BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING ISSUANCE OF A REQUEST FOR PROPOSALS FOR CONSTRUCTION QUALITY ASSURANCE SERVICES REQUIRED FOR THE CLOSURE OF THE ST. JOHNS LANDFILL AND AUTHORIZING THE EXECUTIVE OFFICER TO EXECUTE A CONTRACT WITH THE MOST QUALIFIED PROPOSER	)))))))	RESOLUTION NO. 95-2111 Introduced by Mike Burton Executive Officer

WHEREAS, Metro needs construction quality assurance services to ensure proper completion of the closure of the St. Johns Landfill; and

WHEREAS, As described in the staff report it is desirable to select a firm to provide these services by an open and competitive process; and

WHEREAS, The 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 issuance of RFP # 95-5-SW for Construction Quality Assurance Services at the St. Johns Landfill.

2. That the Metro Council, pursuant to Section 2.04.033 (b) of the Metro Code, authorizes the Executive Officer to execute a contract with the most qualified and cost effective proposer in accordance with the requirements of the Metro Code.

ADOPTED by the Metro Council this 23 day of March, 1995.

J. Ruth McFarland, Presiding Officer

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ATTACHMENT A

REQUEST FOR PROPOSALS
FOR
CONSTRUCTION QUALITY ASSURANCE SERVICES
RELATED TO
ST. JOHNS LANDFILL CLOSURE IMPROVEMENTS

RFP #95R - 5 - SW

March 1995

Metro
Solid Waste Department
600 NE Grand Avenue
Portland, OR 97232
(503) 797-1650

Printed on Recycled Paper, 30 Percent Post-Consumer Content

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REQUEST FOR PROPOSALS
FOR
ENGINEERING SERVICES RELATED TO
ST. JOHNS LANDFILL CLOSURE IMPROVEMENTS

I. INTRODUCTION

Metro is requesting proposals for construction quality assurance (CQA) services for the final phase of the closure of the St. Johns Landfill. These services will include: construction quality assurance, construction inspection, materials testing, geotechnical engineering and surveying. The firm selected will be responsible for preparing the annual construction quality assurance documentation required for this project. The closure of Subareas 4 and 5 is scheduled for completion in November 1996.

The proposals will be due on _____, _____, 1995., in Metro's Solid Waste Department at 600 N.E. Grand Avenue, Portland, Oregon 97232 to the attention of Paul Ehinger, Senior Engineer. Details concerning the project and proposal are contained in this document. The attached Scope of Work lists tasks to be performed.

II. BACKGROUND/HISTORY OF PROJECT

Metro assumed responsibility for operation of the St. Johns Landfill in 1980. Planning for closure of the Landfill was begun in 1988 with the preparation of a closure plan. An Engineering firm was retained and final design of the closure started in 1990. Construction began with a soils procurement contract in late 1991, followed by closure of Subareas 1, 2 and 3, in 1992, 1993 and 1994 respectively. To date, approximately 157 acres of the landfill have received final cover. A motor blower flare has been installed to burn landfill gas.

Final cover will be constructed over remaining 69 acres of the landfill during 1995 and 1996. The portion of the landfill to be closed includes Subareas 4 & 5, and Subarea 5A. The construction includes stripping and stockpiling of existing topsoil; final grading of site ; procurement and placement of a low permeable soil barrier and installation of a 40 mil HDPE geomembrane. Layers of sand and topsoil will be placed over the liner and a cover crop will be planted. Storm drainage facilities include ditches, swales, culverts and a sedimentation basin. Landfill gas collection control facilities including wells, trenches, piping, and condensate pump stations are also included in the project.

Metro will have overall responsibility for construction quality assurance for the project. Metro's Construction Coordinator will be the main point of contact between Metro and the Contractor. Metro plans to have two engineers at the landfill during construction as well as other construction staff members as required to fulfill its responsibilities during construction. In addition, Metro also has staff at the landfill to operate the completed portions of the gas system and to maintain areas which have already been closed.

III. PROPOSED SCOPE OF WORK/SCHEDULE

Metro is seeking proposals from qualified firms to provide Construction Quality Assurance (CQA) services for the Closure of Subareas 4 & 5 (SA 4&5) at the St. Johns Landfill. These services are necessary to implement Metro's Construction Quality Assurance Plan for the Closure of Subareas 4 and 5. The services to be provided are described in the CQA Plan, a draft of which is included with this request for proposals. While the CQA Plan identifies specific positions to perform specific tasks. Firms may recommend different staffing arrangements which accomplish the same tasks more efficiently.

The following are a brief outline of the services required.

Provide personnel to perform the duties of the following positions as described in the CQA Plan:
- CQA Officer
- CQA Inspectors
- Resident Geotechnical Engineer

Provide Materials Testing Services as Required by the CQA Plan and the Specifications including:
- Soils testing
- Testing of the geomembrane and other geosynthetics

Other Services which may be required:
- Surveying"

At the completion of each construction season, the selected CQA Firm will be required to prepare a Certificate of Construction and Final Report which documents the year's construction. This material will be provided to the Oregon Department of Environmental Quality to document that proper CQA procedures were followed during construction.

The construction documents for the Closure of Subareas 4 and 5 call for the closure of Subarea 5 prior to November 15, 1995, and closure of Subarea 4 by November 15, 1996. The contractor has the option, subject to Metro's approval, to complete the closure of both subareas during the 1995 construction season. The length of the CQA firm's contract will vary with the length of the construction contract.

The CQA Officer will share office space with Metro's construction staff at the St. Johns Landfill. A separate trailer or shed will be set up on-site by the Construction Contractor for the use of the CQA Firm for testing and storage of samples. This building will have minimum dimensions of 8 feet by 20 feet, and will be available for the duration of construction activities.

IV. QUALIFICATIONS/EXPERIENCE

The successful Proposer must possess experience with construction quality assurance on similar landfill closure projects or landfill construction projects involving the use of geomembranes. The qualification categories of major interest to Metro include a Proposer's experience with: construction observation for the installation of final landfill covers; familiarity with the use of geomembranes; geotechnical engineering for landfill construction or closure, and the project teams experience in materials testing.

Preference will also given to those who have dealt with sites with similar climatological and geographical conditions.

V. PROJECT ADMINISTRATION

Metro's project manager and contact for this project is Mr. Paul Ehinger, Senior Engineer, in the Engineering and Analysis Department. The Metro executive staff and Council are involved in review and final approval of the project.

Proposals must identify a single person as project manager to work with Metro. The project manager shall be a Professional Engineer, registered in the State of Oregon. The contractor must assure responsibility for any subcontracted work and shall be responsible for the day-today direction and internal management of the project. The prime contractor shall have, or be capable of obtaining, professional liability insurance, general liability insurance, business automobile insurance, and workers' compensation insurance covering the services to be performed, as shown in the attached Personal Services Agreement. Metro shall be an additional insured.

VI. PROPOSAL INSTRUCTIONS

A. Submission of Proposals. Ten (10) copies of the proposal shall be furnished to Metro addressed to:

Paul Ehinger, Senior Engineer
Metro Solid Waste Department
600 N.E. Grand Avenue
Portland, OR 97232

B. Deadline. Proposals will not be considered if received after 5:00 p.m., _____, _____, 1995.

C. RFP as Basis for Proposals. This RFP presents the most definitive statement Metro will make concerning information upon which proposals are to be based. Any verbal information which is not contained in this RFP will not be considered by Metro in evaluating the proposals. All questions relating to the RFP, or the project must be submitted in writing to Paul Ehinger,

Senior Engineer. Any questions which in the opinion of Metro warrant a written reply or RFP amendment will be furnished to all parties receiving a copy of this RFP.

D. 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 Procurement and Contracts Division of General Services, Metro, Metro Center, 600 NE Grand Avenue, Portland, OR 97232 or call (503) 797-1717.

VII. PROPOSAL CONTENTS

Contents of the proposal shall be as follows:

A. Transmittal Letter. Indicate who will be assigned to the project, who will be the project manager, and that the proposal will be valid for ninety (90) days after the submittal date.

B. Project Workplan. Describe how the tasks in the CQA Plan will be performed and any recommended modifications to the CQA Plan. The workplan shall describe the staffing required for construction over a two year period and over a one year period.

C. Staffing/Project Manager Designation. Identify specific personnel assigned to major project tasks, their roles in relation to the work required, and special qualifications they may bring to the project if not described below.

