

REQUEST FOR PROPOSAL
PART I - TECHNICAL PROPOSAL
PART II - COST PROPOSAL

This Request for Proposal is required for professional service contractors.
Failure to provide this information may result in not being considered
for the award of a contract. (Authority: 1984 PA 431)

PROFESSIONAL SERVICES FOR THE
DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDATION AND REDEVELOPMENT DIVISION
PROFESSIONAL SERVICES FOR GROUNDWATER TREATMENT-FORMER NATIONAL PLATE GLASS SITE

4000-4061 ARTHUR ST., SAGINAW TOWNSHIP, MICHIGAN 48603

FILE NO. 761/08129.SAR

Issued by:
The Ad Hoc Advisory Committee
For
Professional Service Contractor Selection

PROPOSAL DUE DATE: Thursday, April 17, 2008, 2:00 p.m., Local Time
MANDATORY WALK-THROUGH DATE: Tuesday, April 8, 2008, 10:00 a.m. at the site

ISSUING OFFICE

U.S. Mail Address

Department of Management and Budget
Facilities Administration,
Design and Construction Division
P.O. Box 30026
Lansing, Michigan 48909

Express Mail Address

Department of Management and Budget
Facilities Administration,
Design and Construction Division
Stevens T. Mason Building
530 West Allegan Street
Lansing, Michigan 48933

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REQUEST FOR PROPOSAL

Professional Services for
File No. 761/08129.SAR
Index No. 44601
Department Of Environmental Quality
Remediation and Redevelopment Division
Professional Services For Groundwater Treatment-Former National Plate Glass Site
4000-4061 Arthur St., Saginaw Township, Michigan 48603

SECTION I GENERAL INFORMATION - PART I TECHNICAL PROPOSAL

I-1 Purpose

This Request for Proposal provides the prospective prime professional service contractor, hereafter referred to as the professional, with information to enable preparation of a proposal to provide professional services and assist the Department of Environmental Quality (DEQ) in the execution of tasks at the Former National Plate Glass Site including, but not limited to, provide high quality expertise necessary to conduct a comprehensive technical review of potential groundwater remediation options, design, construction oversight of the selected remediation option, provide one year of operation and maintenance oversight, advise the DEQ, and prepare a system performance evaluation report. The services to be completed should encompass as a minimum the following phases from the Department of Management and Budget's (DMB's) attached Sample Standard Contract for Professional Services:

Phase

100 Study
200 Program Analysis
300 Schematic Design
400 Preliminary Design
500 Final Design
600 Construction Administration - Office Services
700 Construction Observation - Field Services

I-2 Program Statement

The professional will be required to provide remedial design and construction oversight services. The target contaminants include but are not limited to arsenic, mercury, and high pH in the site's soil and groundwater.

The environmental consulting services shall be provided by an organization with:

- The Professional Project Manager (PM) must have at least three years experience as a PM and at least 10 years experience with similar projects.
- Provide client references and brief descriptions of at least three (3) projects in the last five years closely related to the work requested in this Request for Proposal (RFP).
- Regulatory knowledge and experience in remedial design, groundwater sampling, feasibility studies and Federal regulations and Michigan environmental statutes related to the remedial action programs.
- The Professional must be able to staff a project team that possesses the talent and expertise in the various fields required to perform the work requested in this RFP.
- Key Personnel and consultants/subcontractors shall be trained in health and safety procedures, including participating in a medical monitoring program and have 40 hour HAZWOPER training with up-to-date 8 hour HAZWOPER refresher training.
- Subcontractors must be identified and have client references and brief descriptions of at least three (3) projects in the last five years closely related to the work requested in this RFP.
- Knowledge of the Federal and State of Michigan Environmental Laws, in particular Part 201, Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended.
- Computer expertise and software capabilities with Microsoft Excel, Access, and Word, AUTOCAD 14/Microstation.
- Ability to provide comprehensive professional services for the project.
- Consideration will be given to the record of past performance, and financial and technical resources.

Each Professional providing a proposal must complete the attached Professional Questionnaire and include the following:

- Provide a copy of a Technical Memorandum from a past project that is similar to the work requested in this RFP

- Provide a sample of field activity logs and a weekly report from projects conducted by the Professional within the last five years, with work closely related to the work requested in this RFP.
- Organizational chart that includes each person on the project team and their identified roles.
- Resumes for key personnel

The professional will be required to provide statement of conflict of interest and agree to terms of a confidentiality agreement for alternate dispute resolution involving the site. See attached project/program statement and scope of work for more detailed information.

The design professional, by submitting a Technical (Part I) and Cost (Part II) Proposal to the department for evaluation during the selection process, ascertains that they can and will provide a complete professional services based on the approved project/program statement. No increase in compensation to the professional will be allowed, unless there is material change made to the scope of the project/program statement and the change to the project/program statement is approved, in writing, by the Facilities Administration, DMB.

I-3 Issuing Office

This Request for Proposal is issued by an Ad Hoc Committee for Professional Service Contractor Selection, hereafter referred to as the Issuing Office. **PROPOSALS SHALL BE RETURNED TO THE ISSUING OFFICE.** The Chair for this Ad Hoc Committee and the point of contact for this Request for Proposal is:

Sadi Rayyan
 Department of Management and Budget
 Facilities Administration, Design and Construction Division
 Stevens T. Mason Building
 P.O. Box 30026
 Lansing, Michigan 48909
 Telephone Number: (517) 335-7949
 Fax No. (517) 373-3562
 E-mail Address: rayyans@michigan.gov

I-4 Contract Award

Contract award will be undertaken by the state through the DMB with the professional firm whose proposals (Parts I and II) the issuing office determines to be in the state's best interest.

Professional firms awarded contracts by the Facilities Administration, Design and Construction Division, must be certified by the Michigan Department of Civil Rights for compliance with State of Michigan nondiscrimination requirements. If submittal is made by a Joint Venture, BOTH FIRMS must be certified. **Attach a copy of the Certificate of Awardability, along with one completed, signed Professional Contractor Demographics, Statistics and Certification form; one completed, signed Certification Regarding Debarment, Suspension, and other Responsibility Matters form,** to the returned proposal. Attach a copy of the Certificate of Awardability to the returned proposal. In the event a contractor doesn't possess a valid certificate of awardability, but indicates they have applied for one, DMB will contact Department of Civil Rights (DCR) to verify a completed application had been received prior to the bid opening. Failure to provide a valid certificate of awardability within 24 hours of the bid opening or to have a completed application on file with DCR prior to bid opening will result in the bid not being considered. The time required by the Department of Civil Rights to process applications varies as a function of the department's total workload, which changes from time to time. The professional is responsible for securing all pertinent information from the Department of Civil Rights prior to submitting a proposal. Communications should be directed to:

Michigan Department of Civil Rights, Office of Contractual and Business Services
 Cadillac Place Building, (Former General Motors Building)
 3054 West Grand Boulevard, Suite 3-600
 Detroit, Michigan 48202
 Telephone: (313) 456-3822 or 456-3823

Note: Due to recent processing improvements by the Department of Management & Budget (DMB) and the Department of Civil Rights (DCR) concerning Certificates of Awardability, consideration may be given to proposals received while final certification is still pending. In order to qualify for such consideration a bidder who does not possess a Certificate of Awardability valid through the proposal due date must do each of the following:

Notify MDCR in writing, by sending a facsimile (fax) to 313-456-3826 at least 3 business days prior to the proposal due date, that the bidder has submitted a bid contingent upon a pending Certificate of Awardability. Notice shall indicate the project upon, the scheduled proposal due date, the name and phone number(s) of a contact person able to speak for the bidder on the subject of awardability, and the date on which the bidder's application for Certificate of Awardability was initially filed. Ensure that all information required on the application for Certificate of Awardability was provided to MDCR.

Requests for proposals for this project will be responded to in two parts. The professionals will be evaluated based on their Proposal - Parts I and II. Final selection of the professional will be based on an evaluation of both Parts I and II. Relative weights used for the final selection will be 80 percent (80%) for Part I and 20 percent (20%) for Part II.

I-5 Rejection of Proposals

The state reserves the right to reject any or all proposals, in whole or in part, received as a result of this Request for Proposal.

