

BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF AUTHORIZING)	RESOLUTION NO. 88-959
EXECUTION OF A CONTRACT WITH)	
SWEET-EDWARDS/EMCON, INC. FOR A)	Introduced by Rena Cusma
HYDROGEOLOGIC AND ENGINEERING)	Executive Officer
EVALUATION OF ST. JOHNS LANDFILL)	

WHEREAS, Metro's objective is to close the St. Johns Landfill using cost effective methods to responsibly manage short and long term adverse impacts on health, safety, and the environment; and

WHEREAS, It is necessary to evaluate the impact of St. Johns Landfill on the environment and develop environment management options to facilitate proper closure; and

WHEREAS, Sweet-Edwards/EMCON, Inc. has been selected by an interagency evaluation committee as the preferred vendor after responding to a Request for Qualifications and Request for Proposals; now therefore,

BE IT RESOLVED,

That the Council of the Metropolitan Service District authorizes the Executive Officer to execute a contract in an amount not to exceed \$295,290 with Sweet-Edwards/ EMCON, Inc. to perform a hydrogeologic and engineering evaluation of St. Johns Landfill in connection with the closure process.

ADOPTED by the Council of the Metropolitan Service District this 28th day of July, 1988.


Mike Ragsdale, Presiding Officer



GRANT/CONTRACT SUMMARY

METRO METROPOLITAN SERVICE DISTRICT

GRANT/CONTRACT NO. 88-6-713SW BUDGET CODE NO. 34 03 00 8640 00000

FUND: Capital DEPARTMENT: Solid Waste (IF MORE THAN ONE) _____

SOURCE CODE (IF REVENUE) _____

INSTRUCTIONS

1. OBTAIN GRANT/CONTRACT NUMBER FROM CONTRACTS MANAGER. CONTRACT NUMBER SHOULD APPEAR ON THE SUMMARY FORM AND ALL COPIES OF THE CONTRACT.
2. COMPLETE SUMMARY FORM.
3. IF CONTRACT IS —
 - A. SOLE SOURCE, ATTACH MEMO DETAILING JUSTIFICATION.
 - B. UNDER \$2,500, ATTACH MEMO DETAILING NEED FOR CONTRACT AND CONTRACTOR'S CAPABILITIES, BIDS, ETC.
 - C. OVER \$2,500, ATTACH QUOTES, EVAL. FORM, NOTIFICATION OF REJECTION, ETC.
 - D. OVER \$50,000, ATTACH AGENDA MANAGEMENT SUMMARY FROM COUNCIL PACKET, BIDS, RFP, ETC.
4. PROVIDE PACKET TO CONTRACTS MANAGER FOR PROCESSING

1. PURPOSE OF GRANT/CONTRACT Hydrogeologic and engineering evaluation of St. Johns Landfill
in connection with the landfill closure process

2. TYPE OF EXPENSE PERSONAL SERVICES LABOR AND MATERIALS PROCUREMENT
 PASS THROUGH AGREEMENT INTER-GOVERNMENTAL AGREEMENT CONSTRUCTION
 OTHER

OR

TYPE OF REVENUE GRANT CONTRACT OTHER

3. TYPE OF ACTION CHANGE IN COST CHANGE IN WORK SCOPE
 CHANGE IN TIMING NEW CONTRACT

4. PARTIES METRO & SWEET-EDWARDS/EMCON, INC.

5. EFFECTIVE DATE July 29, 1988 TERMINATION DATE June 30, 1989
 (THIS IS A CHANGE FROM _____)

6. EXTENT OF TOTAL COMMITMENT: ORIGINAL/NEW \$ 295,290.00
 PREV. AMEND _____
 THIS AMEND _____
 TOTAL \$ 295,290.00

7. BUDGET INFORMATION

A. AMOUNT OF GRANT/CONTRACT TO BE SPENT IN FISCAL YEAR 1988-89 \$ 295,290.00

B. BUDGET LINE ITEM NAME CAP/St. Johns Close AMOUNT APPROPRIATED FOR CONTRACT \$ 323,000.00

C. ESTIMATED TOTAL LINE ITEM APPROPRIATION REMAINING AS OF July 1, 1988 \$ 323,000.00

8. SUMMARY OF BIDS OR QUOTES (PLEASE INDICATE IF A MINORITY BUSINESS ENTERPRISE)

Sweet-Edwards/EMCON, inc. \$ 292,100.00 MBE
 SUBMITTED BY AMOUNT

SCS Engineers \$ 288,803.00 MBE
 SUBMITTED BY AMOUNT

_____ \$ _____ MBE
 SUBMITTED BY AMOUNT

9. NUMBER AND LOCATION OF ORIGINALS Metro Solid Waste Dept. and Construction Contracts Div.,
Sweet-Edwards/EMCON, INC.

10. A. APPROVED BY STATE/FEDERAL AGENCIES? YES NO NOT APPLICABLE

B. IS THIS A DOT/UMTA/FHWA ASSISTED CONTRACT YES NO

11. IS CONTRACT OR SUBCONTRACT WITH A MINORITY BUSINESS? YES NO

IF YES, WHICH JURISDICTION HAS AWARDED CERTIFICATION _____

12. WILL INSURANCE CERTIFICATE BE REQUIRED? YES NO

13. WERE BID AND PERFORMANCE BONDS SUBMITTED? YES NOT APPLICABLE

TYPE OF BOND _____ AMOUNT \$ _____

TYPE OF BOND _____ AMOUNT \$ _____

14. LIST OF KNOWN SUBCONTRACTORS (IF APPLICABLE)

NAME Thomas/Wright Inc. (WBE) SERVICE Engineering & Surveying MBE

NAME Hokkaido Drilling (DBE) SERVICE well drilling MBE

NAME _____ SERVICE _____ MBE

NAME _____ SERVICE _____ MBE

15. IF THE CONTRACT IS OVER \$10,000

A. IS THE CONTRACTOR DOMICILED IN OR REGISTERED TO DO BUSINESS IN THE STATE OF OREGON?

YES NO

B. IF NO, HAS AN APPLICATION FOR FINAL PAYMENT RELEASE BEEN FORWARDED TO THE CONTRACTOR?

YES DATE _____ INITIAL _____

16. COMMENTS:

Proposal promises 11% DBE and 5% WBE participation. Contract amount exceeds proposal amount because of additional items added to better carry out the project.