Metro intends to award this contract to a single firm or joint venture to provide the services required. Proposals must identify a single person as project manager to work with Metro. The project manager shall be a Professional Engineer, registered in the State of Oregon.

Designate which tasks will be done by subcontractors.

D. Individuals' Experience. Identify previous experience of the persons on the proposed team who have performed work similar to that required for this project. Include resumes of the individuals proposed for this project team.

E. Firm/Team's Experience. Include a representative list of projects that the proposing firm/team has conducted in the past three (3) years that are similar to the work required for this project. Include a description of each project and its scope (work tasks and project cost). For each project, include the name of the contact person, his/her title, role on the project, and telephone number.

F. Costs. The Proposal shall include an estimate of costs for both a one and a two year construction period. The estimate shall be broken down into the following categories and shall clearly indicate the hourly rates of the personnel assigned:
   1. On-Site CQA Services (Do not include surveying)
   2. Materials Testing
      a. Soils Testing
      b. Testing of Geosynthetics
   3. Office Support Including Project Management
   4. Schedule of Charges including Surveying

   The Proposer shall provide a copy of the cost estimate on a spreadsheet in either Excel or Lotus 123 on a 3.5" floppy disk along with the proposal.

G. Exceptions and Comments. To facilitate evaluation of proposals, Metro wishes that all responding firms adhere to the format outlined within this RFP.

   Firms wishing to take exception to, or comment on the Personal Services Agreement language or any other aspect in this RFP are encouraged to document their concerns in this part of their proposal. Exceptions or comments should be succinct, thorough, and organized.

VIII. GENERAL PROPOSAL/CONTRACT CONDITIONS

A. Limitation and Award. This RFP 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 accept or reject any or all proposals received as the result of this request, to negotiate with all qualified sources, or to cancel all or part of this RFP.

B. Contract Type. Metro intends to award a Personal Services Agreement contract with the selected firm for this project. A copy of the standard form contract which the successful contractor will be required to execute is included as an attachment.

C. 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 the services can occur. A monthly billing, accompanied by a progress report, will be prepared for review and approval.

D. Validity Period and Authority. The proposal shall be considered valid for a period of at least ninety (90) days after the required submittal date 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.

IX. EVALUATION OF PROPOSALS

A. Evaluation Procedure. Proposals received that conform to the Proposal Instructions section will be evaluated. Proposals that are incomplete or do not conform to the Proposal Instructions will not be evaluated. An evaluation of the proposals will take place using criteria identified in the following section. The evaluation process will result in Metro developing a short list of the firms who, in its opinion, are most qualified. Interviews with these firms may be requested prior to final selection of one firm.

EVALUATION CRITERIA

Evaluation Criteria. This section provides a brief description and weighing of the criteria which will be used in the evaluation of the proposals submitted to accomplish the work as described in the RFP

PROJECT WORKPLAN/APPROACH (30 Points)

Demonstration of understanding of the Scope of Work (including work schedule deadlines) and responsiveness of the proposal to the Scope of Work.

Completeness of response

Clarity, conciseness and understandability

PROJECT STAFFING EXPERIENCE (50 Points)

Qualifications and favorable references indicating the expertise of the project team including the project manager, assigned individuals, and any sub-contractors on similar landfill closure projects.

COST PROPOSAL (20 Points)

Cost

TOTAL POSSIBLE POINTS - 100

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ATTACHMENT B -- SITE PLAN

ATTACHMENT C -- CONSTRUCTION QUALITY ASSURANCE PLAN FOR SUBAREAS 4 AND 5 (EXCERPTS)

ATTACHMENT D -- METRO STANDARD CONTRACT -- PERSONAL SERVICES AGREEMENT

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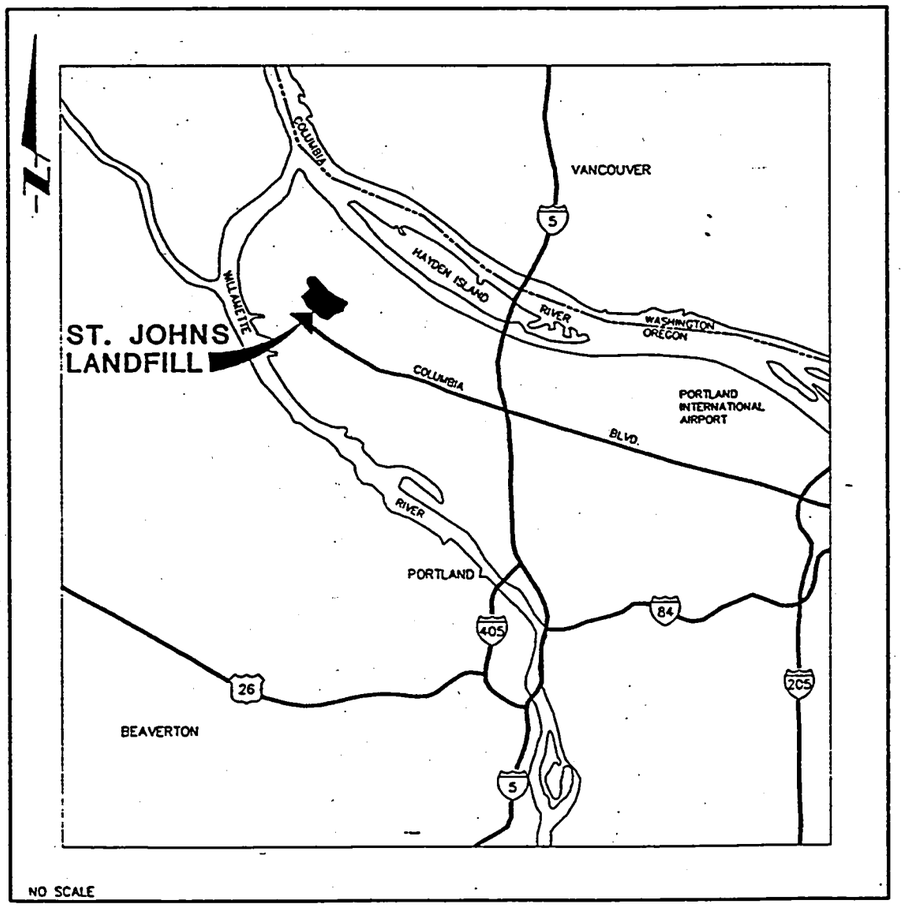
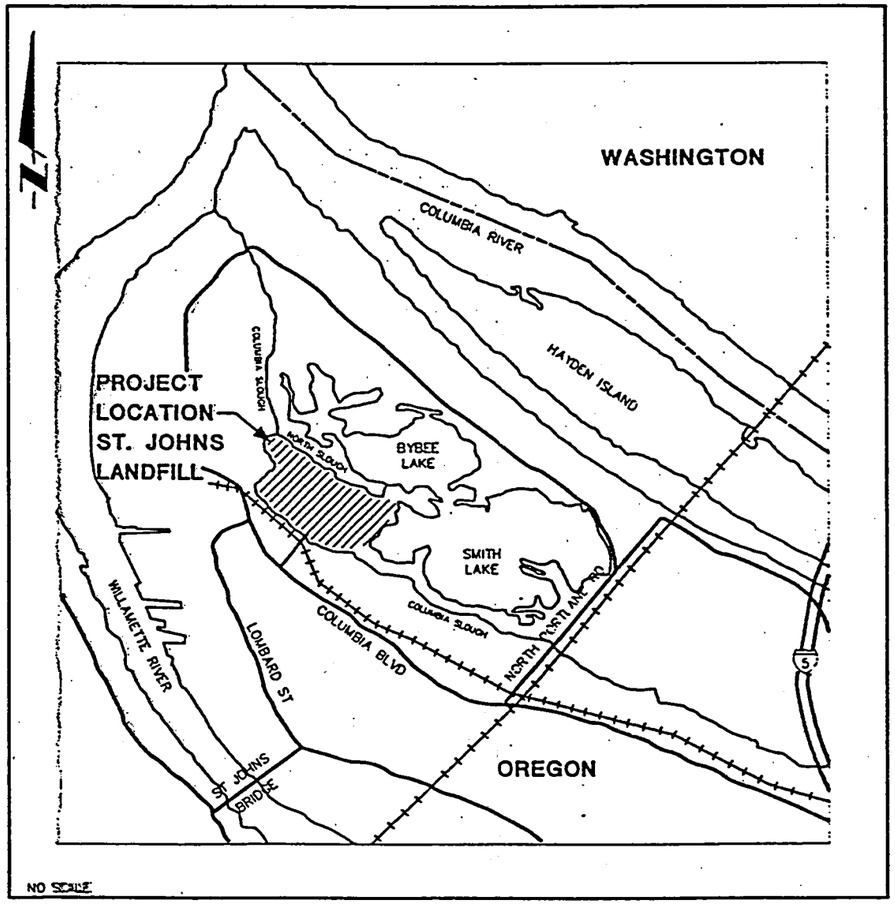
02/27/95 5:30 PM