I-6 Incurring Costs

The state is not liable for any cost incurred by the professional prior to acceptance of a proposal and the award and execution of a contract and issuance of the state's contract order.

I-7 Inquiries

A MANDATORY WALK-THROUGH WILL BE HELD ON TUESDAY APRIL 8, 2008 AT 10:00 a.M. The meeting will be held at the site, 4061 Arthur St., Saginaw Township, Michigan 48603. Questions that arise as a result of this Request for Proposal **MUST BE SUBMITTED IN WRITING** to the issuing office seven days prior to the due date, (i.e., no later than April 9, 2008).

I-8 Addenda to the RFP

In the event that it becomes necessary to amend any part of this Request for Proposal, addenda will be provided to all professional firms who attend the mandatory walk-through.

I-9 Response Date

To be considered, proposals must arrive at the issuing office **no later than 2:00 p.m., local time, on Thursday, April 17, 2008**. Proposals arriving after that time will not be accepted and will be returned unopened. **NOTE:** Due to new construction in the area of the Stevens T. Mason Building, parking is at a premium. Security measures may affect the delivery time of mail and packages sent via UPS, Fed Ex, and Airborne Express. Those hand-delivering their proposal should be prepared to present a pictured identification to the security guard on duty in the lobby of the Stevens T. Mason Building and allow extra time for their proposal to reach Facilities Administration. It remains the responsibility of the professional firm to submit request for proposals as specified. Please allow ample time to arrive at the office prior to the 2:00 p.m. deadline.

I-10 Proposals

To be considered, the professional must submit a complete response to this Request for Proposal including Part I Technical Proposal (using the format provided in Section II), Part II Cost Proposal (using the format and tables provided in Attachments IV and V) and Attachment VI Professional Questionnaire. Each proposal must be submitted in five (5) copies to the issuing office. No other distribution of proposals will be made by the professional. Proposals must be signed by an official authorized to bind the professional firm to its provisions. **NO FACSIMILES OR E-MAILS OF THE REQUEST FOR PROPOSAL WILL BE ACCEPTED.**

I-11 Economy of Preparation

Proposal should be prepared simply and economically, providing a straightforward, concise description of the professional's ability to meet the requirements of the Request for Proposal. Fancy bindings, colored displays, promotional materials, and so forth, are not desired. Emphasis should be on completeness and clarity of content.

I-12 Oral Presentation

The State reserves the right to request an oral presentation from the professional firms. The State will notify the professional if this right is exercised and the issuing office will schedule these presentations and interviews and notify the professional firms of the date and time of the presentation.

I-13 Prime Professional Service Contractor Responsibilities

The prime professional service contractor will be required to assume responsibility for all professional services offered in the proposal whether or not they possess them within their organization. Further, the state will consider the professional to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the contract. The prime professional firm shall possess a license to practice in the State of Michigan pursuant to Public Act 299 of 1980, Article 20.

I-14 Standard Contract Conditions for Professional Services

The contract award with the professional will incorporate "Standard Conditions for Professional Services Contracts". See the Department of Management and Budget's attached "Sample Standard Contract for Professional Services." Sample Contract provided for informational purposes only. Actual contract may not be identical after award and issue.

SECTION II PROPOSAL FORMAT - PART I TECHNICAL PROPOSAL

Proposals must be submitted in the format outlined below:

II-1 Business Organization

State the full name and address of the organization and, if applicable, the branch office, consultants or other subordinate elements that will provide or assist in providing the service. Indicate whether you operate as an individual, partnership or corporation; if as a corporation, include the state in which you are incorporated. State whether you are licensed to operate and practice in the State of Michigan.

II-2 Statement of the Problem

State in succinct terms your understanding of the problem presented by this Request for Proposal.

II-3 Management Summary and Work Plan

Provide in outline form, a complete description of the service proposed. Include a PERT-type display, or similar time-related chart, showing each event, task, and decision point in your work plan. As a guideline, the work plan must include provisions shown in Article 1 - "Phases of Professional Service Which May Be Required" as described in attachment. Include a detailed PERT-type display, or similar time sequenced-related but undated schedule, showing each task and phase in your work plan.

II-4 Personnel Staff

The professional must be able to staff a project team which possesses qualifications and all the expertise necessary to undertake a project of this scope and complexity. Include the number of executive and professional personnel by skill and qualification that will be employed in the work. Indicate the inclusive periods each individual will devote to the work. Indicate which of these individuals you consider to be a key personnel to the successful completion of the project. Resumes of qualifications for key personnel must be provided.

II-5 Organization Chart

Provide an organization chart outlining authority and communication lines for each "Key Personnel" and personnel staff.

II-6 Additional Information and Comments

Include any other information that is believed to be pertinent but not specifically asked for elsewhere.

SECTION III PERSONNEL AND COMPENSATION - PART II COST PROPOSAL

III-1 Instructions

Part II - Cost Proposal shall carefully interface with all phases/tasks of the work plan identified in the Part I - Technical Proposal. Total cost shall be estimated using billing rates for personnel performing a direct service plus reimbursable costs (see attached guideline page for information regarding the "Overhead Items Used for Professional Firm's Billing Rate Calculation").

The department will reimburse the professional for the actual cost of using field equipment and subcontractors. No mark-up of these costs will be allowed.

All other costs, such as indirect labor, phones, miscellaneous reproduction, travel, etc., shall be included in the professional's billing rates.

If the project is further than 100 miles one-way from the professional firm's office, the Design and Construction Division may entertain a proposal to include reimbursable costs for travel mileage to the project site at the State of Michigan's rates if the professional firm can demonstrate a cost savings to the State, if reimbursed for travel mileage in accordance with the current travel rates provided in the State of Michigan's "Schedule of Travel and Meal Reimbursement Rates" (available at http://www.michigan.gov/dmb/0,1607,7-150-9147_10870---00.html) versus an adjustment to the professional's billing rates. If such a situation exists, the professional shall include with the proposal an

estimated amount reflecting proposed travel costs and a schedule showing proposed frequency of such travel, including detailed itemized backup documentation indicating how this estimate was determined.

The design phase tasks shall cumulatively include any contingent services required for subsequent issuing and processing of bulletins arising from, but not limited to, design errors and/or omissions, code compliance (precipitating either from plan review or on-site/field observations), modification of existing structures or systems necessary to achieve the intent of the project statement.

The design phase services shall include either by cumulative allowance or by specific task, the furnishing of all project data and services necessary to legally implement the project. This includes but may not be limited to, code reviews and/or interpretations, project meetings, presentations, hearings, utility allocations requests, and/or connections, easements, or permits.

Any contract issued by the state pursuant to this proposal anticipates that the professional will provide, but shall not seek compensation for services necessary to respond to and resolve contractor claims arising wholly or in part from the professional's design errors or omissions or other aspects of the design or for any aspect of the professional's performance which is inconsistent with the professional or construction contracts. No task or part thereof may include costs for such efforts.

III-2 Identification of Personnel and Estimated Compensation

III-2-A. Primary Professional/Consultant - Position Classification and Employee Wage Information

Utilizing a format similar to the attached Form III-2-A, identify the architectural and/or engineering discipline service being provided and the primary Professional Firm's technical employee(s) names and position classifications for the project and their current hourly billing rates for **Year 2007**. Also, provide the technical employee(s) anticipated hourly billing rates for **Years 2008, 2009, 2010 and 2011** based on the professional's estimated salary increase. **The professional is required to submit the billing rates for each year using the format shown in III-2-A.**

III-2-B Billing Rates

To determine your current billing rates, use the attached guideline page for information regarding the "Overhead Items used for Professional Firm's Billing Rates Calculation," and the attached "Sample Standard Contract For Professional Services," Article 2, Compensation Text. Consultants providing professional services must submit a separate billing rates for services that they will provide. No mark-up of the consultants billing or rates will be allowed. ALL other costs, such as indirect labor, telephones, miscellaneous reproduction, travel, etc., shall be included in the professional's billing rates.

Identify for each task the estimated cost. The combination of all phases/tasks shall become the professional's maximum not-to-exceed cost for all services. Compensation for each phase will be in accordance with the attached "Sample Standard Contract for Professional Services," Article 2, Compensation text.