GRANT/CONTRACT APPROVAL

INTERNAL REVIEW

DEPARTMENT HEAD

FISCAL REVIEW

BUDGET REVIEW

CONTRACT REVIEW BOARD

(IF REQUIRED) DATE _____

1. _____
COUNCILOR

2. _____
COUNCILOR

3. _____
COUNCILOR

COUNCIL REVIEW

(IF REQUIRED)

DATE _____

LEGAL COUNSEL REVIEW AS NEEDED:

A. DEVIATION TO CONTRACT FORM _____

B. CONTRACTS OVER \$10,000 D. Flanagan

C. CONTRACTS BETWEEN GOVERNMENT AGENCIES _____



METRO

2000 S.W. First Avenue
Portland, OR 97201-5398
503/221-1646

Memorandum

Date: July 20, 1988
To: Metro Council
From: Marie Nelson, Clerk of the Council
Regarding: RESOLUTION NO. 88-959

The contract documents have been distributed to the Council. Other parties wanting copies of the documents may contact the Council Clerk.



METRO

2000 S.W. First Avenue
Portland, OR 97201-5398
503/221-1646

Memorandum

Agenda Item No. 8.3, 8.4

Meeting Date July 28, 1988

Date: July 20, 1988

To: Metro Council

From: Councilor Gary Hansen ^{GH.}
Chair, Council Solid Waste Committee

Regarding: COUNCIL SOLID WASTE COMMITTEE REPORT
ON JULY 28, 1988, COUNCIL MEETING AGENDA ITEMS

Agenda Item 8.3

Consideration of Resolution No. 88-957, for the Purpose of Authorizing Change Order No. 7 to the Contract with Browning Ferris Industries to Dispose of Contaminated Yard Debris

Committee Recommendation

The Solid Waste Committee recommends Council adoption of Resolution No. 88-957. This action taken July 19, 1988.

Discussion

Approximately 45,000 cubic yards of contaminated yard debris has been stockpiled at the St. Johns Landfill and the DEQ has notified Metro that the material must be processed or land-filled. To recycle the material would cost approximately \$1,174,950. The estimated cost to landfill it is \$228,150.

Councilor Kirkpatrick stated she would like to see the yard debris recycled. Councilor Hansen pointed out that the "contamination" is not due to hazardous materials but things like rocks that make it difficult to recycle.

The Committee voted 3 to 1 to recommend Council adoption of Resolution No. 88-957. Voting aye: Garnder, Hansen and Kelley. Voting nay: Kirkpatrick.

Agenda Item 8.4

Consideration of Resolution No. 88-959, for the Purpose of Authorizing the Executive Officer to Execute a Contract with Sweet-Edwards/EMCON, Inc. for Hydrogeologic and Engineering of the St. Johns Landfill.

Memorandum
July 20, 1988
Page 2

Committee Recommendation

The Solid Waste Committee recommends Council adoption of Resolution No. 88-959. This action taken July 19, 1988.

Discussion

The purpose of the contract is to investigate the impact of the St. Johns Landfill on the surrounding environment and to develop the environmental management options with costs for public discussion and decision by Metro.

The Committee voted 4 to 0 to recommend Council adoption of Resolution No. 88-959. Voting aye: Gardner, Hansen, Kelley and Kirkpatrick.

RB/gl
9913C/D4

CONSIDERATION OF RESOLUTION NO. 88-959 AUTHORIZING EXECUTION OF A CONTRACT WITH SWEET-EDWARDS/EMCON, INC. FOR A HYDROGEOLOGIC AND ENGINEERING EVALUATION OF ST. JOHNS LANDFILL IN CONNECTION WITH THE CLOSURE PROCESS

Date: July 1, 1988

Presented by: Rich Owings
Dennis O'Neil

FACTUAL BACKGROUND AND ANALYSIS

I. Purpose of Contract

The purpose of this contract is first, to investigate the impact of St. Johns Landfill on the surrounding environment, especially the quality of ground and surface water, and, second, to develop environmental management options with costs for public discussion and decision by Metro.

The consultant team should determine the dimensions of any problem and then propose a range of solutions, if possible, so that relative costs and benefits can be weighed.

II. Introduction

Modern methods of sanitary landfill operation involve not only burying solid waste but using the waste itself to build a structure designed to reduce negative impacts on health, safety, and the environment. Closing a sanitary landfill means the process of finishing the construction of this designed structure so that it best performs its protective function. In the case of St. Johns Landfill, closure means finishing the construction of an old landfill, much of which was built before current environmental standards were in effect.

Oregon State Law requires that the permit holder apply to renew a solid waste permit at least five years before the proposed closure of a land disposal site. The applicant must provide proof of satisfactory financial assurance to cover the cost to install and operate all environmental protection and monitoring systems during closure and for ten or more years after closure.

To comply with those requirements, Metro submitted on January 9, 1986, a draft closure and financial assurance plan to the Department of Environmental Quality (DEQ) staff for comment. After comments were received from DEQ in late October and November 1986, Metro submitted on December 16, 1986 a revised closure and financial assurance plan with its formal application for a closure permit. The plan estimated that costs associated with closure and post closure activities would total 5.8 million dollars. All but \$92,000 would come from Metro.

Although DEQ staff initially indicated that the application appeared complete, it pointed out that the application would need modification after the City of Portland completed its end use plan in June 1987. Also, during the succeeding months a report called Smith and Bybee Lakes Environmental Studies raised questions about the hydrogeology under St. Johns Landfill and the landfill's impact on the environment.

On October 29, 1987 a letter from the DEQ director notified Metro that additional information would be required. Among the information requested was a complete review of ground and surface water monitoring as well as the sampling of selected groundwater monitoring wells for priority pollutants. It also requested information about landfill gas facilities because the City of Portland end use plan specified public access to St. Johns Landfill. Finally, the letter pointed out that leachate seeps are a contributor to surface water pollution. It stated that the closure permit would require highest and best practicable treatment of leachate discharge.

The Metro work plan for closure responds to this request and sets forth a schedule which includes a draft report in December 1988 to present initial results of an environmental impact investigation. Another draft report would present environmental management options and costs at the end of January 1989. Following a public review process a final report would be issued in April 1989 and be included in a revised closure plan and financial assurance package sent to the Metro Council in May 1989. After Council review, a submission would be made to DEQ in June 1989. After DEQ review implementation would occur during 1989-1991. The draft DEQ closure permit lists the above dates in a compliance schedule. This contract is for the above reports which cover the environmental impact investigation and management options.

