

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET

This contract authorizes the professional service contractor
to provide professional services. (Authority: 1984 PA 431)

CONTRACT FOR PROFESSIONAL SERVICES

THIS CONTRACT, authorized this _____ of _____ in the year two-thousand and five (2005), by the Director, Department of Management and Budget, BETWEEN the STATE OF MICHIGAN acting through Facilities Administration, DESIGN AND CONSTRUCTION DIVISION of the DEPARTMENT OF MANAGEMENT AND BUDGET, First Floor, Stevens T. Mason Building, Lansing, Michigan, hereinafter called the State,

and

the Prime Professional Service Contractor, hereinafter called the Professional,

FOR THE FOLLOWING PROJECT:

Index No.
File No.

Contract Order No. Y

NOW THEREFORE, the State and the Professional in consideration of the covenants of this Contract agree as follows:

- I. The Professional shall provide the professional environmental engineering/remedial study services for the Project scope of work in the environmental engineering/remedial study and construction Phase/Task sequence provided in this Professional Services Contract and to the extent authorized by the Department of Management and Budget, Office of Facilities, Design and Construction Division, the Department of Environmental Quality, Remediation and Redevelopment Division and be solely responsible for their professional services. The Professional's environmental engineering/remedial study services shall be performed in strict accordance with this Professional Services Contract and be in compliance with the attached Appendix 1 - Project/Program Statement scope of work requirements.
- II. The State of Michigan shall compensate the Professional for providing their professional environmental engineering/remedial study services for the Project scope of work services in accordance with the conditions of this Professional Services Contract.
- III. CENTURY DATE COMPLIANCE PROTECTION: All fixtures, equipment or operating systems which require firmware or software systems and that are provided with and/or incorporated into the work shall include, at no increase in Contract price or Contract time, design and performance such that they will not experience firmware or software abnormality and/or generate incorrect results or performance deficiencies due to date oriented processing.

If a Construction Contract is required for this Project, the Professional shall include the Century Date Compliance Protection language in the: (1) "Supplemental Conditions," of the Construction Contract of the Department of Management and Budget, Office of Facilities, Design and Construction Division, "MICHSPEC 2001 Edition of The Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)"; or the (2) Current Department of Management and Budget, Office of Facilities, Design and Construction Division, "DMB Short Form 401 - Proposal and Contract/Front-End Package for Small Projects for Professional Service Contractors (PSC) with General Conditions for Construction and Instructions to Bidders" as adopted and modified by the State of Michigan and incorporated into the Construction Contract. The "Supplemental Conditions," Century Date Compliance Protection language will require the Professional to provide in the Construction Contract for this Project, the text provisions of the following paragraphs (A.) through (E.) below:

- A. The firmware and software design to ensure century date compliance capability, shall include, but not be limited to date structures (databases, date files, etc.) that provide four (4) digit date century; stored data that contain date century recognition, including, but not limited to, data stored in databases and hardware device internal system date; calculations and program logic (e.g. sort algorithms, calendar generation, event recognition, and all processing actions that use or produce date values) that accommodates same century and multi-century formulas and date values; and user interfaces (i.e. screen reports, etc.) that accurately treats four (4) digit year 2000 as a leap year within all calculations and calendar logic.
 - B. When requested by the State of Michigan, the Construction Contractor shall promptly provide written assurances to the State from any manufacturer of any fixtures, equipment or operating systems provided with and/or incorporated into the work that its fixtures, equipment, or operating systems have been reasonably tested and will not experience any firmware or software abnormality and/or generate incorrect results or performance deficiencies due to date oriented processing. Whether the State chooses to request such assurances, and whether such assurances are provided, will not relieve the Construction Contractor from the Construction Contractor's obligation to provide fixtures, equipment and operating systems in accordance with the responsible parties (RPs) Professional's Contract Documents/environmental engineering/remedial design drawings and specifications requirements or will represent acceptance of defective work.
 - C. If the Construction Contractor knows or has reason to know of any incorrect results and/or performance deficiencies due to date oriented processing, the Construction Contractor shall promptly notify the Professional and the State in writing of any such defective work.
 - D. The Construction Contractor specifically warrants and represents that all fixtures, equipment or operating systems provided with and/or incorporated into the work will not experience firmware or software abnormality and/or generate incorrect results or performance deficiencies due to date oriented processing. This Construction Contractor warranty shall extend until the applicable warranty otherwise covering the fixture, equipment or operating system at issue expires, whichever is later.
 - E. The Construction Contractor shall take prompt corrective action upon receiving any written notice of any defective work because any fixtures, equipment or operating systems experience firmware or software abnormality and/or generate incorrect results or performance deficiencies.
- IV. The terms and conditions of this Professional Services Contract are outlined in the following Articles 1 through 14 and the attached appendixes.
- V. **DEFINITION OF TERMS:** The capitalized defined terms utilized in this Professional Services Contract shall have the following definitions:

BUDGET: Shall mean the maximum legislatively authorized Budget amount to be provided by the State of Michigan and available for a specific purpose or combination of purposes to accomplish the Project scope of work for this Contract.

CONSTRUCTION CONTRACT: Shall mean a separate written Contract agreement between the Construction Contractor and the Department for the construction, alteration, demolition, repair, or rebuilding of a State/Client Agency building or other State property.

CONSTRUCTION CONTRACTOR: Shall mean any construction firm under a separate Contract to the Department for construction services.

CONSULTANT: Any individual, firm, or employee thereof, not a part of the Prime Professional's staff, but employed by the Prime Professional and whose professional service cost is ultimately paid by the State of Michigan, either as a direct cost or reimbursement. This includes the recipient(s) of Contract Orders for material, support, and/or technical services. Also, included are persons and firms whose management and/or direction of services are assigned to the Prime Professional as may be provided elsewhere in this Contract.

CONTRACT CHANGE ORDER: A written order standard document form (DMB-403) issued and signed by the State of Michigan and signed by the Professional which amends the Contract Documents for changes in the attached Appendix 1 – Project/Program Statement scope of work requirements or an adjustment in Contract price and/or Contract time, or both.

CONTRACT DOCUMENTS: Shall mean the Professional's environmental engineering/remedial study plans/drawings, specifications, and all attachments as may be necessary to comprise a Contract for the Project scope of work requirements.

CONTRACT MODIFICATION: A written amendment standard document form (DMB-410) to the Contract scope of work requirements signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the attached Appendix 1 – Project/Program Statement scope of work requirements or previously unknown on-site field conditions as approved by the Department of Environmental Quality, Remediation and Redevelopment Division, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director will be compensated to the Professional by way of the Contract Modification in accordance with the Article 2, Compensation text of this Contract. Any Contract Modification of this Professional Services Contract must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the Department may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for the Professional's Contract Documents/environmental engineering/remedial study errors, omissions or neglect on the part of the Professional.

CONTRACT ORDER: A written order standard document form (DMB-402) issued and signed by the State of Michigan authorizing a professional firm to: (1) Begin to incur Project expenses and proceed with the Project work on-site; and (2) Provide the professional services stipulated in the fully executed Contract scope of work for the not-to-exceed dollar (\$) fee amount designated in the Phases of the Contract Order. Issuance of this standard document form by the State of Michigan to the Professional firm certifies that: (1) The State will enter into a Professional Services Contract for the professional services described in the Phases of this Contract; and that (2) The proper three (3) sets of Original Certificate of Insurance documents have been received and accepted by the State along with the approval and signing of the Professional firm's Professional Services Contract by the Director of the Department of Management and Budget, Office of Facilities.

DEPARTMENT: The term "Department" shall mean the State of Michigan in its governmental capacity, including its departments, agencies, boards, commissions, officers, employees and agents; and for purposes of this Professional Services Contract, its duly authorized representative shall be the Director of the Department of Management and Budget, or their designee. The Department will represent the State of Michigan in all matters pertaining to this Professional Services Contract. The Department of Environmental Quality, Remediation and Redevelopment Division will administer and interpret the Contract on a day-to-day basis during the term of the

Contract scope of work. All other Contract matters will be administered through the Department of Management and Budget, Office of Facilities, Design and Construction Division.

DESIGN MANUAL: Provides the Professional with information regarding the Department of Management and Budget, Office of Facilities, Design and Construction Division's current "Major Project Design Manual for Professional Service Contractors and State/Client Agencies" review process requirements regarding the uniformity in Contract materials presented to it by the Professional and the State/Client Agency(ies). This manual contains the following noted standards, instructions, and procedures information for: (1) General instructions for planning documents from Phase 100-Study through Phase 500-Final Design; (2) Net and gross area/volume; (3) Project cost format; (4) Outline environmental engineering/remedial study specifications; (5) Specifications in documentation Phase; (6) Instructions for proposal; (7) Bidders questionnaire; and the (8) Project job sign.

DIRECTOR: The Director of the Department of Management and Budget or their authorized State of Michigan representative.

DIRECTOR-OF: The Department of Management and Budget, Director of Office of Facilities or their authorized State of Michigan representative.

KEY PRINCIPAL PERSONNEL/EMPLOYEE: Shall mean a Chief Executive Officer of a professional firm who is essential for the successful completion of this Project scope of work.

PHASE: A discretely distinguishable design Phase step necessary to produce the Project's scope of work in the course of the Professional providing environmental engineering/remedial study services.

PRIME PROFESSIONAL SERVICE CONTRACTOR/PROFESSIONAL: Shall mean an individual, firm, partnership, corporation, association, or other legal entity who is legally permitted by law to sign and seal final design construction Contract Documents and licensed under the State of Michigan's professional licensing and regulation provisions of the Occupational Code (State Licensing Law), Act 299 of the Public Acts of 1980, Article 20, as amended, to practice architecture, engineering, environmental engineering, land surveying, or landscape architecture services in the State of Michigan.

