BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING THE RELEASE OF RFQ #97R-48-REM FOR ANALYTICAL LABORATORY SERVICES	))))	RESOLUTION NO. 98-2598 Introduced by Mike Burton, Executive Officer

WHEREAS, it is in the public interest to monitor environmental quality at Metro-owned or managed properties, or properties otherwise being assessed by Metro; and

WHEREAS, environmental quality monitoring at Metro properties (including laboratory analysis) is required under various state and local permits, rules and regulations; and

WHEREAS, it is desirable to maintain consistent quality and cost in laboratory analysis required by Metro programs and operations; and

WHEREAS, Metro will solicit and evaluate qualifications and proposals through a competitive process, and on that basis will select the most qualified proposer for analytical laboratory services; and

WHEREAS, this resolution was submitted to the Executive Officer for consideration and was forwarded to the Council for approval; now therefore,

BE IT RESOLVED

1. That the Metro Council authorizes the release of RFQ #97R-48-REM for analytical laboratory services.

2. That the Metro Council, pursuant to Section 2.04.026(a) of the Metro Code, authorizes the Executive Officer to execute a contract with the most qualified and cost effective proposer for analytical laboratory services, in accordance with requirements of the Metro Code.

ADOPTED by the Metro Council this 12th day of February, 1998.

Jon Kvistad, Presiding Officer

Approved as to Form:

Daniel B. Cooper, General Counsel

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EXECUTIVE SUMMARY
RESOLUTION NO. 98-2598
ANALYTICAL LABORATORY SERVICES

PROPOSED ACTION

Passage of Resolution 98-2598 would authorize the release of RFQ #97R-48-REM for analytical laboratory services.

WHY NECESSARY

- It is in the public interest that certain Metro-owned, managed, or assessed properties, be monitored for environmental quality.
- In order to meet regulatory conditions of state and local permits, rules and regulations, environmental monitoring often requires laboratory analysis. Such monitoring conducted by Metro includes: evaluation of St. Johns Landfill; groundwater monitoring at Metro Transfer Stations and Washington Park Zoo; surface water monitoring at Smith and Bybee Lakes Wildlife Area and Metro Regional Parks; and various assessments at Metro-owned (or prospective) Open Spaces.
- Metro's current contract for analytical laboratory services expires March 31, 1998. A new contract will be needed to continue providing these services.

ISSUES/CONCERNS

- By making analytical services available to all Metro Departments, this contract avoids the costs of executing separate contracts, and guarantees consistent quality and cost.
- A 3-year term facilitates consistency in the quality of analytical results, and may lower overall cost, as no inflation adjustment during the contract term is provided.
- The Regional Environmental Management Department will manage the contract, and will develop routine procedures (with other Departments using the contract) for review of work products and invoice processing.

BUDGET/FINANCIAL IMPACTS

- The services provided under this contract will cost Metro up to $525,000 over 3 years ($175,000 per year).
- Funds for this contract are included in Metro's FY 1998-99 Departmental budgets.

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STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 98-2598 FOR THE PURPOSE OF AUTHORIZING THE RELEASE OF RFQ #97R-48-REM FOR ANALYTICAL LABORATORY SERVICES.

Date: January 5, 1998

Presented by: Bruce Warner, Director
Regional Environmental Management

PROPOSED ACTION

Adopt Resolution No. 98-2598, which authorizes release of RFQ #97R-48-REM for analytical laboratory services.

FACTUAL BACKGROUND AND ANALYSIS

Metro's current contract for analytical laboratory services expires March 31, 1998. At that time, a new contract will be needed to continue providing laboratory services to Metro programs and operations that involve environmental quality monitoring designed to meet requirements of various state and local permits, rules and regulations.

The current laboratory services contract was executed in 1993 to provide services only for St. Johns Landfill and vicinity. It was subsequently amended to meet other needs for such services within Metro, including groundwater monitoring at Metro Central and Metro South Transfer Stations, and at the Metro Washington Park Zoo; surface water monitoring at the Smith and Bybee Lakes Wildlife Area and Metro Regional Parks; and various samplings at Metro-owned (or prospective) Open Spaces.

The contract would primarily serve the implementation of the 1997 Environmental Quality Monitoring Plan (the Plan) for the Smith-Bybee Lakes Wildlife Area, including St. Johns Landfill. Under the Plan, groundwater, stormwater and leachate from the landfill are regularly analyzed according to monitoring requirements specified by the Oregon Department of Environmental Quality and the City of Portland's regulations and permits.

The Plan also includes analysis of surface water and sediment samples to detect contaminants and to assess their environmental impacts, consistent with the policies of the Smith-Bybee Lakes Natural Resources Management Plan.

The contract would provide services integral to Metro's short-term and ongoing environmental quality monitoring needs. By including all Metro programs and operations in its scope, it avoids the costs of executing separate contracts, and guarantees consistent quality and cost.

BUDGET IMPACT

The original budget for Metro's current contract for analytical laboratory services was $534,411 for a 3-year contract term. The services provided under this contract will cost Metro up to $525,000 over 3 years ($175,000 per year).

Funds for this contract are included in the FY 1998-99 budgets of the Regional Environmental Management Department, Engineering and Analysis Division ($165,000) and Parks and Greenspaces Department, Open Spaces Division ($10,000).

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 98-2598.

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REGIONAL ENVIRONMENTAL MANAGEMENT COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 98-2598 FOR THE PURPOSE OF AUTHORIZING THE RELEASE OF RFQ #97R-48-REM FOR ANALYTICAL LABORATORY SERVICES

Date: February 4, 1998 Presented by: Councilor McFarland

Committee Recommendation: At its February 3 meeting, the Committee considered Resolution No. 98-2598 and voted unanimously to send the resolution to the Council with a do pass recommendation. Voting in favor: Councilors McFarland, Washington and Chair Morissette.

Background

Metro has historically been responsible for the testing of ground and surface water at the St. Johns Landfill and adjacent areas including the Columbia Slough and Smith and Bybee Lakes. This testing program is required under state and federal law related to the closure of landfill sites. The purpose of the testing program is to insure that the decomposing garbage in the landfill is not contaminating nearby water sources. Metro also conducts similar testing at the transfer stations, the zoo and certain potential open space purchase sites where ground water contamination is suspected.

Committee Issues/Discussion: Bruce Warner, Regional Environmental Management Director, presented the staff report. Warner noted the history of the testing program and explained that the purpose of the proposed resolution was to identify firms that would be qualified to perform the analytical lab work related to the water testing program. One of these firms then would be selected to perform this work under a three-year contract. The total amount of the contract would be a maximum of $525,000, or $175,000/year. This fiscal impact is based on expenditures under the existing contract for lab services which expires in March. For the current fiscal year, $165,000 has been allocated in the REM budget and $10,000 in the open spaces budget.

Chair Morissette asked how long Metro will be responsible for testing at the St. Johns Landfill. Warner responded that staff will be submitting a 20-year operations and management plan to the

state DEQ within six months. The final closure plan will be subject to DEQ review and approval. Warner indicated that there will likely be some testing responsibilities throughout the entire length of the plan, but that these requirements should lessen as time goes on. The cost of the proposed lab services contract also may be affected by the terms of the final closure plan.

Request for Qualifications

for

Analytical Laboratory Services

RFP #97R-48-REM

Regional Environmental Management
Engineering & Analysis Division
600 NE Grand Ave
Portland, OR 97232-2736
(503) 797-1650
Fax (503) 797-1795
www.metro.dst.or.us

December 1997

METRO
Regional Services

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REQUEST FOR QUALIFICATIONS
For
ANALYTICAL LABORATORY SERVICES

I. INTRODUCTION

The Regional Environmental Management Department of Metro, a metropolitan service district organized under the laws of the State of Oregon and the 1992 Metro Charter, located at 600 NE Grand Avenue, Portland, OR 97232-2736, is requesting written qualifications/proposals for analytical laboratory services.

Qualifications will be due no later than 4:00 p.m. PST, March 6, 1998, in Metro's business offices at 600 NE Grand Avenue, Portland, OR 97232-2736.

Based on Metro's evaluation of these qualifications, a short-list of the three (3) to five (5) most qualified firms will be determined. Each of these pre-qualified firms will be invited to submit a proposal, including cost and project organization proposals which address the Scope of Work described in this RFQ.

Proposals will be due no later than 8 working days after the date of the letter inviting proposals, in Metro's business offices at 600 NE Grand Avenue, Portland, OR 97232-2736.

Details concerning the project, qualifications and proposal submissions, are contained in this document.

II. PROJECT BACKGROUND

Metro conducts environmental monitoring at various Metro owned or managed properties, or properties otherwise being assessed by Metro. These include, but are not limited to:

- The Smith-Bybee Lakes Wildlife Area
- St. Johns Landfill
- Metro Central (Municipal Solid Waste) Transfer Station
- Metro South (Municipal Solid Waste) Transfer Station
- Metro Owned (or prospective) Open Spaces
- Prospective Metro Open Spaces
- Regional Parks
- Metro Washington Park Zoo

Most of the samples collected at these locations will be analyzed under the anticipated analytical laboratory services contract resulting from this RFQ process.

Some locations are monitored on a regularly scheduled basis, some only occasionally depending on the particular program or project. Sample types include primarily groundwater, surface water, sediment, storm water, and leachate. Tissue (e.g. fish) and soil sampling/analysis are occasionally required. Occasional analysis of construction materials may also be required.

Samples are tested regularly for a host of analytes, including conventional indicator parameters, heavy metals, and several classes of organics including volatile and semi-volatile compounds, pesticides and polychlorinated biphenyls, and herbicides. Other analytes may be tested as needed, including but not limited to additional organic compounds and biological parameters.

Samples are collected predominantly within the Smith-Bybee Lakes Wildlife Area in North Portland, a 2,000 acre urban wetland managed by Metro's Parks and Greenspaces Department. The Wildlife Area includes St. Johns Landfill (SJLF), a closed municipal solid waste landfill managed by Metro's Regional Environmental Management Department (REM). REM is responsible for implementing the Wildlife Area environmental monitoring program.

SJLF is a 240-acre, 60 year old site that served as the primary municipal waste disposal site for the Portland metropolitan area during the 1980's. Metro stopped accepting municipal waste at the site in 1991. Metro then installed a multi-layer cover system over the solid waste. Groundwater, stormwater and leachate samples are collected at SJLF for laboratory analysis on a regularly scheduled basis, in accordance with assorted permits related to landfill closure. Surface water and sediment samples are collected at strategic locations around the Wildlife Area to detect contaminants and to assess their environmental impacts.

III. PROPOSED SCOPE OF WORK/SCHEDULE

Metro is seeking qualifications from firms to perform the services and to deliver the products described in the Scope of Work (Appendix A to this RFQ).

IV. PROJECT ADMINISTRATION

Metro's project manager is Paul Vandenberg, Associate Solid Waste Planner.

Metro intends to award this contract to a single firm to provide the services required. Responders must identify a single person as project manager to work with Metro (see Section VII, parts A and B, of this RFQ).

The Contractor must assure responsibility for any subcontractor work and shall be responsible for the day-to-day direction and internal management of the project. The prime contractor shall have, or be capable of obtaining general liability insurance, business automobile insurance, and workers compensation insurance covering the services to be performed, as shown in the Sample Standard Personal Services Agreements (Attachment A to RFQ). Metro shall be named as an additional insured.

V. QUALIFICATIONS: INSTRUCTIONS

Qualifications should include complete descriptions of qualifications and experience which directly relate to the Scope of Work (Appendix A).

A. Submission of Qualifications

Four (4) copies of the qualifications shall be furnished to Metro, addressed to:

Paul Vandenberg
Metro
Regional Environmental Management Department
600 NE Grand Avenue
Portland, OR 97232-2736

B. Deadline

Qualifications will not be considered if received after 4:00 p.m. March 6, 1998.

C. RFQ as Basis for Qualifications

This RFQ represents the most definitive qualifications statement Metro will make concerning the information upon which proposals are to be based. Any verbal information which is not addressed in this RFQ will not be considered by Metro in evaluating the qualifications/proposals. Any questions relating to this RFQ should be addressed to: Paul Vandenberg, Associate Solid Waste Planner, at (503) 797-1695. Any questions, which

in the opinion of Metro, warrant a written reply or RFQ amendment will be furnished to all parties receiving this RFQ. Metro will not respond to questions received after February 27, 1998.

D. Information Release

All persons submitting qualifications/proposals are hereby advised that Metro may solicit and secure background information based upon the information, including references, provided in response to this RFQ. By submission of a proposal all responders agree to such activity and release Metro from all claims arising from such activity.

E. Minority and Women-Owned Business Program

In the event that any subcontracts are to be utilized in the performance of this agreement, the proposer's attention is directed to Metro Code provisions 2.04.100 & 200.

Copies of that document are available from the Risk and Contracts Management Division of Administrative Services, Metro, Metro Center, 600 NE Grand Avenue, Portland, OR 97232 or call (503) 797-1717.

VI. QUALIFICATIONS: CONTENTS

Submit written materials which demonstrate capability and qualification to provide the services described in the Scope of Work (Appendix A), and in the analytical requirements detailed in the Cost Proposal Form (Appendix B) of this RFQ.

Qualifications should include the information requested in items A through D below. The response to items A through C should contain not more than eight (8) pages of written material, excluding resumes. Supportive Technical Information (Item D) should be included as appendices, and should be referenced where appropriate in the response to items A through C.

All qualifications materials should be submitted on recyclable, double-sided recycled paper (post consumer content). No waxed page dividers or non-recyclable materials should be included in the proposal.

A. Transmittal Letter

Briefly describe the contents of the materials submitted. Identify the person who would be project manager, and personnel who would be assigned to the project. State that the proposal will be valid for ninety (90) days after the date of the proposal's submission.

B. Staffing/Project Manager Designation

Identify the project manager and special qualifications s/he brings to the project. Include a resume for that individual.

Identify all personnel assigned to the project and their roles in relation to the work. Include resumes for all of those individuals.

Use the following format to provide this staffing information:

- Name of person
- Title
- Project Role (brief description)

For each subcontractor that would be involved in the project, provide the following information:

- Name of firm
- Name of primary contact
- Analyses to be performed
- Percent of total analyses required under the prospective contract that is expected to be performed by subcontractor (see Cost Proposal Form -- Appendix B, for details of analytical requirements)

C. Experience

List projects conducted over the past five years which involved services similar to the services required by Metro per this RFQ. For each of these other projects, include the name of the primary contact person, his/her title, role on the project, and telephone number. Identify persons on the proposed project team who worked on each of the projects listed, and their respective roles.

Provide the same information for subcontractors.

D. Supportive Technical Information

Provide as appendices technical documentation that supports or supplements the information provided under items A through C above.

- Accreditations / Certifications
- Documentation of membership in EPA Contract Lab Program (current or past)
- Proficiency Exam results (e.g. EPA Water Supply and Water Pollution)
- Outline key elements of the Quality Assurance Plan which would be applied to the project, and provide brief descriptions or tables, including but not necessarily limited to:
    - data quality objectives (e.g. precision and accuracy)
    - standard quality control checks
    - performance and system audits
    - quality assurance reports to management
    - corrective actions

In outlining the Quality Assurance Plan, refer to the Scope of Work (Appendix A) and the analytical requirements detailed in the Cost Proposal Form (Appendix B).

Provide the same information for subcontractors.

VII. QUALIFICATIONS: EVALUATION

A. Evaluation Procedure

Only Qualifications received that conform to the instructions will be evaluated. Metro will evaluate qualifications using the criteria identified in the following section.

B. Evaluation Criteria

This section describes the basis for evaluation of the Qualifications submitted to provide the services described in this RFQ.

In the evaluation, qualifications will be weighted as follows, on the basis of 100 percentage points:

1. 30% Capabilities and Experience of Personnel

2. 30% Project Experience of Firm

3. 15% Relevance and level of Accreditation and Certification (including proficiency exam results)

4. 15% Thoroughness of QA Program (per outline and brief description of key elements)

5. 10% Relevance and Completeness of Supportive Technical Information

The following sections (Section VIII through XII) only apply if invited by Metro to submit proposals, as determined by qualifications submitted in accordance with the sections above.

VIII. PROPOSAL: INSTRUCTIONS

Proposals should include items described in the next section, with reference to the Scope of Work (Appendix A), and the Cost Proposal (Appendix B).

A. Submission of Proposals

Four (4) copies of the proposal shall be furnished to Metro, addressed to:

Paul Vandenberg
Metro
Regional Environmental Management Department
600 NE Grand Avenue
Portland, OR 97232-2736

B. Deadline

Proposals will not be considered if received after 4:00 p.m., 8 working days after the date of the letter inviting proposals.