III. Contractor Selection Process

The objective was to give proposers enough hope of success to stimulate them to put in maximum research time and money to submit high quality, detailed proposals. Accordingly, a Request for Qualifications (RFQ) was issued at the end of April 1988. Nine organizations responded to the RFQ. Five organizations were selected as most qualified to receive a Request for Proposal

(RFP). These were CH₂M Hill, Dames & Moore, Parametrix, SCS Engineers, and Sweet-Edwards/EMCON, Inc. Evaluation was by an interagency committee consisting of Randy Albright, hydrogeologist for DEQ; Robert Martin, Engineering Manger for Metro; Dan Miller, engineer for the City of Portland Bureau of Environmental Services; and Dennis O'Neil, Senior Analyst for Metro.

On June 1, 1988 three firms submitted proposals. These were Dames & Moore (\$287,205), SCS Engineers (\$288,903), and Sweet-Edwards/EMCON, Inc. (\$292,100). However, the Dames & Moore proposal was disqualified because it did not comply with the Metro DBE/WBE Ordinance (87-231).

The above mentioned evaluation committee interviewed both SCS Engineers and Sweet-Edwards/EMCON, Inc. The committee recommends Sweet-Edwards/EMCON, Inc. based upon criteria weighted at 50 percent for quality of method, 30 percent for project team experience and 20 percent for cost.

After negotiating with the contractor and evaluating public concerns, Metro staff suggests the addition of slough sediment monitoring. This addition would raise the total maximum amount of the contract to \$295,290.

Executive Officer's Recommendation

The Executive Officer recommends adoption of Resolution No. 88-959.

PERSONAL SERVICES AGREEMENT

THIS AGREEMENT dated this _____ day of _____ 1988, is between the METROPOLITAN SERVICE DISTRICT, a municipal corporation, hereinafter referred to as "METRO," whose address is 2000 S.W. First Avenue, Portland, Oregon 97201-5398, and SWEET-EDWARDS/EMCON, INC., hereinafter referred to as "CONTRACTOR," whose address is 5755 S.W. Jean Road, Lake Oswego, OR 97034, for the period of July 15, 1988, through June 30, 1989, and for any extensions thereafter pursuant to written agreement of both parties.

W I T N E S S E T H :

WHEREAS, This Agreement is exclusively for Personal Services;

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

CONTRACTOR AGREES:

1. To perform the services and deliver to METRO the materials described in the Scope of Work attached hereto;
2. To provide all services and materials in a competent and professional manner in accordance with the Scope of Work;
3. To comply with all applicable provisions of ORS Chapters 187 and 279, and all other terms and conditions necessary to be inserted into public contracts in the state of Oregon, as if such provisions were a part of this Agreement;
4. To maintain records relating to the Scope of Work on a generally recognized accounting basis and to make said records available to METRO at mutually convenient times;

5. To indemnify and hold METRO, its agents and employees 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 CONTRACTOR'S negligent performance of this Agreement and CONTRACTOR'S performance of this Agreement where METRO is liable or alleged to be liable because of its employment of CONTRACTOR, with any patent infringement arising out of the use of CONTRACTOR'S designs or other materials by METRO and for any claims or disputes involving subcontractors. CONTRACTOR'S duty to hold harmless and indemnify METRO under this Agreement shall be limited to the limits of CONTRACTOR'S insurance. This Agreement provision does not waive any indemnity available under Oregon Law.

6. The CONTRACTOR agrees to provide the following minimum insurance during the term of this Agreement:

a. \$5,000,000 general liability -- combined single limits, bodily injury and property damage;

b. \$2,000,000 automotive liability -- combined single limits, bodily injury and property damage;

c. \$1,000,000 professional liability -- aggregate limits, and, to name METRO as an additional insured on the policies listed above to which it may be named and to provide METRO with certificates of insurance on all policies.

7. To comply with any other "Contract Provisions" attached hereto as so labeled.

METRO AGREES:

1. To pay CONTRACTOR for services performed and materials delivered in the maximum sum of TWO HUNDRED NINETY FIVE THOUSAND TWO HUNDRED NINETY and NO/100THS (\$295,290.00) DOLLARS and

in the manner and at the time designated in the Scope of Work; and

2. To provide full information regarding its requirements for the Scope of Work.

BOTH PARTIES AGREE:

1. That METRO may terminate this Agreement upon giving CONTRACTOR five (5) days written notice without waiving any claims or remedies it may have against CONTRACTOR;

2. That, in the event of termination, METRO shall pay CONTRACTOR for services performed and materials delivered prior to the date of termination; but shall not be liable for indirect or consequential damages;

3. That, in the event of any litigation concerning this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and court costs, including fees and costs on appeal to an appellate court;

4. That this Agreement is binding on each party, its successors, assigns, and legal representatives and may not, under any condition, be assigned or transferred by either party; and

5. That this Agreement may be amended only by the written agreement of both parties.

SWEET EDWARDS/EMCON, INC.

METROPOLITAN SERVICE DISTRICT

By: _____

By: _____

Date: _____

Date: _____

DO/sm
9747C/542

SCOPE OF WORK

ST. JOHNS LANDFILL WATER QUALITY IMPACT INVESTIGATION AND LEACHATE MANAGEMENT OPTIONS

The goal of this project is to determine the best method to significantly limit environmental impacts of St. Johns Landfill on ground and surface water within the framework of socially acceptable costs. To further this goal Metro expects the Contractor shall provide services and materials adequate to achieve the objectives listed below:

OBJECTIVES

Phase One - Assess Existing Conditions, Precisely Define Problems and Gather Data for the Design of Leachate Management Options.

1. Evaluate the existing groundwater monitoring system (equipment and procedures) and improve (including additional well installation if necessary) so that:
 - a. It can differentiate among groundwater contamination caused by the St. Johns Landfill, contamination caused by other sources, and background water quality.
 - b. It can be used to map the leachate mound and determine the hydraulic gradient within the landfill and in the shallow and deep aquifer.
 - c. It can be used to determine the concentrations of priority pollutants in the perimeter wells with reasonable accuracy.
 - d. Pollutants from the landfill will not be introduced into the underlying aquifer through the monitoring wells themselves.
2. Develop a recommendation and specifications for abandoning inadequate monitoring wells.
3. Determine the vertical and horizontal hydraulic conductivity of material which represents the sediments underlying the solid waste and the material between the solid waste and the surrounding sloughs.

