and Tissue		EXT-OSWT	12
Preparation of Reagents and Blank Matrices Used in Semivolatile Organics Analysis		EXT-REAG	6
Addition of Spikes and Surrogates		EXT-SAS	11
Zero Headspace Extraction (EPA Method 1311)	EPA 1311	EXT-ZHE	1
Facility and Laboratory Cleaning		FAC-CLEAN	5
Operation and Maintenance of Laboratory Reagent Water Systems		FAC-WATER	5
Flashpoint Determination - Setaflash	EPA 1020A	GEN-1020	10
Color	SM 2120 B EPA 110.2	GEN-110.2	8
Total Solids	SM 2540 B EPA 160.3	GEN-160.3	16
Solids, Total Volatile and Percent Ash In Soil and Solid Samples	SM 2540 E EPA 160.4	GEN-160.4	9
Settleable Solids	SM 2540 F EPA 160.5	GEN-160.5	7
Halides, Adsorbable Organic (AOX)	EPA 1650C	GEN-1650	8
Gravimetric Determination of Hexane Extractable Material (1664)	EPA 1664A/9071B	GEN-1664	13
Alkalinity, Total	SM 2320 B	GEN-2320	12
Hardness, Total	SM 2340 C	GEN-2340	12
Chloride (Titrimetric, Mercuric Nitrate)	SM 4500-CL- C EPA 325.3	GEN-325.3	7
Chlorine, Total/Free Residual	SM 4500-CI F EPA 330.4	GEN-330.4	4
Total Residual Chlorine - Method 330.5	SM 4500-CI G EPA 330.5	GEN-330.5	3
Ammonia by Flow Injection Analysis	SM 4500-NH3 G EPA 350.1	GEN-350.1	14
Nitrate/Nitrite, Nitrite by Flow Injection Analysis	EPA 353.2	GEN-353.2	12
Phosphorous Determination Using Colorimetric Procedure	EPA 365.3	GEN-365.3	15
Phenolics, Total	EPA 420.1/9065	GEN-420.1	16
Ammonia as Nitrogen by Ion Specific Electrode	SM 4500-NH3 E	GEN-4500 NH3 E	8
Orthophosphate Determination Using Colorimetric Procedure	SM 4500-P E	GEN-4500 P- E	4
Dissolved Silica	SM 4500-SiO2 C	GEN-4500 SIO2C	6
Sulfide, Methylene Blue	SM 4500-S2- D	GEN- 4500S2D	6
Sulfide, Titrimetric (Iodine)	SM 4500-S2- F EPA 9034	GEN-4500S2F	5
Halogens, Total as Chloride by Bomb Digestion	SM 4500-Cl C EPA 5050	GEN-5050	4
Biochemical Oxygen Demand	SM 5210 B, 4500-O G EPA 360.1	GEN-5210B	7