Use the format shown in Attachments IV and V to establish your total compensation and trade contract reimbursables

The following information is to be used by Professional Firms to determine the **billing rate** to use on State of Michigan Projects.

All of the Consultants providing Project services must submit a separate **billing rate** for the Consulting services they will provide. No mark-up of the Consultants or billing rates will be allowed.

The Owner will reimburse the Professional Firm for the actual cost of using field equipment. No mark-up of these Project costs will be allowed.

2007 BILLING RATE
OVERHEAD ITEMS USED FOR PROFESSIONAL FIRMS' BILLING RATE CALCULATION

SALARIES:

Principals (Not Project Related)
Clerical/Secretarial
Technical (Not Project Related)
Temporary Help
Technical Training
Recruiting Expenses

EQUIPMENT RENTALS:

Computers
Typewriter
Bookkeeping
Dictating
Printing
Furniture and Fixtures
Instruments

EMPLOYEE BENEFITS:

Hospitalization
Employer's F.I.C.A. Tax
Unemployment Insurance
Federal Unemployment Tax
Disability
Worker's Compensation
Vacation
Holidays
Sick Pay
Medical Payments
Pension Funds
Insurance - Life
Retirement Plans

OFFICE FACILITIES:

Rents and Related Expenses
Utilities
Cleaning and Repair

TRAVEL:

All Project-Related Travel*

MISCELLANEOUS:

Professional Organization Dues
for Principals and Employees
Licensing Fees

SERVICES (NONPROFESSIONAL):

Telephone and Telegram
Messenger Services

TAXES:

Franchise Taxes
Occupancy Tax
Unincorporated Business Tax
Property Tax
Single Business Tax
Income Tax

INSURANCE:

Professional Liability Insurance
Flight and Commercial Vehicle
Valuable Papers
Office Liability
Office Theft
Premises Insurance
Key-Personnel Insurance

PRINTING AND DUPLICATION:

Specifications (other than Contract bidding documents)
Drawings (other than Contract bidding documents)
Xerox/Reproduction
Photographs

LOSSES:

Bad Debts (net)
Uncollectible Fee
Thefts (not covered by Project/Contract bond)
Forgeries (not covered by Project/Contract bond)

SERVICES (PROFESSIONAL):

Accounting
Legal
Employment Fees
Computer Services
Research

FINANCIAL:

Depreciation
Business Profit

BILLING RATE DOES NOT HAVE TO INCLUDE AND THE OWNER WILL PAY FOR (UNDER REIMBURSABLE COSTS):

1.* Travel mileage costs for Projects in excess of 100 miles in each direction from the Professional Firm's office if the Professional Firm can demonstrate a cost savings to the Owner, if reimbursed for travel mileage in accordance with the current travel rates provided in the State of Michigan's "Schedule of Travel and Meal Reimbursement Rates" versus an adjustment to the Professional Firm's **billing rate**.

**PROFESSIONAL SERVICES
Position/Classification and Employee Billing Rate Information**

Firm Name

XYZ, Inc.

Yearly Hourly Billing Rate Increase

≈5%

Level	Employee(s) Name	Position/Classification	Year 2008	Year 2009	Year 2010	Year 2011
P4	Robert J. Hafel	Principal/Program Manager**	\$100.00	\$105.00	\$110.00	\$116.00
P4	Donald E. McReynolds	Senior Environmental Eng.	\$100.00	\$105.00	\$110.00	\$116.00
P4	William King	Quality Control/Assurance	\$100.00	\$105.00	\$110.00	\$116.00
P3	Ruby D. Riley	Licensed Surveyor**	\$90.00	\$95.00	\$99.00	\$104.00
P3	Charles D. Gibson	Project Engineer**	\$90.00	\$95.00	\$99.00	\$104.00
P3	William D. Murphy	Project Geologist**	\$90.00	\$95.00	\$99.00	\$104.00
P2	Robert L. Hunter	Engineer	\$80.00	\$84.00	\$88.00	\$92.00
P2	Carolyn M. Phillips	Geologist	\$80.00	\$84.00	\$88.00	\$92.00
P1	Kathleen C. Wilson	Scientist/Surveyor	\$65.00	\$68.00	\$71.00	\$75.00
P1	Jeffrey W. Bennett	Staff Engineer	\$65.00	\$68.00	\$71.00	\$75.00
P1	Scott A. Smith	Staff geologist	\$65.00	\$68.00	\$71.00	\$75.00
T3	Arnold T. Ross	Senior Technician	\$75.00	\$79.00	\$83.00	\$87.00
T2	Jennifer M. Dole	Technician	\$65.00	\$68.00	\$71.00	\$75.00
T1	Brian G. Brown	Field Technician	\$50.00	\$53.00	\$56.00	\$59.00
CL	As Selected	Technical Support	\$35.00	\$37.00	\$39.00	\$41.00

*Billing Rate will be in accordance with the attached guideline page for instructions regarding the "Overhead Items used for Professional Billing Rate Calculation," and the attached "Sample Standard Contract for Professional Services," Article 5, Compensation Text.

** Key Project Personnel

ATTACHMENT I

**PROJECT/PROGRAM STATEMENT
(Statement of Objectives)**

PROJECT STATEMENT

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
Facilities Administration
First Floor, Stevens T. Mason Building
P.O. Box 30026
Lansing, Michigan 48909

FILE NUMBER 761/0708129.SAR	INDEX NUMBER(S) 44601	COMPTROLLER OBJECT	APPROVAL DATE
DEPARTMENT Environmental Quality			
AGENCY Remediation and Redevelopment Division			
ADDRESS 4000-4061 Arthur St., Saginaw Township, Michigan 48603			
AGENCY CONTACT Gary Simons			TELEPHONE NUMBER 517-373-2811
DEPARTMENT OF MANAGEMENT AND BUDGET PROJECT MANAGER Sadi Rayyan			TELEPHONE NUMBER 517-335-7949
PROJECT DESCRIPTION Professional Services Support: Professional services are sought to assist the Michigan Department of Environmental Quality (MDEQ) as detailed in the attached Scope of Work. The professional will be required to effectively conduct and/or coordinate the activities in accordance with the latest federal and state environmental regulations. The intent of this selection process is to contract with a qualified firm to provide ad-hoc services for the remediation of Former National Plate Glass Site. The professional firm is required to refer to State and federal statutes, procedures, guidelines and the administration rules when providing the services or entering into contracts with subcontractors to provide the services. Also, the professional shall submit 5 copies of a technical proposal and 5 copies of the cost proposal. The professional must use the attached Cost Sheets to indicate the billing rates and the total costs. The State reserves the right not to award the work or award the work to one or more firms.			
SPECIAL WORKING CONDITIONS Please follow the requirements of the site-specific health and safety plan during the on-site fieldwork .			
DESIRED SCHEDULE OF WORK The RRD project manager will determine the schedule. See the attached Scope of Work for the list of site activities to be conducted for this project.			
LOCATION OF WORK AREAS Saginaw, Saginaw County, Michigan.			

REFERENCE STANDARDS: This project will comply with all codes, standards, regulations, and workers' safety rules that are administered by federal agencies (EPA, OSHA, and DOT), state agencies (MIOSHA, DNR, and DPH), and any other local regulations and standards that may apply.

This form is required to be a part of the professional service contract. (Authority: 1984 PA 431)

Attachment(s)

ATTACHMENT II

SCOPE OF WORK

**Scope of Work
Request for Proposal
File No. 761/08129.SAR
Index No. 44601
Department Of Environmental Quality
Remediation and Redevelopment Division**

**Evaluation, recommendation and oversight of the installation of selected response activities for
Groundwater Treatment**

**The former National Plate Glass Company
Saginaw, Saginaw County
ID: 73000406**

PURPOSE

Provide professional services and assistance to the Department of Environmental Quality (DEQ) in the execution of tasks at the former National Plate Glass (NPG) Company site in Saginaw County including, but not limited to, providing high quality expertise necessary to conduct a comprehensive technical review of potential groundwater remediation options; final evaluation and recommendation of a water treatment/evaporation system; design treatment system and prepare drawings for the construction of the selected treatment system; prepare bid documents for the selected treatment system; assist in the selection process; conduct oversight of the construction, installation and operation and maintenance of the selected treatment system.