4. Estimate and explain graphically, the quantity of liquid entering and potentially seeping from the solid waste now and after St. Johns Landfill receives all final cover. Show how these values vary during the wet and dry seasons. Estimate the volume rate of flow vertically and also horizontally between the solid waste and the surrounding sloughs.
5. Assess the present and long-term impact of St. Johns Landfill on water quality in North Slough by investigating its flushing characteristics and other indicators.
6. Determine the capacity of both the material between the solid waste and sloughs and also the directly underlying sediments to attenuate representative contaminants. Determine the vertical rate of movement of representative contaminants through the sediments directly underlying the solid waste. Study the termination of the vertical movement. Estimate the quantity of representative contaminants entering the sloughs from the solid waste.
7. Determine whether there are priority pollutants in selected "D" series wells in the clay and silt sediments and the pleistocene gravels and sands. If priority pollutants are found in significant concentrations, determine whether or not these come from the waste in St. Johns Landfill.
8. Estimate the quantity of representative contaminants entering the pleistocene gravels and sands from St. Johns Landfill currently and in the next 20 years.
9. Determine the groundwater flow direction and estimate the volume rate of flow in the sand and gravel aquifer. Determine the beneficial uses of groundwater downgradient of the landfill.
10. Assess the possible current and future impact of St. Johns Landfill on ground and surface water.
11. Collect other data as necessary to determine the feasibility of major leachate management options.

Phase Two - Determine Leachate Management Options.

1. From the Oregon Department of Environmental Quality learn the regulatory requirements which will govern the management of leachate from St. Johns Landfill.
2. Develop conceptual designs and cost estimates accurate to +50 percent and -30 percent for construction and 20-year operation and maintenance for up to three options to mitigate adverse impacts on groundwater and surface water quality. Use graphics to show the relationship between options and efficiency of leachate reduction and/or collection.

The specific Tasks to be performed by Contractor during Phases One and Two of this contract are detailed below.

Phase One - Existing Conditions/Problem Definition

Contractor shall perform the following Tasks:

- Task 1.** Conduct a detailed review of all available existing information about St. Johns Landfill pertinent to all tasks. This information shall include all ground and surface water data, the EPA Dioxin Study, and the Smith and Bybee Lakes study. Rate this information based on the following criteria and give the reason for this rating.
- a. Technically sound information that can, with a high degree of confidence, be incorporated into this study.
 - b. Information that may be of significant value to this study but must be confirmed.
 - c. Information that cannot be considered technically sound and that is not suitable for incorporation into this study.
- Task 2.** Review well logs and water rights records for the area down gradient from the landfill between the landfill and the Columbia and/or Willamette Rivers. Review local, state, and federal agency files for information about any leaks, spills, waste storage or disposal facilities, underground storage tanks, or other potential sources of surface or groundwater

contamination located adjacent to or upgradient of the landfill in both the overbank sediment aquifer and underlying Pleistocene sand and gravel aquifer. Conduct field surveys of representative wells and/or contaminant sources. Hold discussions with area residents, business owners, facility operators or others knowledgeable about local water use/contaminant sources.

Task 3. Drill, sample, construct at least five groundwater monitoring wells in the upper aquifer beneath the fine grained overbank deposits. Monitoring well will be installed outside the limits of the solid waste and will extend at least fifteen feet into the pleistocene sand and gravel aquifer or other permeable deposits hydraulically connected to the pleistocene sand and gravel aquifer. At least one of these wells shall be a double completion well with one screened zone in the upper 15 feet of the aquifer and the second screened zone at a depth of approximately 50 feet below the top of the aquifer. Other depths may be approved by the Metro closure project manager based on actual field conditions.

Drill, sample and log, at least five groundwater monitoring wells at the boundary of the solid waste fill area. The wells shall be completed in the fined grained overbank deposits above the upper aquifer at depths of approximately twenty five to thirty feet below the estimated base of the solid waste fill, 50 feet below ground level, or other depth approved by the Metro closure project manager based on actual field conditions.

Construct all monitoring wells in compliance with Oregon Water Resources Department regulations and the objectives in this work scope. A registered professional surveyor shall survey the location and well head elevation of all new monitoring wells to a vertical accuracy of 0.01 foot and a horizontal accuracy of 0.5 foot.

Repair, flush, and develop all D series wells (shown in the attached map labeled Figure 2-1) which are not recommended to be abandoned and fit these with locking security casings, if necessary.

Of the monitoring wells shown in Figure 2-1, recommend which wells should be abandoned, giving priority and reasons. Submit to Metro specifications and procedures for abandonment suitable for contractual use.

- Task 4. During the construction of all new monitoring wells, collect representative samples of the shallow and intermediate aquifer materials and subject them to laboratory analysis to determine permeability characteristics, grain size distribution, and cation exchange capacity. Test aquifer materials in situ by performing slug tests or pumping tests on each new monitoring well.
- Task 5. Using the EPA HELP model, develop water budget calculations for the St. Johns Landfill, including estimates of seasonally variable seepage/discharge volumes. Use this information and newly generated information about permeability and attenuation characteristics of the aquifer material to estimate the potential rate, path, and extent of leachate migration out of the landfill.
- Task 6. Groundwater quality monitoring/assessment
- a. Monitor water level elevations to 0.01 feet accuracy in all new wells constructed under Tasks 2 and 3 and in those existing on site and off-site wells necessary to achieve the objectives in this Scope of Work. Monitor elevations at least monthly through June, 1989. Pressure Transducers shall be used where necessary to achieve accurate results when there is possible interference from leachate foam.
 - b. Collect water samples from all new wells constructed under Tasks 2 and 3 and from those existing on site and off-site wells necessary to achieve the objectives of this Scope of Work. One round of samples shall be collected early enough in the fall so that the analytical results will be included and interpreted in the draft report of December, 1988. A second round of samples shall be collected in the late winter or early spring but early enough so that the analytical results will be included and interpreted in the final report of April, 1989.
 - c. Water samples will be analyzed for the following groups of parameters. The specific parameters composing some classes are listed in the attached tables titled Leachate Indicators and Standard Water Well Analysis and Analytical Parameters, Priority Pollutants.