The Prime Professional Service Contractor/Professional firm is also legally permitted by the State of Michigan's regulation provisions of the State Construction Code, Act 230 of the Public Acts of 1972, as amended, and designated in a Construction Contract by the Department of Management and Budget, Office of Facilities, Design and Construction Division to recommend construction progress payments to the Construction Contractor.

PROJECT: Shall mean any new construction, existing site, utilities existing building renovation, additions, environmental engineering site remedial services, alteration, repair, installation, painting, decorating, demolition, conditioning, reconditioning or improvement of public buildings, works, bridges, highways or roads authorized by the Department.

PROJECT COST: Shall mean the total Project cost including, but not limited to, site purchase, site survey and investigation, hazardous material abatement, construction, site development, utilities, telecommunications (voice and data), professional fees, testing and balancing services, furnishings, equipment, environmental engineering/remedial study plan(s)/drawing(s) design code compliance and plan review approval fees and all other costs associated with the Project.

PROJECT DIRECTOR: Shall mean the professional licensed State of Michigan employee of the Department of Management and Budget, Office of Facilities, Design and Construction Division, Environmental Engineering discipline who is responsible for directing and supervising the Professional's attached Appendix 1 – Project/Program Statement scope of work requirements during the life of this Professional Services Contract. The Project Director is responsible for monitoring and coordinating the performance of the construction Phase services and also responsible for the overall administration and Inspection of Capital Outlay and miscellaneous operating projects (MOP's) construction activities to ensure quality control, final design Contract

Documents compliance and timely Project completion within the established Project construction Budget. The Project Director, or their Resident Field Inspector, has the authority to require the Professional to respond to and resolve construction on-site field problems and to attend Project related meetings. Unless delegated by specific written notice from the Department, the Resident Field Inspector does not have any authority to order any changes in the Project scope of work or authorize any adjustments in Contract price or Contract time.

PROJECT/PROGRAM STATEMENT: Shall mean the attached Appendix 1 - Project/Program Statement scope of work requirements prepared by the State/Client Agency that defines the scope of the problem and describes why this Project is desirable, and provides a preferred resolution of the problem. The Project/Program Statement also requires the Professional to provide a Project schedule identifying critical design and construction milestone target dates that shall be required and achieved for the Project scope of work.

PROJECT TEAM: Consisting of the Professional, the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director, the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and others as considered appropriate by the Department.

SOIL EROSION AND SEDIMENTATION CONTROL: The planning, design and installation of appropriate Best Management Practices designed and engineered specifically to reduce or eliminate the off-site migration of soils via water runoff, wind, vehicle tracking, etc. Soil Erosion and Sedimentation Control in the State of Michigan is regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and Sedimentation Control associated with this Contract will be monitored and enforced by the Department of Management and Budget, Office of Facilities, Soil Erosion and Sedimentation Control Program.

STATE: Shall mean the State of Michigan in its governmental capacity, including its departments, agencies, boards, commissions, officers, employees and agents. Non-capitalized references to a state refer to a state other than the State of Michigan.

STATE/CLIENT AGENCY: Shall mean the State of Michigan, Department of Environmental Quality, Remediation and Redevelopment Division for whose use the Project will ultimately serve, which requires professional environmental engineering study services. The term State/Client Agency does not include an institution of higher education or a community college.

STATE CONTRACT ADMINISTRATOR: The Chief of the Michigan Department of Environmental Quality, Remediation and Redevelopment Division, Contract Procurement and Design/Operation and Maintenance Unit authorized by the State to administer and interpret the Contract on a day-to-day basis during the term of this Contract scope of work. However, administration of this Contract implies no authority to negotiate, change, modify, amend, or otherwise alter the terms, prices, conditions, and specifications of this Contract unless specified within the Contract. All other authority is retained by the Department of Management and Budget, Office of Facilities, Design and Construction Division.

STATE FIELD INSPECTOR: Shall mean an employee of the State of Michigan under the direction of the Department of Environmental Quality, Remediation and Redevelopment Division, State Project Manager who provides the on-site, Inspection of construction Projects for compliance with the design intent of the Professional firm's and the responsible parties (RP's) Professional's Contract Documents/environmental engineering/remedial drawings and specification requirements and the building construction codes. The State Field Inspector is the liaison between the Construction Contractor, the Professional, and the State Project Manager. The State Project Manager, or their State Field Inspector, has the authority to require the Professional to respond to and resolve construction on-site field problems and to attend Project related meetings.

STATE PROJECT MANAGER: The assigned district staff of the Department of Environmental Quality, Remediation and Redevelopment Division authorized by the State to represent and act on behalf of the State Contract Administrator on a given Project and to thereby provide direction and assistance to the Construction Contractor. The State Project Manager may designate in writing a person to act on behalf of the State Project Manager when they are unable to perform their required duties or is away from the office. In such cases, the State Project Manager must notify the Construction Contractor and the State Contract Administrator.

SUSTAINABLE BEST PRACTICE: Is defined in this Contract as the Professional's use of Project design resources with no negative impact to the natural ecosystems and when possible, achieving a net enhancement of the Project scope of work. Sustainable Best Practices shall be utilized wherever possible by the Professional in their Project design and an itemized list shall be provided with the final design Contract Documents/environmental engineering/remedial drawings and specifications requirements that identifies the processes and products.

TASK: Shall mean the following: (1) A quantifiable component of design related professional environmental engineering study Task services required to achieve a Phase of the Project's scope of work; (2) The most manageable sub-element within a design Phase; (3) A unique item of work within a design Phase for which primary responsibility can be assigned; and (4) Has a time related duration and a cost that can be estimated within a design Phase.

ARTICLE 1 PROFESSIONAL SERVICE

The Professional shall provide, without exception, every professional, scientific, technical, and environmental discipline, staff and support personnel, along with all supplies, equipment and testing apparatus, and all other specialized personnel, services necessary to achieve the Project scope of work as described in the attached Appendix 1 - Project/Program Statement(s), and to perform such work for compensation fee(s) according to the professional environmental engineering/remedial study services rendered and be within the Professional's not-to-exceed compensation fee(s) amount authorized in this Contract and Department approved Contract Change Orders. The Professional shall field check, and verify the accuracy of all drawings and any data furnished by the Department, the State/Client Agency or any other Project related source. The Department, at its discretion, may incorporate by Contract Change Order(s) the work of one (1) or more Projects into this Contract. The Professional's service includes attendance at all Project related meetings and conferences. The Professional is ineligible to Bid on the construction work of any Bidding Documents produced under this Contract. The Professional may not employ in any element of design, specification or estimating of this Project any firm(s) who it anticipates will be a supplier or construction Bidder for the Project or firm(s) that have participated in the Project study or design Phase work, or any part thereof. The assignment of, or continuation of any assigned Project work is conditional upon satisfactory performance for the Department. All on-site management and supervisors directly responsible for, or who shall supervise personnel engaged in, hazardous waste operations shall have successfully completed the Department of Environmental Protection Agency's, Safety Training Program in accordance with the requirements of the General Industry Standards, 29 CFR 1910.120. The Professional shall provide a Health and Safety Plan (H.A.S.P.) before implementation of the approved Project work plan. Response to the assigned Project scope of work shall begin no later than two (2) business days from the date of written notification of the Department's need for professional environmental engineering/remedial study services. Where authorized, elsewhere in this Contract, the Professional may provide testing services, with a Department approved, and fully qualified laboratory on a reimbursable basis. The Professional acknowledges that the Department is the first interpreter of the Professional's performance under this Contract.

The Professional shall reference current State of Michigan and federal statutes and current administrative rules when implementing response activities or corrective actions at the sites with environmental contamination to comply with the requirements of the Department of Natural Resources and the Department of Environmental Protection Act, 1994 PA 451, as amended.

Soil Erosion and Sedimentation Control in the State of Michigan is regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and Sedimentation Control associated with this Contract will be monitored and enforced by the Department of Management and Budget, Office of Facilities, Soil Erosion and Sedimentation Control Program.

The Professional shall reference current operational memoranda including the Tier 1 Risk-Based Screening Levels (RBLs) look-up tables, the current edition of the American Society for Testing and Materials (ASTM), Standard Guide for Risk-Based Corrective Action (RBCA), E1739-95 including the policy decisions made to customize the standard Guide for Risk-Based Corrective Action process into a State of Michigan specific process and the General Guidance for Evaluating and Characterizing Petroleum Releases documents issued by the Department of Environmental Quality, Remediation and Redevelopment Division as needed to assist in implementing the corrective action activities undertaken under Part 213 of the 1994 PA 451, as amended.

For sites with activities undertaken under Part 201 of the 1994 PA 451, as amended, the Professional is required to refer to the operational memoranda including Part 201 Generic Clean-up and Screening Levels and the Training Material issued by the Department of Environmental Quality, Remediation and Redevelopment Division (RRD) as needed to determine whether a remedial plan/response activity complies with the requirements of Part 201 of the 1994 PA 451, as amended.