ST. JOHNS LANDFILL
CLOSURE OF SUBAREAS 4 & 5

METRO
PORTLAND, OREGON



LOCATION MAP



VICINITY MAP

ATTACHMENT A
VICINITY MAP

REVISIONS	DATE	BY

DESIGNED DRAKE/ASHTON
DRAWN D. OGAN
CHECKED T. COLEMAN
APPROVED

SCALE NO SCALE
DATE DECEMBER, 1994

Parametrix, Inc.
WASHINGTON Sumner, Bremerton, Kirkland, Wenatchee
OREGON Portland
HAWAII Honolulu
TEXAS Houston

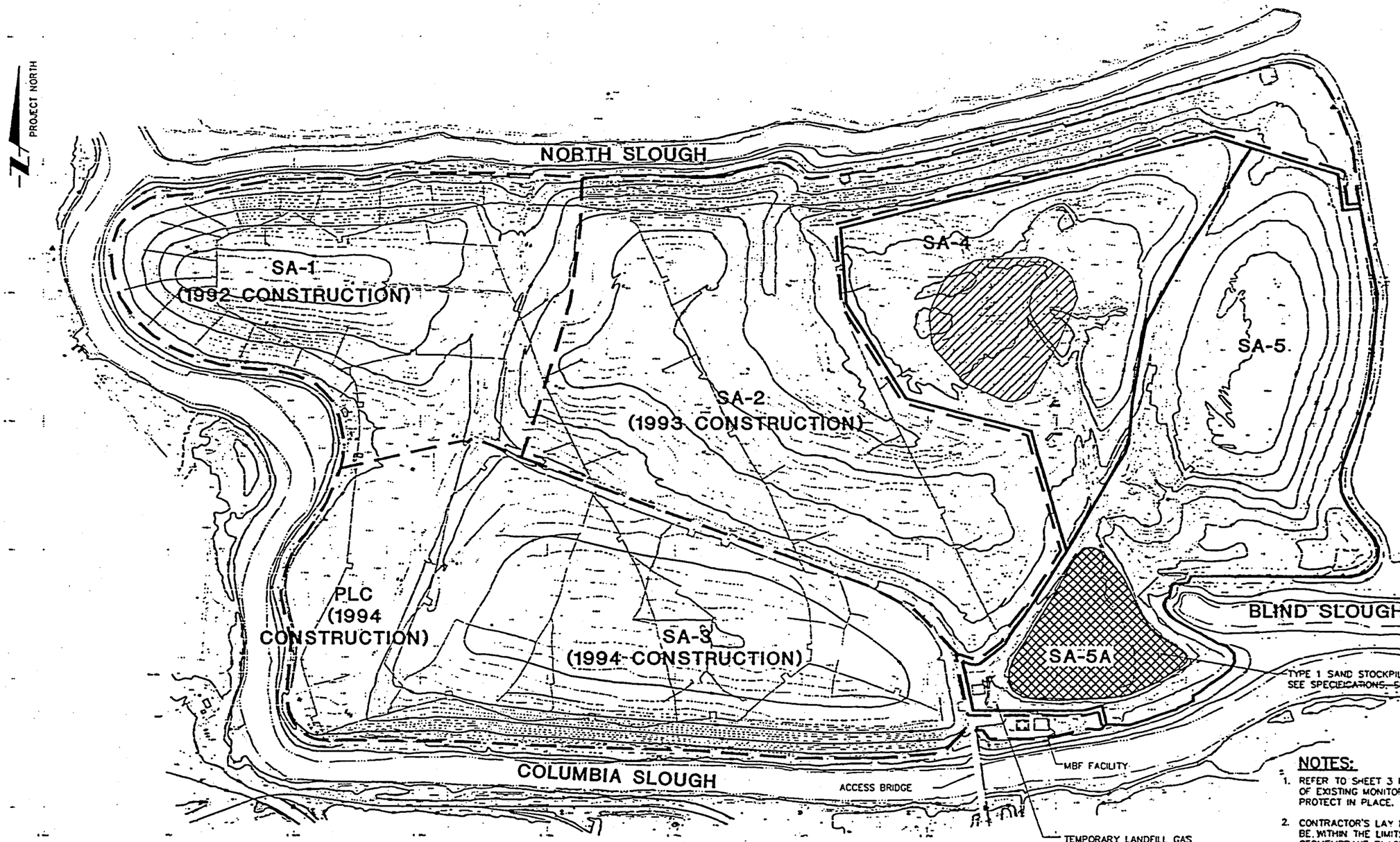
REGISTERED PROFESSIONAL ENGINEER #13473 OREGON EXPIRES 12/31/95

Cornforth Consultants, Inc.

METRO
Solid Waste Department
Jim Watkins, Engineering Manager
Dennis O'Neil, Project Manager

ST. JOHNS LANDFILL
CLOSURE OF SUBAREAS 4 & 5
COVER

SHEET NO. 1 / 34



ATTACHMENT B
SITE PLAN

NOTES:

1. REFER TO SHEET 3 FOR LOCATIONS OF EXISTING MONITORING WELLS. PROTECT IN PLACE.
2. CONTRACTOR'S LAY DOWN AREA SHALL BE WITHIN THE LIMITS OF PROPOSED GEOMEMBRANE PLACEMENT, PRIOR TO PLACEMENT OF GEOMEMBRANE OR SOUTH OF THE LANDFILL NEAR THE ACCESS BRIDGE.
3. REFER TO SHEET 5 FOR APPROXIMATE LOCATION OF 1995 WINTER SHUTDOWN CLOSURE BOUNDARY.
4. EXISTING CONTOURS SHOWN ON THESE PLANS ARE BASED ON AERIAL PHOTOGRAPHY SURVEY. THE AERIAL PHOTOGRAPHY WAS COMPLETED FOR METRO IN OCTOBER 1994 BY DAVID SMITH ASSOCIATES.

LEGEND:

- APPROXIMATE LIMITS OF EXISTING GEOMEMBRANE PLACEMENT
- APPROXIMATE LIMITS OF PROPOSED GEOMEMBRANE PLACEMENT
- ACTIVE CONSTRUCTION DEBRIS DISPOSAL AREA (SA-4), BY METRO
- EXISTING CONTOURS (OCTOBER 1994)

NO	REVISIONS	DATE	BY

DESIGNED GLD/ACA
DRAWN DRO/BKH
CHECKED TMC
APPROVED

SCALE IN FEET
0 200' 400'
SCALE 1"=200'
DATE DECEMBER, 1994

Parametrix, Inc.
WASHINGTON: Sumner, Bremerton, Kirkland, Wenatchee
OREGON: Portland
HAWAII: Honolulu
TEXAS: Houston

REGISTERED PROFESSIONAL ENGINEER #13475 OREGON
EXPIRES: 12/31/95

METRO
Solid Waste Department
Jim Watkins, Engineering Manager
Dennis O'Neil, Project Manager

ST. JOHNS LANDFILL
CLOSURE OF SUBAREAS 4 & 5
CONSTRUCTION SITE PLAN

SHEET NO. 19191504
4
34

ATTACHMENT C

ST. JOHNS LANDFILL CLOSURE

CONSTRUCTION QUALITY ASSURANCE PLAN CLOSURE OF SUBAREAS 4 and 5

METRO
Solid Waste Department
600 NE Grand Avenue
Portland, OR 97232-2736
(503) 797-1650

February 1993
Revised February 1995

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METRO
CONSTRUCTION QUALITY ASSURANCE (CQA) PLAN
FOR THE ST. JOHNS LANDFILL CLOSURE OF SUBAREAS 4 AND 5

1. INTRODUCTION

1.1 Purpose

The final cover system and gas and condensate collection system function together to provide adequate control of gas and leachate at the St. Johns Landfill. The CQA Plan indicates the actions that the Engineer, CQA Firm, and Owner will undertake to ensure that the landfill closure will be in accordance with the Contract Drawings and Specifications and existing regulatory requirements. The CQA Firm in cooperation with the Owner will be responsible for quality assurance and will conduct inspection, testing, observation and documentation as described herein to ensure that the Contractor is properly controlling the quality of his work and producing an acceptable product. The Owners CQA Plan is for the Contractor's information and reference.