<u>Group of Parameters</u>	<u>Number of Samples</u>
Leachate Indicators and Standard Water Well Analysis	40
Priority Pollutant Metals (Filtered)	22
Drinking Water Standards	12
Volatile Organics	22
All Priority Pollutants	12

All samples collected under this task shall be handled, stored, and analyzed using methods the same as or equivalent to methods described in Proposal for St. Johns Landfill Water Quality Impact Investigation and Leachate Management Options, June 1, 1988, submitted by Sweet-Edwards/EMCON, Inc. which is incorporated by reference herein.

Task 7. Surface Water Impact Assessment

- a. Review existing information about the surface water hydraulics and quality around St. Johns Landfill and the impact of St. Johns Landfill on the surface water. Help develop a close cooperative working relationship among Metro, Sweet, Edwards/EMCON Inc., the City or Portland and its consultants for the Columbia Slough Management Plan in order to provide maximum coordination and data sharing and minimum overlap of data collection efforts.
- b. Measure cross channel flows in North Slough during different portions of the tidal cycle. Estimate through-flow volumes and flushing times for summer and winter conditions with and without the sunken barge obstruction. Evaluate the models in the Columbia Slough Management Plan for use in characterizing flow patterns and utilize these if applicable.

- c. Establish two or three sites in or near the North Slough for concurrent monitoring to augment an intensive Columbia Slough monitoring effort by the City of Portland. Monitoring shall include at least one site in the North Slough southeast of the barge obstruction and one site northwest. Monitoring parameters shall be the same as those for intensive modeling surveys for the Columbia Slough Management Plan.

Identify seep source areas along the banks of the North Slough. Collect water quality samples from at least three seep source areas on a minimum of two occasions. Monitoring parameters will be the same as those collected for the intensive surveys for the Columbia Management Plan plus additional parameters necessary to achieve the objectives of 1) providing data comparative with groundwater testing data, 2) identifying tracer contaminants including Ammonium (NH_4^+), Chloride (Cl^-), Sulfate (SO_4^-), and COD; and 3) determining whether the seepage is representative of landfill or leachate effluent.

- d. Make a series of transects of soil borings in the North Slough area including at least three transects from bankside to slough center. Each transect shall incorporate three to five cores of the sediment. Samples of these sediment cores shall be composited to one sample for each transect. These samples shall be analyzed for priority pollutant metals and the same parameters used for sediments in the sampling program for the City of Portland Columbia Slough Management Plan, if feasible. Results and interpretations shall be presented in the draft report discussed in Task 8.
- e. Review data from Task 7 a, b, c, d, monitoring/modeling from the Columbia Slough Management Plan to determine if additional hydrologic or other monitoring is necessary in the sloughs, Smith, or Bybee Lake. If additional monitoring is necessary, produce a technical memorandum to the Metro project manager. This memorandum shall include the reasons why answers to certain additional questions are important, the relative significance of these questions and answers, and the work tasks and costs necessary to obtain these answers.

Task 8. By December 15, 1988, submit to Metro 20 copies of a draft report which presents and interprets the information reviewed and collected in the above tasks in order to achieve the Phase I objectives. This report shall also include an executive summary and significant graphical representation designed to clearly communicate the most significant findings and conclusions to non-specialists. Prior to submission to Metro the contents of the report shall be reviewed by a senior review team consisting of:

- John Pacey, P.E., President, EMCON Associates
- H. Randy Sweet, C.E.G., President, Sweet-Edwards/EMCON, Inc.
- Ed Griffith, P.E., Vice President, EMCON Associates
- Timothy Spencer, Environmental Engineer, R. W. Beck and Associates

Task 9. By April 30, 1989, submit to Metro 20 copies of a final report which presents and interprets the information in the draft report supplemented with information from any continued monitoring and additional work requested by Metro. The report shall contain responses to questions and comments submitted by Metro as a result of a review of the draft report by interested parties.

Phase Two - Determination of Leachate Management Options

Contractor shall perform the following Tasks:

Task 1. When requested by Metro, meet with representatives of the Oregon Department of Environmental Quality (ODEQ) and Metro to discuss the Phase I draft report and approaches to landfill closure. Send to Metro a memorandum of understanding which achieves this objective and receive written authorization from the Metro project manager before beginning other Phase Two tasks.

Task 2. Evaluate historical waste disposal practices and cover materials to determine their impact on leachate and gas migration.

- Task 3. Determine a final grading plan for closure that limits the amount of site work, yet achieves landfill slopes which minimize leachate generation and are acceptable to regulatory agencies. This final grading plan shall include a settlement analysis based on settlement information supplied by Metro. It shall also include surface water drainage facilities and a final contour map representing the anticipated grades to be achieved after completion of all disposal operations and final cover application.
- Task 4. Evaluate landfill gas control requirements in light of proposed leachate control options and the City of Portland end use plan. Develop gas control options with conceptual designs and cost estimates.
- Task 5. Evaluate the effectiveness of final cover options for St. Johns Landfill using the EPA HELP model to predict leachate generation potential of up to three cover options. This evaluation shall include conceptual designs, estimated costs, and potential for environmental impact reduction.
- Task 6. Evaluate the effectiveness of other environmental control options besides final cover. This evaluation shall include conceptual designs, estimated costs and potential for environmental impact reduction.
- Task 7. By January 27, 1989, submit to Metro 20 copies of a draft report which presents the results of the Phase II tasks. The report shall contain an executive summary and significant graphical representation designed to clearly communicate the most significant information to non-specialist decision-makers. Prior to submission to Metro, the contents of the report shall be reviewed by the senior review team named in Task 8, Phase One.
- Task 8. By April 30, 1989, submit to Metro 20 copies of a final report which presents and interprets the information in the draft report supplemented with additional information requested by Metro. The report shall contain responses to questions and comments submitted by Metro as a result of a review of the draft report by interested parties.

Task 9. By June 30, 1989, submit to Metro one copy of all data generated during the investigation (on computer floppy disks, if possible) as well as all field notes, calculations, software, etc. needed to evaluate the data and duplicate the information supporting all options, recommendations, and conclusions in both the Phase One and Phase Two final reports.

Public and Regulatory Review Process

Contractor shall participate in up to five meetings with the public, elected officials, and regulators. Up to three meetings shall be evening meetings. Contractor shall furnish all staff and visual aids necessary to achieve a clear presentation and effectively respond to questions.