The Professional acknowledges by signing this Professional Services Contract, having a clear understanding of the requested Project scope of work requirements and of the professional environmental engineering/remedial study services required by the Department to provide it, and further agrees that the terms and conditions of this Professional Services Contract provide adequate professional compensation fee(s) for the Professional to produce the requested Project scope of work requirements. No increase in compensation fee to the Professional will be allowed unless there is a material change made to the Project scope of work requirements as described in attached Appendix 1 - Project/Program Statement scope of work requirements and the change in scope to the Project/Program Statement scope of work requirements is accepted and approved in writing, by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager, the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Professional. Professional services shall not be performed and no Project expenses shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DMB Form 402 - Contract Order by the Department to the Professional, authorizing the Professional firm to start the Project work on-site. Compensation for Department directed changes to the Project or modifications to the Project scope of work requirements will be provided to the Professional by a Contract Modification and/or Contract Change Order signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from increases in the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Project Director, on an hourly billing rate basis in accordance with this article (and the attached Appendix 5 – Project Hourly Billing Rate \$ Compensation).

Services for this Project shall be provided in the Phase/Task sequence shown below and shall be rendered in accordance with the Professional's attached Appendix 3 – Project Study Schedule duration. The Professional's environmental engineering study schedule shall be detailed, undated, and time sequence related for all Phase/Task services appropriate for the Project scope of work.

The Professional shall immediately inform the Department whenever it is indicated that the Professional's authorized Project not-to-exceed Budget cost may be exceeded. The Professional shall make recommendations to the Department for revisions to the Project to bring the Project cost back to the Professional's original authorized Budget amount. Any revision to the Project must be accepted and approved by the Department in writing.

No substitution of any "Key Principal Personnel/Employee" who is essential for the successful completion of the Project scope of work requirements and identified in the Professional firm's attached Appendix 2 – Project Organizational Chart will be allowed by the Professional firm for this Contract without the prior written consent from the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget,

Office of Facilities, Design and Construction Division's, Project Director. Before any "Key Principal Personnel/Employee" substitution takes place, the Professional firm shall submit a written request to the Project Director for personnel substitution and this substitution request shall include the following information: (1) A request in writing for a No Cost Contract Modification for this "Key Principal Personnel/Employee" substitution; (2) Detailed written justification for this "Key Principal Personnel/Employee" substitution; (3) The Professional firm's qualifications of any proposed "Key Principal Personnel/Employee" replacement; and (4) A written statement from the Professional firm assuring the Department that the Project scope of work will not be adversely affected by this "Key Principal Personnel/Employee" substitution change. This request by the Professional firm to modify their Professional Service Contract must be accepted and approved in writing by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager, the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Director of the Department of Management and Budget, Office of Facilities, on the Department's, Professional Services Contract Modification form (DMB-410).

The Department will designate an individual to serve as the Project Director for the Project scope of work and who shall be fully acquainted with the attached Appendix 1 – Project/Program Statement scope of work requirements and have the authority to render Project decisions and furnish information promptly. Except, in connection with issues under the Article 12 - Contract Claims and Disputes text, the Project Director will exercise general management and administration for the Professional's services in so far as they affect the interest of the State. Also, the Department may assign study, design and/or construction staff to oversee the Professional's performance of the various Project Phase(s) of this Contract. The Professional shall indemnify, defend, and hold harmless the State against exposure to claims arising from delays, negligence or delinquencies by the Professional for the services of this Contract.

During the Study Phase administration of this Project, the Professional shall be required to obtain from the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director, the on-site Inspection record form document titled "DMB-452, The Professional's Inspection Record" for all on-site Inspection visits to the Project site. This standard document form is a part of the "DMB-460, Project Procedures" documents package. The Professional's Inspection Record document shall be completed and signed by the Professional and compiled monthly with the original form document sent to the Department of Environmental Quality, Remediation and Redevelopment Division, State Contract Administrator and a copy sent to the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director. The on-site Inspection record standard document form shall be completed and accompany the Professional's monthly submitted payment request.

The "DMB-460, Project Procedures" documents package shall be completed by the Professional and contains the following Department of Management and Budget, Office of Facilities form documents: (1) DMB-413, General Release – Visitors; (2) DMB-426, Builder's Risk Claim; (3) DMB-434, Certification of Off-Site Material Storage; (4) DMB-437, Guarantee and Indebtedness Statement; (5) DMB-440, Payment Request; (6) DMB-441, Meeting Attendance Record; (7) DMB-445, Certificate of Substantial Completion; (8) DMB-452, Professional's Inspection Record; (9) DMB-485, Bulletin Authorization No.; (10) Instructions for Schedule of Value; (11) DMB-487, Material Stored on Project/Job Site; and (12) DMB-489, Instructions to Construction Contractors for Preparation of Bulletin Cost Quotations for Contract Change Orders.

The environmental engineering/remedial study professional services required for each Phase of this Contract shall be performed by the Prime Professional firm and their Consultants in accordance with the Task service descriptions in this article. The following environmental engineering/remedial Study Phase/Task service descriptions outlined in this Professional Services Contract represents the Department's standard of care method for describing the Professional firm's responsibilities for providing the environmental engineering/remedial study services of this Contract, but by inclusion, or omission, do not limit or exclude any regular or normal professional services necessary to accomplish the Project scope of work as required by the governing environmental enforcing agency, in full compliance with all applicable safety and health regulations and be in accordance with the approved Project Budget and the best industries accepted requisites for occupational safety and health standards of professional environmental engineering/remedial practice. However, all of the Phase/Task service descriptions outlined in this Contract may or may not be applicable to the attached Appendix 1-Project/Program Statement scope of work requirements and will require the Professional to identify only the Phase/Task

services that are applicable for their Project scope of work. The Professional shall determine and coordinate the interface of the environmental engineering/remedial Study Phase/Task services required for their Project scope of work and be responsible for identifying any additional Task services necessary to successfully complete their Project scope of work.

Should litigation occur as a result of this Project, the Professional shall be compensated by the Department of Environmental Quality, Remediation and Redevelopment Division and the Department of Management and Budget, Office of Facilities, Design and Construction Division on an actual hourly billing rate basis at the rate set forth in this Contract by a Contract Modification and/or Contract Change Order, if required to assist the Department of Attorney General, State Affairs Division in providing the professional environmental engineering/remedial study services necessary during the course of litigation.

The following professional services, if they become necessary, may be essential for completing the Project Contract scope of work. They will be individually rendered by the Professional, only upon specific written authorization by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director to the Professional and for the purpose, and to the extent so authorized.

LITIGATION: The Professional shall provide all information, presentations, depositions, testimony as "expert witness", and similar or related services, on behalf of the Department, as may be required in relation to the professional environmental engineering/remedial study services of the design and construction of this Project.

ACCOUNTING: The Professional shall provide all specialized categorizations and distributions of the costs of environmental engineering/remedial study, design and construction services, construction costs, and operational costs, as may be required according to purpose specific parameters.

PUBLIC AWARENESS: The Professional shall provide all environmental engineering/remedial study, design and construction related services to assist in, and make presentations of the professional services of the environmental engineering/remedial design, construction and operational aspects of the Projects as may be required for public meetings, hearings, and similar informational activities.

PHASE 100 - ENVIRONMENTAL INVESTIGATION/STUDY SERVICES

Provide complete and comprehensive site and/or facility surveys, environmental engineering investigation/study services and analysis/reports thereof to define the environmental circumstances of various sites, buildings and/or structures based upon the Department's approved and attached Appendix 1 – Project/Program Statement scope of work requirements to fulfill the following purposes at the , in Michigan.

Task 101 **COORDINATION:** Meet with the Project Team consisting of a representative of the Department, the State/Client Agency, the Department of Environmental Quality, Remediation and Redevelopment Division, State Project Manager and other enforcing agencies having Project jurisdiction, and others as considered appropriate by the Department. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of Management and Budget, Office of Facilities, Soil Erosion and Sedimentation Control Program. Define all areas of the Project scope of work investigation. Establish Project Team responsibilities and lines of communications. Present study documents to the State/Client Agency and Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department deems necessary to completely develop and monitor the Project scope of work. Preside at all Project related meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of site visitations, correspondence, memoranda, telephone, and other conversations or communications. Where essential or significant information is established or evaluated and/or critical decisions are made, distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

- Task 101.01 Organize, facilitate and attend periodic workshops at the direction of the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager, coordinate the various agencies involved in the Project and assist in preparing responses to the responsible parties (RP's) Professional's documents, proposals and positions.
- Task 102 PHASE I - SITE ASSESSMENT: Conduct a Phase I - Site Characterization Assessment of the Project site, its buildings and/or structures, and the natural environment. The survey shall be performed, and reported, in accordance with the current edition of the American Society for Testing and Materials (ASTM) standard practice for E1527-97 Environmental Site Assessment, the instructions for which are part of this Contract and its specifications. The subjects of investigation within the text of this standard practice guide shall be supplemented with such other topics of investigation as may be necessary, and appropriate, to completely describe the Project site. Upon finding any definitive indication of possible defect, or reaching any conclusion that a Phase II Site Assessment Investigation is necessary, photographs and additional site assessment investigations and sampling shall be performed while on-site, using manual and portable power tools and equipment.
- Task 102.01 PHASE II - SITE ASSESSMENT: Upon receiving the Department's written authorization, conduct the Phase II - Site Assessment Investigations to evaluate potential defects identified in the related Phase I - Site Characterization Assessment. Submit a summary report of the Phase II - Site Assessment Investigation in accordance with the Task 110 Report format.
- Task 102.02 SITE CLASSIFICATION: Determine which classification scenarios (Class 1 through Class 4) fit the Project site based on their threat to human health, safety or sensitive environmental receptors in accordance with the Department of Environmental Quality, Remediation and Redevelopment Division operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process for sites under Part 213 of the 1994 PA 451, as amended.
- Task 103 INITIAL RESPONSE INVESTIGATIONS: Conduct such on-site investigations as may be necessary to assess any potential for, verify the occurrence/circumstance of, and Project the implications of, fugitive contamination. Except as may be otherwise directed by the Department, the following work of this Task shall be commenced within twenty-four (24) hours of Project assignment by the Department:
- A. Perform site surveys and site investigations to identify, and initially assess, the extent of uncontrolled toxic/hazardous materials at the Project site. Conduct site Inspections to detect any immediate hazard to public health, safety, and welfare. Prescribe and oversee implementation of measures to arrest, stabilize, contain, and negate or remedy such hazards. In circumstances posing risk of fire, explosion, or release of toxic materials to the atmosphere, develop contingency response procedure plans for the affected area. Prepare submittals, and provide all information necessary to secure the approval of the State and the local disaster preparedness authority having governing jurisdiction at the Project site.
 - B. Recommend procedures for the safe execution of the affected State/Client Agency functions, consistent with the character and impacts of the site contamination. Provide appropriate information for notifications to personnel impacted by the site contamination, and/or for the Department's use in its public information program regarding the site contamination. Provide no statements to State/Client Agency staff, wards of the State, inmates, news media, or the public, regarding any circumstance of the site contamination.