C. RFQ as Basis for Proposals

This RFQ represents the most definitive statement Metro will make concerning the information upon which proposals are to be based. Any verbal information which is not addressed in this RFQ will not be considered by Metro in evaluating the qualifications/proposals. Any questions relating to this RFQ should be addressed to: Paul Vandenberg, Associate Solid Waste Planner, at (503) 797-1695. Any questions, which in the opinion of Metro, warrant a written reply or RFQ amendment will be furnished to all parties receiving this RFQ. Metro will not respond to questions received after February 27, 1998.

D. Information Release

All persons submitting qualifications/proposals are hereby advised that Metro may solicit and secure background information based upon the information, including references, provided in response to this RFQ. By submission of a proposal all responders agree to such activity and release Metro from all claims arising from such activity.

E. Minority and Women-Owned Business Program

In the event that any subcontracts are to be utilized in the performance of this agreement, the proposer's attention is directed to Metro Code provisions 2.04.100 & 200.

Copies of that document are available from the Risk and Contracts Management Division of Administrative Services, Metro, 600 NE Grand Avenue, Portland, OR 97232 or call (503) 797-1717.

IX. PROPOSAL: CONTENTS

The proposal (if invited by Metro) should contain only those materials requested in items A through C below.

Any paper used in the submittal should be recyclable, double-sided recycled paper (post consumer content). No waxed page dividers or non-recyclable materials should be included in the proposal.

A. Project Organization Chart

Provide a chart showing roles and relationships of all project personnel identified in the Qualifications submitted per the Qualifications part of this RFQ (Qualifications: Contents, Section VI, part B). Identify sub-contractors by firm name, and include their respective roles and relationships. Use arrows on the chart to show the direction of communications required to manage the project.

Note: Include the following Metro staff in the Chart.

Name: Paul Vandenberg
Title: Associate Planner
Function: Main contact for laboratory, including:

- overall scheduling of sampling/analysis
- QA/QC issues
- analytical methods issues
- re-sampling / re-analysis issues
- reporting of results
- notification of new certifications/results of performance evaluations
- all other reporting and notification
- invoicing

Name: Deedie Bassham
Title: Hazardous Waste Technician
Function: Field Contact for Laboratory, including:

- container requests
- sample collection
- shipment of containers and samples
- chain-of-custody

B. Example Report of Analytical Results

Provide an example report of groundwater and sediment analytical results (maximum of 10 records per each), including both paper copy and computer files of the results.

Separate computer files should be prepared for groundwater and sediment results, respectively. These files should be Microsoft Access tables (2.0 or higher version), contained in an Access database named [impt0398.mdb].

For report format and content details (for both paper copy and computer files), refer to the reporting specifications provided in Attachment C to the Scope of Work (Analytical Results Report Specifications). Note that the paper copy should include a header containing the information specified in Attachment C, as well as the results.

Submit the computer files on the diskette provided by Metro that contains the Cost Proposal Form (see next section).

Note that for purposes of this example report submittal, example quality control results are not required; nor is an example transmittal letter required.

C. Cost Proposal

The Cost Proposal Form (Appendix B of the RFQ) will be provided by Metro to pre-qualified firms on a diskette in Microsoft Excel format (5.0 version), along with the letter inviting proposals.

Refer to Appendix B for instructions regarding completing the Cost Proposal Form.

The diskette containing the completed Cost Proposal Form should be returned to Metro as part of the overall Proposal, and should also include

the Microsoft Access database containing example analytical results (see previous section).

D. Exceptions and Comments

To facilitate evaluation of proposals, all responding firms will adhere to the format outlined within this RFQ. Firms wishing to take exception to, or comment on, any specified criteria within this RFQ shall document their concerns in this part of their proposal. Exceptions or comments should be succinct, thorough and organized.

X. PROPOSAL: EVALUATION

A. Evaluation Procedure

Only Proposals received that conform to the instructions will be evaluated. Metro will evaluate proposals using the criteria identified in the following section.

B. Evaluation Criteria

This section describes the basis for evaluation of the Proposals to provide the services described in this RFQ.

In the evaluation, qualifications and proposal items will be weighted as follows, on the basis of 100 percentage points:

1. 75% Qualifications* as related to Cost
2. 15% Project Organization
3. 10% Example Report of Analytical Results

Note that qualifications submitted per the Qualifications part of this RFQ will be re-evaluated here in conjunction with evaluation of the cost proposal.

*as demonstrated by materials submitted previously per the Qualifications part of this RFQ.

XI. GENERAL PROPOSAL/CONTRACT CONDITIONS

A. Limitation and Award

This RFQ does not commit Metro to the award of a contract, nor to pay any costs incurred in the preparation and submission of proposals in anticipation of a contract. Metro reserves the right to waive minor irregularities, accept or reject any or all proposals received as the result of this request, negotiate with all qualified sources, or to cancel all or part of this RFQ.

B. Billing Procedures

Proposers are informed that the billing procedures of the selected firm are subject to the review and prior approval of Metro before reimbursement of services can occur. Contractor's invoices shall include an itemized statement of the work done during the billing period, and will not be submitted more frequently than once a month. Metro shall pay Contractor within 30 days of receipt of an approved invoice.

C. Validity Period and Authority

The proposal shall be considered valid for a period of at least ninety (90) days and shall contain a statement to that effect. The proposal shall contain the name, title, address, and telephone number of an individual or individuals with authority to bind any company contacted during the period in which Metro is evaluating the proposal.

D. Conflict of Interest

A Proposer filing a proposal thereby certifies that no officer, agent, or employee of Metro or Metro has a pecuniary interest in this proposal or has participated in contract negotiations on behalf of Metro; that the proposal is made in good faith without fraud, collusion, or connection of any kind with any other Proposer for the same call for proposals; the Proposer is competing solely in its own behalf without connection with, or obligation to, any undisclosed person or firm.

XII. NOTICE TO ALL PROPOSERS -- STANDARD AGREEMENT

The attached personal services agreement (Exhibit A) is a standard agreement approved for use by the Metro Office of General Counsel. This is the contract the successful proposer will enter into with Metro; it is included for your review prior to submitting a proposal.

Exhibit A
(To Request For Qualifications)

Metro Contract No: _____

PERSONAL SERVICES AGREEMENT

THIS AGREEMENT is between Metro, a metropolitan service district organized under the laws of the State of Oregon and the 1992 Metro Charter, located at 600 NE Grand Avenue, Portland, Oregon 97232, and_____, referred to herein as "Contractor," located at

_____.

In exchange for the promises and other consideration set forth below, the parties agree as follows:

1. Duration. This personal services agreement shall be effective on the last signature date below and shall remain in effect until and including March 31, 2001, unless terminated or extended as provided in this Agreement.

2. Scope of Work. Contractor shall provide all services and materials specified in the attached "Attachment A -- Scope of Work," which is incorporated into this Agreement by reference. All services and materials shall be provided by Contractor in accordance with the Scope of Work, in a competent and professional manner. To the extent that the Scope of Work contains additional contract provisions or waives any provision in the body of this Agreement, the Scope of Work shall control.

3. Payment. Metro shall pay Contractor for services performed and materials delivered in the amounts, manner and at the times specified in the Scope of Work.

4. Insurance. CONTRACTOR shall provide METRO with a certificate of insurance complying with this article and naming METRO as an insured within fifteen (15) days of execution of this Contract or twenty-four (24) hours before services under this Contract commence, whichever date is earlier.

a. Contractor shall purchase and maintain at the Contractor's expense, the following types of insurance, covering the Contractor, its employees, and agents:

(1) Broad form comprehensive general liability insurance covering bodily injury and property damage, with automatic coverage for premises, operations, and product liability. The policy must be endorsed with contractual liability coverage; and

(2) Automobile bodily injury and property damage liability insurance.

b. Insurance coverage shall be a minimum of $500,000 per occurrence. If coverage is written with an annual aggregate limit, the aggregate limit shall not be less than $1,000,000.

c. Metro, its elected officials, departments, employees, and agents shall be named as ADDITIONAL INSUREDS. Notice of any material change or policy cancellation shall be provided to Metro 30 days prior to the change or cancellation.

d. Contractor, its subcontractors, if any, and all employers working under this Agreement that are subject employers under the Oregon Workers' Compensation Law shall comply with ORS 656.017, which requires them to provide Workers' Compensation coverage for all their subject workers. Contractor shall provide Metro with certification of Workers' Compensation insurance including employer's liability. If Contractor has no employees and will perform the work without the assistance of others, a certificate to that effect may be attached, as Exhibit B, in lieu of the certificate showing current Workers' Compensation.

e. If required by the Scope of Work, Contractor shall maintain for the duration of this Agreement professional liability insurance covering personal injury and property damage arising from errors, omissions, or malpractice. Coverage shall be in the minimum amount of $500,000. Contractor shall provide to Metro a certificate of this insurance, and 30 days' advance notice of material change or cancellation.

5. Indemnification. Contractor shall indemnify and hold Metro, its agents, employees and elected officials harmless from any and all claims, demands, damages, actions, losses and expenses, including attorney's fees, arising out of or in any way connected with its performance of this Agreement, or with any patent infringement or copyright claims arising out of the use of Contractor's designs or other materials by Metro and for any claims or disputes involving subcontractors.

6. Maintenance of Records. Contractor shall maintain all of its records relating to the Scope of Work on a generally recognized accounting basis and allow Metro the opportunity to inspect and/or copy such records at a convenient place during normal business hours. All required records shall be maintained by Contractor for three years after Metro makes final payment and all other pending matters are closed.

7. Ownership of Documents. All documents of any nature including, but not limited to, reports, drawings, works of art and photographs, produced by Contractor pursuant to this Agreement are the property of Metro, and it is agreed by the parties that such documents are works made for hire. Contractor hereby conveys, transfers, and grants to Metro all rights of reproduction and the copyright to all such documents.

8. Project Information. Contractor shall share all project information and fully cooperate with Metro, informing Metro of all aspects of the project including actual or

potential problems or defects. Contractor shall abstain from releasing any information or project news without the prior and specific written approval of Metro.

9. Independent Contractor Status. Contractor shall be an independent contractor for all purposes and shall be entitled only to the compensation provided for in this Agreement. Under no circumstances shall Contractor be considered an employee of Metro. Contractor shall provide all tools or equipment necessary to carry out this Agreement, and shall exercise complete control in achieving the results specified in the Scope of Work. Contractor is solely responsible for its performance under this Agreement and the quality of its work; for obtaining and maintaining all licenses and certifications necessary to carry out this Agreement; for payment of any fees, taxes, royalties, or other expenses necessary to complete the work except as otherwise specified in the Scope of Work; and for meeting all other requirements of law in carrying out this Agreement. Contractor shall identify and certify tax status and identification number through execution of IRS form W-9 prior to submitting any request for payment to Metro.

10. Right to Withhold Payments. Metro shall have the right to withhold from payments due to Contractor such sums as necessary, in Metro's sole opinion, to protect Metro against any loss, damage, or claim which may result from Contractor's performance or failure to perform under this Agreement or the failure of Contractor to make proper payment to any suppliers or subcontractors.

11. State and Federal Law Constraints. Both parties shall comply with the public contracting provisions of ORS chapter 279, and the recycling provisions of ORS 279.545 - 279.650, to the extent those provisions apply to this Agreement. All such provisions required to be included in this Agreement are incorporated herein by reference. Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations including those of the Americans with Disabilities Act.

12. Situs. The situs of this Agreement is Portland, Oregon. Any litigation over this agreement shall be governed by the laws of the state of Oregon and shall be conducted in the circuit court of the state of Oregon, for Multnomah County, or, if jurisdiction is proper, in the U.S. District Court for the District of Oregon.

13. Assignment. This Agreement is binding on each party, its successors, assigns, and legal representatives and may not, under any circumstance, be assigned or transferred by either party.

14. Termination. This Agreement may be terminated by mutual consent of the parties. In addition, Metro may terminate this Agreement by giving Contractor five days prior written notice of intent to terminate, without waiving any claims or remedies it may have against Contractor. Termination shall not excuse payment for expenses properly

incurred prior to notice of termination, but neither party shall be liable for indirect or consequential damages arising from termination under this section.

15. No Waiver of Claims. The failure to enforce any provision of this Agreement shall not constitute a waiver by Metro of that or any other provision.

16. Modification. Notwithstanding any and all prior agreements or practices, this Agreement constitutes the entire Agreement between the parties, and may only be modified in a writing signed by both parties.

	METRO
_____	_____
Signature	Signature
_____	_____
Print name and title	Print name and title
_____	_____
Date	Date

Attachment A
(Of Personal Services Agreement)

SCOPE OF WORK

1. Scope of Work.

   Contractor shall perform work described in the attached Scope of Work, and shall charge Metro for services per the attached Cost Proposal Form. These attachments are items which were included in Metro's RFQ # 97R-48-REM for Analytical Laboratory Services.

2. Payment, Billing and Term.

   Each Contractor billing statement shall include an itemized statement of work (analyses) accomplished during the billing period, including:

   - sample identification nos. (corresponding to nos. in reports of analytical results)
   - unit cost
   - no. of samples
   - total cost for each analyte or analyte class
   - total amount due

   Contractor shall provide services at unit costs specified in the attached Cost Proposal Form. Billing statements shall not be submitted more frequently than once a month, and shall be sent to Metro, Regional Environmental Management Department.

   Where reports of analytical results are submitted later than 15 working days after receipt by Contractor of samples from Metro (per attached Scope of Work), billing statements shall be subjected to a penalty fee equal to one percent (1.0%) of the total amount due, per late day.

   Each of Metro's payments to Contractor for work Contractor accomplished during the billing period shall be made in a lump sum equal to the total amount due, or to a discounted total based on penalty fees for late reports. Metro will pay Contractor within 30 days of receipt of an approved billing statement.

   Metro may, in its sole discretion and upon written notice to Contractor, extend the term of this contract. During such extended term all terms and conditions of this contract shall continue in full force and effect, pursuant to amendment.

3. Contract Modifications.

   The Personal Services Agreement shall be modified as follows:

(1) Insurance Section 4e. The entire text of 4e shall be deleted.

APPENDIX A
Scope of Work

Attachment A: Sampling/Analysis Plan

Attachment B: Sample Matrices Description

Attachment C: Analytical Results Report Specifications
- Exhibit 1: File Naming and Field Requirements
- Exhibit 2: File Structures
- Exhibit 3: Analyte Code Names and Units

APPENDIX B
Cost Proposal

The following attachments apply if invited by Metro to submit proposals, as determined by qualifications submitted in accordance with Sections I through VII.

Attachment A: Cost Proposal Instructions

Attachment B: Cost Proposal Form

Attachment C: Cost Module

Attachment D: Analyte Class Detail

APPENDIX A

SCOPE OF WORK
LABORATORY SERVICES (1998-2001)

Metro is seeking qualifications, and proposals from pre-qualified firms, to perform the analytical services described below. These services shall be provided by the Contractor for environmental samples collected by Metro or firms under contract to Metro, at properties owned, managed, or otherwise being assessed by Metro.

For all samples submitted by Metro, the Contractor shall use procedures consistent with The Sampling & Analysis Plan for the Smith-Bybee Lakes Wildlife Area Including St. Johns Landfill (Attachment A to Scope of Work). Where alternative procedures are required, Metro shall notify the Contractor at or prior to the time sample containers are requested.

Metro anticipates the work will commence in the spring of 1998, ending in the spring of 2001.

The Contractor shall provide the following services:

1. The Contractor shall fulfill all laboratory responsibilities described in Metro's Sampling & Analysis Plan for the Smith-Bybee Lakes Wildlife Area including St. Johns Landfill (Attachment A to Scope of Work).

2. The Contractor shall perform analyses for those analytes listed on the Cost Proposal Form (Appendix B) using the methods specified on that Form, and using QA/QC procedures which meet, at a minimum, standard EPA approved methods.

   Note that the annual number of samples for each parameter/media specified in the Cost Proposal Form is an estimate, and may change depending on changes in regulations and objectives.

   The Contractor shall perform all analyses at the unit cost specified in the Cost Proposal Form. Unit costs shall reflect all costs associated with services provided to Metro, including but not limited to: administration, labor, supplies, equipment operation and maintenance, container shipment and sample pickup, and subconsultant fees.

3. The Contractor shall perform additional analyses as requested by Metro under a program budget contingency. Sample types and numbers for these additional analyses are dependent on results of current monitoring efforts, or on regulatory considerations or other factors, and will be determined at the time they are required.

Analytes included under the contingency budget may include, but would not be limited to: additional organic analytes specified under *RCRA 40 CFR, Appendix 3: Phase II*; organophosphorus pesticides; biological parameters (e.g. algal biovolume); and constituents of construction materials (e.g. asbestos). Where such additional analyses include analytes not specified on the Cost Proposal Form, Metro will negotiate a unit cost with the Contractor for each analyte, or analyte class, at the time the analyses are needed.