Project Management

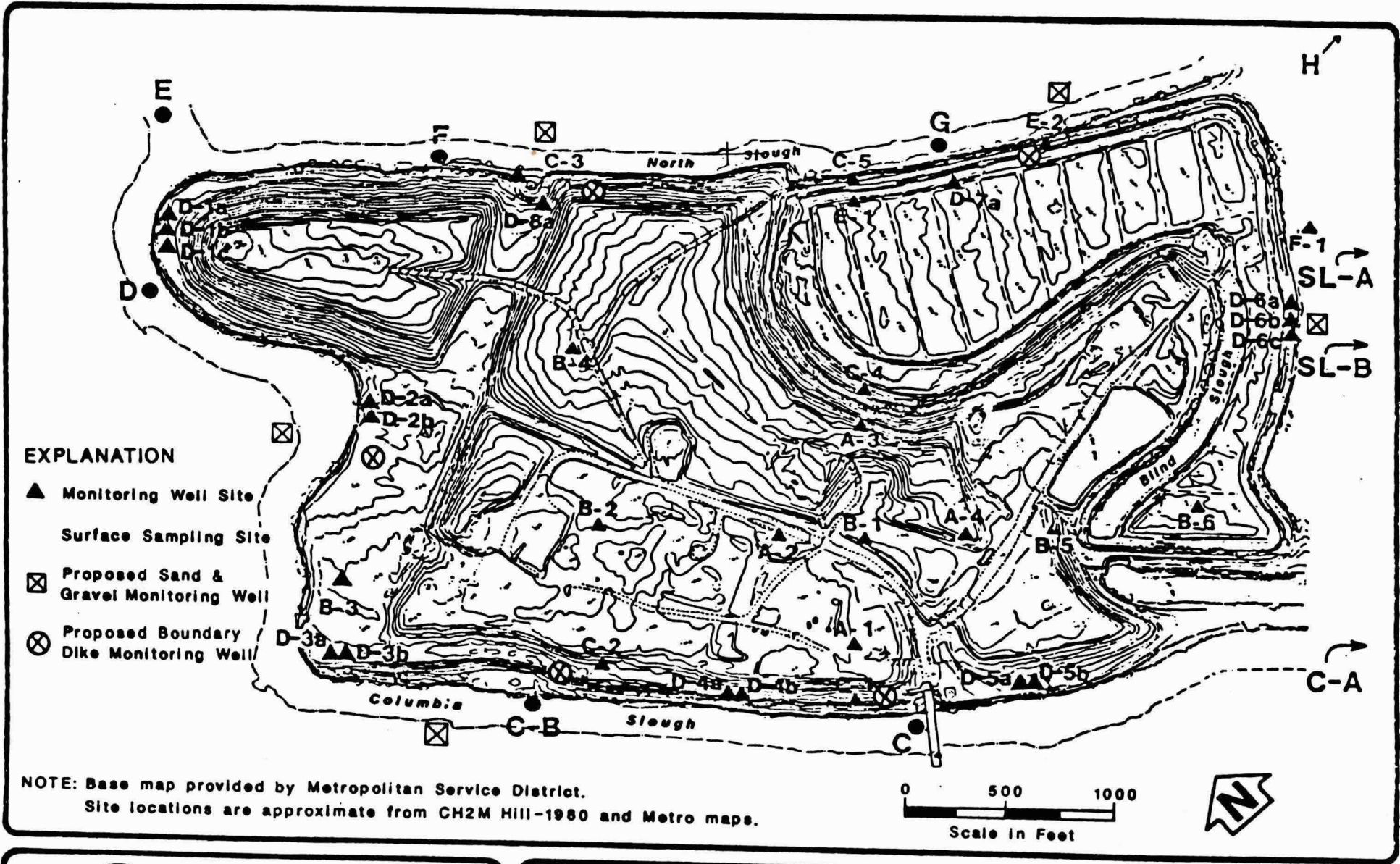

Contractor shall submit to Metro copies of biweekly computerized printouts of labor and expenses used by the contractor for internal cost control.

Contractor shall utilize the services of the persons named in the attached chart labeled Project Organization. Substitutions may not be made without prior written authorization of the Metro project manager. The approximate time commitments of key team members shall be stated in Table 3-1 attached.

Method of Payment

Contractor shall prepare itemized billings on monthly basis detailing hours spent on specific services and any allowable expenses. Hours worked shall be to the nearest one half hour. Contractors' hourly rate shall conform to the rate schedules for Sweet-Edwards/EMCON, R.A. Wright Engineering, Inc. and Hokkaido Drilling and Developing attached to and make a part of this contract. R.A. Wright Engineering and Hokkaido Drilling are Contractors' subcontractors and mention of them does not create any contractual relationship between Metro and Contractors' subcontractors. Contractor shall be solely responsible for payment of subcontractors and for work performed by subcontractors.

Allowable expenses shall include materials and services such as well construction materials, laboratory costs, rented equipment, long distance telephone charges, and copying which are reasonable and which are necessary to the performance of this agreement.

Sweet-Edwards
EMCON

METRO/ST. JOHNS LANDFILL
Proposed Monitoring Well Locations

Figure 2.1

DATE 5-27-88
 DWN. mmn
 APPR. Ruel
 REVIS. _____
 PROJECT NO. _____

**ANALYTICAL PARAMETERS
- PRIORITY POLLUTANTS -**

BASE-NEUTRAL EXTRACTABLE

Acenaphthene
Bis(2-Ethylhexyl)
phthalate
Dimethyl phthalate
Indeno(1,2,3-c,d)pyrene
Acenaphthylen
4-Bromophenyl phenyl
ether
Di-n-butyl phthalate
Isophorone
Anthracene
Butyl benzyl phthalate
2,4-Dinitrotoluene
Naphthalene
Benzidine
2-Chloronaphthalene
2,6-Dinitrotoluene
Nitrobenzene
Benzo(a)anthracene
Chrysene
Di-n-octyl phthalate
N-Nitrosodimethylamine
Benzo(a)pyrene
4-Chlorophenyl
Phenyl
Ether
1,2-diphenylhydrazine
N-Nitrosodi-n-
propylamine
Benzo(b)fluoroanthene
Dibenzo(a,h)anthracene
Fluoroanthene
N-Nitrosodiphenylamine
Benzo(ghi)perylene
1,2-Dichlorobenzene
Fluorene
Phenanthrene
Benzo(k)fluoroanthene
1,3-Dichlorobenzene
Hexachlorobenzene
Pyrene
Bis(2-Chloroethoxy)
methane
1,4-Dichlorobenzene
Hexachlorobutadiene
2,3,7,8-Tetrachloro-
dibenzo-p-dioxin
Bis(2-Chloroethyl)ether