1.2 Scope

The CQA plan does not establish construction requirements. Construction requirements are established by the contract Drawings and Specifications and are not restated here. The actual testing methods used and the criteria for passage will be as defined in the contract Drawings and Specifications.

The CQA plan provides a course of proceedings for inspections, observations, testing, and documentation of the observed quality of materials and work during construction of the final cover system and gas and condensate collection system at the St. Johns Landfill.

1.3 Limitations

The CQA Plan provides a means to observe and document the quality of the construction work by the Contractor. It does not establish procedures to control and/or guide the operations of the manufacturer of materials or the Contractor or relieve them of their contractual responsibility to set up the necessary procedures and controls within their organizations to produce the quality of work called for in the Drawings and Specifications. The CQA plan is not intended to function as or replace the Contractor's quality control program. It is the Owner's Quality Assurance Plan.

2. CQA PLAN ELEMENTS

2.1 Responsibility and Authority

2.1.1 Regulatory Agencies

The Oregon State Department of Environmental Quality (DEQ) has the responsibility and authority to review and approve the CQA Plan prior to construction, and to review all CQA documentation during and following construction as necessary to confirm that the construction meets the requirements of the Drawings and Specifications. CQA documentation may be reviewed at Metro's office on-site during construction.

2.1.2 Metro

Metro is the owner and the operator of St. Johns Landfill. Metro is responsible to ensure that the design and construction of the facility meet the standards of DEQ and adequately protects the quality of the air and waters in the surrounding area. Since Metro will be responsible for the maintenance of the closed landfill in the coming years, special attention to quality of design and construction is required to ensure cost effective operation.

Metro will be responsible for construction management. Metro will also participate in quality assurance, performing inspection and oversight under the guidance of the CQA Officer.

2.1.2.1 Construction Coordinator

The Construction Coordinator is the on-site representative of Metro and is responsible for management of the construction and quality assurance. The Construction Coordinator reports to the Solid Waste Department and works under the supervision of the Engineering and Analysis Manager and the St. Johns Landfill Project Coordinator.

2.1.2.2 Resident Engineer

The Resident Engineer will be an on-site Metro employee who will be responsible for contract administration, office management and record keeping for the Metro/CQA Firm on-site team. The Resident Engineer will report to the Construction Coordinator and will have duties which will include:

- Contract administration to include Requests for Proposal, Change Orders, Claims and Cost Control.
- Processing pay requests and maintaining quantities.
- Maintaining job files and records.
- Maintaining CQA files under the guidance of the CQA Officer.

- Consolidate all daily inspection reports, test data and certifications and furnish to the CQA Officer for review and verification of compliance with contract documents.
- Log and maintain Shop Drawings. Engineer will continue to review and approve Shop Drawings.
- Survey Chief and Construction Safety and Security Officer.
- Field inspection as required to assist the Field Engineer and the CQA Officer.
- Assist the CQA Officer in preparation of the Certificate of Construction and Final Report to DEQ.
- Review and provide answers for Requests for Information.

2.1.2.3 Field Engineer

The Field Engineer will be an on-site Metro employee who will be responsible for inspection and oversight of Construction in cooperation with, and to augment the effectiveness of, the CQA officer. The Field Engineer will report to the Construction Coordinator. Duties will include:

- Supervise other Metro inspectors and technicians which may be required to assist the Field Engineer or the CQA Officer.
- Monitor the construction activities of the Contractor.
- Interpret and clarify Drawings and Specifications in coordination with the CQA Officer.
- Schedule the activities of available CQA inspectors to ensure full-time observation of final cover construction.
- Ensure that all required CQA inspection documentation and test results are completed and furnished to the Resident Engineer.
- Make a daily report of CQA activities and construction activities.

2.1.2.4 Construction Clerks/Assistant CQA Inspectors

The Construction Clerks will work under the supervision of the Metro Field Engineer and will assist in inspection and oversight of construction of St. John's Landfill. Duties of the Construction Clerk include:

- Monitor existing topsoil stripping and stockpiling.
- Monitor existing clay stripping and stockpiling to assist the Geotechnical Engineer.
- Assist the Geotechnical Engineer in probing Type A or Type C clay profiles. Determination of clay depth and quality will be the responsibility of the Geotechnical Engineer.
- Assist the Geotechnical Engineer in monitoring the placement of existing and imported clay to ensure lift thickness criteria and approved compaction techniques are followed. Compaction testing and approval of placement will be the responsibility of the Geotechnical Engineer.

- Monitor the placement of subgrade embankment to ensure lift thickness criteria and approved compaction techniques are followed.
- Monitor the placement of Type I Sand to assist the Metro Field Engineer. Ensure that the liner is not damaged or wrinkled during placement. Ensure that lift thickness criteria and approved placement techniques are followed.
- Monitor the placement of existing or imported topsoil to assist the Metro Field Engineer. Ensure that lift thickness and approved placement techniques are followed.
- Monitor the seeding operation to ensure uniform coverage of seed and fertilizer at the approved rate.
- Make a daily report of activities inspected or observed.
- Other duties as required such as member of survey party, back-up liner inspector, observer for pipe pressure tests, etc.

2.1.2.5 Metro Special Inspectors:

Metro will also provide trained personnel as backup inspectors for liner installation, the gas system and electrical installation. The Construction Coordinator, the Resident Engineer and the Field Engineer will augment the efforts of a full-time liner inspector which will be provided by the CQA Firm . Operations personnel assigned to maintain the gas system and manage the landfill will be called upon as required to inspect mechanical and electrical installation to augment the efforts of gas and electrical inspectors provided by the CQA Firm.

2.1.3 Engineer

Parametrix, Inc. is the Engineer and has the responsibility for the design of the facility such that the design meets the operational and performance requirements of the Owner and the regulatory agencies.

2.1.4 CQA Personnel

2.1.4.1 CQA Officer

The CQA Officer is a representative of the CQA Firm and has the responsibility to administer the CQA Plan. Duties of the CQA Officer include:

- Schedule and coordinate CQA meetings, inspections and testing.
- Review all CQA documents and check for accuracy and completeness.
- Review all CQA inspection and test results to verify compliance with project requirements.
- Provide CQA reports to the Metro's Construction Coordinator and regulatory agencies.
- Liaison with the Construction Coordinator.
- Direct the activities of the CQA inspectors.

- Maintain log and file on Problem Identifications. Verify that all problems are adequately resolved.
- Interpret and clarify Drawings and Technical Specifications with the assistance of Metro and, if required, the Engineer.
- Prepare Certificate of Construction and Final Report with Metro assistance.

2.1.4.2 CQA Inspector(s)

CQA inspector(s) will be on-site representative(s) of the CQA Firm and will have the responsibility to carry out the various aspects of the CQA plan. Metro personnel as described in paragraph 2.12 will also function as CQA Inspectors. Duties of the CQA inspectors include:

- Check construction materials upon arrival to the site and observe general conformance to the Drawings and Specifications.
- Perform inspections and observe work in progress to determine if work complies with contract requirements.
- Report to the CQA officer all areas of work found to be deficient in quality as soon as they become known.
- Perform inspections of completed areas of work prior to covering to determine that the area meets the requirements of the contract documents, by observation, testing, or other specified methods.
- Record on a daily basis, all CQA observations, inspections and test results and submit records to CQA Officer.

A CQA inspector shall be physically present (full time) to observe all aspects of final cover construction.

CQA manpower requirements will be determined prior to each construction season and will depend on the amount and type of work scheduled.

2.1.4.3 Resident Field Engineer

(Not required on this contract. See Sections 2.1.2.2 and 2.1.2.3.)

2.1.4.4 Resident Geotechnical Engineer

The Resident Geotechnical Engineer is an on-site representative of the CQA Firm. The Resident Geotechnical Engineer will carry out full-time CQA inspection of all low permeability soil barrier construction and will conduct periodic inspection of on-site earthwork.