Determination of Methylene Blue Active Substances (MBAS)	SM 5540 C	GEN-5540C	9
Tannin and Lignin	SM 5550 B	GEN-5550	8
Halides, Total Organic (TOX)	EPA 9020B	GEN-9020	11
Total Sulfides by Methylene Blue Determination	SM 4500-S2 D EPA 9030B	GEN-9030	12
Cation-Exchange of Soils - Ammonium Acetate	EPA 9080	GEN-9080	0
Acidity	SM 2310 B EPA 305.2	GEN-ACIDITY	6.1
Total Carbon in Soil	ASTM 4129-05 Lloyd Kahn/PSEP 9060A	GEN-ASTM	14
Sulfides, Acid Volatile	EPA 1629	GEN-AVS	10
Heat of Combustion	ASTM D240-87 ASTM D5865-04	GEN-BTU	5
Chlorophyll-a by Colorimetry	SM 10200 H	GEN-CHLOR	4
Total Cyanides and Cyanides Amenable to Chlorination	SM 4500-CN E, G EPA 335.4, 9012B/9013, Kelada-01	GEN-CN	22
Cyanide, Weak Acid Dissociable	SM 4500-CN- I	GEN-CNWAD	3
Chemical Oxygen Demand	SM 5220 C	GEN-COD	10.1
Conductivity and Salinity in Water and Wastes	SM 2510 B EPA 120.1,9050A Salinity, SM 2520 B	GEN-COND	12
Hexavalent Chromium - Colorimetric	EPA 7196A, 3060A SM 3500-Cr B	GEN-CR6	16
Standard Test Methods for Determining Sediment Concentration in Water Samples	ASTM 3977-97	GEN-D3977	3
Carbonate (CO3) by Evolution and Coulometric Titration	ASTM D513-82M	GEN-D513M	3
Sulfide, Soluble Determination of Soluble Sulfide in Sediment	EPA 376.2	GEN-DIS.S2	3
Bulk Density of Solid Waste Fractions	ASTM E1109-86	GEN-E1109	2
Free Cyanide in Water, Wastewater, and Soil by Microdiffusion	ASTM D4282-83 EPA METHOD 9016	GEN-FCN	0
Ferrous Iron in Water	Lovely/Phillips	GEN-FeII	6
Fluoride by Ion Selective Electrode	SM 4500-F C	GEN-FISE	10
Formaldehyde Colorimetric Procedure	ASTM D6303-98 NCASI 99.02/98.01	GEN-FORM	3
Hydrazine in Water Using Colorimetric Procedure	ASTM D1385-88	GEN-HYD	3
Total Sulfur for Ion Chromatography	EPA 300.0	GEN-ICS	3
Ion Chromatography	EPA 300.0, 9056A	GEN-IONC	21
Color, NCASI	NCASI Bull. #253	GEN-NCASI	5
Oxygen Consumption Rate	SM 2710 B	GEN-O2RATE	2
Carbon, Total Organic Determination (Walkley Black Method)	Walkley Black	GEN-OSU	4
pH in Soil and Solids	EPA 9045D	GEN-pHS	17



pH in Water	SM 4500-H+ B EPA 9040C EPA 150.1	GEN-pHW	17
Sulfides, Reactive	EPA 9030A	GEN-RS	5
Total Sulfide by PSEP	PSEP TC-3991-04	GEN-S2PS	2
Sulfite	SM 4500-SO32- EPA 377.1	GEN-SO3	3
Specific Gravity	SM 2710 F ASTM D854-83	GEN- SPGRAV	2
Solids, Total Dissolved (TDS)	SM 2540 C	GEN-TDS	15
Thiocyanate	SM 4500-CN- M	GEN- THIOCN	4
Nitrogen, Total and Soluble Kjeldahl		GEN-TKN	16
Total Nitrogen and Total Phosphorous by Alkaline Persulfate Digestion NCASI Method TNTP-W10900	NCASI TNTP-W10900	GEN-TNTP	2
Total Organic Carbon in Water	SM 5310 C EPA 9060A	GEN-TOC	15
Solids, Total Suspended (TSS)	SM 2540 D	GEN-TSS	14
Turbidity Measurement	SM 2130 B EPA 180.1	GEN-TURB	9
Labware Washing for Inorganic Analyses		GEN-WASH	6.1
Pharmaceuticals, Personal Care Products, and Endocrine Disrupting Compounds by HPLC/Tandem Mass Spectrometry (HPLC/MS/MS)	EPA 1694	LCP-1694	6
Determination of Selected Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction & Liquid Chromatography / Tandem Mass Spectrometry (LC/MS/MS)	EPA METHOD 533	LCP-533	0
Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)	EPA 537	LCP-537	7
Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction & Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)	EPA 537.1	LCP-537.1	0
Quantitative Determination of Carbamate Pesticides in Solid Matrices by High Performance Liquid Chromatography/Tandem Mass Spectrometry (HPLC/MS/MS)	EPA 8321B	LCP-8321S	2
Determination of Carbamates in Water by EPA 8321 Using LC Tandem Mass Spectrometry	EPA 8321B	LCP-8321W	3
Acrylamide by High Performance Liquid Chromatography/tandem mass spectrometry (HPLC/mMS/MS)		LCP-ACRYL	3
Quantitative Determination of N-DPA and DPA in Liquid Matrices by High Performance Liquid Chromatography (HPLC)		LCP-DPA	0
Per- and Polyfluoroalkyl Substances (PFAS) by HPLC MS/MS		LCP-PFC	11
Per- and Polyfluoroalkyl Substances (PFAS) by HPLC MS/MS - NJ Edition		LCP-PFC_NJ	0
Total Oxidative Precursor (TOP) Assay of Poly- and Perfluoroalkyl Substances		LCP-TOP	0
Methyl Mercury in Soil and Sediments by Cold Vapor Atomic Fluorescence Spectrometry	EPA 1630	MET-1630S	5