3,3-Dichlorobenzidine
Hexachlorocyclo
pentadiene
1,2,4-Trichlorobenzene
Bis(2-Chloroisopropyl)
ether
Diethyl phthalate
Hexachloroethane

ACID EXTRACTABLE

2-Chlorophenol
2,4-Dinitrophenol
4-Nitrophenol
Phenol
2,4-Dichlorophenol
4,6-Dinitro-o-cresol
p-Chloro-m-cresol
2,4,6-Trichlorophenol
2,4-Dimethylphenol
2-Nitrophenol
Pentachlorophenol

VOLATILES

Acrolein
Chloroethane
Trans-1,2-Dichloroethene
Tetrachloroethene
Acrylonitrile
2-Chloroethyl vinyl
ether
1,2-Dichloropropane
1,1,2,2-Tetrachloro
ethane
Benzene
Chloroform
1,3-Dichloropropene
1,1,1-Trichloroethane
Bromoform
Dichlorobromomethane
Ethylbenzene
1,1,2-Trichloroethane
Carbon Tetrachloride
1,1-Dichloroethane
Methyl bromide
Trichloroethene
Chlorobenzene
1,2-Dichloroethane
Methyl chloride
Toluene
Chlorodibromomethane

1,1-Dichloroethene
Methylene Chloride
Vinyl Chloride

PESTICIDES/PCB's

Aldrin
4,4-DDE
Endrin aldehyde
PCB-1232
Alpha-BHC
4,4-DDD
Heptachlor
PCB-1248
Beta-BHC
Dieldrin
Heptachlor
epoxide
PCB-1260
Delta-BHC
Endosulfan I
Toxaphene
PCB-1016
Gamma-BHC
Endosulfan II
PCB-1242
Chlordane
Endosulfan sulfate
PCB-1254
4,4-DDT
Endrin
PCB-1221

METALS

Antimony
Chromium
Nickel
Zinc
Arsenic
Copper
Selenium
Beryllium
Lead
Silver
Cadmium
Mercury
Thallium

OTHER

Free Cyanide

**LEACHATE INDICATORS AND
STANDARD WATER WELL ANALYSIS**

pH ¹	Sodium
Hardness	Sulphate ¹
Conductivity	Carbonate
Chloride ¹	Bicarbonate
Chemical Oxygen Demand	Flouride ¹
Iron ¹	Silica
Zinc ¹	Calcium
Manganese ¹	Nitrate Nitrogen ¹
Magnesium	Ammonium Nitrogen
Potassium	Phosphate
	Total Dissolved Solids