- During the period of construction grading activities, the Resident Geotechnical Engineer will attend the Weekly CQA meetings.
- A senior geotechnical engineer may conduct occasional site visits to verify that all CQA duties by the Resident Geotechnical Engineer and Assistants are being properly

performed. The senior geotechnical engineer shall notify the Metro Construction Coordinator prior to making site visits.

- The Resident Geotechnical Engineer will have a geotechnical field laboratory on site, fully equipped to conduct the following CQA testing: a) gradation analyses, b) No. 200 wet sieving, c) plasticity index, d) Atterberg limits, e) compaction Proctor testing, and f) moisture content determination.
- All geotechnical field laboratory testing equipment will be properly calibrated and maintained.

2.1.5 Construction Contractor

The Construction Contractor has the responsibility to provide internal quality control procedures so as to produce the work in accordance with the Drawings and Specifications. The Construction Contractor will be expected to cooperate with the Engineer, Owner, and CQA personnel.

2.2 Documentation

Documentation of all CQA Plan elements will have a consistent format throughout the project for each of the following:

- Daily Report
- CQA Observations and Testing Data Sheets
- Problem Reporting / Corrective Action Sheets

2.2.1 Daily Report

An overall project daily report will be prepared by the Field Engineer or representative for each day that the Contractor is working. This report will summarize the Contractor's activities for that day and include the following:

Project name.

- Date.
- General weather information: sky condition, temperature range, wind velocity and direction, precipitation.
- Construction Contractor and Contractor's representative.
- Observed items of work performed by the Contractor.
- Specific location of work performed by the Contractor.
- Time period of observed work performed by the Contractor.
- Equipment, including model numbers, used to perform the work.
- Description of work as observed.
- Number and classifications of workers on site.
- Problems encountered during construction; if none, so state.

2.2.2 CQA Observation and Testing Data (CQA) Reports

CQA reports will be filled out daily by the CQA inspector or Metro inspector whenever CQA observations or testing is done. Reports will include:

- Project name

- Date
- Description of observation or test procedure.
- Location of observation or test.
- Time of observation or test.
- Results of observation or test.
- Reference to all Problem Reporting/Corrective Action sheets submitted as a result of CQA observations or testing.
- Clarifying remarks.
- Signature of CQA inspector.
- Forms shall be attached to the report as appropriate.

2.2.3 Problem Identification and Corrective Measures Report

Problems observed by the CQA inspector or Metro inspector, or reported by the Contractor, relating to the quality of the materials or construction, will be documented on a Problem Identification sheet and submitted to the CQA Officer. The sheet will include a complete description of the problem explaining the nature, extent, probable cause, when the problem was first noted, and required corrective measures. The problem will be brought to the Contractors attention, where appropriate. The Contractors corrective action proposal will be reviewed for adequacy by the CQA Officer. When corrective actions have been taken to remedy the problem, it will be noted on the PR/CA sheet, along with the date and initials of the CQA inspector who observed the remedial work.

2.3 CQA Meetings

2.3.1 Preconstruction CQA Meeting

A preconstruction CQA meeting will be held to resolve any uncertainties in the content or execution of the CQA plan prior to construction of the facility. The CQA Officer, Construction Coordinator, Resident Engineer, Field Engineer, CQA inspectors, Resident Geotechnical Engineer, construction contractor, and representatives from final cover and gas system installation subcontractors shall attend this meeting.

2.3.2 Weekly CQA Meetings

CQA meetings will be held at approximately weekly intervals, in conjunction with progress meetings, to ensure that the CQA documentation is complete, up-to-date, and accurate, and that completed work meets the requirements of the Drawings and Specifications. Generally, CQA personnel and the Contractor's quality control personnel will attend these meetings.

2.3.3 Special CQA Meetings

Special CQA meetings will be held whenever a problem or deficiency arises that is not resolved in the normal course of action.

2.4 CQA Procedures - General

2.4.1 Preconstruction

Metro, with the assistance of the Engineer, will review submittals to ensure that the construction materials meet the performance requirements of the project, including preconstruction testing and manufacturer's, fabricator's, and installer's qualifications statements.

2.4.2 Construction

During construction, the CQA personnel will perform inspections of materials received, carry out the schedule of in-situ testing and observations, monitor the sampling of materials for destructive and non-destructive testing, prepare daily reports and other CQA documentation, and attend CQA meetings.

2.4.3 Post Construction

Construction certification reports will be prepared at the end of each construction season, by the CQA Officer assisted by Metro, and shall document and certify that construction met approved performance and design specifications. Each certification report should include summaries of all construction activities, field reports, observations, test data sheets, problem reporting and corrective measures data sheets, deviations from design and material specifications, and record drawings and photographs.

3. CQA FOR THE FINAL GRADING

All observations, testing, problems, corrective actions, and rejection of materials will be documented as outlined in Sections 2.2.2 and 2.2.3.

CQA for final grading includes the following elements of construction:

- Evaluation of Existing Low-Permeable Soil
- Evaluation of Off Site Borrow Sources
- Stockpiling and Reuse of Existing Topsoil
- Stockpiling and Reuse of Existing Low Permeable Soil
- Inspection of Imported Low Permeable Soils
- Subgrade Embankment
- Subgrade Preparation for Geosynthetics
- Low Permeable Soil for Type "A", "B", and "C" Covers
- Type 1 Sand

3.1 Evaluation of Existing Low-Permeable Soil

3.1.1 Preconstruction

Prior to the start of construction, the Geotechnical Engineer will review all available documents from Metro regarding Existing Low-Permeable Soils. Pertinent information includes records on borrow sources, placement methods, areas of placement, and field and laboratory test data.

3.1.2 Soil Probing in Type 'A' and Type 'C' Areas.

After removal of the topsoil, the Geotechnical Engineer will probe the Existing Low-Permeable Soil in the Type 'A' and Type 'C' cover areas to determine if there is a uniform minimum thickness of acceptable Low-Permeable Soil. The probing will be performed at rates of at least 6 probes per acre in Type 'A' cover areas, and at least 10 probes per acre in Type 'C' cover areas. The Geotechnical Engineer will identify the probed soils in accordance with the Visual-Manual procedure (ASTM D2488). Soil features described will include soil color, the content of fines (silt or clay), sand, gravel, refuse content (if any), and any cracking or degradation due to contact with leachate. The following tests will be performed on all of the visibly different types of Existing Low-Permeable Soil: (i) compaction test (ASTM D698), (ii) Atterberg limits test (ASTM D4318), and (iii) wet sieve grain size analysis (ASTM D422 and D1140). Existing Low-Permeable Soil which is either too thin or does not meet the requirements for reuse based on either lab tests or visual acceptability will be covered with layers of additional Low-Permeable Soil as described in the Specifications. Additional Atterberg limits and grain size analyses will be performed on Existing Low-Permeable Soil from Type 'C' cover areas at a rate of 1 set of tests per 2 acres. To be reused, the Existing Low-Permeable Soil shall conform to the criteria listed in 3.7.2.

3.1.3 Stripping Existing Low-Permeable Soil in Type 'B' Areas

During stripping operations, the Geotechnical Engineer will be present full-time to verify that reclaimed soils consist of acceptable Low-Permeable Soil which conforms to the criteria listed in 3.7.2. Prior to stripping, the Geotechnical Engineer will identify the acceptable in-place soils in accordance with the Visual-Manual procedure (ASTM D2488). The following tests will be performed on all the visibly different types of Existing Low-Permeable Soil: (i) compaction test (ASTM D698), (ii) Atterberg limits test (ASTM D4318), and (iii) a wet sieve grain size analysis (ASTM D422 and D1140). During stripping operations, the Geotechnical Engineer will map areas where suitable Existing Low-Permeable Soil is mined from, and areas where it is stockpiled. Compaction curves will be conducted, one for each type of suitable Low-Permeable Soil. The Geotechnical Engineer will identify each compaction curve corresponding to a certain batch of soil which has been mined and stockpiled, and document such test so that the appropriate compaction curve is subsequently used when the batch of material is being reused.

3.2. Evaluation of Off Site Borrow Sources

The Geotechnical Engineer will review submittal data required for each proposed borrow source and will physically investigate and evaluate each site prior to approval. The Geotechnical Engineer may conduct tests (gradation analyses and/or plasticity) to confirm or check data submitted by the Construction Contractor. The Geotechnical Engineer will develop compaction curves per ASTM D698 for each suitable borrow site.