Methyl Mercury in Tissue by Alcoholic Potassium Hydroxide Digestion, Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry	EPA 1630	MET-1630T	4
Methyl Mercury in Water by Distillation, Aqueous Ethylation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry	EPA 1630	MET-1630W	5
Mercury by Oxidation, Purge & Trap, and Cold Vapor Atomic Fluorescence Spectrometry	EPA 1631E	MET-1631	16
Determination of Arsenic Species by Hydride Generation Cryogenic Trapping Gas Chromatography Atomic Absorption Spectrophotometry	EPA 1632A	MET-1632	5
Mercury in Water	EPA 245.1	MET-245.1	18
Metals Digestion	EPA 3010A	MET-3010A	17
Metals Digestion	EPA 3020A	MET-3020A	20
Metals Digestion	EPA 3050B	MET-3050B	18
Closed Vessel Oil Digestion	EPA 3051A	MET-3051M	5.1
Closed Vessel Digestion of Siliceous and Organically Based Matrices	EPA 3052	MET-3052M	6
Determination of Metals & Trace Elements by Inductively Coupled Plasma-MS (Method 6020)	EPA 6020B	MET-6020	19
Mercury in Liquid Waste	EPA 7470A	MET-7470A	20
Mercury in Solid or Semisolid Waste	EPA 7471A/B	MET-7471	21
Bioaccessibility of Metals in Soil and Solid Waste		MET-BIOACC	5
Metals Digestion of Aqueous Samples	CLP ILM04.0 EPA 200 series	MET-DIG	20
Sample Filtration for Metals Analysis		MET-FILT	6
Metals Laboratory Glassware Cleaning		MET-GC	10
Determination of Metals and Trace Elements by ICP/AES	EPA 200.7/6010D	MET-ICP	28
Determination of Metals and Trace Elements by Inductively Coupled Plasma-MS (METHOD 200.8)	EPA 200.8	MET-ICPMS	19
Trace Metals in Water by Preconcentration Using Reductive Precipitation Followed by ICP-MS		MET-RPMS	11
Metals and Semivolatiles SPLP Extractions (EPA Method 1312)	EPA 1312	MET-SPLP	3
Waste Extraction Est (WET) Procedure (STLC) for Nonvolatile and Semivolatile Parameters	CA Title 22	MET-STLC	5
Metals and Semivolatiles TCLP Extraction (EPA Method 1311)	EPA 1311	MET-TCLP	11
Sample Preparation for Biological Tissues for Metals Analysis by ICP-OES and ICP-MS		MET-TDIG	6
Tissue Sample Preparation		MET-TISP	12
Analysis of Water and Solid Samples for Aliphatic Hydrocarbons	EPA 8015C	PET-ALIPHAT	3
Analysis of Waters, Solids, and Soluble Waste Samples for Semi-Volatile Fuel Hydrocarbons	EPA 8015C NWTPH-Dx AK102/103	PET-SVF	17
Analysis of Water and Solid Samples for Total Petroleum Hydrocarbons	EPA 8015C NWTPH-Dx	PET-TPH	2