¹Drinking water standard

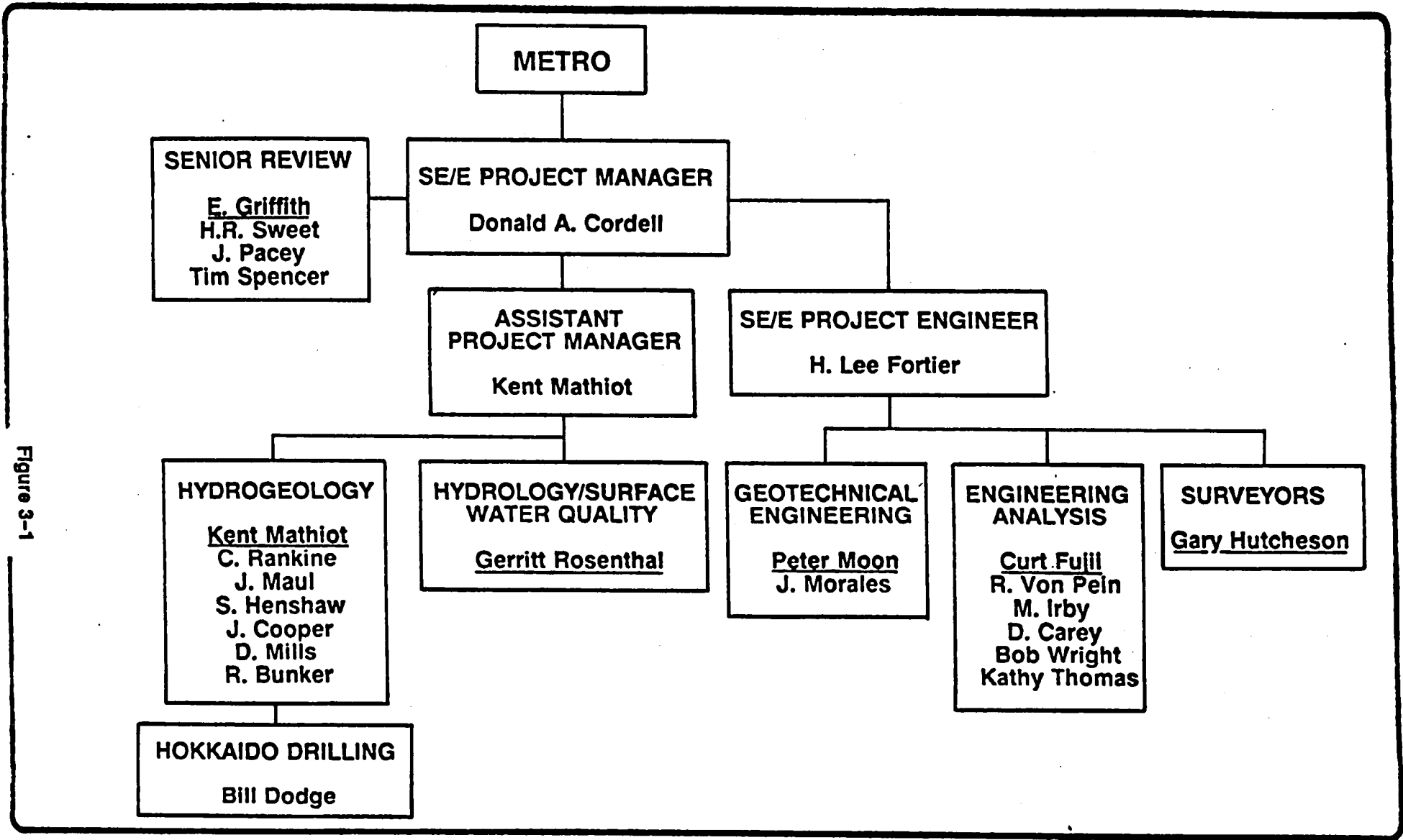



Figure 3-1



Sweet-Edwards
EMCON

**METRO/ST. JOHNS LANDFILL
PROJECT ORGANIZATION**

DATE 5-11-88
 OWN. mmm
 APPR. _____
 REVIS. _____
 PROJECT NO. _____

TABLE 3-1
APPROXIMATE TIME COMMITMENTS
Key Team Members

<u>POSITION</u>	<u>APPROX. % OF TIME COMMITMENT</u>	<u>DURATION</u>
Project Manager	10-15%	Entire Project
Asst. Project Manager	25-30%	Entire Project
Senior Chemist	30-35%	Phase I
Engineering Manager	10-15%	Phase II
Project Geologist/Engineer	70-80%	Entire Project
Staff Geologist/Engineer	85-95%	Entire Project



Sweet-Edwards/EMCON, Inc.

Ground Water, Engineering, Waste Management, & Drilling Services

506 Royal • P.O. Drawer B • Kelso, WA 98626-3409

Office (206) 423-3580 • FAX (206) 423-7518

SCHEDULE OF FEES

1. SERVICE OF PERSONNEL

	<u>Rate Per Hour</u>
Professional:	
Principal	90.00
Executive Manager/Project Manager	70.00 - 85.00
Sr. Engineer/Geologist/Chemist	60.00 - 75.00
Project Engineer/Geologist	50.00 - 70.00
Staff Engineer/Geologist/Chemist	38.00 - 59.00
Technical:	
Engineer/Geology Technician	35.00 - 45.00
Field Technician	25.00 - 35.00
Graphics Designer	35.00 - 45.00
Graphics Technician	25.00 - 35.00
Technical Writer	35.00 - 45.00
Administrative:	
Contract Administrator/Controller	35.00 - 50.00
Word Processor/Clerical	25.00 - 30.00

Notes: A. Travel time after 50 miles or 1 hour per trip at 50% of above.
B. Expert testimony in deposition/trial at 150% of above rates.

2. DIRECT EXPENSES

Actual direct expenses associated with performing services such as: fares on public carriers, rented vehicles, meals, lodging, long distance communications, special supplies, computer service costs, reproduction and expendable materials at cost plus 10%.

Mileage of Consultant and employee owned vehicle at \$0.38/mile.

Use of Consultant owned microprocessors at \$7.50 per hour for data entry/word processing and \$20.00 per hour for computations/modeling.

3. SUBCONTRACTS AND EQUIPMENT RENTAL

Subcontract services and equipment rentals at cost plus 15%.

4. SPECIAL EQUIPMENT

Rates for Consultant owned equipment at a fixed daily, weekly or monthly rate per "Standard Equipment Rates" on the reverse.

5. RATE CHANGES

Schedule of Fees and Standard Equipment Rates subject to change without notice.

6. PAYMENT

Monthly invoices are to be paid within 30 days from the invoice date. Interest on late payments will be at 18% per annum.

Rev. 3
1/88

SWEET-EDWARDS/EMCON, INC.
STANDARD EQUIPMENT RATES

	<u>Rate</u>
1. SAFETY EQUIPMENT:	
Level of Protection:	
"D" - Gloves, hard hat, eye protection, & disposable suit	\$ 15.00/day
"C2" - Above plus respirator	40.00/day
"C1" - Above plus chemical suit	80.00/day
"B" - Above plus SCBA	125.00/day
 Explosive meter (O ₂ def., toxic, combust.)	 100.00/wk.
Gas Tech gas meter	20.00/day
Photovac meter	50.00/day
 2. MONITORING AND SAMPLING EQUIPMENT:	
Peristaltic pump	\$ 30.00/day
Centrifugal pump for pore volume removal	25.00/day
Submersible (4-in.) pump with generator for pore volume removal	50.00/day
Middleberg pump (e.g. Well Wizard)	50.00/day
Field filtering unit with peristaltic pump	40.00/day
Stainless steel or Teflon bailer	10.00/day
Bailing Reel and Tripod	15.00/day
Electric Depth Probe (e.g. Actat)	10.00/day
Field Gas Chromatograph w/ back flush	1000.00/mo.
Field Lab Trailer	500.00/mo.
Conductivity meter (e.g. Chemtrix, Cole Parmer)	10.00/day
Hydrolab field or borehole temperature/electrical conductivity meter, cable and probe	50.00/day
Data Logger/Processor (e.g. Hermit, Terra 8)	50.00/day
Transducer with cable (assumes reusable)	50.00/day
Current Meter (e.g. Swoffer)	50.00/day
pH meter (e.g. Yokogawa, Beckman)	20.00/day
Continuous recorder with security casing (e.g. Leupold-Stevens)	40.00/mo.
Hand auger	10.00/day
 3. DRILLING EQUIPMENT:	
Rates for company owned drilling services may be on a per-foot or time-and-materials basis as project conditions and/or client needs dictate.	

R.A.WRIGHT ENGINEERING, INC.
Fee Schedule
May 1988

<u>Staff</u>	<u>Classification</u>	<u>Rate</u>
Kathleen Thomas, P.E.	Engineer	\$70.00/hour
Robert A. Wright, P.E.	Engineer	\$70.00/hour
Darrel J. Huckabay, P.E.	Engineer	\$64.00/hour
Gary Hutcheson, P.L.S.	Surveyor	\$45.00/hour
Gregory C. Dutson	Technician	\$26.00/hour
Bonny J. Armstrong	Technician	\$25.00/hour
Matthew L. McComb	Technician	\$30.00/hour
Judi A. Gram	Administrator	\$27.00/hour
AutoCAD Computer System		\$10.00/hour
Wild T2000 Surveying Equipment		\$25.00/hour
Vehicle Expense		\$0.25/mile
Subconsultants		Cost plus 10%
Other Direct Expense		At Cost

R.A.Wright
engineering

consulting engineers

HOKKAIDO DRILLING AND DEVELOPING

CABLE TOOL DRILLING \$95/HOUR

HOLLOW STEM AUGER DRILLING \$110/HOUR

MATERIALS @ COST +15%

Agenda Item No. 8.4
July 28, 1988, Council Meeting

Resolution No. 88-959
Contract Documents