3.3. Stockpiling and Reuse of Existing Topsoil

The Resident Geotechnical Engineer assisted by Metro personnel will monitor the excavation and stockpiling of existing topsoil. Materials which do not meet the specifications and which are contaminated by refuse or materials which will interfere with plant growth will be directed to Subarea 4 for disposal.

3.4. Stockpiling and Reuse of Existing Low Permeable Soil

The Resident Geotechnical Engineer will monitor excavation and stockpiling of existing acceptable low permeable soil. Material which does not conform to the specifications in 3.7.2 will be considered unsuitable for reuse. The Resident Geotechnical Engineer will make this determination. Unsuitable material may be left in place if it is located 12" or more below required grade of the geomembrane. Otherwise, unsuitable material will be disposed of by hauling to Subarea 4 or as directed by Metro.

3.5. Inspection of Imported Low Permeable Soils

The Resident Geotechnical Engineer will visually monitor the delivery and stockpile (if required) of imported low permeable soil. If the character of the material being imported from an approved borrow source is observed to be different from the specifications, the Resident Geotechnical Engineer will perform the necessary checking to confirm that the material meets the specifications. Based on these findings, Metro may reject the material or require the Contractor to provide an additional gradation test and plasticity studies on the new material.

Optimum moisture content per ASTM D698, Standard Proctor, shall serve as a basis for weight deductions for borrow material brought onto the site per Contract Specification 01025. In addition, the Resident Geotechnical Engineer will provide on-going monitoring services so that materials containing excessive free water are not brought on site or incorporated into the work.

3.6. Subgrade Embankment

Subgrade Embankment materials for Subareas 4 & 5 will be obtained from a stockpiled source at Subarea 5. The materials within the stockpile were tested during initial procurement and placement and were in compliance with the Specifications for Subgrade Embankment. Compaction curves per ASTM D698, standard Proctor, will be developed for the materials within the stockpile, by the Geotechnical Engineer.

Placement and compaction of the Subgrade Embankment materials will be observed by the Geotechnical Engineer, assisted by Metro personnel. Subgrade Embankment which has been mixed with deleterious materials, such as refuse and organic matter during excavation and hauling, may be rejected based on visual observations. The Resident Geotechnical Engineer will perform periodic compaction testing. The in-place density tests will be by nuclear methods (ASTM D2922). The Contractor shall rework any deficient areas to achieve compliance with project Specifications.

The Resident Geotechnical Engineer will monitor wet weather conditions during placement of the Subgrade Embankment. If soils are susceptible to degradation during wet weather, the Resident Geotechnical Engineer will recommend to the CQA Firm and Owner that the work be stopped until satisfactory results can be achieved.

3.7. Subgrade Preparation for Geosynthetics

The Resident Geotechnical CQA Firm will monitor wet weather conditions during subgrade preparation. If the prepared surface or soils are susceptible to degradation during the wet weather, the Resident Geotechnical CQA Firm will recommend that the work be stopped.

The Resident Geotechnical CQA Firm, assisted by Metro personnel, will monitor placement and compaction of subgrade embankment and low permeable soil, both by observation and testing, so that the completed subgrade is properly prepared to receive the geosynthetics.

The Resident Geotechnical CQA Firm will also supervise the backfilling and packing of any penetration of the low permeable soil layer (e.g., such as that left by grade stakes or compaction testing probes).

3.7.1 Low Permeable Soil for Type "A" Cover

The Type A cover shall be constructed by compacting the in-place Existing Low Permeable Soil after the Topsoil has been removed. Prior to compaction, foreign materials and protrusions shall be removed and the surface made uniformly sloping. The surface shall be free from angular rocks, roots, grass and vegetation. The thickness and suitability of in-place Existing Low Permeable Soil shall be determined using depth probes and visual observation as described in Section 3.1.1.

Compaction shall be accomplished using a multi-tired pneumatic roller weighing between 10,000 and 20,000 pounds. The roller shall provide uniform compaction, work well on a slope, and leave a relatively smooth surface. Vibratory action shall not be used. The specific roller used for compacting the Type 'A' cover shall be approved by the Resident Geotechnical CQA Firm in advance of the work. If sideslopes are too steep for the specified roller, the Geotechnical CQA Firm will recommend that alternative rollers be allowed, provided that a minimum of 93 percent compaction (per ASTM D698) is achieved.

Compaction will be observed by the Resident Geotechnical CQA Firm. The Low Permeable Soil will be compacted to at least 95 percent of the standard Proctor, ASTM D698 maximum dry density. The compacted soil will be periodically tested by the Resident Geotechnical CQA Firm at a minimum of four (4) tests per acre per lift or more frequently as deemed necessary by the resident Geotechnical CQA Firm. Any areas showing failed test results shall be moisture-conditioned and/or recompacted and retested until failed area is in compliance with Specifications.

During density testing, periodic compaction "check point" tests will be performed in the field laboratory to verify that the appropriate compaction curves are being used for the Existing Low-Permeable Soil.

General construction traffic shall not be allowed on the compacted Low Permeable Surface except for grading equipment needed to finish the surface prior to placing the Geosynthetic.

During dry weather, the compacted surface shall be continually moisture conditioned to prevent the formation of shrinkage cracks.

The finished surface shall be inspected by the CQA Inspector and geosynthetic installer's representative before installation of the geosynthetic. Acceptance of the finished surface shall be determined in accordance with Specification Sections 02220 - 3.12 & 3.13A and other applicable portions of the contract documents.

3.7.2 Low Permeable Soil for Type "B" Cover

The Type `B' cover shall be constructed by placing and compacting twelve inches of low permeable soil after the subgrades on the top surface of Subareas 4 & 5 have been prepared. Prior to placement, foreign materials and protrusions shall be removed and the surface made uniformly sloping as indicated on the Drawings.

Existing and Imported Low-Permeable Soil will be tested to meet the following criteria:

- visual classification as a clay, clayey silt, silty clay per ASTM D2488
- Plasticity Index greater than 10 (ASTM D4318)
- 75 percent or greater passing the No. 200 sieve size
- for Imported Low Permeable Soil, not more than 5 percent gravel present. Maximum rock size may be 1" in diameter if material is to be placed in the top 6" lift against the liner. If the material is to be used in the bottom 6" lift, maximum rock size may be as much as 3" in any dimension.
- for Existing Low Permeable Soil that is reclaimed for reuse from interim cover soils or left in place, not more than occasional gravel can be present (i.e., not more than 15 percent retained on the No. 4 sieve). Maximum rock size may be 3" in any dimension.

Low Permeable Soil delivered to the Subarea 4 & 5 Closure area, will be visually inspected by the Resident Geotechnical CQA Firm. Material which is outside the above criteria will be rejected. Rejected materials shall be disposed of in Subarea 4 by the Contractor at the Contractor's Expense. The CQA Firm may also reject materials that contain excessive free water. Contractor must utilize all suitable existing Low Permeable Soil removed from Subareas 4 & 5 prior to importing Low Permeable Soil from off-site or from a stockpile on-site containing low permeable soil.

The Low Permeable Soil shall be placed and compacted using the following procedure:

1. The Low Permeable Soil shall consist of clods no greater than 1.5-inches in the largest dimension. If larger clods are present, the Soil shall be repeatedly pulverized using a farm type disc, rototiller, or other appropriate means to meet the size requirement.

2. Prior to compaction the Geotechnical CQA Firm will measure moisture content of the placed Low Permeable Soil to verify soils are within the required moisture range. Test frequency will be at least four (4) tests per acre per lift conducted in accordance with ASTM D2216. Additional moisture content tests shall be conducted as deemed necessary by the Geotechnical CQA Firm. The moisture content of the soil shall be adjusted to be within a range of 2 percent below optimum to 3 percent above optimum based on ASTM D698 (standard Proctor). Moisture conditioning of the placed Low-Permeable Soil shall be conducted by scarifying and/or air-drying if too wet, or by scarifying and wetting if too dry.

3. Compaction shall be accomplished using a medium weight roller greater than 30,000 pounds with penetrating feet greater than 6-inches long. The roller shall provide uniform compaction. Vibratory action shall not be used. The specific roller used for compacting the Type 'B' cover shall be approved by the Geotechnical CQA Firm in advance of the work.