Analysis of Solid and Aqueous Samples for State of Wisconsin Diesel Range Organics	WI DNR DRO	PHC-WIDRO	5
Bottle Order Preparation and Shipping		SMO-BORD	18
Sample Disposal		SMO-DISP	15
Foreign Soils Handling Treatment		SMO-FSHT	12
Sample Receiving		SMO-GEN	38
Sample Tracking and Internal Chain of Custody		SMO-SCOC	18.1
Organochlorine Pesticides and PCBs (Method 608)	EPA 608	SOC-608	9
Organochlorine Pesticides and PCBs (Method 608.3)	EPA 608.3	SOC-608.3	0.1
Glycols		SOC-8015	14
Organochlorine Pesticides by Gas Chromatography; Capillary Column Technique	EPA 8081B	SOC-8081	22
PCBs as Aroclors	EPA 8082A	SOC-8082Ar	20
Congener-Specific Determination of PCBs by GC/ECD	EPA 8082A	SOC-8082Co	17
Chlorinated Herbicides	EPA 8151A	SOC-8151	19
Chlorinated Phenols Method 8151 Modified	EPA 8151A	SOC-8151M	13
Methanol in Process Liquids and Stationary Source Emissions	NCASI 94.03	SOC-9403	9
Hazardous Air Pollutants (HAPS) in Pulp and Paper Industry Condensates	NCASI 99.01	SOC-9901	6
Alcohols	EPA 8015C	SOC-ALC	3
Butyltins		SOC-BUTYL	16
Calibration of Instruments for Organic Chromatographic Analyses		SOC-CAL	10
Confirmation Procedure for GC and HPLC Analyses		SOC-CONF	8
Aliquoting of Samples		SOILPREP-ALIQUOT	2
Subsampling and Compositing of Samples		SOILPREP-SUBS	2
Particle Size Determination - ASTM Procedure	ASTM D421-85 ASTM D422-63	SOIL-PSASTM	6
Particle Size Determination	ASTM D422 Plumb/PSEP	SOIL-PSP	11
Total, Fixed, and Volatile Solids in Solid and Semi-Solid Samples	EPA 160.3M, EPA 160.4, SM 2540G Mod, and PSEP	SOIL-SOLIDS	2
1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane, and 1,2,3-TCP BY GC	EPA 504.1	SVD-504	13
Haloacetic Acids in Drinking Water	EPA 552.2	SVD-552	9.1
Chlorinated Phenolics by In-Situ Acetylation and GC/MS	EPA 1653A	SVM-1653A	11
Semivolatile Organic Compounds by GC/MS	EPA 625	SVM-625	8
Semivolatile Organic Compounds by GC/MS	EPA 625.1	SVM-625.1	0
Semivolatile Organic Compounds by GC/MS - Method 8270D	EPA 8270D	SVM-8270D	7





Semivolatile Organic Compounds by GC/MS - Low Level Procedure	EPA 8270D	SVM-8270L	10
Polynuclear Aromatic Hydrocarbons by Gas Chromatography/Mass Spectrometry SIM	EPA 8270D	SVM-8270P	11
Semivolatile Organic Compounds by GC/MS Selected Ion Monitoring	EPA 8270D	SVM-8270S	9
Anthraquinone in Paperboards by GC/MS Selective Ion Monitoring	NCASI AQ-S108.01, EPA 8270D	SVM-AQ	1
Quantitative Geochemical Biomarkers By GC/MS Selective ION Monitoring		SVM-BIO	3
Diisopropyl Methylphosphonate by GC/MS Selective Ion Monitoring	Cert. Method UK16, SOP 217	SVM-DIMP	0
Nonylphenols Isomers and Nonylphenol Ethoxylates	ASTM D7065-06	SVM-NONYL	6
Organophosphorous Pesticides by Method 8270E	EPA 8270E	SVM-OPPMS2	3
Chlorinated Pesticides by GC/MS/MS		SVM-PESTMS2	7
Polybrominated Diphenyl Ethers (PBDEs) and Polybrominated Biphenyls (PBBs) by GC/MS	EPA 8270	SVM-ROHS	2
Purge and Trap for Aqueous Samples	EPA 5030B	VOC-5030	12
Purge and Trip/Extraction for VOC in Soil and Waste Samples, Closed System	EPA 5035A	VOC-5035	15
Volatile Organic Compounds by GC/MS	EPA 524.2	VOC-524.2	19
Volatile Organic Compounds In Water by GC/MS SIM	CA SRL 524.2M	VOC-524.2SIM	2
Volatile Organic Compounds by GC/MS	EPA 624.1	VOC-624	14
Volatile Organic Compounds by GC/MS	EPA 8260C	VOC-8260	21
Volatile Organic Compounds by GC/MS	EPA 8260D	VOC-8260D	0
Volatile Organic Compounds by GC/MS Selective Ion Monitoring		VOC-8260S	5
VOA Storage Blanks		VOC-BLAN	12
Sample Screening for Volatile Organic Compounds in Soil, Water, and Misc. Matrices		VOC-BVOC	10
Gasoline Range Organics by Gas Chromatography	EPA 8015C NWTPH-Gx AK101	VOC-GRO	13



## Appendix H Data Qualifiers

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM definition:* Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM definition:* Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM definition:* Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.