4. When performing analyses using a gas chromatograph/mass spectrophotometer, the Contractor shall tentatively identify and report (but not quantify) any significant peaks, in addition to quantifying the specified analytes. A list of the compounds associated with these peaks shall be provided on the paper copy report of analytical results (refer to Attachment C to Scope of Work: Analytical Results Report Specifications).

5. Where any sample submitted to the laboratory is considered by the Contractor to be inadequate for analysis, the Contractor shall notify Metro immediately, and shall request additional information or advise Metro as necessary regarding re-sampling.

6. Where the analysis of a sample fails any quality control criteria, the Contractor shall re-analyze as necessary to produce a valid result, or otherwise notify Metro about corrective action required to achieve a timely result.

7. Reports of analytical results shall be submitted by the Contractor according to the formats and contents specified by Metro in Attachment C to Scope of Work: Analytical Results Report Specifications , within 15 working days of receipt of sample(s) by the laboratory. Where results are submitted later than 15 working days, billing statements associated with those results shall be subjected to a penalty fee equal to one percent (1%) of the invoice total amount due, per late day.

8. The Contractor shall submit in writing for Metro's approval requests for any desired modifications or substitutions to analytical methods specified in the Cost Proposal Form (Attachment B to Cost Proposal), and corresponding changes in method detection or reporting limits, at least one week prior to performing the analyses which use such methods. Such requests shall include documentation of regulatory approval for the modification or substitution.

9. The Contractor shall notify Metro in writing of all performance evaluations, new accreditations or certifications, within 30 days of receipt of such.

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Attachment A
(To Scope of Work)

Sampling and Analysis Plan

Draft Environmental Monitoring Plan

for

Smith-Bybee Lakes Wildlife Area

Including

St. Johns Landfill

Sampling and Analysis Plan

The Sampling and Analysis Plan is the field and laboratory procedures component of the Environmental Monitoring Plan for the Smith-Bybee Lakes Wildlife Area including St. Johns Landfill. The objective of this plan is to optimize the accuracy and precision of environmental quality data collected from within SBWA through effective and controlled sampling, laboratory analysis, and field measurements. Monitoring procedures meeting these criteria will allow for accurate evaluations of environmental quality and associated environmental effects.

The term "sampling" herein means field measurements in addition to the collection of samples for laboratory analysis. "Laboratory" refers to any entity which has contracted with Metro to perform analytical laboratory services required by Metro's Environmental Monitoring Program.

In addition to complete and effective laboratory Quality Assurance / Quality Control (QA/QC), a key function of the plan in meeting the objectives is to employ procedures -- for detection, assessment and investigation --which provide field data and samples for laboratory analysis that are representative of environmental conditions (e.g., hydrologic; hydrogeologic) at the time and location of sampling.

The principles and methods associated with the following sampling and analysis functions vary little among media sampled, and will be described in this plan overview; they include:

- Sample Storage, Labeling and Transport
- Field QA/QC
- Laboratory QA/QC
- Field measurement instrument calibration
- Equipment decontamination

Three other functions of the plan are largely dependent on the media sampled, and are described under the respective media sections of the plan; they include:

- Field Documentation
- Sampling Equipment
- Sampling Procedures

The sampling equipment and procedures described in this plan include those which are currently used, and also those which may be used in the future -- depending on the nature of changes in monitoring plan objectives. The Sampling and Analysis plan will be updated to describe in more detail equipment and procedures which are added because of monitoring objective modifications.

Metro personnel implementing the sampling function of the plan will adhere to the specifications described in this plan, unless unspecified measures are warranted based on unanticipated conditions. Where this occurs, any alternative measures employed will be fully explained and documented.

Where required when sampling, Metro personnel will wear personal protective clothing, use equipment and employ measures consistent with OSHA, EPA, and DEQ standard operating safety guidelines and procedures.

Sample Storage, Labeling and Transport

An essential function of the plan is the tracking of sample handling, from the time of container preparation and shipment from the laboratory to Metro, to the return of samples to the laboratory, including sample analysis.

Sample Labels

Containers will be requested by Metro as close in time to the sampling event as possible. After containers are received they will be stored in a dry and clean location.

The laboratory will prepare sample labels and secure them to the containers prior to shipment to Metro. Where applicable, the laboratory will identify on container labels preservatives in the containers, based on analytes requested by Metro (see below "Chain of Custody Record").

Upon sampling, Metro personnel will record the following information on each label:

- a unique sample identification
- location (e.g., Columbia Slough; Smith Lake)
- date and time of collection

Sample Container Preparation

Metro will request containers from the laboratory, including the number of containers and analytes to tested. Based on this request the laboratory will provide the appropriate container types (composition, color, and volume), and will add preservatives as necessary, using the following as guidelines:

- Test Methods for Evaluating Solid Waste - Physical/Chemical Methods; SW-846.
- Methods for Chemical Analysis of Water and Wastes; EPA-600/4-79-020; 1983.
- Standard Methods for the Examination of Water and Wastewater; 18th edition.

Along with the containers the laboratory will provide coolers and blue ice, and appropriate packaging materials.

Chain of Custody Record

A Chain of Custody sheet (COC) will accompany each sample or group of samples collected by Metro. The COC will be provided by the laboratory. In preparing samples for transport, Metro will complete the COC with the following information:

- name and phone number of destination laboratory
- Metro/laboratory contract number
- name of sample collector(s)
- name of person recording the COC
- name of contact person
- site location and sample matrix type
- unique identification for each sample; associated date and time of collection
- parameters to be analyzed
- sample transport instructions if required
- notes regarding filtering of samples if required
- turn-around time requirements

Sample Analysis Request Sheet

A sample analysis request sheet prepared by the laboratory will accompany each sample through the analytical process, and will provide the following information:

- name of person receiving the sample
- date of sample receipt
- laboratory sample identification number
- analyses to be performed

Field Quality Assurance/Quality Control

Field QA/QC procedures ensure the reliability of field sampling and measurements, and contribute to the validity of the analytical results for collected samples. These procedures include transport blanks, which test the effects of contamination resulting from sample transport, if any; field duplicates, which test sampling precision; and field instrument calibrations which ensure accurate measurement of field parameters.

Transport Blanks

Transport blanks will be prepared and analyzed per sampling event if volatile organic compounds are to be tested. These blanks will be prepared by the laboratory by filling containers with Type II reagent grade water. The containers will be transported to, and stored by Metro with the sample containers, and transported back to the laboratory with the collected samples. At no point in this process will these containers be opened or exposed. At the laboratory, these blanks will be analyzed for volatile organic compounds using the same methods as for the collected samples.

Field Duplicates

Field duplicates will be two samples collected one immediately after the other at the same monitoring station, and will be analyzed for the same parameters. Field duplicate samples will be collected at a rate of one per ten sample locations. These duplicate samples will be given a unique identification number, transported, processed, and analyzed at the laboratory just like their companion (i.e., co-located) samples.

Field Instrument Calibration

Calibration of test sensors for field parameters will be performed according to procedures recommended by the field instrument vendor(s). Where required during sampling, maintenance and any associated re-calibration will also be performed.

Recordkeeping

Sampling Data Sheets will be used to record all relevant field observations and data (see below sampling and analysis plans for each media). Copies of all Sampling Data Sheets will be sent by Metro field staff to the EMIS database custodian at Metro headquarters within one weeks after samples are collected. This information will be stored at both St. Johns Landfill and at Metro headquarters. Chain of Custody Records and Sample Analysis Request Sheets will be sent by the laboratory to the EMIS database custodian along with analytical results per a scheduled specified by Metro's contract with the laboratory.

Laboratory Quality Assurance/Quality Control

In order to further substantiate and validate the quality of analytical data, all laboratory procedures will be detailed in a Laboratory QA/QC Plan, to be prepared by the laboratory -- as a condition of its contract with Metro -- based on procedures and standards of the following:

- Standard EPA approved methods and procedures
- American Society of Testing and Materials
- Association of Official Analytical Chemists

The QA/QC Plan will include the following:

- methods for preparing all sample containers and trip blanks
- routine instrument calibration procedures to standard reference materials
- specified holding time limits prior to which samples will be analyzed, by analyte or analyte class
- analytical accuracy and precision targets, by analyte, matrix and method
- analytical methods of QC samples including blanks, duplicates, organic compound surrogate spikes and matrix spikes.
- methods for evaluating the maintenance of control limits for QC results
- description of laboratory logbook for maintaining records of all analyses
- analytical result qualification by type, with associated reporting codes

Analytical QC will be performed at a minimum frequency of 10% (i.e., one complement of relevant QC tests per nine field samples analyzed). QC results (e.g. % recovery; relative % difference) will be provided to Metro along with field sample results. These results will be used by Metro and the laboratory as a measure of performance and as an indicator of potential sources of cross-contamination. Routine QC control charts will be maintained and made available to Metro upon request.

A laboratory logbook of all analyses performed for Metro will be maintained a minimum of three years to document the sample processing steps, including:

- sample preparation technique (e.g., dilution; extraction)
- analytical instruments
- analytical methods
- experimental conditions

Reporting of analytical results will include the following:

- sampling site and media
- dates and times of sampling
- date of receipt of sample by laboratory
- date of sample analysis
- laboratory sample identification number
- analytical method(s)
- measured concentrations
- method detection limits (MDLs) or
- method reporting limits (MRLs) or
- practical quantitation limits (PQLs)
- analytical qualifier where applicable

Field Measurement Instrument Calibration

Parameters of interest which are chemically-unstable will be measured only in the field. These parameters include pH, temperature, dissolved oxygen, specific conductance, and oxidation/reduction potential . Some combination or all of these parameters will be measured in each media. Currently, equipment used for field measurement of these parameters is supplied to Metro by Hydrolab Corporation. This equipment (herein referred to as the "Hydrolab") contains sensors for single or continuous (i.e. high frequency) measurement of the parameters identified above. The Hydrolab and any other equipment used for field measurements will be calibrated as required, and all equipment will be maintained to allow for accurate and precise measurement of water quality parameters.

Hydrolab Calibration

All Hydrolab instruments used in the field will be calibrated as required according to the following procedure:

1. All Hydrolabs that are deployed for high frequency monitoring will be brought in for maintenance and calibration every two weeks;
2. Hydrolabs used for single measurements (e.g., surface water grab samples) will be maintained monthly and calibrated prior to each use;
3. Procedures in the Hydrolab manual for maintenance and calibration of each sensor currently in use will be followed;
4. Initial and final calibration readings for each sensor will be recorded in a log book, as follows;

Parameter	Initial Reading	Final Reading	Calibration Std.
depth (m)			
conductivity (mS/cm)			
pH (lower bound)			
pH (upper bound)			
dissolved oxygen (mg/l)			
dissolved oxygen % saturation			

5. All other required field information will be recorded in the log book;
6. Battery voltage will be checked every two weeks on all units being used for high frequency monitoring.

Records will be kept of any equipment calibration and maintenance performed between sampling events. This will include records of equipment function problems, calibration and maintenance procedures, and dates.

Sampling and Analysis
Groundwater

Sampling and analysis equipment and procedures described here relate only to testing of groundwater from St. Johns Landfill and vicinity. They will be consistent with monitoring requirements specified in Metro's Solid Waste Disposal Site Closure Permit (#116) with DEQ.

Field Documentation

Documentation of all relevant field activities is essential to meeting plan objectives. A "Groundwater Sampling Data Sheet" will be used to record critical field information related to measuring and sampling groundwater at each monitoring well. The information recorded will include:

- name of collector(s)
- site location
- date and time of purging, sampling
- basic conditions such as climatic, condition of the well
- measurements of well static water elevation
- purge rates, volumes, and related calculations
- well recharge rates
- field measurements of certain indicator parameters
- sample containerization and preservation details
- observations of unanticipated conditions which may directly cause (or result in procedures which cause) deviation from this plan, potential contamination, or otherwise potentially anomalous data.
- results of field measurements

Sampling Equipment

Equipment

The equipment used for sampling groundwater will be dedicated to each well, thereby removing the risk of cross-contamination of samples and wells. The design of this equipment will allow for low-flow rate purging and sampling, while also providing the option to purge wells at greater flow rates as necessary. The combined aspects of equipment dedication and low-flow purging and sampling are expected to minimize disturbance to the groundwater in and around the screened interval, and of the well itself, thereby facilitating the collection samples which are representative of the geologic interval.

In addition to sample collection equipment, other equipment will be used for field measurements of groundwater. The design of this equipment will allow for accurate and precise measurement of certain key indicator parameters, and of well static water elevation.

Field equipment which will be used includes, but may not be limited to the following:

- Bladder pump with a polyvinyl chloride housing and check valves; and a polytetra fluoroethylene bladder membrane/tube; dedicated to each monitoring well
- Fluoroethylene polymer-lined discharge tubing (1/2 inch diameter.) from pump, dedicated to each monitoring well
- Air compressor for expanding bladder in order to push sample through discharge tubing
- Regulator for controlling flow rates
- In-line disposable filters with 0.45 micron membranes to remove particulates

- Electronic sensor for static water elevation measurements, sensitive to ± 0.01 foot, and including a polyvinyl chloride tape and 6" stainless steel shaft at tape end which contains a water-sensing pin
- Multiparameter field monitoring instrument, equipped with sensors for measuring pH, temperature, specific conductance, dissolved oxygen, oxidation/reduction potential, and salinity (currently, "Hydrolab")
- Sampling containers, as provided by the laboratory based on analytes to be sampled (see Sample Containerization under Sample Collection)

Sampling Procedures (Water Quality Data)

Sampling Preparations

Installation of Dedicated Sampling Equipment. An in-well bladder pump and discharge tubing will be dedicated to each well. Dedication of this primary sampling equipment avoids contamination. Therefore, routine decontamination is generally not required. However, all dedicated equipment placed within the well casing will be cleaned prior to installation using double-distilled water. Filters will be in-line and disposable.

After cleaning, the bladder pump will be positioned in each well such that the intake -- for both purging and sampling -- is located approximately in the middle of the screened interval. Discharge tubing from the pump to the top of the well will be installed. The pump and tubing will not be moved after initial placement in the well, until the well is abandoned for purposes of monitoring, or the equipment requires maintenance or replacement.

Preliminary testing of pumping and flow rates will be performed prior to each event, as necessary, at wells which are representative of different depths / geologic intervals. This testing will be designed primarily to provide guidance for employing appropriate flow rates at each monitoring well on sampling days.

Measurement of Well Static Water Elevation. Water elevation measurements will be taken from an established and marked reference point on the well. The reference point will be:

- established by licensed surveyor to an established National Geodetic Vertical Datum;
- permanent and easily identified mark;
- located on the top of the well casing with the locking cap removed; and
- periodically re-surveyed.

Static water level elevation measurement will be from an established reference point on the well, using the procedure described above for establishing the reference point. An electronic sensor is lowered with a graduated tape into the well until a signal indicates that water has been contacted. The tape indicates the depth in feet, which is then recorded. Between samplings, the sensor is decontaminated with a non-phosphate laboratory grade detergent wash, and a distilled water rinse.

If a well being sampled makes bubbling noises, or shows evidence of foam, this will be recorded on the sampling data sheet.

During purging, water level measurements will be taken as required to document drawdown. These measurements allow the sampler to control pumping rates to minimize drawdown, thereby minimizing the introduction of stagnant casing water into the discharge tubing.

Well Purging. Wells will be purged at flow rates which approximate well recharge rates, to avoid mixing the overlying stagnant water with the water adjacent to the well screen. This will be indicated by the stabilization of key indicators of background water chemistry during purging, and by static water elevation

measurements (i.e. static water elevation should remain unchanged). These rates are expected to range from 100-1000 milliliters per minute, depending on well recharge rate.

To measure key indicators, the discharge line will be connected to a flow-through cell which is in direct contact with parameter sensors of the field parameters measurement instrument, for measurements and recording.

Because pH and temperature typically stabilize quickly, dissolved oxygen and specific conductivity will be considered the key indicators for stabilization. These parameters will be considered stable when they stabilize within the following variation:

- dissolved oxygen: +/- 0.2 mg/l
- specific conductivity: +/- 10.0 uS/cm

Other field parameters will be monitored continuously and recorded on the sampling data sheet during this stabilization process, including pH and temperature, oxidation/reduction potential, and salinity.

In addition, water level measurements will be taken as required to document drawdown. As described above, these measurements will allow the sampler to control pumping rates to minimize drawdown, thereby minimizing the introduction of stagnant casing water into the discharge tubing.

Purge water will be collected, consolidated in 55-gallon drums, and stored on site until a sufficient quantity is collected for testing to determine disposal status. Upon testing, where any parameter exceeds the MCL for drinking water the purge water will be disposed in the leachate pump station wet well unless its disposal could cause a violation of the Industrial Wastewater Discharge Permit (see Leachate Discharge Monitoring Plan). If any parameter exceeds the standard defining it as a hazardous waste it will be disposed of at a permitted hazardous waste disposal facility. Where this is not the case, it will be disposed of on the ground at the site.