4. The Type `B' cover shall be constructed in two 6-inch finish thickness lifts. The material used in the top lift must conform to the specification for Imported Low Permeable Soil with a maximum rock size of 1" in diameter to protect the liner. The material shall be placed in successive horizontal layers and compacted to the 6-inch thickness as required. Compaction testing will be conducted by the Resident Geotechnical CQA Firm at the frequency indicated in above item 2. No additional lift shall be placed until the previous lift has passing density test results within the specified moisture content range. Any areas showing failed test results shall be reconditioned for moisture content (if required), recompacted and retested until failed area is in compliance with Specifications. Each layer shall be compacted to the specified requirement before the overlying lift is placed.

5. Each layer shall be compacted to not less than 95 percent of the standard Proctor maximum dry density. Placement and compaction shall be observed by the Geotechnical CQA Firm. Compaction will be verified by the Geotechnical CQA Firm. The compacted soil shall be tested by the Geotechnical CQA Firm at a minimum of four (4) soil density/moisture tests per acre per lift, or more frequently as deemed necessary by the Geotechnical CQA Firm. During density testing, periodic compaction "check point" tests will be performed in the field laboratory to verify that the appropriate compaction curves are being used for the various types of Low-Permeable Soils.

General construction traffic shall not be allowed on the compacted Low Permeable Surface except for grading equipment needed to finish the surface prior to placing the Geosynthetic. During dry weather, the compacted surface shall be continually moisture conditioned to prevent the formation of shrinkage cracks.

The finished surface shall be inspected by the CQA Inspector and geosynthetic installer's representative before installation of the geosynthetic. Acceptance of the finished surface shall be determined in accordance with Specification Sections 02220 - 3.12 & 3.13A and other applicable portions of the contract documents.

3.7.3 Low Permeable Soil for Type "C" Cover

The Type `C' cover shall be constructed by compacting the in-place Existing Low Permeable Soil after the Topsoil has been removed. Prior to compaction, foreign materials and protrusions shall be removed and the surface made uniformly sloping. The surface shall be free from angular rocks, roots, grass and vegetation. The thickness and suitability of in-place Existing Low Permeable Soil shall be determined using depth probes and visual observation as described in Section 3.1.1.

Compaction shall be accomplished using a multi-tired pneumatic roller weighing between 10,000 and 20,000 pounds. The roller shall provide uniform compaction, work well on a slope, and leave a relatively smooth surface. Vibratory action shall not be used. The specific roller used for compacting the Type 'C' cover shall be approved by the Resident Geotechnical CQA Firm in advance of the work.

Compaction will be observed by the Resident Geotechnical CQA Firm. The Low Permeable Soil will be compacted to at least 95 percent of the standard Proctor, ASTM D698 maximum dry density. The compacted soil will be periodically tested by the Resident Geotechnical CQA Firm at a minimum of four (4) tests per acre per lift or more frequently as deemed necessary by the resident Geotechnical CQA Firm. Any areas showing failed test results shall be moisture-conditioned and/or recompacted and retested until failed area is in compliance with Specifications.

During density testing, periodic compaction "check point" tests will be performed in the field laboratory to verify that the appropriate compaction curves are being used for the Existing Low-Permeable Soil.

General construction traffic shall not be allowed on the compacted Low Permeable Surface except for grading equipment needed to finish the surface prior to placing the Geosynthetic.

During dry weather, the compacted surface shall be continually moisture conditioned to prevent the formation of shrinkage cracks.

The finished surface shall be inspected by the CQA Inspector and geosynthetic installer's representative before installation of the geosynthetic. Acceptance of the finished surface shall be determined in accordance with Specification Sections 02220 and other applicable portions of the contract documents.

4. CQA FOR THE FINAL COVER

All observations, testing, problems, corrective actions, and rejection of materials shall be documented as outlined in Sections 2.2.2 and 2.2.3.

4.1. Subgrade Preparation

CQA for the Subgrade shall be carried out in accordance with Section 3.

4.2. Installation Procedures for Synthetic Components

Construction of the synthetic components making up the final cover system shall proceed in such a way that each layer is observed, tested, and approved by CQA personnel prior to covering by each subsequent layer.

4.2.1 Bentonite Mat

The following tests and inspections are to be performed by the CQA inspectors for the Bentonite mat:

- Review all required submittals.
- Visual inspection of material after receipt on-site, in accordance with Receiving Inspection Form R-1. Obtain manufacturer quality control certificate for each roll of material delivered to the project site. Visual inspections shall determine l) general condition of material (e.g., apparent shipping damage), 2) product information shall be recorded (e.g. roll I.D. numbers, manufacturer name, date of mfr., specifications of product) and 3) storage of product in accordance with mfr. recommendations.
- Observed product damage, missing product information, non-spec. material or improper storage shall be noted on the receiving form and shall be immediately communicated to the CQA Officer. The CQA Officer shall determine the appropriate actions to take to resolve the issue (e.g. rejection, request for contractor review and action, conditional acceptance).
- Full-time inspection of installation in accordance with Construction Inspection Form C-3.

4.2.2 Geomembrane Cover (GC)

The tests and inspections to be performed by the CQA inspectors for the geomembrane cover are as follows:

- Review all required submittals.
- Visual inspection of material after receipt on-site, in accordance with Receiving Inspection Form R-1. Refer to paragraph 4.2.1. for additional actions and criteria.
- Full-time inspection of installation in accordance with Construction Inspection Forms C-1 and C-2.

- Identify locations for and observe all destructive field testing of seam samples taken from installed sections of GC. Refer to next paragraph for criteria to determine destructive seam test locations. Review daily reports of all Contractors field and laboratory testing. CQA Officer will arrange for one independent test of destructive test samples, including material thickness, for every ten destructive tests performed by the Contractor. Results of independent tests will be conveyed to the Contractor within two working days after the test patch was cut from the installed geomembrane.
- Destructive test locations shall be selected by the CQA Inspector based on one or more of the following: 1) rate of testing in Specification Section 02272 - 1.7.3.A (first paragraph), 2) observed seam sections which appear to be of questionable quality (e.g. panel edge overlap excess or deficit, "burn through", bunching of panel edge along seam), 3) marginal seaming conditions observed (e.g., presence of light mist/moisture, high or low ambient temperatures).

4.2.3 Geonet Composite

The following tests and observations shall be performed by the CQA Inspectors for Geonet Composite:

- Review all required submittals
- Visual inspection of the Geonet Composite materials after receipt on-site, in accordance with Receiving Inspection Form R-1. Refer to paragraph 4.2.1. for additional actions and criteria.
- Ensure that liner has been inspected, tested and approved before covering with Geonet Composite.
- Full-time inspection of installation in accordance with Construction Inspection Form C-4.

4.2.4 Liner System Penetrations

Work associated with pipe and other penetrations of the cover system (GC, Bentonite Mat and Geonet Composite) shall be observed to assure that the proper materials are used and all construction requirements are met.

4.3. Type 1 Sand

4.3.1 Placement and Compaction

Type 1 Sand will be obtained from existing stockpiled sources located at Subarea 5A and the PLC, St. Johns Landfill. The sand at these stockpiles was tested during initial placement and is in compliance with the Specifications for Type 1 Sand.

Placement of the Type 1 Sand shall be observed on a full-time basis by the CQA Inspector. Type 1 Sand that is mixed with non-suitable materials such as Subgrade Embankment, refuse, and organic matter during excavation and hauling shall be rejected based on visual observation. CQA

inspector will ensure that the underlying geosynthetic is not damaged by rocks, placement techniques or excessive folding of the liner.

Proposed placement methods and compaction equipment shall be reviewed and pre-approved by CQA staff in accordance with required results noted in Specification Section 02220

4.3.2 Protection of the Underlying Geosynthetic Liner

The in-place thickness and satisfactory condition of the underlying geosynthetic shall be observed and documented by the CQA Inspector with careful hand excavations down to the geosynthetic. The frequency of excavations shall be no less than four (4) per acre. If warranted, an equivalent means of determining in-place thickness of sand and underlying geosynthetic condition may be utilized by the CQA Inspector after review and approval by the CQA Officer.