SITE BACKGROUND

The Saginaw Plate Glass company operated a glass and salt manufacturing facility on the property around the turn of the century. Fisher Body Incorporated, Saginaw Plate Glass, and two out-of-state glass manufacturers, formed National Plated Glass, operating until the mid to late 1920's. Exhaust steam generated from the manufacture of glass was used to process brine water, producing salt. A chemical works on site further processed brine. At the time of manufacture, glass had to be polished on both sides to make it clear. It is believed that the waste from the polishing operations was routed to a dewatering/storage area south of the former manufacturing plant, now referred to as the National Plate Glass site.

Arsenic contamination in the soil exceeding Direct Contact Criteria (DCC = 7.6ppm) is pervasive in and around the former manufacturing plant. Caustic materials in the former lagoon area cause water that comes in contact with the materials to be hazardous for direct contact. Water is contaminated in the former lagoon area with arsenic up to 24,000 ppb with a pH of 10 -11.

Interim Response activities designed to prevent direct contact with contaminants on the site and to stop contaminated water in the lagoon area from leaching into the adjacent Tittabawassee River are ongoing. Sheet pile was installed around the perimeter of the lagoon. Contaminated material that slumped into the river was removed and placed on the interior of the site. Portions of the lagoon and properties north, east and west of the lagoon were covered with clay. A dewatering system is under contract with an expected completion date of April 2008.

The Dewatering System Project was designed to provide 4 feet of freeboard below the lowest elevation from the top of the sheet piling wall along the southern portion of the site to minimize the potential for impacted groundwater to leave the site under conservative storm events. This design control elevation particularly affects alternatives that rely upon evapotranspiration, which may potentially require water storage both during the non-growing season and large volumes of water at the near surface during the growing season. The dewatering system at the site was designed to:

- Maintain a reduced groundwater elevation (recharge removal), while not fully dewatering the site, and prevent discharges of contaminated groundwater over the top of the sheet piling for the southern half of the site where seeps occur at approximately the same elevation as the top of the sheet piling.
- Promote surface water runoff to the extent practical by maintaining or improving grades where economically or technically feasible.
- Remove, treat and discharge or evapotranspire accumulated, contaminated groundwater from within the perimeter sheet piling of the site, excluding contaminated groundwater contained within the southeastern triangular-shaped sheet pile cell.

PRELIMINARY EVALUATION OF ALTERNATIVES

DEQ conducted a preliminary evaluation of potential response options. A summary of those evaluations study is attached in Appendix I.

DESCRIPTION OF PROFESSIONAL SERVICES

- Evaluate and determine the feasibility of recommended response actions as outlined in Malcolm Pirnie's draft Preliminary Evaluation of Potential Site Response Options, Dated November 30, 2007. A summary of the draft document is attached.
- Make a recommendation for groundwater treatment and disposal at the NPG site.
- Design groundwater treatment system and produce drawings for the construction of the system with specifications and bidding documents.
- Prepare an operation and maintenance plan of the selected treatment and disposal options. All photos and drawings for the site are to be georeferenced.
- Perform construction oversight of the selected treatment technology and all construction contractors including operation and maintenance for one year.
- During the O&M period of one year, evaluate the performance of the dewatering and treatment system to determine system effectiveness and make recommendations for changes in the system to meet the objectives of the dewatering system.

COST AND COMPENSATION

The actual tasks that will be conducted over the life of the contract period cannot be reliably anticipated. In order to fairly evaluate bid costs, estimates for the following Tasks should be developed. This amount is likely to fluctuate based on the actual activities that are required by the State.

1. Cost to conduct file review.
2. Cost to evaluate and determine the feasibility of the recommended response actions as outlined in the draft Preliminary Evaluation of Potential Site Response Options summary.
3. Assisting the State Project Manager in evaluating and recommending additional work to address site-specific issues necessary for the selection of a groundwater remediation system. Assume 30 hours for the purpose of this proposal only.
4. Cost to design the selected groundwater treatment technology including site specific operation and maintenance documents.

5. Cost to prepare bid documents for the selected technologies including oversight of the bidding process.
6. Cost for construction oversight of the selected treatment technology and all construction contractors.
7. Costs for O&M oversight for a period of one year.
8. Conduct performance evaluation of the dewatering and treatment system to determine system effectiveness and/or to make recommendations for changes in the system to meet the objectives of the dewatering system.
9. Cost to prepare a project summary and budget as requested by the State Project Manager. Assume that the summary will provide a detailed written description of the specific activities that were conducted by the professional, the costs of those activities, and other activities that are expected to be conducted by the Professional, and a budget and schedule for those activities. The report should be organized to indicate which specific subtask was, or is expected, to be billed for the work being described. The report should track the overall labor hours billed to the project each month by individual project team member.
10. Expenses incurred by the Professional for travel greater than 200 miles round trip to the site from the nearest office may be reimbursed in accordance with Guidelines for Travel Reimbursement of Contractors (available at http://michigan.gov/dmb/0,1607,7-150-9147_10870---,00.html). Only expenses that are allowed under the contract will be reimbursed.

Additional costs may be negotiated between the State and Professional for actual work items that exceed the assumptions contained in the above generic cost estimates. Cost reductions may also be negotiated for actual tasks that require less work than the generic cost estimates.

INELIGIBLE COSTS

In addition to other specific exclusions in the Contract for Professional Services, the following are ineligible costs;

Invoice preparation or correction of invoices by the Professional or consultant/subcontractors

Downtime due to mechanical problems or failure of the Professional's or consultant/subcontractor's equipment.

The State of Michigan will not pay for the Professional to rewrite all or portions of the documents when the Professional did not follow written State directions or in the opinion of the State Project Manager (SPM), the written product received by the State is inadequate.

When there is a change in the Professional's team, the State will not pay for new staff to review information that the previous staff person understood.

The Professional may not bill the State for health and safety training and medical monitoring for Professional and consultant/subcontractor staff.

GENERAL PROVISIONS

The Professional is responsible for developing and implementing a health and safety plan (HASP) for the site.

The Professional is responsible for obtaining any permits which are required for the performance of the work specified.

All on-site work shall be in a timely manner. Security of the site and equipment shall be the Professional's responsibility.

DELIVERABLES

The Professional shall provide electronic copies of all final reports, specifications, drawings and other significant deliverables in Microsoft Word, Excel or AutoCAD 14/Microstation, as applicable, as well as in PDF format. In addition, the Professional shall provide one unbound, reproducible copy of each deliverable.

RESPONSIBILITIES OF MDEQ

The MDEQ will be responsible for the following:

- Obtaining all Site access
- Providing the Professional with a CAD file of the Site map
- Providing the Professional with all previous laboratory analytical results

PROJECT SCHEDULE

Upon acceptance by the State of the proposal and contract, the winning bidder agrees to complete all work required within 18 months. The contract may be extended for one additional year at the sole option and discretion of the State. If the contract needs to be extended, it will be done with a change order. The following tasks shall be completed within the stated timelines:

- The Project Kick-Off Meeting shall be held within 14 calendar days of contract award.
- The HASP shall be submitted to the MDEQ within 30 calendar days of contract award.
- The Monthly Progress Reports shall be submitted to the MDEQ by the Wednesday of the week following the end of the service period.
- The Weekly Reports shall be submitted to the MDEQ by email by the Monday of the week following the end of the service period.

LABORATORY ANALYSIS

The Professional will be required to schedule all sample analysis (soil and groundwater samples) with the MDEQ laboratory consistent with the MDEQ's updated procedure for scheduling sample analysis document dated November 20, 2003. Utilize a newer procedure if and when available. The Professional shall ship/deliver all samples to the MDEQ laboratory or an appropriate contract laboratory. If a contract lab must be utilized for sample analysis, the lab will be chosen based on cost and availability. The MDEQ Project Manager must approve the chosen contract laboratory prior to sample shipment/delivery. The Professional will require a two week turn-around time on VAS, deep soil boring and waste characterization sample analysis from a stationary lab. Costs for laboratory analysis, both mobile and stationary laboratory services, will be billed directly to the project. Sample analysis costs may not be charged by the Professional and will not be included in the cost of this contract.