Sample Collection

Sampling will proceed only after three successive measurements (at specific intervals) of the key indicator parameters have stabilized, and at least one pump and tubing volume have been purged. The discharge tube will be disconnected from the flow-through cell for discharge directly into sample containers.

Samples will be collected at flow rates equal to or less than the purge rate so that static water level in each well remains unchanged. Care will be taken to minimize turbulence and mixing of air with samples. Lower rates may be warranted based on the analytes to be tested, for example, volatile organic compounds which are more stable at lower flow rates (e.g. 100 milliliters per minute).

Grab samples for dissolved metals or any other dissolved contaminants will be filtered, using a Nalgene 0.45 micron disposable cartridge filter attached to a peristaltic pump. New filter cartridges and pump tubing will be used for each sampling station.

Containers with samples for volatile organic compound analysis will be filled with zero headspace so that volatiles will not escape from the liquid. Containers of samples for heavy metal analysis will not be allowed to overflow.

Samples will be collected and containerized in the order of decreasing volatility of the parameters to be analyzed, as follows:

- volatile organic compounds
- total organic halogens
- total organic carbon

- semi-volatile organic compounds
- total recoverable metals
- dissolved metals
- phenols
- cyanide
- sulfate and chloride
- nitrate and ammonia

Upon collection, most samples will be immediately stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.

Sampling Procedures (Water Level Data)

Data Collection (Monitoring Wells)

Continuous water level data will be collected electronically in six monitoring wells penetrating the top of the sand/gravel aquifer, including D-6C, G-4B, G-5B, G-6, G-8B and G-8C. Water levels will also be recorded manually, both as a check on the logged data, as well as a way to calibrate the piezometers (by determining when the aquifer essentially has a flat water surface).

Data Collection (Piezometers)

Piezometer data at multiple depths in the silts, sands, and gravels will be collected either continuously or monthly. The data loggers were installed at the locations of greatest current interest (see below), with the anticipation of moving the loggers as required over time. Monthly data will be taken at all other piezometer locations.

At 9 locations around the perimeter of the landfill, multi-level vibrating strip pressure transducers were installed as a string, and then backfilled with bentonite between each sensor. Six of these have shallow monitoring wells drilled a few feet away, which allows comparison and approximate verification of the water level data.

The piezometer data will be read as frequency, and converted to pressure (psi) using a polynomial expression (and calibration factors unique to each sensor, as obtained from the transducer manufacturer). Because the sensors are unvented, they will be adjusted for the atmospheric barometric pressure (primarily obtained from the Oregon Climate Center, and with gaps filled in from an on-site barometer).

Sampling and Analysis
Leachate Discharge
(St. Johns Landfill)

Sampling and analysis equipment and procedures described here relate only to testing of leachate discharged from St. Johns Landfill into the City of Portland sanitary sewer. As such, they will be consistent with monitoring requirements specified in Metro's Industrial Wastewater Discharge Permit (#400.018) with the City of Portland's Bureau of Environmental Services. If any new permits issued to Metro by the City specify monitoring methods different than those described below, this plan will be updated accordingly.

Field Documentation

Documentation of all relevant field activities is essential to meeting plan objectives. A "Leachate Sampling Data Sheet" will be used to record critical field information related to measuring and sampling leachate at each monitoring station. The information recorded will include:

- name of collector(s)
- site location
- date and time of sampling
- leachate color and condition
- sample type (e.g., grab; composite)
- sample containerization and preservation details
- observations of unanticipated conditions which may directly cause (or result in procedures which cause) deviation from this plan, potential contamination, or otherwise potentially anomalous data.
- results of field measurements (if required)

Sampling Equipment

Leachate sampling equipment will include equipment used for collecting samples for laboratory analysis.

Field equipment which will be used includes, but may not be limited to the following:

- leachate pump and discharge line from wet well to sanitary sewer
- sampling containers, as provided by the laboratory per analytes to be sampled
- ISCO sampler (for in-line, composite sampling at programmed time intervals)

Sampling Procedures

Grab samples will be collected at the specified monitoring location accordingly to the following procedure:

1. The sampler will wear gloves.
2. The in-line valve will be opened.
3. Upon opening the valve, samples will be collected immediately by holding sample containers directly under the outfall, and without making contact between the container and surroundings.
4. Upon collection, samples will immediately be stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.

Composite samples will be collected at the specified monitoring location accordingly to the following procedure:

1. The sampler will wear gloves.
2. The in-line ISCO sampler will be programmed for either time proportional or flow proportional sampling.
3. For time proportional sampling, a start and stop time is entered, desired volume for each sample and number of samples to take - follow instructions in the operating manual.
4. For flow proportional sampling the daily flow must be estimated and the sampler programmed according to this volume - follow instructions in the operating manual.
5. When the sampling sequence is complete the sample will be placed in the appropriate lab container for the specified analyses.
6. Upon collection, samples will immediately be stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.
7. Chain-of -Custody records will be completed and sent to the lab with the samples.
8. Excess sample will be returned to the leachate / condensate collection system.

Sampling and Analysis
Sediment

Sampling and analysis equipment and procedures described here relate only to testing of surface water sediments within the Smith-Bybee Lakes Wildlife Area. To the extent feasible, they will be consistent with methods used in the City of Portland's Columbia Slough Sediment Project (Remedial Investigation / Feasibility Study Phase).

Field Documentation

Documentation of all relevant field activities is essential to meeting plan objectives. A "Sediment Sampling Data Sheet" will be used to record critical field information related to measuring and sampling sediment at each monitoring station. The information recorded will include:

- name of collector(s)
- site location
- date and time of sampling
- weather conditions
- wind conditions
- surface water depth to bottom
- sample type (e.g., grab)
- sediment characteristics (e.g., color, presence of oily sheen, odor, presence of biological items such as wood, macrophytes)
- sample containerization and preservation details
- observations of unanticipated conditions which may directly cause (or result in procedures which cause) deviation from this plan, potential contamination, or otherwise potentially anomalous data.
- results of field measurements (if required)

Sampling Equipment

Sediment monitoring equipment include equipment used for collecting samples for laboratory analysis, and equipment used for field measurements of sediment. Where applicable, equipment used for field measurements will be calibrated, and all equipment will be maintained to allow for accurate and precise measurement of sediment quality parameters.

The equipment used is dependent on the type of sample collected. Currently, the sediment monitoring plan specifies grab sampling only. These samples provide the nature and extent of contamination in the upper sediments which are the most biologically active layer (typically the upper 2 centimeters, or 0.78 in.).

Where it is decided that the vertical extent of sediment contamination must be measured to meet plan objectives, core samples will be collected. Where measurement of the bioavailability of sediments is required, a third type of sample -- sediment interstitial water (or, pore water) -- will be collected. The equipment required to collect all three types of sediment samples is described below.

Grab Samples

Grab samples will be collected using a stainless steel Ponar dredge. This dredge is designed to collect sediments at shallow depth (e.g., the upper 2 cm.), without disturbing or contaminated the sample. The sampler will possess the following characteristics:

- create a minimal bow wave when descending;
- prevent twisting of the cable by using an attached hydrowire with a ball-bearing swivel;
- form a leakproof seal when the sediment sample is collected;
- prevent winnowing (scattering) and excessive sample disturbance when ascending;
- allow easy access to the sample surface.

Core Samples

Where the monitoring plan is modified to include sediment core sampling, samples will be collected using a stainless steel manual corer with a 2 inch inner diameter, and with threaded extensions to accommodate different water and sediment depths. The corer will be fitted with decontaminated polycarbonate liners that will contain the sediment samples before they are composited.

Interstitial Water

Where the monitoring plan is modified to include interstitial water sampling, samples will be collected using a pressurized squeezer that forces pore water from a large bore sediment corer. The squeezer is adapted with piston assemblies, pre-fit to the core tube to protect against leakage.

Other Sampling Equipment

Other equipment which will be used for sediment sampling includes:
- sampling containers, as provided by the laboratory per analytes to be sampled
- graduated metal tape (for measuring surface water depth to bottom at the point of sediment sampling)
- equipment for measuring field parameters, if required

Sampling Procedures

Following is the sampling procedure for collecting sediment grab samples using an Ponar Dredge. Note that procedures for collecting sediment cores and interstitial water will be added to the plan when required, as the methods for these sample types vary depending on objectives to be defined.

1. The Ponar Dredge will be lowered from a boat into the water at approximately one foot per second.
2. The weight of the dredge will be allowed to force it into the sediment, at which point the sample device is triggered and the jaws closed to form a tight seal.
3. After the sample is collected, the dredge is retrieved at a slow yet continual rate and placed on the boat deck, where it is inspected for quality.
4. The following grab sampling criteria from the Puget Sound Estuary Program will be used (Tetra Tech, 1986. *PSEP: Recommended Protocols for Measuring Selected Environmental Variables in Puget Sound.* Prepared for USEPA Region 10):
   - sample is not over-filled (to prevent overflow of sediment from the dredge)
   - overlying water should be present in the dredge (indicates minimal leakage)
   - care is taken to prevent sample disturbance (indicated by nonturbid overlying water in the dredge)
   - sample surface is relatively flat (indicates minimal disturbance or winnowing)
   - desired sample depth is achieved

With the exception of samples collected for sediment grain size analysis, collected samples will immediately be stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.

Sampling and Analysis
Stormwater
(St. Johns Landfill)

Sampling and analysis equipment and procedures described here relate only to testing of stormwater outfall from St. Johns Landfill into surrounding surface waters. As such, they will be consistent with monitoring requirements specified in Metro's NPDES Stormwater Discharge General Permit (1200-G type permit for landfills) with DEQ. If any new permits issued to Metro by DEQ specify monitoring methods different than those described below, this plan will be updated accordingly.

Field Documentation

Documentation of all relevant field activities is essential to meeting plan objectives. A "Stormwater Sampling Data Sheet" will be used to record critical field information related to measuring and sampling stormwater at each monitoring station. The information recorded will include:

- name of collector(s)
- site location
- date and time of sampling
- general weather conditions
- rainfall conditions (e.g., intensity, duration)
- air temperature
- water color and condition
- sample type (e.g., grab; composite)
- sample containerization and preservation details
- observations of unanticipated conditions which may directly cause (or result in procedures which cause) deviation from this plan, potential contamination, or otherwise potentially anomalous data.
- results of field measurements

Sampling Equipment

Stormwater sampling equipment include equipment used for collecting samples for laboratory analysis, and equipment used for field measurements of sediment. Where applicable, equipment used for field measurements will be calibrated, and all equipment will be maintained to allow for accurate and precise measurement of sediment quality parameters.

The equipment used is dependent on the type of sample collected. Currently, the stormwater monitoring plan specifies grab sampling only, per Metro's NPDES Stormwater Discharge Permit. These samples provide the nature of contamination in the "first flush" of stormwater from SJLF, as described below under "Sampling Procedures".

Where it is decided that time-weighted or flow-weighted composite sampling is required to measure the nature and extent of stormwater sampling as a function of time or flow, composite samples will be collected.

Equipment used for stormwater grab samples includes:

- sampling containers, as provided by the laboratory per analytes to be sampled
- multiparameter field monitoring instrument, equipped with sensors for measuring pH, temperature, specific conductance, dissolved oxygen, oxidation/reduction potential, and salinity (currently, "Hydrolab")

Where composite sampling is required, based on objectives to be defined, the following equipment will be used, in addition to the equipment described above:

- automatic proportional sampling device connected to a flow measurement device and programmed (either variable time interval or variable volume) such that the volume of one composite sample is proportional to stormwater flow during the sampling period.
- Rain gages (for rainfall measurement)

Sampling Procedures

Following is the sampling procedure for collecting stormwater grab samples. General procedures for composite sampling and flow measurement are also described, although methods for these measurements vary depending on objectives to be defined.

Grab samples

Grab samples will be collected at each monitored outfall identified in the Stormwater Pollution Control Plan for SJLF (per the Stormwater Discharge Permit) to characterize contaminant concentrations in samples collected once during the Spring and once during the Fall.

To the extent feasible, samples will be collected during the "first flush" of stormwater from the outfalls, defined here as the initial (30-minute) period of measurable surface water runoff after rainfall begins. First flush grab samples will characterize probable maximum contaminant concentrations during the storm.

Samples collected for the analysis of dissolved metals or any other dissolved contaminants will be filtered, using a Nalgene 0.45 micron disposable cartridge filter attached to a peristaltic pump. New filter cartridges and pump tubing will be used for each sampling station.

1. The sampler will wear gloves.
2. Samples will be collected by holding sample containers directly under the outfall, and without making contact between the container and surroundings.
3. Upon collection, samples will immediately be stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.

Chemically unstable parameters will be measured only in the field, using Hydrolab. These parameters include: pH, temperature, specific conductance, dissolved oxygen, and redox.

Flow-weighted Composite Samples

The monitoring plan does not include composite sampling of stormwater. However, where the evaluation of stormwater data from grab samples indicates a need for a more detailed analysis of stormwater, or where regulatory measures otherwise require it, composite sampling will be implemented.

Where this is the case, flow-weighted composite samples may be collected to characterize contaminant concentrations in storm water during a storm, as this sampling method is considered to be more representative of the average runoff quality than other methods such as time-weighted composite. In this case, a composite sample consists of a set of flow weighted subsamples or aliquots that are combined or composited into one sample. For example, composite aliquots could be collected at the onset of the storm and every 20 minutes for the first 3 hours of rainfall for a maximum of 9 subsamples.

Where necessary, rainfall will be recorded during each sampling interval to provide additional information for sample compositing, if needed.

Flow Measurement

When feasible and necessary, storm water flow will be measured to determine flow volumes for flow-weighted compositing. Storm water flow will be measured at regular intervals, associated with flow-weighted composite sampling, for the duration of the sampling event. At locations where storm water discharge cannot be estimated, relative flow depth and rainfall will be measured to determine a relative change in flow during the storm. The percent change will be used to estimate the percent storm water contribution for compositing.

Flow-weighted composite sampling will follow procedures described in the:
Guidance Manual for the Preparation of NPDES Permit Applications for Storm Water Discharges Associated with Industrial Activity (USEPA, 1991).

Flow measurement is used to calculate flow volumes during the storm. The relative proportion of flow volume during each interval will correspond to the relative proportion of the final composite sample contributed by any particular aliquot. For example, if 10% of the storm flow occurs during the first sampling interval, then 10% (e.g. 300 ml) of the final composite sample (3 L) will be composed of the first aliquot collected.

Following is the sample compositing procedure which will be used:

1. The appropriate portion of each aliquot sample volume (based on flow measurement) will be measured in a graduate cylinder (e.g. the 300 ml from the first interval), then poured into a large compositing container (e.g. decontaminated 5-gallon glass carboy), and mixed with the other aliquot proportions.
2. The composited sample is then used to fill all the laboratory containers required for chemical analyses.
3. Samples for dissolved metals are filtered using .45 micron membrane Nalgene filter.

Sampling and Analysis
Surface Water

Sampling and analysis equipment and procedures described here relate only to testing of surface waters within the Smith-Bybee Lakes Wildlife Area.

Field Documentation

Documentation of all relevant field activities is essential to meeting plan objectives. A "Surface Water Sampling Data Sheet" will be used to record critical field information related to measuring and sampling surface water at each monitoring station. The information recorded will include:

- name of collector(s)
- site location
- date and time of sampling
- air temperature
- tidal conditions
- wind conditions
- water color and condition
- approximate depth to bottom
- sample type (e.g., grab)
- sample containerization and preservation details
- observations of unanticipated conditions which may directly cause (or result in procedures which cause) deviation from this plan, potential contamination, or otherwise potentially anomalous data.
- results of field measurements

Sampling Equipment

Surface water monitoring equipment will include equipment used for collecting samples for laboratory analysis, and equipment used for field measurements of surface water. Field measurements will be taken in conjunction with grab sampling, and in high frequency monitoring of conventional water quality parameters. Equipment used for field measurements will be calibrated, and all equipment will be maintained to allow for accurate and precise measurement of water quality parameters.

Field equipment which will be used includes, but may not be limited to the following:

- sampling containers, as provided by the laboratory per analytes to be sampled (see Sample Containerization under Sample Collection)
- Secchi Disk (for measuring water clarity)
- multiparameter field monitoring instrument, equipped with sensors for measuring pH, temperature, specific conductance, dissolved oxygen, oxidation/reduction potential, and salinity (currently, "Hydrolab")
- graduated metal tape (for measuring depth to bottom)

Sampling Procedures

Water Column Sample Collection

Grab samples will be collected from the water column at each specified monitoring location accordingly to the following procedure:

1. The sampler will wear gloves
2. An initial sample will be collected with a Pyrex beaker (prewashed in double-distilled water), approximately 6 inches below the water surface, then discarded.
3. Another sample will be collected with the beaker, which will be used to transfer water to sample containers (filling each container without overflow); the beaker will be washed with double-distilled water for collecting the next sample.
4. Samples will be collected in a manner which minimizes contamination by floating oil or debris, or water which has contacted the hands, the outside of the sample container, the boat, the motor, and its combustion products.
5. Samples will be collected in an upstream direction will usually minimize the risks.
6. Samples for dissolved metals will be filtered, using a Nalgene 0.45 micron disposable cartridge filter attached to a peristaltic pump. New filter cartridges and pump tubing will be used for each sampling station.
7. Upon collection, samples will immediately be stored in cooling chests with ice or ice packs, as required. These chests will be certified to maintain a 4 degrees Centigrade temperature during transport of sample containers.