- C. Provide, on the Department's behalf, the appropriate notifications to the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the local and State government agencies and identify any reportable quantities of hazardous materials that may have been released, as required by the 1994 PA 451, as amended. Provide reports required by the 1994 PA 451, as amended, and make all other required notifications to the respective enforcing agency(s). Prepare and provide the initial response investigation(s) reports for this Task, in accordance with the Task 110 Report format or the format required by the enforcing agency.
- D. Provide initial response services including emergency response to a new spill or source area at the request of the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager.

Task 104 **PRELIMINARY SITE INVESTIGATION:** Conduct the following on-site Inspections, and research, as appropriate, to define the Project site and the circumstances of the site contamination:

- A. Identify and analyze the character, use, history, construction, utilities, and all other pertinent built and natural features of the site, and those within any proximate area which may be impacted by, subject to, responsible for, or contributory to, fugitive contamination. Secure, for reference, all site maps utility/building/structural drawings, well/boring records, surveys, any enforcement records, and all other applicable data. Conduct additional on-site surveys and investigations as necessary to adequately define and depict the Project site. Identify all known, and suspected, contaminants and those that may be predictable from previous site usage.
- B. Conduct an evaluation of the existing data based on preliminary site data and the characteristics of the contaminants, and to the extent that reasonable predictions can be made, project the source(s), routes, and consequences of active contamination and inspect for indications thereof. As applicable, prepare and submit, on the Department's behalf, a site characterization plan in accordance with the 1994 PA 451, as amended. Prepare and provide preliminary site investigation report(s) for this Task in accordance with the Task 110 Report format requirements.
- C. Conduct Tier 1 Assessment for sites under Part 213 of the 1994 PA 451, as amended. Gather site assessment data on source characterization, potential for exposure and degradation of beneficial uses and extent of contamination. Evaluate Tier 1 results for no action, final corrective action, interim corrective action or tier upgrade-further analysis. Prepare and provide the ninety (90) calendar day initial assessment report in accordance with the report format required by the Department of Environmental Quality, Remediation and Redevelopment Division.

Task 105 **PROJECT WORK PLAN:** Prepare a complete, cost effective, viable, and efficient, work plan to determine the extent and degree of environmental contamination at the Project site.

- A. The work plan shall be consistent with the attached Appendix 1 - Project/Program Statement scope of work and the governing enforcing agency's guidelines for preparation of Project work plan(s). Incorporate the Project specific adapted Project Health and Safety Plan and Quality Control/Quality Assurance Plan of Tasks 602 and 603 and the cost and schedule estimate of Task 108 and Task 109. Summarize the preliminary site investigation findings of Task 104. Develop an appropriate program of sampling and other specialized, nondestructive, investigations to adequately characterize the Project site with respect to geologic, hydrogeologic, hydrologic, topographic, surface and ground water, soil, sediment, air quality, biota, demographics, and other parameters influencing, or, influenced by the contaminants, and/or affecting the vertical and horizontal dispersal and intensities of contaminants, and the migration of the same. Support each line of site investigation with the logic

and principals underlying and being applied to define test indicators, detection levels, expected background levels, and the prescribed work.

- B. Where Project site sample analysis is to be by other than the Professional's own staff, or subcontracted laboratory, the work plan shall include, as appendixes, a listing of the type, method, and number, of environmental tests to be performed and an inventory of all sampling supplies required. The work plan shall be objectively composed and shall not identify the Professional, by name, as performing any part of the work plan. This document shall be so comprehensive, definitive, clearly presented, and self-contained, that the intended work may readily be competitively bid from that document. Review the work plan with the Project Team and revise as required. Where the Project requires, submit the work plan in accordance with the 1994 PA 451, as amended. Submit the work plan and report in accordance with the Task 110 Report work plan format requirements.

Task 106 **REMEDIAL INVESTIGATION/SITE ASSESSMENT:** Direct, or as appropriate supervise, the Phase 600 and 700 related Tasks of this Contract for site specific surveys, sampling and subsurface investigations as necessary to fully identify and/or monitor the circumstances of contamination.

Task 106.01 Conduct all site investigation work in accordance with the requirements of the accepted Project work plan (and such extensions and modifications thereof as the governing enforcement authority may require), and with the Project schedule. Notify the Department and the governing enforcing agency of all sampling with adequate advance notification to allow for their participation.

Task 106.02 Provide a summary report of all findings and determinations. Include and analyze the results of all laboratory testing. Conduct dispersion modeling as appropriate. Identify and define all geological parameters having influence. Depict the results of all data to graphically show the location(s), vertical and horizontal extent, profiles, and intensities of the site contamination, any plume orientation/rate of dispersion, and the characteristics of any impacted soils and surface/ground water. Identify all computer programs used to reduce, analyze, and otherwise use data. Analyze and provide a risk assessment of the site contamination consistent with the United States Environmental Protection Agency (USEPA) and the Department of Environmental Quality, Remediation and Redevelopment Division criteria. The finalized report shall be sufficiently objective, comprehensive, and inclusive that no other reference will be required to understand the circumstances of the site contamination, determine the appropriate method of remediation, and submit proposals for its design. Submit the remedial investigations reports in accordance with the Task 110 Report format requirements.

Task 106.03 Conduct Tier 2 Assessment: Upon receiving the Department's written authorization, to consider site-specific target levels (SSTLs) and appropriate points of compliance in accordance with the Department of Environmental Quality, Remediation and Redevelopment Division operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process. Evaluate the results of Tier 2 for no action, final corrective action, interim corrective action or tier upgrade. Provide a summary report of the Tier 2 assessment in accordance with the report format required by the Department of Environmental Quality, Remediation and Redevelopment Division.

Task 106.04 Conduct Tier 3 Assessment: Where the Project requires under Part 213 of the 1994 PA 451, as amended. Upon receiving the Department's written authorization, conduct Tier 3 assessment to consider a more refined site-specific target levels to improve the accuracy of the applicable models in accordance with the Department of Environmental Quality, Remediation and Redevelopment Division operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process. Evaluate the results of Tier 3 for no action, final corrective action or interim corrective action. Provide a summary report of the Tier 3 assessment in accordance with

the report format required by the Department of Environmental Quality, Remediation and Redevelopment Division.

Task 106.05 Conduct A Site Characterization: By collecting sufficient data to understand source area(s), define the nature and extent of contamination, understand contaminant transport and exposure pathways and design a remediation system. Conduct a feasibility study to select a viable and most economical remedial alternative for implementation as a corrective action plan at the site. Prepare the final assessment three-hundred and sixty-five (365) calendar day report. Prepare a closure report for the sites qualified for closure under Part 213 of the 1994 PA 451, as amended. Provide the reports in accordance with the report format required by the Department of Environmental Quality, Remediation and Redevelopment Division.

Task 106.06 BUILDINGS/AIR QUALITY: Define and conduct the appropriate testing program to confirm and/or establish the existing baseline/ambient air quality for the site/building(s)/facility and to identify any level(s) of contamination therein.

- A. Determine the local air quality as reported by most current air quality report of the Department of Environmental Quality, Air Quality Division. Such program shall consist of one (1) or more sampling stations on-site and upwind of buildings. Within buildings and structures, identify and sample appropriate areas of homogeneous use, common air supply/return/circulation. Provide a minimum of three (3) samples per area known to contain hazardous materials or sources of contamination as well as one (1) or more representing the main ventilation system air return within each mechanical room, boiler room, and utility tunnel, at all open space or above ceiling plenums, and at such other locations as may represent quantifiable areas having common air supply or circulation characteristics.
- B. Present test results in comparison to standard limits of concentrations allowed and/or recommended by the Department of Community Health, the Department of Environmental Quality, Remediation and Redevelopment Division, the Michigan Occupational Safety and Health Regulations, and the United States Environmental Protection Agency. Present findings in such format as the Department may prescribe. Verbally notify the governing enforcing agency and the Department of any test results exceeding allowable limits and confirm notice in writing. Provide a summary testing report in accordance with the Task 110 Report format requirements.

Task 106.07 HAZARDOUS MATERIALS: Define and conduct an appropriate bulk sampling program for suspected toxic/hazardous materials and/or for waste characterization.

- A. ASBESTOS: Assess all asbestos containing materials and provide a management plan and operating/maintenance program in the following format:
 - (1) Assessment.
 - (2) Management Plan.
 - (3) Operations and Maintenance Program.

Task 107 RISK ASSESSMENT: Provide support to the Department of Environmental Quality, Remediation and Redevelopment Division to determine ecological and human health risks at the site due to the presence of contaminants. Conduct statistical analysis and data evaluations to support risk assessment. The Professional will evaluate site specific data on a reach by reach basis to develop statistically significant relations of contaminants, to the extent that the data allow.