INVOICING

Application for payment shall be submitted monthly per the requirements in the Contract for Professional Services. Project costs will be reimbursed to the Professional on an as-incurred basis in accordance with the terms of the Contract for Professional Services. Invoices received covering service periods for which the monthly progress reports have not been received by the MDEQ Project Manager will not be processed until the progress reports are received. These will be considered incomplete invoices.

Each invoice that includes labor will include a one-page summary sheet that lists by date the name of the individual providing the professional service, the individual's position/classification, hours worked that day and hourly billing charge. Each invoice that includes reimbursable expenses will include a one page summary with the following categories: *Meals, Lodging, Travel, Shipping, Equipment Rental, Field*

Supplies/Equipment Purchase, Subcontractors and Miscellaneous. Under Meals and Lodging categories, the date, name of the individual and total daily cost will be included. Under Travel category, the Professional will include the date, name of the individual, total daily mileage (minus 200 miles), mileage rate and total daily cost. Under Shipping, the Professional will include the date shipped, description of item shipped (e.g., water samples, groundwater tech memo, etc.) and the cost to ship the item. Under Equipment Rental, the Professional will include the range of dates equipment rented, description of equipment rented and rental cost. Under Field Supplies/Equipment Purchase and Miscellaneous categories, the Professional will include the date purchased, description and purpose of the item purchased (e.g., ice for sample preservation, baggies for samples, .45 micron filters for groundwater sampling, etc.) and the cost. Under Subcontractors, the Professional will list the date of the subcontractor work, name of the subcontractor, description of work conducted (e.g., monitoring wells surveyed, VAS drilling, etc.) and the cost. The cost for each category will be totaled.

EQUIPMENT AND SUPPLY PURCHASE AND RENTAL PROCEDURES

The Professional shall use the methods in this section to purchase, rent or use Professional-owned equipment. If an item will be consumed or would be expected to be rendered unusable during the project assignment, then renting is not a viable alternative and purchasing the item is necessary. Examples of consumption are bags of cement and installed casing. Examples of items expected to be rendered unusable are Tyveks and disposable bailers. If the rental price or price of using Professional-owned equipment exceeds the purchase price, the item shall be purchased. If the purchase price exceeds \$2,500, the Professional shall obtain three bids and the State will accept the lowest bid. At the end of the project, the State then has the option to accept ownership of a purchased piece of equipment. All deposit charges will be paid by the Professional and will not appear on invoices to the State.

APPENDIX I

PRELIMINARY EVALUATION OF POTENTIAL RESPONSE OPTIONS

APPENDIX I

PRELIMINARY EVALUATION OF POTENTIAL RESPONSE OPTIONS

The following is a summary of the preliminary evaluation of potential site response options and identified evaluations and studies that are considered necessary to more thoroughly evaluate potential response actions for the referenced site. It is important to qualify that this provides only preliminary evaluations of whether each respective option is likely to be viable, and only provides preliminary estimates of capital and operation and maintenance costs. A detailed evaluation of all the technical and financial aspects for each option is not supplied by this preliminary evaluation. The estimated costs presented in this letter reflect only partial costs with each option and exclude costs not specifically noted described or not in the brief description and the appended cost estimates for each option. The evaluations performed and the information summarized in this letter do not fulfill the requirements for a feasibility study and are not intended to replace a feasibility study.

RELEVANT HYDROLOGICAL CONDITIONS

The annual average precipitation for the Saginaw area is approximately 32-inches per year (Source: NOAA). Consequently, for the 43-acre Former National Plate Glass Site, the volume of precipitation falling on the site is approximately 36 million gallons per year, which equates to an average precipitation rate of 69 gallons per minute (gpm) for the site. Understanding that a significant but unquantifiable fraction of this volume will evaporate, be transpired, or run off, a reasonable recharge rate to the site may be on the order of one-third of the total precipitation or 12 million gallons per year (approximately 23 gpm).

To enable rapid lowering of the groundwater table following the initial startup of the dewatering system, two pumps possessing 80 gpm flow capacities (approximately 160 gpm total) were specified for the Dewatering System Project. Pumps with an operational capacity of 80 gpm are believed to provide a very conservative margin of safety that is warranted due to uncertainties and fluctuations with precipitation rates and precipitation intensities, and because of variations in soil and hydrogeologic conditions across the site that could not be assessed by the limited pumping tests performed by Malcolm Pirnie. Except where noted, treatment and discharge alternatives were, consequently, evaluated assuming an operational flow rate of approximately 80 gpm, which would be necessary during initial start-up of the system.

RELEVANT SITE HYDROGEOLOGY

As documented during groundwater monitoring events for 2007, groundwater levels in the fill tend to rise and fall rapidly due to the low effective porosity of the fill material. The effective porosity is the volume of water that the fill will yield under gravity drainage; in this case, approximately 5% per unit volume as estimated from the results of the June 2007 pump test. The effective porosity of soils across the site will significantly affect the rate at which groundwater levels for the site will rise or fall under conditions of increasing or decreasing water volumes within the sheet-pile perimeter of the site.

Total porosity of fine sand and silt, the predominant soil types in the fill, is on the order of 25 to 40%. When these soils are “dewatered”, most water stays bound to soil particles, where there is insufficient pore pressure to move the water toward a well or dewatering trench. Although this water is accessible to plants to be transpired, it is important to note that low effective porosity has a multiplying effect on recharge. One inch of recharge, with 5% effective porosity, could theoretically result in a 20-inch rise in water levels.

The design standard recommended by EPA in landfill design guidance documents is the 24-hour, 25-year average storm event, which is 3.56 inches for Saginaw County (Rainfall Frequency Atlas of the Midwest). Assuming that all of this volume recharges the lagoon, and that 5% effective porosity is accurate, this volume of water could theoretically raise water levels approximately 70 inches. However, recharge during high-intensity rain events will rarely exceed over one-third of the total precipitation that falls across an area. Consequently, a more realistic estimate of water level rise is closer to 24 inches during the storm event described.

Malcolm Pirnie has prepared a summary of the preliminary evaluation of the feasibility and costs of the following options:

- A. Evapotranspiration system
- B. Pump and haul
- C. Grading
- D. Capping
- E. Co-precipitation treatment system
- F. Mechanical evaporation system

A. EVAPOTRANSPIRATION SYSTEM

The feasibility of whether the combined rates of evaporation and evapotranspiration could be reasonably relied upon to eliminate uncontrolled discharge of groundwater from the site if various grading changes and possible modifications to storm water ponds or wetland storage areas were also made. It was concluded that Michigan's climate will not promote sufficient evapotranspiration and evaporation to remove water from the site at a rate exceeding the average precipitation rates for the region. Literature publications state that approximately 80% of the evaporation for the Saginaw area occurs between May and October (Source: US Climatic Atlas). This limited evaporation season, in conjunction with the relatively short growing season for Michigan, cannot be relied upon to prevent the future build-up and potential uncontrolled discharge of water at the site.

Although natural evaporation and evapotranspiration could achieve the site objectives, it is believed that by increasing the number of carefully-selected species of trees and plants across the site, it could be feasible to increase evapotranspiration on site to meet objectives of preventing uncontrolled groundwater discharges. This alternative of "enhanced evapotranspiration" is described and evaluated in the section that follows.

A.1. FORESTED EVAPOTRANSPIRATION – STORAGE SYSTEM

Based on preliminary discussions with Malcolm Pirnie's Wetlands Knowledge Team and two vendors (JF New, Inc. and Microbial Technologies, Inc.), a forested evapotranspiration system irrigated with water collected and stored on-site may be a technically feasible means of increasing the rate of evapotranspiration of site water to prevent uncontrolled discharges from the site. Precipitation that becomes site recharge could potentially be "stored" during the non-growing season and removed from storage during the growing season to irrigate trees and vegetation capable of high rates of water uptake (transpiration).