Chemically unstable parameters will be measured only in the field using the Hydrolab. These parameters include: pH, temperature, specific conductance, dissolved oxygen, and redox.

Hydrolab data Download and Re-Program (High Frequency Monitoring)

The following procedure will be used for downloaded Hydrolab data which has been collected at high frequency, and for re-deploying the unit.

1. All Hydrolabs that are deployed for long-term monitoring shall be downloaded every two weeks
2. Follow download procedure in Hydrolab manual (data can either be downloaded to the Surveyor 4 and then to a PC or directly to a PC
3. All data should be downloaded in a spreadsheet compatible format
4. All data should be transferred to an Excel spreadsheet formatted to the Metro EMIS database
5. After all data is removed from the Hydrolab the file should be deleted
6. Following the procedure in the Hydrolab manual ,re-program the Hydrolab to log for the next two week interval
7. Re-deploy the instrument after all maintenance and calibration has been performed.

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Attachment B
(to Scope of Work)

Sample Matrices Description

Following are sample matrices for Metro's primary environmental monitoring locations:

Sample Matrix	Primary Location *	Applicable Federal, State or Local Permits or Rules (or other monitoring rationale)
groundwater	aquifer: Metro Central MSW Transfer Station	Adjacent to EPA Superfund site
groundwater	aquifer: Metro South MSW Transfer Station	Adjacent to closed MSW landfill
groundwater	aquifers: St. Johns Landfill	MSW Disposal Site Closure Permit
		Oregon Environmental Cleanup Rules
landfill gas condensate	St. Johns Landfill	MSW Disposal Site Closure Permit
solid waste leachate **	discharge to sewer: St. Johns Landfill	Industrial Wastewater Discharge Permit
surface water sediments	Columbia Slough; Smith & Bybee Lakes	Water Quality Limited (Clean Water Act)
		Columbia Slough (Oregon Cleanup Rules)
surface water	Columbia Slough; Smith & Bybee Lakes	Water Quality Limited (Clean Water Act)
		Columbia Slough (Oregon Cleanup Rules)
stormwater	St. Johns Landfill	NPDES Stormwater Discharge Permit
		Columbia Slough (Oregon Cleanup Rules)
groundwater seepage	silt aquifer: St. Johns Landfill	MSW Disposal Site Closure Permit
air	landfill gas emissions: St. Johns Landfill	MSW Disposal Site Closure Permit
fish tissue	Columbia Slough; Smith & Bybee Lakes	NPDES Stormwater Discharge Permit
		Columbia Slough (Oregon Cleanup Rules)
plant tissue	Smith-Bybee Lakes Wildlife Area	Oregon Environmental Cleanup Rules

* Metro may submit samples from other sources which may have different characteristics than those from primary sources.

** mixture of landfill gas condensate and solid waste leachate.

Attachment C
(To Scope of Work)

Analytical Results Report Specifications

For this project, the following items constitute a "Report" of analytical results to Metro by the contractor:

1. Transmittal letter

2. Paper copy (double-sided) of results, including:
   - analytical results
   - list of tentatively identified compounds
   - Quality Control (QC) results
   - methodology summary (analyte or analyte class; method; units)

3. Computer file of analytical results only
   (format must be consistent with specifications in Exhibits 1 through 3 of this Attachment)

Transmittal Letter

The purpose of the transmittal letter (herein Letter) is to provide basic information identifying the analyses which were performed, and documenting any circumstances of significance surrounding the analyses. The Letter should identify the sample collection site, sample matrix, and the total number of samples analyzed.

The Letter should provide a brief summary of QC results. It should mention anything of significance pertaining to QC (e.g. failure to meet QC criteria), including any corrective action taken on samples or analyses which were initially inadequate.

Note that where QC - related deficiencies occur, and are documented in the Letter, these deficiencies should be indicated in the results as well, both on the paper copy and in computer files of results (in the "Quality" field of computer files). Refer to Exhibit 1 of this Attachment -- File Naming and Field Requirements).

Where conversations were had with Metro in the process of any corrective action, those conversations should also be noted in the Letter. Where Metro-approved modifications or substitutions in analytical methods were employed, these should be documented in the Letter.

Paper Copy of Results

The header on each page of the paper copy of results should clearly display the following information (per sample container label / chain-of-custody form):

- site location (e.g. St. Johns Landfill)
- sample matrix (e.g. groundwater)
- date and time of sample collection
- date sample received by the laboratory
- date of analysis
- sample identification no. (assigned by laboratory)

Results should be grouped by parameter class, using Metro's class codes (Exhibit 3 of this Attachment). In the body of the results, provide a method detection limit for each measurement, unless sample preparation factors (e.g. dilution) or other analytical considerations warrant the use of a higher limit, such as a practical quantitation or other reporting limit. The type of detection limit used should be clearly identified.

As noted above under the definition of "Report," paper copy reports should also include a listing of tentatively identified compounds (where applicable), all QC results, and a methodology summary that includes analyte (or analyte class), method and units.

Computer File of Results

See attached Exhibits 1 through 3 for computer file specifications, including:

Exhibit 1: File Naming and Field Requirements
Exhibit 2: File Structures
Exhibit 3: Analyte Code Names and Units

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Exhibit 1
(of Analytical Results Report Specifications)

File Naming and Field Requirements

Software

Microsoft Access 2.0 (preferable), or higher version.

File name

Files of analytical results should be provided as tables within a Microsoft Access database. Any database containing results should be named using the format **imptmmyy.mdb**, where the prefix "impt" is a constant, mm and yy are month and year of the report. Tables within this database should be named using the format **ppppmmyy**, where pppp is a prefix based on data type (as shown below), mm and yy are month and year of sample collection. For example, the table GRND0798 in database IMPT0898.MDB would be results of groundwater analyses for samples collected in July, 1998, reported in August, 1998.

Table Name Prefix	Type of Results Contained in Table
AIRE	Air
CENT	Groundwater (Central)
COND	Condensate
FISH	Fish Tissue
GRND	Groundwater (SJLF)
LEAC	Leachate
PTIS	Plant Tissue
SEDM	Sediment
SEEP	Seep
SOIL	Soil
SOUT	Groundwater (South)
STOR	Stormwater
SURF	Surface

File record key

One record per: Station / Parameter / Sample Date / Sample Time

File structure / Field format

Refer to Exhibit 2 of this Attachment -- File Structures

Field Requirements

Station: Enter sample ID from sample container label / chain-of-custody.

Parameter: Enter Parameter Name or Parameter ID (refer to Exhibit 3 of this Attachment).

SampDate: Enter sample date from sample container label / chain-of-custody.

Species: Enter abbreviation of fish or plant species name (note: Metro will provide a list of species code names at the time tissue analyses are requested).

SampTime: Enter time of sample collection from sample container label / chain-of-custody.

AnalyDate: Enter date of sample analysis.

SampType: Leave this field blank.

TissType: Leave this field blank.

Composite: For fish or plant tissue, enter "Y" (Yes) or "N" (No).

W/D: For matrices analyzed on a weight basis (e.g., fish tissue; sediment), enter "W" (wet weight basis) or "D" (dry weight basis).

Concentration: Enter the measured value to five decimal places; where analyte is not detected and is below the method detection limit or reporting limit, enter the code number "-9".

Units: Enter the analytical units of measure (see Exhibit 3 of this Attachment: – Analyte Code Names and Units).

DupConcentration: If the measured value is for a station whose name ends with "-DUP," enter it in this field, in the record for the corresponding station. For example, concentrations of benzene in samples labeled D-2A and D-2A-DUP, for the same sample date and time, should be entered into one record, in the Concentration and DupConcentration fields, respectively.

%Moisture: Enter percent moisture of samples analyzed on a weight basis; one decimal place with no % symbol (e.g. 72.5).

Dup%Moisture: Enter percent moisture for duplicate station; follow instructions for DupConcentration.

%Fat/Lipid: Enter percent fat / lipid for fish tissue samples; one decimal place with no % symbol.

Field Requirements (continued)

D/R: To identify the Limit field, enter "D" (method detection limit), or "R" (any type of reporting limit; e.g., a practical quantitation limit).

Limit: Enter the value of the detection or reporting limit.

Source: Enter the number 135.

Quality: Enter a data qualifier, if warranted, according to the following:

- Enter "B" to indicate that the accuracy of the reported value is questionable based on suspected contamination by laboratory reagents.
- Enter "C" to indicate that the accuracy of the reported value is questionable, and unable to be confirmed due to matrix interference.
- Enter "E" to indicate that the accuracy of the reported value is questionable due to a high degree of sample dilution.
- Enter "R" to advise that the reported value be rejected due to serious deficiencies in quality control. The presence or absence of the analyte cannot be verified.
- Enter "Y" to indicate a raised detection limit due to background interference or to activity on the instrument.

Class: Enter the parameter class (see Exhibit 3 of this Attachment -- Analyte Code Names and Units).

Method: Enter the analytical method number; reference not required (e.g., where method is EPA 200.7, enter 200.7).

User: Leave this field blank.

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Exhibit 2 (of Analytical Results Report Specifications)

File Structures (Microsoft Access Tables: 2.0 or higher version)

Filename Prefix: GRND; CENT; SOUT; STOR; LEAC; COND

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
SampTime	Text	5
AnalyDate	Date/Time	8
Concentration	Number (Double)	8
Unit	Text	10
DupConcentration	Number (Double)	8
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Filename Prefix: SEDM; SOIL

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
SampTime	Text	5
SampDepth	Number (Double)	8
AnalyDate	Date/Time	8
SampType	Text	15
W/D	Text	1
Concentration	Number (Double)	8
Unit	Text	10
%Moisture	Number (Double)	8
DupConcentration	Number (Double)	8
Dup%Moisture	Number (Double)	8
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Filename Prefix: FISH

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
Species	Text	10
SampTime	Text	5
AnalyDate	Date/Time	8
TissType	Text	15
Composite	Text	1
W/D	Text	1
Concentration	Number (Double)	8
Unit	Text	10
%Moisture	Number (Double)	8
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Filename Prefix: SURF

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
SampTime	Text	5
SampDepth	Number (Double)	8
AnalyDate	Date/Time	8
Concentration	Number (Double)	8
Unit	Text	10
DupConcentration	Number (Double)	8
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Filename Prefix: PTIS

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
Species	Text	10
SampTime	Text	5
AnalyDate	Date/Time	8
TissType	Text	15
Composite	Text	1
W/D	Text	1
Concentration	Number (Double)	8
Unit	Text	10
%Moisture	Number (Double)	8
DupConcentration	Number (Double)	8
Dup%Moisture	Number (Double)	8
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Filename Prefix: AIR

Name	Type	Size
Station	Text	10
Parameter	Text	12
SampDate	Date/Time	8
SampTime	Text	5
AnalyDate	Date/Time	8
Concentration	Number (Double)	8
Unit	Text	10
D/R	Text	1
Limit	Number (Double)	8
Source	Number (Double)	2
Quality	Text	2
Class	Text	11
Method	Text	10
User	Text	10

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Parameter Class Code [1]	Parameter Full Name	Parameter Code [2]	Unit (liquid) [3]	Unit (solid) [3]	Unit (air) [3]	Regular Analyte [4]
BIOL	Chlorophyll-a	Clorophl-a	mg/l	mg/kg		◆
BIOL	Chlorophyll-b	Clorophl-b	mg/l	mg/kg		
BIOL	Fecal coliform	Fecal coli	CFU/100 ml	CFU/100 gm		◆
BIOL	Fecal enterococci	Fecal entr	CFU/100 ml	CFU/100 gm		◆
BIOL	Fecal streptococci	Fecal strp	CFU/100 ml	CFU/100 gm		◆
BIOL	Phaeophytin a	Phaeophy a	mg/l	mg/kg		◆
BIOL	Total coliform	Coliform-T	CFU/100 ml	CFU/100 gm		◆
CON	Acidity	Acidity	mg/l	mg/kg		◆
CON	Biochemical oxygen demand	BOD	mg/l	mg/kg		◆
CON	Bromide	Br	mg/l	mg/kg		◆
CON	Carbon dioxide	CO2			kg/cu m	
CON	Carbon monoxide	Carbon monox			kg/cu m	
CON	Chloride	Cl	mg/l	mg/kg		
CON	Dissolved oxygen -%	DO-%	% saturation			
CON	Dissolved oxygen	DO	mg/l	mg/kg		◆
CON	Fluoride	Fluoride	mg/l	mg/kg		◆
CON	Hydrogen sulfide	H2S			ug/cu m	
CON	Nitrate	NO3	mg/l	mg/kg		
CON	Nitrate + Nitrite	NOX	mg/l	mg/kg		◆
CON	Nitrate Nitrogen	N-NO3	mg/l	mg/kg		
CON	Nitrite Nitrogen	N-NO2	mg/l	mg/kg		◆
CON	Nitrogen	N2			kg/cu m	
CON	Nitrogen (total Kjeldhal)	N-TK	mg/l	mg/kg		◆
CON	Oil and Grease	Oil/Grease	mg/l	mg/kg		◆
CON	ortho-phosphate	O-PO4	mg/l	mg/kg		◆
CON	ortho-phosphate as phosphorus	O-PO4-P	mg/l	mg/kg		
CON	Ox/Red Potential	Redox	Eh (mv)			
CON	Oxygen	O2			kg/cu m	
CON	pH	pH-lab	s.u.			◆
CON	Phosphate (total as phosphorus)	PO4-P-T	mg/l	mg/kg		
CON	Phosphate (total)	PO4-T	mg/l	mg/kg		
CON	Phosphorus	P	mg/l	mg/kg		
CON	Phosphorus (dissolved available)	P-DA	mg/l	mg/kg		◆
CON	Phosphorus (total)	P-T	mg/l	mg/kg		◆
CON	Salinity	Salinity	ppt			
CON	Sulfate	SO4	mg/l	mg/kg		◆
CON	Sulfide	Sulfide	mg/l	mg/kg		
CON	Sulfite	SO3	mg/l	mg/kg		◆
CON	Total organic carbon (%)	TOC-%	%			◆
CON	Total organic halogen	TOX	mg/l	mg/kg		◆
CON	Total petroleum hydrocarbon	TPH	mg/l	mg/kg		◆
CON	Total solids	TS	mg/l	mg/kg		◆
CON	Total solids (%)	TS-%	%			◆
CON	Total volatile solids (%)	TVS-%	%			◆
CON/LI	Alkalinity (bicarbonate)	ALK-B	mg/l	mg/kg		◆
CON/LI	Alkalinity (carbonate)	ALK-C	mg/l	mg/kg		◆
CON/LI	Alkalinity (hydroxide)	ALK-OH	mg/l	mg/kg		◆
CON/LI	Alkalinity (total)	ALK-T	mg/l	mg/kg		◆
CON/LI	Ammonia nitrogen	NH3	mg/l	mg/kg		◆
CON/LI	Chemical oxygen demand	COD	mg/l	mg/kg		◆
CON/LI	Dissolved organic carbon	DOC	mg/l	mg/kg		◆
CON/LI	Hardness (total as CaCO3)	Hardnes	mg/l	mg/kg		◆
CON/LI	Phosphorus (dissolved)	P-D	mg/l	mg/kg		◆
CON/LI	Specific Conductance	Cond-specf	umhos/cm			
CON/LI	Specific Conductance -TDS	Cond-TDS	umhos/cm			◆
CON/LI	Total dissolved solids	TDS	mg/l	mg/kg		◆
CON/LI	Total organic carbon	TOC	mg/l	mg/kg		◆
CON/LI	Total suspended solids	TSS	mg/l	mg/kg		◆
DM	Aluminum (dissolved)	Al-D	mg/l	mg/kg		
DM	Antimony (dissolved)	Sb-D	mg/l	mg/kg		◆
DM	Arsenic (dissolved)	As-D	mg/l	mg/kg		◆