**Master List of Controlled Documents**

Internal QA Documents	Location
Quality Assurance Manual	Q:\QA Manual\QAM.rXX.DOC
ALS-Kelso Certifications/Accreditations	QA Department and online access
MDL/LOD/LOQ Tracking Spreadsheet	MDL_LIST_Master.xls
Technical Training Summary Database	TrainDat.mdb
Approved Signatories List	QAM App A
Personnel resumes/qualifications	HR Department
Personnel Job Descriptions	HR Department/QA Training Files
ALS - Kelso Data Quality Objectives	Kelso DQO table-QA Maintained.xls
Master Logbook of Laboratory Logbooks	QA Masterlog-001
Standard Operating Procedures and Spreadsheet	1_ Kelso SOP.xls
Proficiency Testing Schedule and Tracking Spreadsheet	PT_Schedule.xls
External Normative Documents	Location
USEPA Manual for the Certification of Laboratories Analyzing Drinking Water, 5th Edition, EPA 815-B-97-001 (January 2005)	QA Department and online access
USEPA 40 CFR Part 136, Guidelines for Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, and EPA Method Update Rule 2007, 2012, 2017.	QA Department and online access
USEPA 40 CFR Part 141, National Primary Drinking Water Regulations and EPA Method Update Rule 2007.	QA Department and online access
National Environmental Laboratory Accreditation Program (NELAP), 2009 Quality Standards.	QA Department
Quality Standards. American National Standard General requirements for the competence of testing and calibration laboratories, ANSI/ISO/IEC 17025:2005(E).	QA Department
DoD Quality Systems Manual for Environmental Laboratories, Versions 4.2, 5.0, and 5.1.	QA Department and online access
Analytical Methods (see References section).	Laboratory Departments and Online access



**Appendix J**  
**Laboratory Accreditations**

The list of accreditations, certifications, licenses, and permits existing at the time of this QA Manual revision is given below, followed by the entire primary NELAP and DOD ELAP accreditations (un-numbered attachments). Current accreditation information is available at any time by contacting the laboratory or viewing the ALS Global website [www.alsglobal.com](http://www.alsglobal.com).

<b>Program</b>	<b>Number</b>
<b><u>National Programs</u></b>	
ISO:IEC 17025:2017	L18-129
DoD ELAP	L18-128
<b><u>State Programs</u></b>	
Alaska DEC CSLAP	17-004
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2795
Florida DOH	E87412
Hawaii DOH	-
Louisiana DEQ	3016
Maine DHS	WA01276
Minnesota DOH	053-999-457
Nevada DEP	WA35
New Jersey DEP	WA005
New York DoH	12060
North Carolina DWQ	605
Oregon - DOH (primary NELAP)	WA100010
South Carolina DHEC	61002
Texas CEQ	T104704427-16-11
Washington DOE	C544
Wyoming/EPA Region 8	R 8 Drinking Water
	Reciprocal Cert.
<b><u>Miscellaneous</u></b>	
Foreign Soil Permit	USDA
Plant Import Permit	USDA







**Cooler Receipt and Preservation Form**

PM \_\_\_\_\_

Client \_\_\_\_\_ Service Request **K20**  
 Received: \_\_\_\_\_ Opened: \_\_\_\_\_ By: \_\_\_\_\_ Unloaded: \_\_\_\_\_ By: \_\_\_\_\_

- Samples were received via? *USPS Fed Ex UPS DHL PDX Courier Hand Delivered*
  - Samples were received in: (circle) *Cooler Box Envelope Other NA*
  - Were custody seals on coolers? *NA Y N* If yes, how many and where? \_\_\_\_\_  
 If present, were custody seals intact? *Y N* If present, were they signed and dated? *Y N*
  - Was a Temperature Blank present in cooler? *NA Y N* If yes, notate the temperature in the appropriate column below:  
 If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
  - Were samples received within the method specified temperature ranges? *NA Y N*  
 If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. *NA Y N*
- If applicable, tissue samples were received: *Frozen Partially Thawed Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number	NA	Filed