For purposes of this preliminary evaluation, The results of the calculations for the hypothetical 7-acre planting suggest that evapotranspiration may have viability as a long-term method of achieving site groundwater control objectives; however, literature data reveals that there is a great deal of uncertainty or potential variation of ET rates for plant species as a consequence of differences in site conditions, climates, and soil conditions, amongst other factors.

A drip irrigation system required to implement enhanced evapotranspiration would consist of pumps, distribution piping, and possibly nutrient feed systems. During wet times of the year, the system could cycle frequently, similar to leachate and storm water pumping systems. Annual winterization of the irrigation system would be necessary along with other maintenance activities.

Monitoring, operation, and maintenance of the ET-Storage System would be required, and would likely consist of the following types of activities:

- Fertilization
- Weed Control
- Growth monitoring
- Pruning
- Climatic monitoring
- Soil nutrient and contaminant monitoring
- Groundwater elevation and contaminant monitoring
- Harvesting

B. PUMP AND HAUL

The annual average precipitation for the Saginaw area is approximately 32-inches per year. For the 43-acre Former National Plate Glass Site, the volume of precipitation falling on the site is approximately 36 million gallons per year, or an average of 69 gpm. Understanding that a significant but unquantifiable fraction of this volume will evaporate, be transpired, or run off, a reasonable recharge rate to the site may be on the order of one-third of precipitation or 23 gpm. Furthermore, recognizing seasonal weather variations and that the seeps appear to be more prominent during each spring, costs were prepared for temporary dewatering during 4 months for the spring of each year.

The costs of an interim response to use the existing sumps for dewatering purposes during the spring of each year are summarized in this section for the purposes of forming a baseline for cost comparisons. Assuming that hauling and disposal occurs during a 4 month season (120 days) and that the average recharge rate during this time period is 23 gpm, the volume of water that would require disposal is 3,974,000 gallons. Based on analytical data from the June 2007 pumping test water from sump no. KV6, the starting and ending pH was approximately 9.4 and the arsenic concentration was approximately 2 mg/L. Based on arsenic concentration and pH, the water from the pumping test meets a non-hazardous characterization for purposes of disposal.

C. GRADING

Grading options would modify existing grades to promote runoff, thereby reducing the volume of water that infiltrates to the site. Grading alone would not eliminate all infiltration but could be used to reduce the volume of infiltration and may be used in conjunction with the each of the other options evaluated.

Some cost savings may be afforded by land-balancing where enough topographic relief exists, such as the central-western depression. Such land-balancing was not performed as part of our preliminary evaluations. Additional cost savings could also be gained by utilizing areas of existing depressions for storm water detention/retention, but further evaluation would be necessary for considerations regarding infiltration, storm water monitoring, etc. depending on which option or action is ultimately selected.

D. CAPPING

Approximately 410,000 cubic yards of imported fill materials would be required to obtain the approximately 4% cap sloping shown on Figure 2, Appendix E.

Estimates of two capping options were compiled and consisted of the following:

- Capping Option 1 represents a minimalistic cover system with a primary infiltration barrier consisting of a 40-mil LLDPE flexible membrane liner. The estimated cost to install the cap, including material costs, is approximately \$3.8 Million.
- Capping Option 2 represents a cover system that is similar to Option 1, but includes an additional geosynthetic composite liner as an additional infiltration barrier. The estimated cost to install the cap, including material costs, is approximately \$4.8 Million.

Both caps provide a significant reduction in the infiltration rates in comparison to the existing cover soils.

The preliminary summary of capital costs for each option did not address storm water detention/retention requirements that we would expect to be necessary, particularly before the establishment of vegetation across the cap. Furthermore, only an extremely rudimentary estimate of fill quantity was made for this site by assuming that fill material was brought in to create approximately 4% final grades across the entire site for purposes of promoting runoff.

E. CO-PRECIPIATION TREATMENT SYSTEM

The chemical characteristics across the NPG site vary considerably. A prediction of untreated wastewater characteristics was based on the following: 1) the recent analytical data for site wells supplied by MDEQ; 2) analytical characterization from the titration study; and 3) characterization results of the discharge

from the short duration (24-hour) pumping test. The prediction of influent pollutant concentrations was made by a brief comparison of the results from the three data sets, with no statistical evaluation being made.

With a co-precipitation treatment system, there are two possibilities for the discharge of treated groundwater, which include the following:

- Discharge to the sanitary sewer system
- Discharge to the nearest surface water body by obtaining a NPDES permit

For the purposes of this preliminary evaluation, and based on the information gathered, the costs were assumed based on obtaining a permit to discharge to the sanitary sewer system. Although, the benefits and disadvantages of discharging the effluent to the surface water body are summarized in a following section.

E.1 – CO-PRECIPIATION SYSTEM COMPONENTS

We received preliminary capital investment costs from vendors regarding expected operation and maintenance costs for a pretreatment system that would allow discharge to the sanitary sewer based on achieving limits established for the City of Saginaw POTW system, refer to Appendix F. The vendors were in general agreement that the following treatment processes and equipment would be required to meet the discharge criteria.

- Flow equalization tank (not included in vendor's estimate)
- Influent pumps
- Dual stage reaction tanks
 - First Stage: adjust pH and iron coagulant addition
 - Second Stage: adjust pH and calcium addition (lime or CaCl)
- Flash mix tank for polymer addition
- Clarifier
- Sludge management system
 - Sludge pump
 - Thickening tank
 - Small Filter Press
- Three Multimedia Filters in Parallel
- Polishing Filters
 - Arsenic removal media (lead/lag)
 - Carbon for Mercury removal (lead/lag)

E.2 – EVALUATION OF EFFLUENT DISCHARGE TO SURFACE WATER

Discharging the effluent from the co-precipitation treatment system to the River would likely be more cost-effective than discharging to the sanitary sewer system as long as the treatment costs to meet the surface water discharge costs did not exceed the costs of the sanitary sewer discharge fees.

Based on review of the STORET database the data suggests that the TDS concentrations for the Tittabawasee River may periodically exceed water quality standards of 500 mg/L during certain months of the year. If the co-precipitation treatment system were to discharge to the River, the final acute value (FAV) will likely establish the discharge limits for non-bioaccumulative compounds. The FAV are consistent with the values forwarded to a couple of vendors to allow them to assess treatability and provide preliminary cost.

The limits that would be imposed on TDS and total phosphorus would likely be the controlling parameters for the treatment system. The site water contains thousands of parts per million of TDS. There

is also some variability in the mercury concentrations. The costs and viability of a surface water discharge can not be completely assessed.

F. MECHANICAL EVAPORATION SYSTEM

Fen-Tech Environmental, Inc. a vendor who specializes in manufacturing wastewater sludge dehydration equipment and wastewater evaporation systems provided system and cost estimates. The EVAP-O-DRY Wastewater Evaporation System consists of a submerged burner tube that fires below the solution level and achieves greater than 95% energy efficiency according to the vendor's literature. The evaporation system is designed such that hot gas contact with the liquid creates almost instantaneous vapor while the combustion gases rapidly mix the liquid for even heat distribution.

For a 80 gpm flow rate, the vendor stated that 3 evaporator units at a cost of \$545,000 each would be necessary, which comprises an equipment cost of approximately \$1,635,000. Additional equipment costs would be necessary for buffering the influent to a pH between 6 and 8. Other ancillary equipment costs are not included in this estimate.

For annual operational costs, the vendor estimated natural gas costs per unit as \$873,000 and electrical costs.

It should be further noted that numerous problems exist with mechanical evaporation systems, ranging from precipitated solids handling, corrosion, limited fuel source capabilities, high energy consumption, limited flow rate capabilities, operator attention, design restrictions, and air emissions compliance. Additional costs would be necessary to address the potential issues stated and are not included in the estimated equipment capital cost and estimated annual operation costs. The vendor also recommended a bench-scale test with representative samples of the wastewater to determine the extent of potential scale build-up problems in the combustion chamber. In summary, use of mechanical evaporation as part of an response action to control site groundwater is not economically practical.