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
DM	Barium (dissolved)	Ba-D	mg/l	mg/kg		◆
DM	Beryllium (dissolved)	Be-D	mg/l	mg/kg		◆
DM	Cadmium (dissolved)	Cd-D	mg/l	mg/kg		◆
DM	Chromium (dissolved)	Cr-D	mg/l	mg/kg		◆
DM	Cobalt (dissolved)	Co-D	mg/l	mg/kg		◆
DM	Copper (dissolved)	Cu-D	mg/l	mg/kg		◆
DM	Lanthanum (dissolved)	La-D	mg/l	mg/kg		
DM	Lead (dissolved)	Pb-D	mg/l	mg/kg		◆
DM	Lithium (dissolved)	Li-D	mg/l	mg/kg		
DM	Mercury (dissolved)	Hg-D	mg/l	mg/kg		◆
DM	Molybdenum (dissolved)	Mo-D	mg/l	mg/kg		
DM	Nickel (dissolved)	Ni-D	mg/l	mg/kg		◆
DM	Selenium (dissolved)	Se-D	mg/l	mg/kg		◆
DM	Silver (dissolved)	Ag-D	mg/l	mg/kg		◆
DM	Thallium (dissolved)	Tl-D	mg/l	mg/kg		◆
DM	Vanadium (dissolved)	V-D	mg/l	mg/kg		◆
DM	Zinc (dissolved)	Zn-D	mg/l	mg/kg		◆
DM/LI	Calcium (dissolved)	Ca-D	mg/l	mg/kg		◆
DM/LI	Dissolved magnesium	Mg-D	mg/l	mg/kg		◆
DM/LI	Iron (dissolved)	Fe-D	mg/l	mg/kg		◆
DM/LI	Manganese (dissolved)	Mn-D	mg/l	mg/kg		◆
DM/LI	Potassium (dissolved)	K-D	mg/l	mg/kg		◆
DM/LI	Silica (dissolved)	Silica-D	mg/l	mg/kg		◆
DM/LI	Sodium (dissolved)	Na-D	mg/l	mg/kg		◆
HERB	2,4,5-T	2,4,5-T	mg/l	mg/kg		◆
HERB	2,4,5-TP (Silvex)	2,4,5-TP	mg/l	mg/kg		◆
HERB	2,4-DB	2,4-DB	mg/l	mg/kg		◆
HERB	2,4-dichlorophenoxyacetic acid	2,4,-D	mg/l	mg/kg		◆
HERB	Dalapon	Dalapon	mg/l	mg/kg		◆
HERB	Dicamba	Dicamba	mg/l	mg/kg		◆
HERB	Dichlorpropane	Diclorprop	mg/l	mg/kg		◆
HERB	Dinoseb	Dinoseb	mg/l	mg/kg		◆
HERB	MCPA	MCPA	mg/l	mg/kg		◆
HERB	MCPP	MCPP	mg/l	mg/kg		◆
HERB	Picloram	Picloram	mg/l	mg/kg		◆
HERB	Tricamba	Tricamba	mg/l	mg/kg		◆
LI	Chloride (dissolved)	Cl-D	mg/l	mg/kg		◆
LI	Cyanide (total)	CN-T	mg/l	mg/kg		◆
LI	Nitrate + Nitrite (dissolved)	NOX-D	mg/l	mg/kg		◆
LI	Phenol (total)	Phenol-T	mg/l	mg/kg		◆
LI	Sulfate (dissolved)	SO4-D	mg/l	mg/kg		◆
PCB	PCB Arochlor-1016	ACLOR-1016	mg/l	mg/kg		◆
PCB	PCB Arochlor-1221	ACLOR-1221	mg/l	mg/kg		◆
PCB	PCB Arochlor-1232	ACLOR-1232	mg/l	mg/kg		◆
PCB	PCB Arochlor-1242	ACLOR-1242	mg/l	mg/kg		◆
PCB	PCB Arochlor-1248	ACLOR-1248	mg/l	mg/kg		◆
PCB	PCB Arochlor-1254	ACLOR-1254	mg/l	mg/kg		◆
PCB	PCB Arochlor-1260	ACLOR-1260	mg/l	mg/kg		◆
PEST	2-Pentachlorobromophenol	2-PCBP	mg/l	mg/kg		
PEST	3-Pentachlorobromophenol	3-PCBP	mg/l	mg/kg		
PEST	Aldrin	Aldrin	mg/l	mg/kg		◆
PEST	Alpha-chlordane	Clordane-a	mg/l	mg/kg		
PEST	Azinphosmethyl	Azinphos	mg/l	mg/kg		
PEST	BHC-alpha	BHC-alpha	mg/l	mg/kg		◆
PEST	BHC-beta	BHC-beta	mg/l	mg/kg		◆
PEST	BHC-delta	BHC-delta	mg/l	mg/kg		◆
PEST	BHC-gamma (Lindane)	BHC-gamma	mg/l	mg/kg		◆
PEST	Chlopyrifos	Clorpyr	mg/l	mg/kg		
PEST	Chlordane	Clordane	mg/l	mg/kg		◆
PEST	Chlorfenvinphos	Clorfen	mg/l	mg/kg		
PEST	Dematon	Dematon	mg/l	mg/kg		
PEST	Diazinon	Diazinon	mg/l	mg/kg		

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
PEST	Dieldrin	Dieldrin	mg/l	mg/kg		◆
PEST	Dimethoate	Dimethoate	mg/l	mg/kg		
PEST	Disulfoton	Disulfoton	mg/l	mg/kg		
PEST	Endosulfan I	Endosul-I	mg/l	mg/kg		◆
PEST	Endosulfan II	Endosul-II	mg/l	mg/kg		◆
PEST	Endosulfan sulfate	Endo-SO4	mg/l	mg/kg		◆
PEST	Endrin	Endrin	mg/l	mg/kg		◆
PEST	Endrin aldehyde	Endrin ald	mg/l	mg/kg		◆
PEST	Endrin ketone	Endrin ket	mg/l	mg/kg		◆
PEST	Ethion	Ethion	mg/l	mg/kg		
PEST	Fenitrothion	Fenitrothion	mg/l	mg/kg		
PEST	Fenthion	Fenthion	mg/l	mg/kg		
PEST	Fonofos	Fonofos	mg/l	mg/kg		
PEST	Gamma-chlordane	Clordane-g	mg/l	mg/kg		
PEST	Heptachlor	Heptachlor	mg/l	mg/kg		◆
PEST	Heptachlor epoxide	Heptacl ep	mg/l	mg/kg		◆
PEST	Isofenfos	Isofenfos	mg/l	mg/kg		
PEST	Malathion	Malathion	mg/l	mg/kg		
PEST	Methidathion	Methidathion	mg/l	mg/kg		
PEST	Methoxychlor	Methoxyclr	mg/l	mg/kg		◆
PEST	Methylparathion	Metparathion	mg/l	mg/kg		
PEST	Mevinphos	Mevinphos	mg/l	mg/kg		
PEST	Monocrotophos	Monocrotopho	mg/l	mg/kg		
PEST	p,p'Methoxychlor	p,p'Methcl	mg/l	mg/kg		
PEST	p,p-DDD	p,p-DDD	mg/l	mg/kg		◆
PEST	p,p-DDE	p,p-DDE	mg/l	mg/kg		◆
PEST	p,p-DDT	p,p-DDT	mg/l	mg/kg		◆
PEST	Parathion	Parathion	mg/l	mg/kg		
PEST	Phorate	Phorate	mg/l	mg/kg		
PEST	Phosalone	Phosalone	mg/l	mg/kg		
PEST	Phosmet	Phosmet	mg/l	mg/kg		
PEST	Technical-chlordane	Clordane-t	mg/l	mg/kg		
PEST	Terbufos	Terbufos	mg/l	mg/kg		
PEST	Tetrachlorobromophenol	TCBP	mg/l	mg/kg		
PEST	Tetrachlorvinphos	Tetclovinphs	mg/l	mg/kg		
PEST	Toxaphene	Toxaphene	mg/l	mg/kg		◆
PHYS	Flash point	Flash point	degrees F			◆
PHYS	Temperature	Temp	degrees C			
PHYS	Turbidity	Turbidity	NTU			
SVOC	1,2,4,5-tetrachlorobezene	1,2,4,5TCB	mg/l	mg/kg		
SVOC	1,2,4-trichlorobenzene	1,2,4-TCB	mg/l	mg/kg		◆
SVOC	1,2-dichlorobenzene	1,2-DCB	mg/l	mg/kg		◆
SVOC	1,3-dichlorobenzene	1,3-DCB	mg/l	mg/kg		◆
SVOC	1,4-dichlorobenzene	1,4-DCB	mg/l	mg/kg		◆
SVOC	1,4/1,3-dimethylbenzene	1,4/1,3DMB	mg/l	mg/kg		
SVOC	1-methyl-4-(1-methylethyl)benzene	1-M-4-1MBZ	mg/l	mg/kg		
SVOC	2,3,4,6-tetrachlorophenol	2,3,4,6TCP	mg/l	mg/kg		
SVOC	2,3,5,6-tetrachlorophenol	2,3,5,6TCP	mg/l	mg/kg		
SVOC	2,3,7,8-TCDD (dioxan)	2,3,7,8-TCDD	mg/l	mg/kg		◆
SVOC	2,4,5-trichlorophenol	2,4,5-TCP	mg/l	mg/kg		◆
SVOC	2,4,6-trichlorophenol	2,4,6-TCP	mg/l	mg/kg		◆
SVOC	2,4-dichlorophenol	2,4-DCP	mg/l	mg/kg		◆
SVOC	2,4-dimethylphenol	2,4-DMP	mg/l	mg/kg		◆
SVOC	2,4-dinitrophenol	2,4-DNP	mg/l	mg/kg		◆
SVOC	2,4-dinitrotoluene	2,4-DNT	mg/l	mg/kg		◆
SVOC	2,6-dichlorophenol	2,6-DCP	mg/l	mg/kg		
SVOC	2,6-dinitrotoluene	2,6-DNT	mg/l	mg/kg		◆
SVOC	2-chloroethylvinyl ether	2-CEVE			ug/cu m	
SVOC	2-chloronaphthalene	2-clonaph	mg/l	mg/kg		◆
SVOC	2-chlorophenol	2-clophen	mg/l	mg/kg		◆
SVOC	2-methyl-4,6-dinitrophenol	2M-4,6-DNP	mg/l	mg/kg		
SVOC	2-methylnaphthalene	2-methnaph	mg/l	mg/kg		◆

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
SVOC	2-methylphenol	2-methphen	mg/l	mg/kg		◆
SVOC	2-nitroaniline	2-nitanil	mg/l	mg/kg		◆
SVOC	2-nitrophenol	2-nitphen	mg/l	mg/kg		◆
SVOC	3,3-dichlorobenzidine	3,3-DCBD	mg/l	mg/kg		◆
SVOC	3-nitroaniline	3-nitanil	mg/l	mg/kg		◆
SVOC	4,6-dinitro-2-methylphenol	4,6-N-2-MP	mg/l	mg/kg		◆
SVOC	4-bromophenyl-phenylether	4-BP-PE	mg/l	mg/kg		◆
SVOC	4-chloro-3-methylphenol	4-C-3-MP	mg/l	mg/kg		◆
SVOC	4-chloroaniline	4-cloanil	mg/l	mg/kg		◆
SVOC	4-chlorophenyl-phenylether	4-CP-PE	mg/l	mg/kg		◆
SVOC	4-methylphenol	4-methphen	mg/l	mg/kg		◆
SVOC	4-nitroaniline	4-nitanil	mg/l	mg/kg		◆
SVOC	4-nitrophenol	4-nitphen	mg/l	mg/kg		◆
SVOC	Acenaphthene	Acenaphthe	mg/l	mg/kg		◆
SVOC	Acenaphthene/Fluorene	Acen/Fluor	mg/l	mg/kg		◆
SVOC	Acenaphthylene	Acenaphthl	mg/l	mg/kg		◆
SVOC	Aniline	Aniline	mg/l	mg/kg		◆
SVOC	Anthracene	Anthracene	mg/l	mg/kg		◆
SVOC	Azobenzene	Azobenzene	mg/l	mg/kg		◆
SVOC	Benzidine	Benzidine	mg/l	mg/kg		◆
SVOC	Benzo(a)anthracene	Benz(a)ant	mg/l	mg/kg		◆
SVOC	Benzo(a)pyrene	Benz(a)pyr	mg/l	mg/kg		◆
SVOC	Benzo(b)fluoranthene	Benz(b)flr	mg/l	mg/kg		◆
SVOC	Benzo(g,h,i)perylene	Benz(ghi)p	mg/l	mg/kg		◆
SVOC	Benzo(k)fluoranthene	Benz(k)flr	mg/l	mg/kg		◆
SVOC	Benzoic acid	Benzo acid	mg/l	mg/kg		◆
SVOC	Benzyl alcohol	Benzyl alc	mg/l	mg/kg		◆
SVOC	bis-(2-chloroethoxy)methane	bis,2-CEM	mg/l	mg/kg		◆
SVOC	bis-(2-chloroethyl)ether	bis,2-CE	mg/l	mg/kg		◆
SVOC	bis-(2-chloroisopropyl)ether	bis,2-Cl	mg/l	mg/kg		◆
SVOC	bis-(2-ethylhexyl)phthalate	bis(2-EH)P	mg/l	mg/kg		◆
SVOC	Butylbenzylphthalate	BBP	mg/l	mg/kg		◆
SVOC	Carbazole	Carbazole	mg/l	mg/kg		
SVOC	Chrysene	Chrysene	mg/l	mg/kg		◆
SVOC	Di-n-butylphthalate	D-N-BP	mg/l	mg/kg		◆
SVOC	Di-n-octyl phthalate	D-N-OP	mg/l	mg/kg		◆
SVOC	Dibenzo(a,h)anthracene	DB(ah)ant	mg/l	mg/kg		◆
SVOC	Dibenzofuran	DBF	mg/l	mg/kg		◆
SVOC	Diethylphthalate	DEP	mg/l	mg/kg		◆
SVOC	Dimethylphthalate	DMP	mg/l	mg/kg		◆
SVOC	Fluoranthene	Fluoranthn	mg/l	mg/kg		◆
SVOC	Fluorene	Fluorene	mg/l	mg/kg		◆
SVOC	Hexachlorobenzene	Hexacl ben	mg/l	mg/kg		◆
SVOC	Hexachlorobutadiene	Hexacl but	mg/l	mg/kg		◆
SVOC	Hexachlorocyclopentadiene	Hexacl pen	mg/l	mg/kg		◆
SVOC	Hexachloroethane	Hexacl eth	mg/l	mg/kg		◆
SVOC	Indeno(1,2,3-cd)pyrene	Indenopyre	mg/l	mg/kg		◆
SVOC	Isophorone	Isophorone	mg/l	mg/kg		◆
SVOC	N-nitroso-di-n-propylamine	N-nitdprop	mg/l	mg/kg		◆
SVOC	N-nitrosodimethylamine	N-nitdmeth	mg/l	mg/kg		◆
SVOC	N-nitrosodiphenylamine	N-nitdphen	mg/l	mg/kg		◆
SVOC	Naphthalene	Naphthalen	mg/l	mg/kg		◆
SVOC	Nitrobenzene	Nitrobenz	mg/l	mg/kg		◆
SVOC	Pentachlorophenol	Penta	mg/l	mg/kg		◆
SVOC	Phenanthrene	Phenanthre	mg/l	mg/kg		◆
SVOC	Phenol	Phenol	mg/l	mg/kg		◆
SVOC	Pyrene	Pyrene	mg/l	mg/kg		◆
SVOC	trans-nonaclor	t-nonacl	mg/l	mg/kg		
TRM	Aluminum	Al	mg/l	mg/kg		◆
TRM	Antimony	Sb	mg/l	mg/kg		◆
TRM	Arsenic	As	mg/l	mg/kg		◆
TRM	Barium	Ba	mg/l	mg/kg		◆