- Task 107.01 **ECOLOGICAL RISK ASSESSMENT:** Provide support to the Department Environmental Quality, Remediation and Redevelopment Division to determine risks posed by contaminants at the site. Evaluate the studies, analysis, models and comments on the Ecological Risk Assessment provided by the responsible parties (RPs) Professionals' and the United States Environmental Protection Agency (USEPA) and prepare a response to address the issues/comments.
- Task 107.02 **HUMAN HEALTH RISK ASSESSMENT:** Provide support to the Department of Environmental Quality, Remediation and Redevelopment Division to determine risks posed by contaminants at the site to humans. Evaluate the studies, analysis, models and comments on the Human Health Risk provided by the responsible parties (RPs) Professional's and the United States Environmental Protection Agency (USEPA) and prepare a response to address the issues/comments.
- Task 108 **PROJECT COST:** Provide cost(s) for each Project and maintain current, the estimated cost for, and expenditures of each Task of each respective Phase. In addition to remediation costs, such costs shall include, and specifically identify, all professional, testing, construction, and remediation costs, as well as any costs to maintain the State/Client Agency facility operations. Project cost analysis shall consider funding sources availability, and all steps of the Project Budget and appropriation processes and similar allocation processes affecting funding availability. Such availability shall be compared to projected cash flows. Where any cost is projected to occur over more than one (1) fiscal year, the estimate shall reflect annual costs.
- Task 109 **PROJECT SCHEDULE:** Provide and submit for the Department's acceptance, and maintain current for each Project, a schedule for the events of Tasks 104, 105, 106, and 107. The schedule format will be prescribed by the Department. This schedule shall include the procedural steps of Project Budget submittal, legislative appropriation, and the allocation and release of funds. Project schedules shall be in total compliance with the requirements of any court order(s), consent agreement(s) or other governing directive(s). Prescribed, agreed upon, or historically reasonable schedule times shall be included for reviews and approvals by the governing enforcing agency and for budgetary processes. Such schedules shall be provided in undated unit time durations (day(s), week(s), month(s), etc.) Dates will be incorporated when approvals or other written orders to proceed become known. Adherence by the Professional, to the Project's accepted schedule time/duration is a condition for satisfactory performance of this Contract.
- Task 110 **PROJECT STUDY REPORTS:** Submit weekly written reports for the work of Tasks 103, 104, 106, and 107 (or as the Department may require) which briefly summarize the on-site field investigation activities, findings, significant decisions, and accomplishment of the preceding period. These reports shall transmit and summarize the findings of the on-site field investigation reports of the Phase 700 Project Tasks. Give notice of identified, or anticipated, problems which require response by the Project Team. Project study reports shall identify any significant deviations from the accepted Project work plan, cost estimate, or schedule, and provide explanations of the same.
- A. Submit the Task 102, draft, preliminary, and final versions, of the Project written report in accordance with the current edition of the American Society for Testing and Materials (ASTM) standard practice for E1527-97, Environmental Site Assessment and as outlined in the attached Appendix 1 - Project/Program Statement, and the summary reports of Tasks 102, 103, 104, 106, and 107 as the Department may require. Prepare all revisions thereto as the Project Team may deem necessary to produce complete and acceptable report documents. The draft, preliminary, and final reports of Tasks 102.01, 103, 104, 105, 106, and 107 shall be as required by the governing enforcing agency or the Department, as appropriate, and shall include as a minimum the following items:

1. Problem
 2. Conclusion
 3. Recommendations
 4. Discussion, details, and documentation
- B. Provide copies of the finalized work plan of Task 105 and summary reports of Tasks 102, 103, 104, 106, and 107 as necessary for submittal to the governing enforcing agency and the Department, along with one (1) camera-ready original, suitable for legible reproduction. In addition, copies of the work plan, and all study reports of this Phase shall be provided to the Project Team members along with up to five (5) additional copies to be distributed as the Department may direct. Provide the Department copies of all electronic/computer data records generated for the Project scope of work, suitable for reapplication to the Project by others.
- C. When directed by the Department, submit the Project work plan and reports to the governing enforcing agency on the Department's behalf. Monitor the progress of the approval process. Attend all Project related meetings, make presentations, explain all submitted technical data and proposals, provide and submit such amending information, and make such revisions, as may be necessary for the governing enforcing agency's evaluation and approval of the Project work plan and report. Provide environmental engineering investigation study presentations as indicated in the Project scope of work plan for Department acceptance and incorporate all study review comments required for Department written acceptance of the Project program analysis report. Provide one (1) acceptable environmental investigation/study presentation to the Project Team for this Task, any additional environmental investigation/study presentations requested by the Department will be considered extra professional services and the additional environmental engineering investigation study costs will be paid to the Professional by the Department with a Contract Change Order.

Task 111 DATA MANAGEMENT: Review data submitted by the responsible parties (RPs) Professional's to determine completeness, integrity, and comparability to other data sets. Develop and manage a comprehensive database to allow the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager access to all electronically submitted data. Run queries on the data at the direction of the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director to support the Department of Environmental Quality, Remediation and Redevelopment Division's analysis and decision making processes. Review and validate data submitted by the responsible parties (RPs) Professional's on quarterly basis. Provide data queries, maps, and associated summaries as requested by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager.

Task 112 DOCUMENT MANAGEMENT: Provide services to the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager to organize, log, maintain document database, and manage the documents associated with the administrative records for the site. Assist the Department of Environmental Quality, Remediation and Redevelopment Division in locating, copying, and distributing documents as requested through the Freedom of Information Act or as otherwise requested by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager.

**PHASE 600 - CONSTRUCTION REMEDIATION/ADMINISTRATION -
LABORATORY SERVICES**

The Department of Environmental Quality, Remediation and Redevelopment Division will appoint a State Project Manager to monitor and coordinate the performance of the Project environmental remediation laboratory/office Phase services. Except where the Contract is assigned, the Professional is responsible to the State Project Manager for the adequacy and timeliness of their services.

Provide all laboratory and office engineering services to test, analyze, evaluate and report the results of all environmental and construction/site remediation services. Conduct, prepare, and submit all tests and test result reports and any associated correspondence.

Establish and maintain effective construction administration laboratory/office procedures, systems and records to progressively, and exclusively, manage and control the Professional's obligations, commitments, achievements and expenditures under this construction Phase administration.

Advise and assist the Department in taking all practical steps to address and complete the Project scope of work requirements.

In cases involving danger to human life, immediate safety hazards to personnel, existing or impending damage to the Project, to the Department of Environmental Quality, Remediation and Redevelopment Division's property or to other property; as may be impacted by the Project, the Professional may take such action as may be necessary to immediately abate the danger to human life and/or property and record and report such emergency action to the Department and certify any accrued Project costs in writing.

Task 601 **COORDINATION:** Coordinate all the Professional's staff, Consultants staff, authorized direct cost reimbursement items, and other Project related resources. Preside at all Project related meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, site visitation reports of Phase 700 services, copies of correspondence, memoranda, records of telephone or other conversations and other communications. Where essential or significant Project information is established or evaluated, where critical problems are identified, or where crucial decisions are made, distribute copies to the Department and participants within two (2) business days following the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

Task 602 **HEALTH AND SAFETY PLAN:** Within fifteen (15) business days of execution of this Contract, the Professional shall prepare and submit for acceptance, a basic Project Health and Safety Plan for all assigned work under this Contract. This plan must meet the following minimum requirements:

- 1.) 29 CFR 1910.120: Safety and Health Regulations for General Industry, Occupational Safety and Health Administration (OSHA), as amended December, 1986.
- 2.) Standard Operating Safety Guides, United States Environmental Protection Agency (USEPA), November, 1984.
- 3.) Occupational Health and Safety Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health Administration (NIOSH), Publication No. 85-115, October, 1985.
- 4.) Michigan Right-To-Know Law, 1986 PA 80, as amended.

All on-site management and supervisors directly responsible for, or who shall supervise personnel engaged in, hazardous waste operations shall have successfully completed the Environmental Protection Agency's Safety Training Program.

Within fifteen (15) business days of Project assignment, adapt and amend the accepted Health and Safety Plan as appropriate to include all provisions necessary for each Project site and its related work. No on-site or laboratory work may be performed without such a plan. Acceptance of the Professional's Health and Safety Plan imposes no expressed or implied responsibility, by the State, for the plan or its application. The Professional is exclusively responsible for their plan's effectiveness and for conducting all work in compliance with it. Production of an accepted plan, and amendments thereto, and adherence to the same, is a condition of satisfactory performance. Failure to do so is just and sufficient cause for suspension of the Professional's work, removal of their workers

from any site, and any other actions, including termination of this Contract scope of work without prejudice to the State.

Task 603 **QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN:** Prepare a basic Quality Control/Quality Assurance Plan and adapt for individual Projects as assigned.

Within fifteen (15) business days of execution of this Contract, prepare and submit for acceptance a Quality Control/Quality Assurance Plan for all work to be performed under this Contract. This plan shall be consistent with the attached Appendix 8, Guidelines for Quality Control/Quality Assurance (QC/QA) Plan.

Within fifteen (15) business days of Project assignment, adapt and amend the accepted plan as appropriate to include all provisions necessary for each Project site and its related work. No on-site or laboratory work may be performed without such a plan. Acceptance of the Professional's work plan imposes no expressed or implied responsibility, on the State, for the plan or its application. The Professional is exclusively responsible for their Project work plan's effectiveness and for conducting all work in compliance with it. Production of an accepted plan, and amendments thereto, and adherence to the same, is a requisite condition of satisfactory performance. Failure to do so is just and sufficient cause for suspension of the Professional's work, removal of workers from any site, and any other actions, including termination of this Contract scope of work without prejudice to the State.