- Packing material: *Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves* \_\_\_\_\_
- Were custody papers properly filled out (ink, signed, etc.)? *NA Y N*
- Were samples received in good condition (unbroken) *NA Y N*
- Were all sample labels complete (ie. analysis, preservation, etc.)? *NA Y N*
- Did all sample labels and tags agree with custody papers? *NA Y N*
- Were appropriate bottles/containers and volumes received for the tests indicated? *NA Y N*
- Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* *NA Y N*
- Were VOA vials received without headspace? *Indicate in the table below.* *NA Y N*
- Was C12/Res negative? *NA Y N*

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**MARION COUNTY  
FEASIBILITY DETERMINATION AND COST ANALYSIS FORM**

**Directions:** Marion County Public Contracting Rules Section 20-0110 instructs the department on how to use this Form. Departments shall complete this form prior to conducting a procurement for services (including anticipated amendments) exceeding \$250,000 to summarize its determinations and evaluation. ***Submit this form and any supporting documentation to finance contracts and procurement manager prior to releasing a solicitation under MCPCR Section 20 Public Procurements for Goods or Services.***

Date: 6/1/2022	Department: Public Works - Environmental Services	Project Name/Location: Env. Monitoring at NMCDF and BILF
Type of Service ( <i>attach draft scope of work if necessary</i> ):		Environmental Monitoring and Reporting Services - Consulting and Laboratory Services for North Marion County Disposal Facility and Browns Island Landfill
Person Submitting Request: Chalyce MacDonald		Telephone: 503-566-4139
Department Head (Designee) Signature:		

**Select options 1 or 2:**

1.  **Exempt Services.** Contracts with the following services are exempt from a Feasibility Determination:

- |  |  |
|--|--|
| <input type="checkbox"/> Client Services   | <input type="checkbox"/> Contract exemptions defined in ORS 279A.025 |
| <input type="checkbox"/> Personal Services | <input type="checkbox"/> Construction Services                       |

2.  **Feasibility Determination.** Determine if one or more of the following special circumstances make the county's use of its own personnel and resources to provide the services not feasible:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Lack Specialized Technical Expertise   | <input type="checkbox"/> Conflict of Interest; Unbiased Review                    |
| <input type="checkbox"/> Grant or Other Funding                            | <input type="checkbox"/> Emergency Procurement                                    |
| <input checked="" type="checkbox"/> State or Federal Law Requirements      | <input type="checkbox"/> Delay  |
| <input type="checkbox"/> Incidental Services for Real or Personal Property | <input type="checkbox"/> Services Completed within Six Months                     |
| <input type="checkbox"/> Other Special Circumstance                        | <input type="checkbox"/> None of the above ( <b>Proceed to 3. Cost Analysis</b> ) |

Indicate why one or more of the Special Circumstances apply:

As required by the Oregon Department of Environmental Quality (DEQ) Solid Waste Disposal Permits for North Marion and Browns Island, all environmental sampling data shall be analyzed by an Oregon Laboratory Accredited Program Lab or National Volunteer Laboratory Accreditation Program Lab. Annual Environmental Monitoring and Reporting must be prepared and stamped by either a Geologist or a Certified Engineering Geologist with current Oregon registration.



## MARION COUNTY FEASIBILITY DETERMINATION AND COST ANALYSIS FORM

**3. Cost Analysis.** When the services have been determined feasible to complete by the county's own personnel and resources, the department must determine the county's cost to perform the services:


County Estimate to Perform the Services:		County Estimate to Contract Out the Services:	
County Costs		Contractor Costs	
A. Salary or Wage & Benefit Costs (including all employees directly involved)	\$	A. Salary or Wage & Benefit Costs (including all employees directly involved)	\$
B. Material Costs	\$	B. Material Costs	\$
C. Related Costs	\$	C. Related Costs	\$
D. Other Information	\$	D. Other Information	\$
		E. Estimated Contractor profit	\$
<b>TOTAL:</b> (Costs the <b>County would incur</b> to perform the Services.)	<b>\$</b>	<b>TOTAL:</b> (Costs the <b>County would incur</b> to contract out the Services)	<b>\$</b>