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name [2]	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
TRM	Beryllium	Be	mg/l	mg/kg		◆
TRM	Boron	B	mg/l	mg/kg		◆
TRM	Cadmium	Cd	mg/l	mg/kg		◆
TRM	Calcium	Ca	mg/l	mg/kg		◆
TRM	Chromium	Cr	mg/l	mg/kg		◆
TRM	Chromium 6	Cr 6	mg/l	mg/kg		
TRM	Cobalt	Co	mg/l	mg/kg		◆
TRM	Copper	Cu	mg/l	mg/kg		◆
TRM	Iron	Fe	mg/l	mg/kg		◆
TRM	Lanthanum	La	mg/l	mg/kg		
TRM	Lead	Pb	mg/l	mg/kg		◆
TRM	Lithium	Li	mg/l	mg/kg		◆
TRM	Magnesium	Mg	mg/l	mg/kg		◆
TRM	Manganese	Mn	mg/l	mg/kg		◆
TRM	Mercury	Hg	mg/l	mg/kg		◆
TRM	Mercury	Hg	mg/l	mg/kg		◆
TRM	Molybdenum	Mo	mg/l	mg/kg		◆
TRM	Nickel	Ni	mg/l	mg/kg		◆
TRM	Potassium	K	mg/l	mg/kg		◆
TRM	Selenium	Se	mg/l	mg/kg		◆
TRM	Silver	Ag	mg/l	mg/kg		◆
TRM	Sodium	Na	mg/l	mg/kg		◆
TRM	Strontium	Sr	mg/l	mg/kg		◆
TRM	Thallium	Tl	mg/l	mg/kg		◆
TRM	Tin	Sn	mg/l	mg/kg		◆
TRM	Titanium	Ti	mg/l	mg/kg		◆
TRM	Vanadium	V	mg/l	mg/kg		◆
TRM	Zinc	Zn	mg/l	mg/kg		◆
VOC	1,1,1,2-tetrachloroethane	1,1,1,2TCE	mg/l	mg/kg	ug/cu m	
VOC	1,1,1-trichloroethane	1,1,1-TCE	mg/l	mg/kg	ug/cu m	◆
VOC	1,1,2,2-tetrachloroethane	1,1,2,2TCE	mg/l	mg/kg	ug/cu m	◆
VOC	1,1,2,2-tetrachloroethylene	1,1,2,2TCY	mg/l	mg/kg	ug/cu m	
VOC	1,1,2-trichloroethane	1,1,2-TCE	mg/l	mg/kg	ug/cu m	◆
VOC	1,1,2-trichloroethene	1,1,2-TCEe	mg/l	mg/kg	ug/cu m	
VOC	1,1,2-trichloroethylene	1,1,2-TCY	mg/l	mg/kg	ug/cu m	◆
VOC	1,1-dichloroethane	1,1-DCEa	mg/l	mg/kg	ug/cu m	◆
VOC	1,1-dichloroethene	1,1-DCEe			ug/cu m	
VOC	1,1-dichloroethylene	1,1-DCEy	mg/l	mg/kg	ug/cu m	◆
VOC	1,1-Dichloropropene	1,1-DCPe	mg/l	mg/kg	ug/cu m	
VOC	1,2,3-trichlorobenzene	1,2,3-TCB	mg/l	mg/kg	ug/cu m	
VOC	1,2,3-trichloropropane	1,2,3-TCP	mg/l	mg/kg	ug/cu m	
VOC	1,2,4-trimethylbenzene	1,2,4-TMB	mg/l	mg/kg	ug/cu m	
VOC	1,2-dibromo-3-chloropropane	1,2-DBCP	mg/l	mg/kg	ug/cu m	
VOC	1,2-dibromoethane	1,2-DBE			ug/cu m	
VOC	1,2-dichloroethane	1,2-DCE	mg/l	mg/kg	ug/cu m	◆
VOC	1,2-dichloroethene	1,2-DCEe	mg/l	mg/kg	ug/cu m	
VOC	1,2-dichloroethylene	1,2-DCEy	mg/l	mg/kg	ug/cu m	◆
VOC	1,2-dichloropropane	1,2-DCP	mg/l	mg/kg	ug/cu m	◆
VOC	1,2-dimethylbenzene	1,2-DMB	mg/l	mg/kg	ug/cu m	
VOC	1,3,5-trimethylbenzene	1,3,5-TMB	mg/l	mg/kg	ug/cu m	
VOC	1,3-Butadiene	1,3-Butadi			ug/cu m	
VOC	1,3-Dichloropropane	1,3-DCPa	mg/l	mg/kg	ug/cu m	
VOC	1,3/1,2-dimethylbezene	1,3/1,2DMB	mg/l	mg/kg	ug/cu m	
VOC	1,4-dimethylbenzene	1,4-DMB	mg/l	mg/kg	ug/cu m	
VOC	1,4-dioxane	1,4-dioxan	mg/l	mg/kg	ug/cu m	
VOC	2,2-Dichloropropane	2,2-DCPa	mg/l	mg/kg	ug/cu m	
VOC	2-butanone	2-butanone	mg/l	mg/kg	ug/cu m	◆
VOC	2-hexanone	2-hexanone	mg/l	mg/kg	ug/cu m	◆
VOC	4-Bromofluorobenzene	4-BFB	mg/l	mg/kg	ug/cu m	◆
VOC	4-methyl-2-pentanone	4-M-2-P	mg/l	mg/kg	ug/cu m	◆
VOC	Acetone	Acetone	mg/l	mg/kg	ug/cu m	◆
VOC	Acetonitrile	Acetonitrl	mg/l	mg/kg	ug/cu m	

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
VOC	Acrolein	Acrolein	mg/l	mg/kg	ug/cu m	
VOC	Acrylonitrile	Acrylnitrl	mg/l	mg/kg	ug/cu m	
VOC	Benzene	Benzene	mg/l	mg/kg	ug/cu m	◆
VOC	Bromobenzene	Bromobenz	mg/l	mg/kg	ug/cu m	
VOC	Bromodichlormethane	BDCM	mg/l	mg/kg	ug/cu m	◆
VOC	Bromoform	Bromoform	mg/l	mg/kg	ug/cu m	◆
VOC	Bromomethane	Bromometha	mg/l	mg/kg	ug/cu m	◆
VOC	Butyl mercaptan	Butylmerc			ug/cu m	
VOC	Carbon disulfide	Carbon dis	mg/l	mg/kg	ug/cu m	◆
VOC	Carbon tetrachloride	Carbon tet	mg/l	mg/kg	ug/cu m	◆
VOC	Carbonyl sulfide	Carbylsulf			ug/cu m	
VOC	Chlorobenzene	Clorobenz	mg/l	mg/kg	ug/cu m	◆
VOC	Chlorodibromomethane	CDBM	mg/l	mg/kg	ug/cu m	◆
VOC	Chloroethane	Cloroethan	mg/l	mg/kg	ug/cu m	◆
VOC	Chloroform	Cloroform	mg/l	mg/kg	ug/cu m	◆
VOC	Chloromethane	Clorometha	mg/l	mg/kg	ug/cu m	◆
VOC	cis-1,2,-dichloroethene	c-1,2-DCEe			ug/cu m	
VOC	cis-1,2-Dichloroethylene	c-1,2-DCEy	mg/l	mg/kg	ug/cu m	
VOC	cis-1,3-dichloropropene	c-1,3-DCP	mg/l	mg/kg	ug/cu m	◆
VOC	cis/trans-1,2-dichloroethene	ct-1,2-DCE	mg/l	mg/kg	ug/cu m	
VOC	Dibromochloromethane	DBCM	mg/l	mg/kg	ug/cu m	
VOC	Dibromomethane	DBM	mg/l	mg/kg	ug/cu m	
VOC	Dichlorodifluoromethane	DCDFM	mg/l	mg/kg	ug/cu m	
VOC	Dichloromethane	Diclormeth			ug/cu m	
VOC	Dimethyl sulfide	Dimethsulf			ug/cu m	
VOC	Ethanol	Ethanol	mg/l	mg/kg	ug/cu m	
VOC	Ethyl benzene	Ethyl benz	mg/l	mg/kg	ug/cu m	◆
VOC	Ethyl mercaptan	Ethylmerc			ug/cu m	
VOC	Ethyl methacrylate	Ethyl meth	mg/l	mg/kg	ug/cu m	
VOC	Ethylene dibromide	EDB	mg/l	mg/kg	ug/cu m	
VOC	Fluorotrichloromethane	FTCM	mg/l	mg/kg	ug/cu m	
VOC	Iodomethane	Iodomethan	mg/l	mg/kg	ug/cu m	
VOC	Isobutyl mercaptan	Isobutmerc			ug/cu m	
VOC	Isopropyl mercaptan	Isopromerc			ug/cu m	
VOC	Isopropylbenzene	IPBenzene	mg/l	mg/kg	ug/cu m	
VOC	Methane	CH4			kg/cu m	
VOC	Methyl mercaptan	Methylmerc			ug/cu m	
VOC	Methylene chloride	Methylencl	mg/l	mg/kg	ug/cu m	◆
VOC	n-butylbenzene	n-Butylbenz	mg/l	mg/kg	ug/cu m	
VOC	n-propylbenzene	n-Propylbenz	mg/l	mg/kg	ug/cu m	
VOC	ortho-chlorotoluene	o-CLTOL	mg/l	mg/kg	ug/cu m	
VOC	p-dichlorobenzene	p-DCB	mg/l	mg/kg	ug/cu m	◆
VOC	para-chlorotoluene	p-CLTOL	mg/l	mg/kg	ug/cu m	
VOC	para-isopropyltoluene	p-IPToluene	mg/l	mg/kg	ug/cu m	
VOC	Propyl mercaptan	Propylmerc			ug/cu m	
VOC	Secondary-butylbenzene	sec-Butbenz	mg/l	mg/kg	ug/cu m	
VOC	Styrene	Styrene	mg/l	mg/kg	ug/cu m	◆
VOC	Tertiary-butylbenzene	tert-Butbenz	mg/l	mg/kg	ug/cu m	
VOC	Tetrachloroethene	Tetcloethe			ug/cu m	
VOC	Tetrachloroethylene	Tetcloethy	mg/l	mg/kg	ug/cu m	◆
VOC	Toluene	Toluene	mg/l	mg/kg	ug/cu m	◆
VOC	Total toxic organics	TTO	mg/l	mg/kg	ug/cu m	
VOC	Total Trihalomethanes	THM-T	mg/l	mg/kg	ug/cu m	
VOC	trans-1,2-dichloroethane	t-1,2-DCEa	mg/l	mg/kg	ug/cu m	
VOC	trans-1,2-dichloroethene	t-1,2-DCEe			ug/cu m	
VOC	trans-1,2-dichloroethylene	t-1,2-DCEy	mg/l	mg/kg	ug/cu m	
VOC	trans-1,2-dichloropropene	t-1,2-DCP	mg/l	mg/kg	ug/cu m	
VOC	trans-1,3-dichloropropene	t-1,3-DCP	mg/l	mg/kg	ug/cu m	◆
VOC	Trichloroethene	Triclethen			ug/cu m	
VOC	Trichloroethylene	Triclethyl	mg/l	mg/kg	ug/cu m	
VOC	Trichlorofluoromethane	Triclfimet	mg/l	mg/kg	ug/cu m	◆
VOC	Trichlorotrifluoroethane	Triclflet			ug/cu m	

Exhibit 3

(of Analytical Results Report Specifications)

Analyte Code Names and Units

Class Code [1]	Full Name	Code [2]	(liquid) [3]	(solid) [3]	(air) [3]	Analyte [4]
VOC	Vinyl acetate	Vinyl acet	mg/l	mg/kg	ug/cu m	◆
VOC	Vinyl chloride	Vinyl clor	mg/l	mg/kg	ug/cu m	◆
VOC	Volatile organic compounds	Volatiles	mg/l	mg/kg	ug/cu m	
VOC	Xylene	Xylene	mg/l	mg/kg	ug/cu m	
VOC	Xylenes (total)	Xylenes-T	mg/l	mg/kg	ug/cu m	◆

[1] Metro's parameter class code, as follows:

BIOL	biological
CON	conventional
CON/LI	conventional / leachate indicator
DM	dissolved metal
DM/LI	dissolved metal / leachate indicator
HERB	herbicide
LI	leachate indicator
PCB	polychlorinated biphenyl
PEST	pesticide
SVOC	semi-volatile organic compound
TRM	total recoverable metal (TM when analyzed in soil/sediment matrix)
TM	total metal (TRM when analyzed in water matrix)
VOC	volatile organic compound

[2] Metro code names; some follow code conventions; others are truncated full names or otherwise abbreviated.

[3] Where no units are provided, analyte is either inherently not tested in specified matrix, or, Metro currently does not test analyte in the specified matrix.

[4] Analytes identified by the symbol are those which currently are requested by Metro on a regularly scheduled basis. Analytes not identified by the symbol are not requested regularly, but may to changed to regular status. Other analytes not included on this list may be requested in the future, and will be added to the list as needed.

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APPENDIX B

COST PROPOSAL

Laboratory Services (1998-2001)

Attachment A
(To Cost Proposal)

Cost Proposal Instructions

Pre-qualified firms will be invited to submit proposals, including cost proposals per the instructions which follow.

Cost proposals must be submitted using the Microsoft Excel 5.0 files [costpro.xls and module.xls] on diskette to be provided by Metro to pre-qualified firms.

Cost Proposal Form

In the Cost Proposal Form (herein Form), the proposer shall provide a unit cost in each cell which is shaded in gray. A unit cost is requested for each analyte, except where requested for analyte classes as indicated by shaded cells in the subtotal lines for these classes (e.g. pesticides/PCBs in groundwater using method 608 EPA). For individual analytes included in these classes, refer to Attachment D (To Cost Proposal): Analyte Class Detail.

Proposers should not make entries in any cell of the Form that is not shaded.

Total annual costs for each analyte or analyte class are computed automatically in the Form, based on the number of samples provided by Metro. At the bottom of the Form is a Cost Summary which automatically totals annual costs for each matrix, and computes a grand total for the 3-year contract term -- all based on unit costs entered by the proposer.

Unit costs shall reflect all costs associated with the services to be provided per the Scope of Work, including but not limited to the following:

- administration
- labor
- supplies
- equipment operation and maintenance
- container shipment and sample pickup
- subconsultant fees

In addition, unit costs shall:

- reflect any cost of living adjustment factors which proposers choose to include;
- be effective for the contract term.

Unit costs shall also reflect analyses which follow the recognized protocol of the methods specified on the Form, including appropriate sample preparation, analytical procedures and associated quality control, and the achievement of corresponding method detection limits. Method detection limit is defined here as the achievable minimum concentration of an analyte that can be measured under normal conditions, using the specified method, and reported with 99% confidence that the value is greater than zero.

Note that the methods specified on the Form are those currently used. The Form allows for proposing alternative methods. Where an alternative method is provided by the proposer, it must be an EPA approved equivalent to the specified method (including a comparable method detection limit), and the unit cost must reflect use of the alternative (see field instructions below under "Alternative Method").

Following are descriptions and instructions for each field in the Form:

Analytical Method No. Provided by Metro; method of analysis currently used by Metro, by analyte or analyte class.

Method Reference. Provided by Metro. Code for Method Reference is as follows:
SM = Standard Methods for the Examination of Water and Wastewater (18th ed.)
SW-846 = Test Methods for Evaluating Solid Waste Physical/Chemical Methods
EPA = Methods for Chemical Analysis of Water and Wastes (1983)

Alternative Method. Provided by proposer, if desired. An EPA approved method which must be equivalent (including a comparable method detection limit) to the method specified by Metro in the previous two fields.

Units of Measure. Provided by Metro. Units of measure which correspond to specified analyte and method.

Samples per year. Provided by Metro. Includes field duplicates (approximately one per 9 samples) and transport blanks (one per sampling event where volatile organic compounds are analyzed).

Unit Cost. Provided by proposer. Cost per analysis of specified analyte, or analyte class, in a given sample, effective for contract term.

Total Cost per year. Automatically computed. Number of samples (provided by Metro) multiplied by the unit cost (provided by proposer).

Cost Module

The Cost Module (herein Module) requests supplementary cost information which is not integral to the Cost Proposal Form. Only unit costs are requested in the Module. These unit costs, if provided, will not be added in any way to costs proposed on the Form. Rather, information provided in, or attached to the Module will be evaluated separately, in the context of the overall Proposal.

The Module lists ten (10) groundwater analytes which also appear in the Form. For these ten analytes, it is desirable to Metro, if feasible, to achieve method detection limits which are below the regulatory levels specified in the Module. For any analyte where this is feasible, proposers should specify a method, method detection limit (only if below the regulatory level), and a unit cost for the analyte or analyte class (as indicated in the Module).

The unit cost provided for an analyte class must reflect the additional cost (to that provided on the Cost Proposal Form for the same class and matrix) of lowering the detection limit for the analyte(s) from that class specified in the Module; it may also reflect lower detection limits for other analytes in the class if the method inherently leads to that effect.

Metro has provided the estimated number of samples per year only to facilitate the unit cost estimate by the proposer, not for purposes of computing total annual costs.

Where method detection limits below the regulatory level are not achievable, proposers should include in the Proposal notes of explanation, on a sheet which they should title "Cost Module: Method Detection Limit Notes."

Even where methods, detection limits and unit costs are provided, notes of explanation or clarification are encouraged (on the sheet described above), particularly where they facilitate understanding of the issues surrounding lower detection limits.

Proposals will not be rejected or discounted for failure to provide the requested detection limits (and associated unit costs) in the Module, so long as appropriate and understandable notes are provided. Where this is the case, notes should include brief discussions of issues such as equipment limitations, lower confidence levels, use of data qualifiers, greater time and cost, etc.

Metro will evaluate the Module, including attached notes, based on the quality and usefulness of the information conveyed.