Task 604 **ENVIRONMENTAL TESTING/ANALYSIS:** Where provided for in this Contract provide laboratory testing and analysis of Phase 700 environmental sampling services. All laboratory testing and analysis services shall be in accordance with the United States Environmental Protection Agency, Document SW-846, the American Society for Testing and Materials Procedures, and all requirements and standards prescribed by the Department of Environmental Quality, Remediation and Redevelopment Division. Provide positive custody control records in such format and detail as the Department may require, or accept. The testing/analysis of Task 103 samples shall receive first priority in laboratory processing and, except where the method procedures may preclude, results shall be produced within five (5) business days of sampling. Analysis of samples from underground storage tank sites, having a confirmed release, shall be produced within ten (10) calendar days of sampling. All findings shall be reported, and graphically illustrated, in comparison to acceptable limits/standards as the Department may require. Notify the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director by telefax number (517) 335-0144 or (517) 373-3562 of test results not meeting acceptable testing standards. Hold, and legally dispose of all expended samples, drill cuttings, water, mud, and all other constituents, debris from sampling and testing. Where testing and analysis services are by others, evaluate and approve, or disapprove, test reports within two (2) business days of the receipt of such reports, provide copies thereof marked with the Professional's approval. Provide written reports and appropriate correspondence summarizing the findings of testing and analysis.

PHASE 700 - ENVIRONMENTAL RESPONSE/REMEDIAL ACTION - FIELD SERVICES

The Department may provide full- or part-time on-site State Field Inspectors to monitor the coordination and progress of the scope of work services of the Professional. Such Inspections may generate reports, minutes of meetings, notes and documents, which will be available to, and may be useful for, the Professional. These Department State Field Inspectors will be under the direction of the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director. The Department of Environmental Quality, Remediation and Redevelopment Division, State Project Manager, or their State Field Inspector has the authority to require the Professional to respond to and resolve on-site problems and to attend Project related meetings.

The Professional shall provide sufficient on-site field Inspections of the work to administer the construction field services Phase, and its related construction Phase remediation/administration office services, as directly related to the degree of Project complexity and scope of work requirements, up to and including full-time on-site field Inspections. These Inspections shall occur as the on-site field conditions may warrant, and during regularly-scheduled monthly progress meetings. Inspections shall be performed by professional disciplines appropriate to the status of the Project scope of work. The Professional may utilize for on-site field Inspection services, only personnel having such professional expertise, experience, authority, and compatibility with departmental procedures as the Department may approve. The Professional agrees that such characteristics are essential for the successful completion of the Project scope of work. Such individuals shall be replaced for cause where the Department determines and notifies the Professional, in writing, of their unacceptable performance.

No on-site advertising by, or of, the Professional or Project signs other than those appropriate to locate an approved field office will be permitted.

Task 701 **COORDINATION:** Coordinate all the Professional's staff, Consultants staff, and all other Project related resources.

Task 702 **ENVIRONMENTAL SAMPLING:** Conduct on-site surveys, investigations, sampling and monitoring procedures in accordance with the following Phase 100 Study/Task Services: (1.) Task 102, Site Assessments; (2.) Task 103, Initial Response Investigations; (3.) Task 104, Preliminary Investigations; (4) Task 106, Remedial Investigations; and (5) Task 107, Risk Assessments.

Where sampling by the Professional is required in this Contract, produce all sampling in accordance with the United States Environmental Protection Agency, Document SW-846, the Department of Natural Resources requirements, the American Society for Testing and materials procedures, and all other Project related governing regulations, standards, and procedures. Maintain positive custody control and records thereof in such format and detail as the State may prescribe or accept. Provide written report and appropriate analysis of all tests. Where testing services are by others, monitor, evaluate, and take timely action, as may be required, in response to the results of the testing program. Evaluate and approve, or disapprove as appropriate, all test reports. Verbally notify the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department immediately of any field inspection/observation or test(s) not meeting applicable Project governing standards and confirm in writing. Provide the Department with copies of test reports, marked with the Professional's approval or disapproval within five (5) business days of receipt of the report. Provide up to five (5) additional copies and distribute as the Department may direct.

Task 703 **IN-FIELD INSPECTION/TESTING SERVICES:** Define, prepare, and conduct an appropriate in-field inspection/testing program in association with the Phase 100 and 600 operations requiring field inspection and testing services. Provide all field observations, sampling, testing, and inspections as necessary in association with Phase 100 and 600 services and testing program/requirements. Submit all tests, test result reports, and any Project associated correspondence. Verbally notify the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department immediately of any field inspection/observation or test(s) not meeting applicable Projects governing standards and confirm in writing. Provide copies to the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director.

ARTICLE 2 COMPENSATION

In consideration of the performance of this Contract, the State agrees to pay the Professional, as compensation for the professional environmental engineering site study services, an hourly billing rate for each employee providing a direct service to this Project, on an estimated cost not-to-exceed basis as specified herein, subject to subsequent modification mutually agreeable to the parties hereto: provided, however, that the Professional may not incur costs, or bill the State, for professional services in excess of the estimates set for herein without the prior written agreement of the State.

The hourly billing rates shall include all direct and indirect costs associated with the employment of personnel, Contract computer services, equipment, home office, field office, related operating expenses, indirect labor, overhead, and profit. Sick leave, vacation, and holiday pay shall be included in the overhead costs and shall not be billable to the Project. Billing rates for this Contract shall remain fixed for the duration of the Project Contract. In the event the Professional is required to provide the State with future services beyond the duration of this Contract, the hourly billing rates will be subject to negotiation.

Compensation fee to the Professional for this Project scope of work shall be on an hourly billing rate basis for the professional environmental engineering site study services rendered by salaried and nonsalaried professional, technical and technical support employees, except for any authorized reimbursable expenses provided for in this Contract. Total compensation for any Phase shall not exceed the amount authorized for that Phase, unless so authorized in writing by the Department's approved Contract Change Order. Compensation for professional environmental engineering site study services and authorized reimbursables shall not exceed the amount authorized in the Phases of the Contract Order or Contract Change Order issued by the Department to the Professional and such professional services shall not be performed and no Project expense shall be incurred by the Professional prior to issuance of a written Contract Order by the Department to the Professional. No increase in compensation fee to the Professional will be allowed unless there is a material change made to the Project scope of work of the attached Appendix 1 - Project/Program Statement and the change in scope to the Project/Program Statement is approved in writing, by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager, the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Professional. Professional services shall not be performed and no Project expenses shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DMB Form 402 - Contract Order by the Department to the Professional, authorizing the Professional firm to start the Project work on-site. Compensation for Department directed changes to the Project or modifications to the Project scope of work will be provided to the Professional by a Contract Change Order modification signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from increases in the Project scope of work or previously unknown on-site field conditions will be compensated, as approved by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director, on an hourly billing rate basis in accordance with this article.

The Professional acknowledges having a clear understanding of the requested Project scope of work requirements and of the professional environmental engineering site study services required by the Department to provide it, and further agrees that the terms of this Contract provide adequate professional compensation fee(s) to produce the requested Project scope of work requirements. No increase in compensation fee to the Professional will be allowed unless there is a material change made to the Project scope of work requirements as described in the attached Appendix 1 - Project/Program Statement scope of work requirements and the change in scope to the Project/Program Statement scope of work requirements is accepted and approved in writing, by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Professional. Professional services shall not be performed and no Project expenses shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DMB Form 402 - Contract Order by the Department to the Professional. Compensation for Department directed changes to the Project or modifications to the Project scope of work will be provided to the Professional by a Contract Modification and/or Contract Change Order signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from increases in the

Project scope of work or previously unknown on-site field conditions will be compensated to the Professional, as approved by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director, on an hourly billing rate basis in accordance with this article.

No substitution of any "Key Principal Personnel/Employee" who is essential for the successful completion of the Project scope of work requirements and identified in the Professional firm's attached Appendix 2 – Project Organizational Chart will be allowed by the Professional firm for this Contract without the prior written consent from the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director. Before any "Key Principal Personnel/Employee" substitution takes place, the Professional firm shall submit a written request to the Project Director for personnel substitution and this substitution request shall include the following information: (1) A request in writing for a No Cost Contract Modification for this "Key Principal Personnel/Employee" substitution; (2) Detailed written justification for this "Key Principal Personnel/Employee" substitution; (3) The Professional firm's qualifications of any proposed "Key Principal Personnel/Employee" replacement; and (4) A written statement from the Professional firm assuring the Department that the Project scope of work will not be adversely affected by this "Key Principal Personnel/Employee" substitution change. This request by the Professional firm to modify their Professional Service Contract must be accepted and approved in writing by the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager and the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Director of the Department of Management and Budget, Office of Facilities, on the Department's, Professional Services Contract Modification form (DMB-410).

Compensation for professional services shall be determined using the current hourly billing rate costs for the employees performing a direct service for the Project. Such costs shall not change during the life of this Contract without written approval by the Department.