SUMMARY

Based on the preliminary evaluation of the requested potential site response options, the following options appear to be cost prohibitive:

- Pump and Haul
 - Approximately \$1,042,000 per season (120 days) for a flow rate of only 23 gpm
- Mechanical Evaporation System
 - Estimated annual operational cost is approximately \$2,683,000 for a flow rate of 80 gpm

Based on the preliminary evaluation of the requested potential site response options, the following options appear to be technically feasible. A detailed review of all the technical and financial aspects for each option is not supplied by this summary. The estimated costs presented in this summary represent cost estimates for only portions of each option and do not provide a total estimated cost for each option and may exclude costs not specifically noted or excluded in the brief description of each option.

A summary of the estimated costs and major advantages/disadvantages for each of these options is as follows:

- Forested Evapotranspiration – Storage System
 - The capital costs are estimated as approximately \$854,500 and the first year of monitoring, operation, and maintenance costs are approximately \$154,000.
 - Relatively low long-term monitoring, operation, and maintenance costs.
 - Large uncertainties associated with the transpiration rates, further evaluations are necessary to determine the evapotranspiration rate required for a net deficit in the water budget for the site.
 - The vegetation may take as long as 18 months to reach the required transpiration rates and may require discharge to an alternative source during that time period.

- Grading
 - The costs to fill the existing on-site depressions, using imported fill, and grading of perimeter areas to promote runoff are approximately \$180,000 and do not include potential costs for storm water control and detention/retention. The cost estimates were made without the benefit of a detailed cut-and-fill land balance evaluation.
 - As a less expensive alternate to capping, implementing this option would reduce the amount of infiltration requiring disposal or treatment and discharge.
 - This option can not solely remedy the problem with potential uncontrolled discharge of impacted water and would have to be combined with another option to achieve site objectives.
- Capping
 - Installation of Capping Option 1, which represents a minimalistic cover system, is estimated to cost approximately \$3.8 Million. Installation of Capping Option 2, which includes an additional geosynthetic composite liner, is estimated to cost approximately \$4.8 Million. Costs to address storm water detention/retention are not included in these estimates.
 - Installation of a cover system would significantly reduce the volume of recharge and infiltration requiring disposal or discharge.
 - It is likely that a leachate management system would still be necessary to remove accumulated water, although a much smaller volume.
- Co-precipitation Treatment System
 - Assuming pretreatment of groundwater to levels meeting the City of Saginaw Sanitary Sewer Discharge limits, the capital cost for the co-precipitation treatment system without an enclosure or building is approximately \$600,000 to \$700,000. Annual operation and maintenance costs would be approximately \$250,000 to \$500,000.
 - Co-precipitation results in wastewater sludge wastes that may be difficult to dewater and will require disposal.
 - The co-precipitation treatment system would likely require an operator(s) for 40 or more hours per week, which is a major disadvantage.
 - Bench-scale test are required to confirm the efficiency of co-precipitation to achieve discharge limits and to refine capital and operation and maintenance costs.

RECOMMENDATIONS

This letter report summarizes the status of the preliminary evaluation of potential site response options that MDEQ has requested Malcolm Pirnie to evaluate and provide recommendations for additional response actions for the referenced site. The letter report also provides recommendations for additional evaluations and studies to further evaluate appropriate response actions.

Though this letter report provides estimated capital costs and preliminary operation and maintenance costs, the report is not intended to serve as a feasibility study or intended to replace a feasibility study. As requested by MDEQ, this letter presents only preliminary cost estimates and a preliminary evaluation of whether each option appears to be technically feasible. A detailed evaluation of all the technical and financial aspects for each option is not supplied by this preliminary evaluation. The estimated costs presented in this letter represent cost estimates for only portions of each option and do not provide a total estimated cost for each option and may exclude costs not specifically noted or excluded in the brief description of each option.

This letter report recommends additional detailed evaluations in the form of a feasibility study for the following response options:

- Evapotranspiration system
- Grading/Capping
- Co-precipitation System

Preliminary costs of the pump and haul option and evaporation system option appear to be cost-prohibitive, and would be included in the feasibility study for reference and cost comparisons, but would not be further evaluated.

Based on these preliminary evaluations, additional evaluations, testing, and possible comparison of potentially viable options through performance of a feasibility study is warranted before proceeding with a design for any of the options evaluated in this letter.

ATTACHMENT III

GUIDELINES FOR POSITION CLASSIFICATIONS

GUIDELINES FOR POSITION CLASSIFICATIONS

The professional firms are required to use the following guidelines as the basis for classification of personnel to be assigned under their contracts. Changes in the key personnel under the contract must be done by Contract Modification. In addition, the professional firms must provide with their modification requests the names, hourly billing rates, and resumes for the new **Key Personnel** to be added to the contracts. A Key Personnel is any staff member of the professional firm who is essential for the successful completion of the Project scope of work and authorized to make decisions affecting the work at the sites under the contracts.

1. PROFESSIONAL KEY PERSONNEL

- A. **Level 4** (P4) - Plans, conducts and supervises projects of major significance, necessitating proven managerial skills and knowledge of hazardous waste sites. Must demonstrate ability to originate and apply new and/or unique methods and procedures. Supplies technical advice and council to other professionals. Generally operates with wide latitude for unreviewed action.

Typical Title: National Manager, Project Leader, Chief Engineer or Scientist.

Qualifications and Experience:

Ph.D. degree with 10 years or more experience.

MS degree with 12 years or more experience.

BS degree with 14 years or more experience.

Experience Factors: Technical experience in environmental investigation and remediation activities, or other discipline directly related to the requirements of this contract. Minimum of 4 years experience in supervising multidisciplinary professionals and general office management including budgetary requirements.

- B. **Level 3** (P3) - Under general supervision of National Program Manager, plans, conducts and supervises assignments on a project-by-project basis. Estimates and schedules work to meet completion dates. Directs assistance, reviews progress and evaluates results; makes changes in methods, design or equipment are made where necessary. Responsible for safe and cost-effective approaches to achieve the objectives of the project.

Typical Title - Regional Team Leader, Project Engineer.

Qualifications and Experience:

Ph.D. degree with 4 to 10 years experience

MS degree with 6 to 12 years experience

BS degree with 8 to 14 years experience

Experience Factors: Technical experience in environmental investigation and remediation activities, or other disciplines directly related to the requirements of this contract. Minimum of 4 years experience or equivalent. Must have demonstrated ability to manage group of interdisciplinary professionals.

- C. **Level 2** (P2) - Under supervision of a senior or project leader, carries out assignments associated with projects. Work assignments are varied and require some originality and ingenuity. Applies training of professional discipline to assigned projects and translates technical guidance and training received into usable data products and reports. Evaluates data associated with various watersheds for use in developing digital flood insurance map production and development of updated flood data.

Typical Title: Surveyor, Engineer, Construction Manager, Project Manager, Scientist, Analyst

Qualifications and Experience:

MS degree with 2 to 6 years experience.

BS degree with 3 to 8 years experience.

Experience Factors: Minimum of 2 years in area directly related to contract requirements.

2. PROFESSIONAL NON-KEY PERSONNEL

- A. **Level 1** (P1) - Entry level for professional classification; works under supervision of team or project leader. Gathers and correlates basic data and performs routine tasks and other duties as assigned. Makes recommendations on work assignments and on variables which affect field operations. Assist field operations as directed, including manual tasks of equipment setup and maintenance. Performs other duties as assigned.

Typical title: Junior Associate (Surveyor, Engineer, Environmental Scientist, Geologist, etc.)

Qualifications and Experience:

MS degree with 0 to 2 years experience.

BS degree with 0 to 3 years experience.

Experience Factor: None

3. TECHNICIAN NON-KEY PERSONNEL

- A. **Level 3** (T3) - Performs non-routine and complex assignments. Works under general supervision of a surveyor, scientist or engineer. Performs experiments or tests which may require non-standard procedures and complex instrumentation. Records, computes and analyzes test data, prepares test reports. May supervise lower level technicians or trades personnel.

Typical Title: Senior Technician

Qualifications and Experience: 6 years or more experience.

Experience Factor: Related to scope of contract.

- B. **Level 2** (T2) - Performs non-routine and complex tasks in addition to routine assignments. Works at the direction of the team or project leader. Gathers and correlates basic data and performs routine analyses. May also perform experiments or tests which may require non-standard procedures and complex instrumentation. May construct components or sub-assemblies or prototype models. May troubleshoot malfunctioning equipment and make simple repairs as authorized by team or project leader.