If Type 1 Sand layer is less than the required thickness, or if damage or disturbances of the underlying geosynthetic line system is observed, then three (3) similar excavations shall be performed around the deficiency to define the extent of the deficient area. The Contractor shall increase the thickness of deficient sand areas by filling with Type 1 Sand in accordance with the Specifications.

4.4 Topsoil

A Qualified soil scientist must determine a) if the texture and nutrient content of existing and imported topsoil is suitable for sustaining growth of the proposed cover crops; and b) any soil texture adjustment and/or fertilizer needs.

5. CQA FOR THE GAS AND CONDENSATE COLLECTION SYSTEMS

5.1 Preconstruction Inspections

Prior to the system installation, the CQA Inspector shall review all required submittals. The CQA Inspector will inspect gas and condensate collection system materials for the following items.

- Manufacturer's identification to verify the proper material and equipment was received.
- Cuts, gouges, or other damage from handling equipment or poor packaging.
- Curvature or deterioration due to thermal expansion or sunlight.

5.2 Construction Inspections

5.2.1 Pipe Installation

Inspections will be performed by CQA Inspectors to verify the following:

- That the pipe material and size conforms to the Specifications.
- That the pipe is installed in accordance with the Drawings and Specifications.
- That no obstructions or debris are left in the pipe prior to connection.
- Verify that the Contractor has prepared and implemented a Health and Safety Plan that addresses all health concerns related to fabricating and installing the gas and condensate collection manifold.
- Verify that the crew which will be performing the work has the proper certifications and/or experience.
- Verify that all piping is leak tested according to the Specifications.
- Verify that the Contractor has cleaned up his work area.

5.2.2 Gas Well Drilling

CQA Inspectors will verify that:

- The driller has prepared and will implement a Health and Safety Plan that addresses all health concerns related to drilling and completing of the gas extraction wells.
- All crew personnel have the proper certifications and experience to do their assigned tasks.
- All materials used are in general conformance with the Drawings and Specifications and approved submittals.
- All work is performed in general accordance with the Drawings and Specifications.
- The drill rig and other equipment including casing, auger, and cable tool bit is decontaminated if required.

5.3 Construction Inspections for the Remote/Condensate Pump Station

CQA Inspectors will verify that:

- The Contractor has prepared and implemented a Health and Safety Plan that addresses all health concerns related to fabricating and installing the the Pump Stations.
- The crew which will be performing the work has the proper certifications and/or experience.
- The materials and equipment to be used in the construction of the Pump Stations meet the Specifications and have been approved by the Engineer.
- All equipment and piping are installed in general according to the Drawings and Specifications.
- All piping and "gas containing" equipment is leak tested according to the Specifications.
- The Contractor has cleaned up his work area.
- Equipment manufacturers have certified the installations are correct prior to start-up, where appropriate.
- All equipment, valves, and piping perform in accordance with the Specifications, during and after start-up.

5.4 Gas and Condensate Collection System Start-Up Procedures

5.4.1 Landfill Gas Manifold

The following procedures must be followed:

- Walk along the entire LFG manifold and verify that all trench end valves are open, and all in-line isolation valves are open or closed as indicated on the Plans.
- Prepare the condensate extraction manifold as described in Section 5.4.3.

5.4.2 Perimeter Gas Extraction Trenches and Vertical Gas Extraction Wells

The following are the start-up procedures for initial operation of new gas extraction trenches:

- With the LFG manifold under full vacuum, adjust the throttling valve at the trench or well head to ambient or "O" gauge pressure.
- Operate and monitor the individual trenches and wells as described in the Operations and Maintenance Manual.

5.4.3 Condensate Extraction Manifold

Before applying a vacuum to the LFG manifold system, each vacuum valve station between the LFG manifold and the condensate extraction manifold should be checked to verify that all valves are open, to allow condensate to flow from the condensate header to the LFG header. The vacuum valve will create a seal between the two manifolds to prevent landfill gas from the LFG header from being sucked into the condensate extraction manifold. A vacuum can now be induced on the LFG manifold, and condensate will drain to the condensate extraction manifold.

6. SPECIALTY INSPECTION (CQA) FORMS

The forms are provided to indicate the checks to be made for inspection. The format of the inspection forms may be modified by the CQA Officer. However, the revised form must include all checks and information contained in the original form.

LIST OF FORMS

RECEIVING INSPECTION

R-1 Geomembrane/Bentonite Mat/Geonet Composite

CONSTRUCTION INSPECTION

C-1 Geomembrane - Destructive Test Log

C-2 Geomembrane - Panel Form

C-3 Bentonite Mat

C-4 Geonet Composite

C-5 Type I Sand Cover

C-6 Topsoil Placement

PROBLEM IDENTIFICATION AND CORRECTIVE MEASURES REPORT

ATTACHMENT D

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 _____, unless terminated or extended as provided in this Agreement.

2. Scope of Work. Contractor shall provide all services and materials specified in the attached "Exhibit 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 amount(s), manner and at the time(s) specified in the Scope of Work for a maximum sum not to exceed _____Dollars ($_____).

4. Insurance.

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

Exhibit A

Scope of Work

1. Statement of Work.

2. Payment and Billing.

   Contractor shall provide the above services at the hourly rate of $___ for a maximum price not to exceed ___ THOUSAND, ___ HUNDRED AND ___ DOLLARS ($___.00). In the event Metro wishes for Contractor to provide services beyond those which can be accomplished for the maximum price, Contractor shall provide such services pursuant to amendment at the rate of $___ per hour.

   The maximum price includes all fees, costs and expenses of whatever nature. Each of Metro's payments to Contractor shall equal the percentage of the work Contractor accomplished during the billing period. Contractor's billing statements will include an itemized statement of work done and expenses incurred during the billing period, will not be submitted more frequently than once a month, and will be sent to Metro, Attention Solid Waste Department. Metro will pay Contractor within 30 days of receipt of an approved billing statement.

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STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 95-2111 FOR THE PURPOSE OF AUTHORIZING ISSUANCE OF A REQUEST FOR PROPOSALS FOR CONSTRUCTION QUALITY ASSURANCE SERVICES REQUIRED FOR THE CLOSURE OF THE ST. JOHNS LANDFILL AND AUTHORIZING THE EXECUTIVE OFFICER TO EXECUTE A CONTRACT WITH THE MOST QUALIFIED PROPOSER

Date: March 7, 1995 Presented by: Jim Watkins

PROPOSED ACTION

Adopt Resolution No. 95-2111.

FACTUAL BACKGROUND AND ANALYSIS

Metro began construction activities for the closure of the St. John's Landfill in late 1991 with a soil procurement project. This was followed by two additional projects which resulted in final closure of Subareas 1, 2, and 3. Construction management services for these projects were provided by the engineering firms who prepared the construction plans and specifications for the projects under a contract entered into in 1990. In 1994, the Metro Council approved a change order to the design and construction management contract to fund construction management services through the completion of Subarea 3. At that time, Staff indicated that open competitive proposals would be requested for these services for Subareas 4 and 5. The engineering firm which designed the closure improvements will be retained to provide interpretation of the construction documents.

Metro has assumed as much of the responsibility for construction quality assurance at St. Johns Landfill as staff levels permit. There still remains a need for specialized engineering services to:

- Inspect off-site borrow sources for imported soils
- Inspect imported soils for compliance with specifications
- Evaluate existing topsoil and low permeable soil on St. Johns Landfill to decide how much can be recycled
- Inspect subgrade embankment application and compaction
- Inspect application and compaction of low permeable soil layer to ensure that it complies with DEQ mandates
- Inspect and test plastic geomembrane to detect any damage and leaking seams
- Inspect soil layers above the geomembrane
- Inspect the construction of the gas collection system
- Inspect construction of the condensate collection system
- Inspect the construction of the stormwater collection system

- Review submittals from the construction contractor
- Evaluate proposals submitted by construction contractor for changes in the work
- Prepare voluminous construction certification report required by DEQ

The request for proposals prepared for this work requests information on the experience and qualifications of the firms as well as the cost of their services. The proposals received will be evaluated based on the firm's qualifications, firm and staff experience on similar projects, and cost.

BUDGET IMPACT

The construction management services for the St. Johns Landfill for the current fiscal year can be accomplished within the $550,000 budgeted for engineering services for the 1994-1995 fiscal year. Similar amounts have been proposed for the coming fiscal year. The authorization for work after June 30, 1995 will be determined by the Metro Council through the annual budget process.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 95-2111.

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