- 2.1 PREMIUM TIME/OVERTIME: This Contract anticipates that no premium or overtime is required to achieve this Project's scope of work. No compensation will be allowed to the Professional for any premium or overtime incurred to achieve the Project schedule of this Contract.
- 2.2 EMPLOYEE HOURLY BILLING RATES: The salaried employees hourly billing rate is determined by dividing the annual salary, exclusive of bonuses and profit sharing, by 2,080 and adjusting such rate to reflect the actual reduced per-hour cost if more than eight (8) hours per day or forty (40) hours per week are worked in any payroll period. Salaried employees shall be clearly identified. Hourly billing rates for nonsalaried employees is the basic hourly wage rate received by an employee and includes fringe benefits, vacations, sick leave, other indirect costs and profit. No lump-sum subcontracts for the professional services of any employee may be billed against this Contract. Any employee associated with this Project who performs the professional services of a subordinate or of a position classification having a lower classification/pay range shall be accounted and paid at the lower hourly billing rate pay rate. The hourly billing rate charge of any employee may be changed by the Professional firm with a written and Department approved Contract Modification during the life of this Contract to account for normal personnel pay increases.

The Professional shall provide only one (1) Key Principal (Chief Executive Officer) Personnel from each design discipline to contribute direct services to this Project.

Hourly billing rates will include all direct and indirect costs to the State for the Professional firm's services under this Contract other than the authorized and approved reimbursements. Hourly billing rates shall be based on the Professional firm's documented historical operating expenses and adjusted for Project specific costs. In no case shall this documentation period include more than eighteen (18) months prior to the date of award of this Contract. The Professional's use of providing different hourly billing rates for different Phases is not allowed.

Hourly billing rates include, but are not limited to: Overhead items such as employee fringe benefits, vacations, sick leave, insurance, taxes, pensions, retirement plans, meals, lodging, and all Project related travel expenses for Projects less than one-hundred (100) miles in each direction from the Professional firm's Michigan office. The cost of all telephone-related services and all reproduction services (except Contract Bidding Documents/drawings and specifications and where specifically authorized elsewhere in this Contract, reproduction of Contract Documents for legislative presentation). Also, included is all reproduction costs for clarifications and Bulletins related to the environmental engineering site study errors or omissions and similar, or avoidable costs shall be accounted as part of the Professional firms' hourly billing rates. All postage, mail or other shipping or delivery services, acquisition, bad debts, previous business losses, employment fees, depreciation and operating costs for equipment, including computer design and/or computer drafting systems, and any specialized testing equipment are to be included. The hourly billing rate shall include, without exception, secretarial, typing/word processing, editing, and clerical services utilized in any way for the Project as well as other nontechnical and/or overhead employees. All other direct or indirect costs, including that of processing the costs of the Professional firm's Consultant's, and reimbursable expense items shall be included. Such costs and Professional firm's calculated billing rates shall not change during the life of this Contract without written approval by the Department. The hourly billing rate also includes all profit without regard to its form or distribution. Project related travel for Projects more than one-hundred (100) miles in each direction from the Professional firm's Michigan office shall be treated as a reimbursable expense at the State of Michigan's current travel rates (See Article 2.4 text of this Contract).

The Professional firm's calculated billing rates also includes: (1) All consumables used by the Professional or the Professional firm's Consultants for collection of samples to be tested and analyzed by others; and (2) The costs of owning, operating, maintaining, insuring, and replacing all direct reading/measuring and testing instruments designed for on-site field Inspection and testing work, along with their computer or data recorders, as the Professional may use for laboratory services and on-site field Inspections, investigations, measuring, sampling, or testing services. Reimbursement for the attached Appendix 1 - Project/Program Statement scope of work requirements will be provided to the Professional firm only for Department approved items authorized for reimbursement compensation in this Contract. Compensation is approved and authorized by the Department on a per test basis for laboratory services by firm(s) identified and listed in this Contract to: (1) Test and analyze samples collected by their technical employees; and (2) The Professional firm's per test costs shall be recognized by the Department to include all consumables necessary to prepare and secure the respective sample(s) and to conduct the required analytical testing procedures thereon.

Items not allowable as part of the Professional firm's calculated hourly billing rate, include, but are not limited to: Any costs associated with litigation and settlements for the Professional, or other liability suits, out of state offices and associated travel, bonuses, profit sharing, premium/overtime costs, public relations, entertainment, business promotion, contributions, and various speculative allowances.

The hourly billing rate for the Professional may not be applied to the work of the Professional firm's Consultant's. Each Consultant must submit a separate hourly billing rate with proper documentation for the Consultant services they will provide. The hourly billing rate of the respective Consultant's shall be used for that Consultant firm's personnel only. No mark-up may be applied by the Professional to their Consultant's hourly billing rate(s) charges. The professional services of all the Professional firm's Consultants shall be billed as a reimbursable expense item.

All reproduction costs for clarifications and Bulletins dealing with the environmental engineering site study errors or omissions or avoidable costs shall be accounted as part of the Professional firm's calculated hourly billing rates.

- 2.3 **RANGE OF EMPLOYEE HOURLY BILLING RATES:** The Professional shall identify the environmental engineering discipline service being provided and include the Primary Professional/Consultant's technical employee(s) full payroll signature names and position classifications for the Project and their current hourly billing rates at the beginning of the Project. Also, provide the technical employee(s) anticipated hourly billing rates at the end of the Project based on the Professional's estimated schedule duration. This range of current and anticipated hourly billing rates shall reflect the actual costs currently being paid to all of the Primary Professional/Consultant's technical employees for the professional services within their specified position classification, and shall include any anticipated pay increases over the life of the Professional/Consultant's estimated Contract schedule. The range of the hourly billing rates for any employee position or classification may not be changed without a Contract Modification approved by the Department in writing. No mark-up of the Professional firm's Consultant's hourly billing rates will be allowed.
- 2.4 **DIRECT COST REIMBURSEMENT ITEMS:** The services of all the Professional firm's Consultants, shall be treated as reimbursable expenses at a direct cost times a 1.0 multiplier. Reimbursement of authorized expense items at direct cost times a 1.0 multiplier is intended only as a means to compensate the Professional for their direct costs. The Professional shall be responsible for: (1) The selection of the supplier of such services or materials; (2) The coordination, adequacy and application of such services, whether provided by the Professional firm's staff or provided by their Consultant; and (3) Any Project costs that exceed the Contract per Phase reimbursement Budget.

All reproduction costs for clarifications and Bulletins dealing with the environmental engineering site study errors or omissions or avoidable costs shall be accounted as part of the Professional firm's calculated hourly billing rate. Unless authorized elsewhere in this Contract, reimbursement expense items shall be limited to: Printing and reproduction of Study Phase final reports, final design Phase Contract Bidding Documents/drawings and specifications and the United States (U.S.) Mail regular shipping postage and handling of Contract Bidding Documents, documents for legislative presentation, artistic productions, mobilization of testing equipment, laboratory costs for testing samples, per-linear-foot cost of soil borings and specialized inspections of the structural, mechanical, electrical, chemical or other essential components of the Project. Where reproduction of Contract Bidding Documents is by the Professional, reimbursement shall be limited to the cost of materials only. In addition, the authorized reimbursement includes the number of Contract Bidding Documents and Addendums that are required to supply all prospective Bidders.

The hourly billing rate (See Appendix 5) does not include and the Department of Management and Budget, Office of Facilities, Design and Construction Division will pay the Professional for (under Appendix 4 – Reimbursable Tests/\$ Expenses) travel mileage costs for State of Michigan Projects more than one-hundred (100) miles in each direction from the Professional firm's Michigan office 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" versus an adjustment to the Professional firm's calculated hourly billing rate. Compensation to the Professional firm for Project related travel when authorized by the Department, will be in the attached Appendix 4 – Reimbursable Tests/\$ Expenses text and will be limited and reimbursed by the Department in accordance with the current travel rates provided in the State of Michigan's "Schedule of Travel and Meal Reimbursement Rates."

Prime Professional Firm:

Position/ Classification	Individual	Hourly \$ Range	Total Hours	Total \$ Cost
		Billing Rate From - To		

(See Attached Appendix 5 – Project Hourly Billing Rate \$ Compensation for the Actual Position/Classifications and the Anticipated Hourly Billing Rate \$ Compensation Range for this Contract.)

*Key Principal Personnel/Employee

Consultant Firm:
City, State

Position/ Classification	Individual	Hourly \$ Range	Total Hours	Total \$ Cost
		Billing Rate From - To		

(See Attached Appendix 5 – Project Hourly Billing Rate \$ Compensation for the Actual Position/Classifications and the Anticipated Hourly Billing Rate \$ Compensation Range for this Contract.)

*Key Principal Personnel/Employee

Consultant Firm: As Selected ~ Printing and Reproduction of Phase 100 Study, Phase 600 –
City, State Construction/Remediation Administration-Laboratory Services and Phase 700
– Environmental Response/Remedial-Field Services Final Reports

Multiplier: 1.0

2.5 DIRECT COST/REIMBURSABLE CONSULTANT SERVICES: The services of all the Professional firm's Consultants shall be treated as a reimbursable expense at a direct cost times a 1.0 multiplier.

2.6 DIRECT COST REIMBURSEMENT ITEMS: Reimbursement of authorized expense items at direct cost times a 1.0 multiplier is intended only as a means to compensate the Professional for their direct costs. The Professional shall be responsible for: (1) The selection of the supplier of such services or materials; (2) The coordination, adequacy and application of such services, whether provided by the Professional firm's staff or provided by their Consultant; and (3) Any Project costs that exceed the Contract per Phase reimbursement Budget.

Reproduction costs for the Professional firm's environmental engineering site study clarifications and Bulletins necessary to achieve the Contract scope of work is not allowed for reimbursement and shall be accounted as part of the Professional firm's calculated billing rate.

Compensation to the Professional for individual Tasks described in Article 1 shall not exceed the following amounts per Project Phase unless authorized by a Department approved Contract Change Order signed by the Department and the Professional.