**Cost Analysis Decision:**

- County estimated costs exceed Contractor costs sole reason is Salary/Wages; may not procure services.
- County estimated costs exceed Total Contractor Costs; may proceed with procurement.
- Request exemption based on lack of county personnel and resources provide explanation below:

Explanation of Exemption Request (*attach draft scope of work if necessary*):

**Approval of Exemption or Feasibility Determination and Cost Analysis**

DocuSigned by:  
 6/1/2022  **Approved**  **Denied**  
D1FCCAACCB14CB...  
 Contracts Officer or Designee Date

DocuSigned by:  
 6/1/2022  
 Contracts and Procurement Review Date



# Solicitation Award Transmittal

Submitted By: Tim Beaver Department: Public Works

Contact Phone #: 503-365-3100 Date Sent: Friday, February 4, 2022

Solicitation Name: RFP for Environmental Monitoring and Reporting

1027

Formal:  Bid  RFP Advertising Date: Nov 10, 2021 Close Date: Dec 14, 2021

Quote:  Verbal  Written  IRFP

Addenda Issued/Date  
#1 Nov 19, 2021 #2 \_\_\_\_\_ #3 \_\_\_\_\_ #4 \_\_\_\_\_

Solicitations Received From (or attach solicitation summary)

Contractor Name	Bid-Quote Amount/Proposal Score
SCS Engineers, Inc.	345 out of 360
PBS Engineering & Environmental, Inc.	309 out of 360
**Proposal Evaluation Summary in the CMS**	

Bid/Proposal in compliance for all requirements:  Yes  No (Detailed explanation required if "No" is checked)

Fiscal Impact (Description of impact)  
Funds have been budgeted for these recurring services.

Service: 4303 Account: 525110

### DEPARTMENT RECOMMENDATION

Name: SCS Engineers, Inc.

- Award to Low Bid-Quote/Highest Rank Proposal  Multiple Awards
- Award to other than Low Bid-Quote/Highest Rank Proposal (Attach written support)
- Reject All Bids/Proposals (Attach written justification for rejection of all bids/proposals)

### Finance Use: (when required)

Date Finance Received: 2/7/22

Comments:  
CMS UP TO DATE  
HIGHEST RANKED PROPOSER

Solicitation Award Approval:

[Signature] 2/7/22  
Finance Contracts / Date

[Signature] 2/7/2022  
Chief Administrative Officer / Date

Date paperwork returned to department: 2/7/22

**SCORING SUMMARY**

Request for Proposal #C25102-1027-21

RFP for Environmental Monitoring and Reporting

Due Date:

Tuesday, December 14, 2021

Review Date:

Monday, January 31, 2022

EVALUATION TEAM:

May, B  
 Johnson, A.  
 Toepfer, R.  
 Knudsen, M.  
 5

<i>PROPOSER</i>		<i>SCS Engineers</i>					
<b>Evaluation Criteria</b>	<b>Max Score</b>	1	2	3	4	5	<b>Total</b>
1. General Qualifications and Experience	30	30	30	25	30		<b>115.0</b>
2. Scope of Work / Program Description	30	30	30	25	30		<b>115.0</b>
3. Cost Proposal	30	30	30	25	30		<b>115.0</b>
Phase I Points Possible	90	90	90	75	90	0	<b>345.0</b>
5. Interviews / Presentation / Demonstration (Optional)	20						<b>0.0</b>
<b>Total Score</b>	<b>110</b>	<b>90</b>	<b>90</b>	<b>75</b>	<b>90</b>	<b>0</b>	<b>345.0</b> ✓

<i>PROPOSER</i>		<i>PBS Engineering</i>					
<b>Evaluation Criteria</b>	<b>Max Score</b>	1	2	3	4	5	<b>Total</b>
	30	29	25	25	30		<b>109.0</b>
2. Scope of Work / Program Description	30	30	30	20	30		<b>110.0</b>
3. Cost Proposal	30	20	25	25	20		<b>90.0</b>
Phase I Points Possible	90	79	80	70	80	0	<b>309.0</b>
5. Interviews / Presentation / Demonstration (Optional)	20						<b>0.0</b>
<b>Total Score</b>	<b>110</b>	<b>79</b>	<b>80</b>	<b>70</b>	<b>80</b>	<b>0</b>	<b>309.0</b> ✓