Typical Title: Senior Technician

Qualifications and Experience: Two to six years experience or equivalent.

Experience Factor: Related to scope of contract.

- C. **Level 1** (T1) - Entry level; performs simple, routine tasks under supervision as established in chain-of-command procedures. Performs routine maintenance and may install, set up or operate field equipment of moderate complexity. Provides a wide variety of support functions during field operations.

Typical Title: Junior Technician (field technician)

Qualifications and Experience: 0 to 2 years experience.

Experience Factor: None

4. ADMINISTRATIVE TECHNICAL SUPPORT (CL) NON-KEY PERSONNEL

Performs project specific administrative support work such as word processing, spreadsheet preparation, data entry, etc.

Typical Title: Project Assistant, Word Processor, Data Entry Clerk, etc.

Qualifications and Experience: 0 to 2 years or more

**ATTACHMENT V
TASK COST SHEET
File No. 761/08129.SAR
Index No. 44601**

**Department Of Environmental Quality
Remediation and Redevelopment Division**

PROFESSIONAL SERVICES FOR GROUNDWATER TREATMENT-FORMER NATIONAL PLATE GLASS SITE

FIRM NAME _____

Please complete the following Bid Summary and include in the proposal:

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	SUBTOTAL
1.	File Review	1	Lump Sum		
1a.	Health and Safety Plan and Work Plan Preparation	1	Lump Sum		
2.	Response Option Evaluation & Recommendation	1	Lump Sum		
3.	<i>Recommendation fro additional work</i>	30	Hours		
4.	Design of treatment system	1	Lump Sum		
5.	Bid Documents preparation	1	Lump Sum		
6.	Construction Oversight	60	Days		
7.	O&M Oversight	12	Months		
8.	System Performance Evaluation	1	Lump Sum		
9.	Project Summary preparation	24	Months		
10.	Over 200 Miles Travel Expenses	1	Lump Sum		
	TOTAL				

NOTE: Pay items shall include compensation for all labor, materials, equipment and subcontractor cost necessary to complete the work described in this document.

* Estimated.

ATTACHMENT VI
Professional Questionnaire

**Professional Questionnaire for
File No. 761/08129.SAR
Index No. 44601**

**Department Of Environmental Quality
Remediation and Redevelopment Division**

PROFESSIONAL SERVICES FOR GROUNDWATER TREATMENT-FORMER NATIONAL PLATE GLASS SITE

INSTRUCTIONS: Bidders shall complete the following required information in the form provided. A separate sheet may be used if additional space is needed. The Article number(s) the additional information pertains must be included on the separate sheet. Bidders are to ensure all questions are answered completely in the most concise way possible to streamline the review process.

ARTICLE 1: BUSINESS ORGANIZATION

- 1.1 Business Organization Full Name: _____
Business Organization Address: _____
If Applicable, state the branch office(s), partnering organization or other subordinate element(s) that will perform, or assist in performing, the work: _____

- 1.2 Check the appropriate operation status:
 Individual firm Association Partnership Corporation, or Combination – Explain:

- 1.3 If you operate as a corporation, include the state in which you are incorporated (_____) and the date of incorporation (_____).
- 1.4 Include a brief description of Professional's history: _____

- 1.5 Professional(s) federal I.D. number: _____

ARTICLE 2: PRIOR EXPERIENCE

- 2.1 Provide a client reference and brief descriptions of at least three (3) projects in the last five years closely related to the work requested in this RFP. Emphasis shall be placed on recent work at sites of environmental contamination and on sites where the Professional has provided RI/FS services, design services, and community relations for remedial actions:

Project 1 Reference Information:

Project Name: _____

Project Address: _____

Project City/State/Zip: _____

Contact Name and Telephone #: _____

Project 1 Description: _____

Project 2 Reference Information:

Project Name: _____
Project Address: _____
Project City/State/Zip: _____
Contact Name and Telephone #: _____
Project 2 Description: _____

Project 3 Reference Information:

Project Name: _____
Project Address: _____
Project City/State/Zip: _____
Contact Name and Telephone #: _____
Project 3 Description: _____

- 2.2 A copy of technical memorandum from a past project that is similar to the work requested in the RFP is provided?
 Yes No
- 2.3 A sample of field activity logs detailing a 1-week period (from one of the three (3) prior experience sites) and a weekly report is provided? Yes No

ARTICLE 3: REGULATORY KNOWLEDGE

Include a brief description of your firm's professional experience in each of the following areas:

3.1 Remedial Investigations: _____

3.2 Groundwater Sampling: _____

3.3 Feasibility Studies: _____

3.4 Federal Regulations and Michigan environmental statutes related to the remedial action programs: _____

ARTICLE 4: PERSONNEL STAFFING

4.1 An organizational chart that includes each person on your project team and their identified roles is provided?

Yes No

4.2 Please fill out the following information regarding the personnel your firm considers key to the successful completion of the study or project scope of work:

Key Personnel 1

Name: _____ Job Title: _____

Labor Classification: _____ College Degree(s): _____

Successfully completed 40 hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up-to-date 8 hour HAZWOPER refresher training? Yes No

Key Personnel 2

Name: _____ Job Title: _____

Labor Classification: _____ College Degree(s): _____

Successfully completed 40 hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up-to-date 8 hour HAZWOPER refresher training? Yes No

Key Personnel 3

Name: _____ Job Title: _____

Labor Classification: _____ College Degree(s): _____

Successfully completed 40 hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up-to-date 8 hour HAZWOPER refresher training? Yes No

Key Personnel 4

Name: _____ Job Title: _____

Labor Classification: _____ College Degree(s): _____

Successfully completed 40 hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up-to-date 8 hour HAZWOPER refresher training? Yes No

Key Personnel 5

Name: _____ Job Title: _____

Labor Classification: _____ College Degree(s): _____

Successfully completed 40 hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training with an up-to-date 8 hour HAZWOPER refresher training? Yes No

4.3 Does the Professional Project Manager (PM) have at least three years experience as a PM? Yes No

4.4 Does Professional PM have a minimum of 10 years experience with similar projects?

Yes No

4.5 Resumes for the key personnel provided? Yes No

ARTICLE 5: CONSULTANTS/SUBCONTRACTORS

5.1 Specifically, identify any consultants/subcontractors you plan to use including those for engineering, well drilling, and geophysical testing (*Note: If any support must be provided by a consultant/subcontractor, said consultants/subcontractors must indicate their capability and willingness to carry out the work*):

Consultant/Subcontractor 1

Business Name: _____

Address: _____

City/State/Zip: _____

Contact Name and Telephone #: _____

Description of Work to Be Conducted: _____

Letter of intent provided? Yes No

Consultant/Subcontractor 2

Business Name: _____

Address: _____

City/State/Zip: _____

Contact Name and Telephone #: _____

Description of Work to Be Conducted: _____

Letter of intent provided? Yes No

Consultant/Subcontractor 3

Business Name: _____

Address: _____

City/State/Zip: _____

Contact Name and Telephone #: _____

Description of Work to Be Conducted: _____

Letter of intent provided? Yes No

- 5.2 Are consultants/subcontractors trained in health and safety procedures, including participating in a medical monitoring program, and comply with 29 CFR Part 1910, as amended? Yes No
- 5.3 If a consultant/subcontractor is to be used for drilling, do they have a minimum of 5 years related experience? Yes No
- 5.4 Provide the following information and brief descriptions of at least three (3) projects in the last five years closely related to the work requested in this RFP for drilling consultant/subcontractor:

Project 1 Reference Information:

Project Name: _____

Project Address: _____

Project City/State/Zip: _____

Contact Name and Telephone #: _____

Project 1 Description: _____

Project 2 Reference Information:

Project Name: _____

Project Address: _____

Project City/State/Zip: _____

Contact Name and Telephone #: _____

Project 1 Description: _____

Project 3 Reference Information:

Project Name: _____

Project Address: _____

Project City/State/Zip: _____

Contact Name and Telephone #: _____

Project 1 Description: _____

ATTACHMENT VII

Standard Contract Conditions for Professional Services