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Attachment B
(to Cost Proposal)
Cost Proposal Form

	Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
SURFACE WATER							
Conventionals							
Dissolved Chloride	325.3	EPA		mg/l	42		$0.00
Biochemical Oxygen Demand (BOD)	405.1	EPA		mg/l	42		$0.00
Chemical Oxygen Demand (COD)	410.2	EPA		mg/l	42		$0.00
Total Hardness	6010	EPA		mg/l	42		$0.00
Total Alkalinity	310.1	EPA		mg/l	42		$0.00
Total Organic Carbon (TOC)	415.1	EPA		mg/l	42		$0.00
Total Solids (TS)	160.3	EPA		mg/l	42		$0.00
Total Suspended Solids (TSS)	160.2	EPA		mg/l	42		$0.00
Total Dissolved Solids (TDS)	160.1	EPA		mg/l	42		$0.00
subtotal							**$0.00**
Nutrients							
Ammonia	350.3	EPA		mg/l	42		$0.00
Nitrate + Nitrite	353.2	EPA		mg/l	42		$0.00
Total Kjeldahl Nitrogen (TKN)	351.3	EPA		mg/l	42		$0.00
Total Phosphorus	365.2	EPA		mg/l	42		$0.00
Dissolved available phosphorus	365.2	EPA		mg/l	42		$0.00
subtotal							**$0.00**
Metals (Dissolved)							
Antimony	200.7	EPA		mg/l	42		$0.00
Arsenic	206.2	EPA		mg/l	42		$0.00
Barium	200.7	EPA		mg/l	42		$0.00
Beryllium	200.7	EPA		mg/l	42		$0.00
Cadmium	200.7	EPA		mg/l	42		$0.00
Chromium	200.7	EPA		mg/l	42		$0.00
Cobalt	200.7	EPA		mg/l	42		$0.00
Copper	200.7	EPA		mg/l	42		$0.00
Lead	239.2	EPA		mg/l	42		$0.00
Mercury	245.1	EPA		mg/l	42		$0.00
Nickel	200.7	EPA		mg/l	42		$0.00
Selenium	270.2	EPA		mg/l	42		$0.00
Silver	200.7	EPA		mg/l	42		$0.00
Thallium	200.7	EPA		mg/l	42		$0.00
Vanadium	200.7	EPA		mg/l	42		$0.00
Zinc	200.7	EPA		mg/l	42		$0.00
subtotal							**$0.00**
Biologicals							
Enteroccocci Bacteria	9221C	SM		CPU/100 ml *	42		$0.00
Fecal Coliform Bacteria	9221C	SM		CPU/100 ml *	42		$0.00
Chlorophyll A	1002G	SM		mg/l	42		$0.00
Pheophytin	1002G	SM		mg/l	42		$0.00
subtotal							**$0.00**

* MPN/100 ml may be utilized at a unit cost to be negotiated

Surface Water Total **$0.00**

SEDIMENT

Attachment B
(to Cost Proposal)
Cost Proposal Form

	Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
Conventionals							
Total Solids (%)	2540B	SM		%	30		$0.00
Total Organic Carbon (%)	9060	SW-846		%	30		$0.00
Acid Volatile Sulfides		EPA		mg/kg	30		$0.00
Simultaneously Extracted Metals		EPA		mg/kg	30		$0.00
Grain Size	D422	ASTM		*	30		$0.00
subtotal							**$0.00**
	* mm (opening) and % (retention)						
Metals (Total)							
Antimony	7041	SW-846		mg/kg	30		$0.00
Arsenic	7060	SW-846		mg/kg	30		$0.00
Barium	6010	SW-846		mg/kg	30		$0.00
Beryllium	6010	SW-846		mg/kg	30		$0.00
Cadmium	7131	SW-846		mg/kg	30		$0.00
Chromium	6010	SW-846		mg/kg	30		$0.00
Cobalt	6010	SW-846		mg/kg	30		$0.00
Copper	6010	SW-846		mg/kg	30		$0.00
Lead	7421	SW-846		mg/kg	30		$0.00
Mercury	7471	SW-846		mg/kg	30		$0.00
Nickel	6010	SW-846		mg/kg	30		$0.00
Selenium	7740	SW-846		mg/kg	30		$0.00
Silver	7760	SW-846		mg/kg	30		$0.00
Thallium	6010	SW-846		mg/kg	30		$0.00
Vanadium	6010	SW-846		mg/kg	30		$0.00
Zinc	6010	SW-846		mg/kg	30		$0.00
subtotal							**$0.00**
Semi-Volatile Organic Compounds (SVOC)	8270	EPA		mg/kg			
subtotal					30		$0.00
Pesticides/PCBs	8080	EPA		mg/kg			
subtotal					30		$0.00
Herbicides	8150	EPA		mg/kg			
subtotal					30		$0.00
						Sediment Total	**$0.00**

Attachment B
(to Cost Proposal)
Cost Proposal Form

	Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
GROUNDWATER							
Leachate Indicators							
Total Alkalinity	310.1	EPA		mg/l	68		$0.00
Ammonia	350.1	EPA		mg/l	68		$0.00
Bicarbonate, HCO3	2320B	SM		mg/l	68		$0.00
Calcium (Dissolved)	200.7	EPA		mg/l	68		$0.00
Carbonate, CO3 (field filtered)	2320B	SM		mg/l	68		$0.00
Chemical Oxygen Demand (COD)	410.4	EPA		mg/l	68		$0.00
Chloride (Dissolved)	325.3	EPA		mg/l	68		$0.00
Specific Conductance	120.1	EPA		umhos/cm	68		$0.00
Hardness, CaCO2	130.2	EPA		mg/l	68		$0.00
Iron (Dissolved)	200.7	EPA		mg/l	68		$0.00
Magnesium (Dissolved)	200.7	EPA		mg/l	68		$0.00
Manganese (Dissolved)	200.7	EPA		mg/l	68		$0.00
Nitrate (Dissolved)	353.3	EPA		mg/l	68		$0.00
Phosphorus (Dissolved)	365.3	EPA		mg/l	68		$0.00
Potassium (Dissolved)	200.7	EPA		mg/l	68		$0.00
Sodium (Dissolved)	200.7	EPA		mg/l	68		$0.00
Sulfate (Dissolved)	375.2	EPA		mg/l	68		$0.00
Total Dissolved Solids (TDS)	160.1	EPA		mg/l	68		$0.00
Total Organic Carbon (TOC)	415.1	EPA		mg/l	68		$0.00
Total Suspended Solids (TSS)	160.2	EPA		mg/l	68		$0.00
subtotal							**$0.00**
Metals (Total Recoverable)							
Antimony	200.7	EPA		mg/l	68		$0.00
Arsenic	206.2	EPA		mg/l	68		$0.00
Barium	200.7	EPA		mg/l	68		$0.00
Beryllium	200.7	EPA		mg/l	68		$0.00
Cadmium	200.7	EPA		mg/l	83		$0.00
Chromium	200.7	EPA		mg/l	83		$0.00
Cobalt	200.7	EPA		mg/l	68		$0.00
Copper	200.7	EPA		mg/l	83		$0.00
Iron	200.7	EPA		mg/l	68		$0.00
Lead	239.2	EPA		mg/l	83		$0.00
Mercury	245.1	EPA		mg/l	68		$0.00
Nickel	200.7	EPA		mg/l	83		$0.00
Selenium	270.2	EPA		mg/l	68		$0.00
Silver	200.7	EPA		mg/l	68		$0.00
Thallium	200.7	EPA		mg/l	68		$0.00
Vanadium	200.7	EPA		mg/l	68		$0.00
Zinc	200.7	EPA		mg/l	83		$0.00
subtotal							**$0.00**
Volatile Organic Compounds (VOC)	624	EPA		mg/l	83		$0.00
subtotal							
Semi-Volatile Organic Compounds (SVOC)	625	EPA		mg/l	20		$0.00
subtotal							
Herbicides	615	EPA		mg/l			

Attachment B
(to Cost Proposal)
Cost Proposal Form

		Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
	subtotal					20		$0.00
Pesticides/PCBs		608	EPA		mg/l			
	subtotal					20		$0.00
						Groundwater Total		**$0.00**

Attachment B
(to Cost Proposal)
Cost Proposal Form

STORMWATER

	Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
Conventionals							
Oil & Grease	413.1	EPA		mg/l	14		$0.00
Specific Conductance	120.1	EPA		umhos/cm	14		$0.00
Chemical Oxygen Demand (COD)	410.4	EPA		mg/l	14		$0.00
Total Organic Carbon (TOC)	415.2	EPA		mg/l	14		$0.00
Total Suspended Solids (TSS)	160.2	EPA		mg/l	14		$0.00
Total Phosphorus	365.2	EPA		mg/l	14		$0.00
Dissolved Ortho Phosphate	365.2	EPA		mg/l	14		$0.00
subtotal							**$0.00**
Biologicals							
Enteroccocci Bacteria	9221C	SM		CPU/100 ml *	14		$0.00
Fecal Coliform Bacteria	9221C	SM		CPU/100 ml *	14		$0.00
subtotal							**$0.00**
* MPN/100 ml may be utilized at a unit cost to be negotiated							
Metals (Dissolved)							
Arsenic	206.2	EPA		mg/l	14		$0.00
Cadmium	200.7	EPA		mg/l	14		$0.00
Chromium	200.7	EPA		mg/l	14		$0.00
Copper	200.7	EPA		mg/l	14		$0.00
Iron	200.7	EPA		mg/l	14		$0.00
Lead	239.2	EPA		mg/l	14		$0.00
Manganese	200.7	EPA		mg/l	14		$0.00
Mercury	245.1	EPA		mg/l	14		$0.00
Nickel	200.7	EPA		mg/l	14		$0.00
Zinc	200.7	EPA		mg/l	14		$0.00
subtotal							**$0.00**
						Stormwater Total	**$0.00**

Attachment B
(to Cost Proposal)
Cost Proposal Form

	Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year
LEACHATE							
Conventionals							
pH	150.1	EPA		s.u.	4		$0.00
Total fats, oils, and grease (FOG)	1664	EPA		mg/l	4		$0.00
Total petroleum hydrocarbons (TPH)	418.1	EPA		mg/l	4		$0.00
Total Solids	160.3	EPA		mg/l	4		$0.00
Total Phenol	420.2	EPA		mg/l	4		$0.00
subtotal							$0.00
Metals (Total; Composite Sample)							
Arsenic	200.7	EPA		mg/l	4		$0.00
Cadmium	200.7	EPA		mg/l	4		$0.00
Chromium	200.7	EPA		mg/l	4		$0.00
Copper	200.7	EPA		mg/l	4		$0.00
Lead	238.1	EPA		mg/l	4		$0.00
Mercury	245.1	EPA		mg/l	4		$0.00
Molybdenum	200.7	EPA		mg/l	4		$0.00
Nickel	200.7	EPA		mg/l	4		$0.00
Selenium	200.7	EPA		mg/l	4		$0.00
Zinc	200.7	EPA		mg/l	4		$0.00
subtotal							**$0.00**
Volatile Organic Compounds (VOC)	624	EPA	8240	mg/l			
subtotal					4		$0.00
Semi-Volatile Organic Compounds (SVOC)	625	EPA	8270	mg/l			
subtotal					4		$0.00
Pesticides/PCBs	608	EPA	8080	mg/l			
subtotal					4		$0.00
						Leachate Total	**$0.00**

Attachment B
(to Cost Proposal)
Cost Proposal Form

Analytical Method No.	Method Reference	Alternative Method	Units of Measure	Samples per year	Unit Cost	Total Cost per year

COST PROPOSAL SUMMARY

Surface Water	**$0.00**
Sediment	**$0.00**
Groundwater	**$0.00**
Stormwater	**$0.00**
Leachate	**$0.00**
Annual Total	**$0.00**
3-YEAR GRAND TOTAL	**$0.00**

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Attachment C
(to Cost Proposal)
Cost Module

	Regulatory Level (mg/l)	Proposed Analytical Method	Method Detection Limit (mg/l)	Samples per year	Unit Cost	Cost Basis [Analyte or Class]
GROUNDWATER						
Volatile Organic Compounds (VOC)						
Vinyl chloride	0.002			83		
						VOC class
Semi-Volatile Organic Compounds (SVOC)						
Hexachlorobenzene	0.001			20		
Indeno(1,2,3-cd)pyrene	0.0029			20		
Pentachlorophenol	0.001			20		
						SVOC class
Pesticides/PCBs						
pp-DDE	0.000006			20		
pp-DDT	0.000017			20		
Aroclor 1221	0.00023			20		
						PEST/PCB class
Metals (Total Recoverable)						
Antimony	0.006			68		Sb
Beryllium	0.004			68		Be
Thallium	0.002			68		Tl

Attachment D
(To Cost Proposal)
Analyte Class Detail

VOC (EPA 624)	SVOC (EPA 625, 8270)	SVOC (continued) (EPA 625, 8270)	SVOC (PAH) (EPA 8270)	Pesticides/PCB (EPA 608, 8080)	Herbicides (EPA 615, 8150)
1,1,1-trichloroethane	1,2,4-trichlorobenzene	Benzo(k)fluoranthene	Naphthalene	Alpha BHC	2,4-D
1,1,2,2-tetrachloroethane	1,2-dichlorobenzene	Benzidine	Acenaphthylene	Lindane	2,4-DB
1,1,2-trichloroethane	1,3-dichlorobenzene	Benzoic acid	Acenaphtylene/Fluorene	Heptachlor	2,4,5-T
1,1,2-trichloroethylene	1,4-dichlorobenzene	Benzyl alcohol	Phenanthrene	Aldrin	2,4,5-TP
1,1-dichloroethane	2-chlorophenol	Chrysene	Anthracene	Beta-BHC	Dalapon
1,1-dichloroethylene	2,4,5-trichlorophenol	Di-n-butylphthalate	Fluoranthene	Delta-BHC	Dicamba
1,2-dichloroethane	2,4,6-trichlorophenol	Di-n-octyl phthalate	Pyrene	Heptachlor epoxide	Tricamba
1,2-dichloroethylene	2,4-dichlorophenol	Dibenzo(a,h)anthracene	Benzo(a) anthracene	Endosulfan I	Dichloroprop
1,2-dichloropropane	2,4-dimethylphenol	Dibenzofuran	Chrysene	Endosulfan II	Dinoseb
2-butanone (MEK)	2,4-dinitrophenol	Diethylphthalate	Benzo(b)fluoranthene	Endosulfan sulfate	MCPA
2-hexanone	2,4-dinitrotoluene	Dimethylphthalate	Benzo(k)fluoranthene	pp-DDE	MCPP
4-Bromofluorobenzene	2,6-dinitrotoluene	Fluoranthene	Benzo(a)pyrene	pp-DDD	
4-methyl-2-pentanone (MIBK)	2-chloronaphthalene	Fluorene	Dibenzo(a,h)anthracene	pp-DDT	
Acetone	2-methylnaphthalene	Hexachlorobenzene	Benzo(g,h,i)pyrylene	Endrin	
Bromodichlormethane	2-methylphenol	Hexachlorobutadiene	Indeno(1,2,3-cd)pyrene	Endrin aldehyde	
Benzene	2-nitroaniline	Hexachloroethane		Methoxychlor	
Bromoform	2-nitrophenol	Hexachlorocyclopentadiene		Toxaphene	
Bromomethane	3,3-dichlorobenzidine	Indeno(1,2,3-cd)pyrene		Chlordane	
Chlorodibromomethane	3-nitroaniline	Isophorone		Dieldrin	
Carbon disulfide	4,6-dinitro-2-methylphenol	N-nitrosodimethylamine		Arochlor 1016	
Carbon tetrachloride	4-bromophenyl-phenylether	N-nitrosodiphenylamine		Arochlor 1221	
Chlorobenzene	4-chloro-3-methylphenol	N-nitroso-di-n-propylamine		Arochlor 1232	
Chloroethane	4-chlorophenyl-phenylether	Naphthalene		Arochlor 1242	
Chloroform	4-chloroaniline	Nitrobenzene		Arochlor 1248	
Chloromethane	4-methylphenol	Pentachlorophenol		Arochlor 1254	
Ethyl benzene	4-nitroaniline	Phenanthrene		Arochlor 1260	
Methylene chloride	4-nitrophenol	Phenol			
Styrene	Acenaphthene	Pyrene			
Tetrachloroethylene	Acenaphthylene	bis-(2-ethylhexyl)phthalate			
Toluene	Aniline	bis-(2-chloroethyl)ether			
Trichlorofluoromethane	Anthracene	bis-(2-chloroethoxy)methane			
Vinyl acetate	Azobenzene	bis-(2-chloroisopropyl)ether			
Vinyl chloride	Butylbenzylphthalate				
Xylenes (total)	Benzo(a)anthracene				
cis-1,3-dichloropropene	Benzo(a)pyrene				
p-dichlorobenzene	Benzo(b)fluoranthene				
trans-1,3-dichloropropene	Benzo(g,h,i)perylene			s:\share\vand\labrfq\costprop\rfqcost\analyte.xls	