PROJECT PHASE	SUBTOTAL AMOUNTS	MULTIPLIER**	COMPENSATION NOT TO EXCEED
100 Environmental Investigation/Study			
Billing Rate Payroll	\$	1.0	\$
Reimbursables*		1.0	
TOTAL			\$
600 Construction/Remediation Administration - Laboratory Services***			
Billing Rate Payroll	\$	1.0	\$
Reimbursables*		1.0	
TOTAL			\$
700 Environmental Response/Remedial - Field Services			
Billing Rate Payroll	\$	1.0	\$
Reimbursables*		1.0	
TOTAL			\$
TOTAL CONTRACT AMOUNT			\$

Reimbursable Expenses:

*See attached Appendix 4 for authorized reimbursable test items and \$ expenses. The compensation amounts provided in this Contract are not allowances, but comprise the Budget within which the Professional firm(s) can produce the attached Appendix 1 - Project/Program Statement scope of work requirements with reasonable and acceptable contingency.

**See attached Appendix 7 guideline form for computation instructions regarding the overhead items allowed by the Department for the Professional Service Contractor's hourly billing rate calculation.

***All environmental engineering/remedial services laboratory work, samples, and sample analysis, whether under Phases 100 and 700, shall be itemized and listed in Phase 600 services.

ARTICLE 3 PAYMENTS

Payment of the professional services fee, by the State of Michigan to the Professional, shall be based on the Professional's performance of authorized Contract professional services expenses performed prior to the date of each monthly submitted payment request. Payment requests shall be submitted monthly to the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director (with a copy to the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager) as the Project progresses on a Department payment request form (DMB-440). Payment to the Professional by the Department for each monthly submitted payment request invoice shall be made to the Professional within thirty (30) consecutive calendar days following the Department's receipt and approval of an approved payment request invoice from the Professional. Payment for reimbursable expenses shall be made only for authorized Contract obligations in the amount incurred prior to the date of the payment request application. The Professional's payment requests to the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director shall include signed certification by the Professional and shall graphically illustrate the following items: (1) The actual percentage (%) of work necessary to fulfill and complete the Contract requirements for the total Project; (2) The actual percentage (%) of Project work completed as of the date of the monthly payment request; and (3) The actual percentage (%) of work completed for each Task of the current Project Phase. This information shall be provided monthly with each submitted payment request and be graphically displayed on a copy of the Professional's original/revised submitted Project schedule.

Payment request applications shall be submitted monthly by the Professional to the Department, appropriately itemized, indicating the separate amounts being requested for each Phase of the Project service and reimbursement of each authorized expense and the total amount previously paid, if any, for such professional services. Payment request applications shall not be submitted to the Department, in amounts exceeding those indicated in the Department's signed Contract Order or Contract Change Order(s). Except as may be required by Department approved Contract Orders, no payment request will be processed for Project work accounted against any previous Phase after the date that the Project submittals of that Phase have been finalized and accepted by the Department, and in no case later than the designated date that Project work on any subsequent Phase is authorized by the Department. All invoicing for payment requests for the professional services work of a completed Phase must be finalized within sixty (60) calendar days of the end of the month in which the Project Phase scope of work is completed.

Payment request applications shall be submitted monthly on Department forms (DMB-440) and prepared in such detail as the Department may prescribe. The Professional's payment request applications shall summarize the amounts authorized, earned, previously paid and currently due for each Project Phase.

The Professional shall submit with their monthly application for payment a sworn statement stating that the amounts previously invoiced for professional services performed by their Consultants have been paid to their Consultants. Payment request applications to the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director shall be supported by itemized Project work documentation supporting the requested professional services fee amounts for each Project Phase and shall include, but not be limited to:

- a) Phase/Task Numbers for the professional services provided for the Project scope of work.
- b) Name of individual providing professional service and position/classification title as defined in the Article 2 - Compensation text.
- c) Hours worked: Authorized reimbursable expense items provided.
- d) Current hourly billing rate charge.
- e) Copy of certified on-site visitation log or site visit report showing time on-site.
- f) Receipts for authorized reimbursable expense items.
- g) Itemized invoices from each of the Professional's Consultant's documenting that firm's professional services charge and the Project work related services provided.

ARTICLE 4 ACCOUNTING

Authorization for the Professional firm to begin to incur costs for the Project professional services shall be made by the Department with a Department signed Professional Services Contract and a Department approved and signed DMB Form 402 - Contract Order. This Contract Order may authorize funds for all professional service Project Phases or authorizations may be made for sequential Phases according to the Project needs. It shall be the Professional's responsibility to carefully monitor their Project costs and their Consultant's professional service costs, activities, and progress and to give timely notification of any justifiable need to increase the authorized funds. Increases or decreases to the authorized Project Budget funds will be provided to the Professional by the Department of Management and Budget, Office of Facilities, Design and Construction Division's, Project Director and the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager by a revised and Department approved Contract Change Order signed by the Department and the Professional. No unauthorized Project work shall be performed by the Professional.

The Professional shall keep records of costs and expenses of direct payroll rates, billing rates, and authorized reimbursable expense items and all other necessary Project related document accounting costs to support the Professional's monthly application for payment. Records shall be kept on a generally recognized accounting basis. Such records shall be available to the Department for a period of three (3) years after the Department's final payment to the Professional. The State of Michigan reserves the right to conduct, or have conducted, an audit and Inspections of these Project records at any time during the Project or following its completion.

ARTICLE 5 INSURANCE

The Professional shall submit original Certificate of Insurance documents or certify that it will obtain all of the required insurance documents under Section 21542 of Act 451. The Professional shall purchase, maintain and require that the insurance as required in this article text and the original Certificate of Insurance documents shall be attached to the Appendix 11 – Original Certificates of Insurance section, that will provide protection from claims set forth below which may arise out of or result from the Professional's services under this Contract, whether such service is performed by the Professional or performed by any of the Professional's Consultant's, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

The following insurance policy limits described below are intended to be the minimum coverage acceptable by the State and under Section 21542 of Act 451:

- a) Workers' Compensation Insurance for claims under the Michigan's Workers' Compensation Act or other similar employee benefit act of any other state applicable to an employee.

Employers' Liability Insurance, in conjunction with Workers' Compensation Insurance, for claims for damages because of bodily injury, occupational sickness or disease or death of an employee when workers' compensation may not be an exclusive remedy, subject to a limit of liability of not less than \$100,000 each accident.

- b) Automobile Insurance required by law of not less than \$1,000,000 per each occurrence for claims arising from ownership, maintenance or use of a motor vehicle.

- c) Commercial General Liability Insurance coverage not less than \$1,000,000 per occurrence and \$2,000,000 aggregate.
- d) Contractual Liability Insurance for claims for damages that may arise from the Professional's assumption of liability on behalf of the State under Article 6 concerning indemnification for errors, omissions, or negligent acts in the course of the professional service or other provision within this Contract to the extent that such kinds of contractual liability are insurable in connection with and subject to limits of liability not less than for the Professional professional liability insurance and commercial general liability insurance set forth in subsections (c) and (e).
- e) The Professional's Errors and Omissions coverage shall include coverage for claims resulting from acts of forbearance that cause or exacerbate pollution and claims of bodily injury and property damage in the amount of \$1,000,000 minimum coverage per occurrence. This insurance is required of all Professional firms who conduct professional environmental services including, but not limited to, any of the following services:
 - (i) Remedial System Design.
 - (ii) Remediation Management.
 - (iii) Feasibility Development and Implementation.
 - (iv) Hydrogeological Evaluation.
 - (v) Media Testing and Analysis.
 - (vi) Subsurface and Geophysical Investigation.
 - (vii) Other related activities as determined by the Department.
- f) Pollution Liability in the amount of not less than \$1,000,000 per occurrence is required.

Original signed Certificate of Insurance documents, acceptable to the State under Part 215 of Act 451, and under this rule shall be provided and filed with the State prior to commencement of the Professional firm's Project scope of work services unless otherwise approved, in writing, by the Department. Faxes or Portable Document Format (PDF) copies of the required original Certificate of Insurance documents will not be accepted, only the original documents are acceptable. Signatures on the original Certificate of Insurance documents must be blue pen and ink and cannot be laser facsimile. The insurance company shall attach evidence that it is authorized by the Department of Labor and Economic Growth, Office of Financial and Insurance Services to do business as an insurer in the State of Michigan and must have an insurance rating of "A-" or better as listed by the A.M. Best Company unless otherwise authorized in writing, by the State of Michigan. The original Certificate of Insurance documents must specify on the certificate in the oblong rectangle space labeled "Description of Operations/Locations/Vehicles/Exclusions Added By Endorsement/Special Provisions/Special Items" the following items: (1) The Project Index No.; (2) The Project File No.; (3) The Project Title; (4) Description of the Project Scope of Work; and (5) The State of Michigan must be named as an "Additional Insured on the General Liability Insurance Policy." The original Certificate of Insurance documents shall contain a provision that the Project insurance coverage afforded under the insurance policies for this Contract will not be modified or canceled without at least thirty (30) consecutive calendar days prior written notice to the State of Michigan, Department of Management and Budget, Office of Facilities, Design and Construction Division. To view the latest A.M. Best's Key Ratings Guide and the A.M. Best's Company Reports (which include the A.M. Best's Ratings) visit the A.M. Best internet web site at <http://www.ambest.com>.

The attached Appendix 11, Original Certificates of Insurance documents required for this Project shall be in force for this Project until the final payment by the State to the Professional is made and shall be written for not less than any limits of liability specified above. The Professional has the responsibility for having their Consultant's comply with these insurance requirements.

Also, be advised that the surety bonds required for a Construction Contract for this Project will not be accepted by the State of Michigan unless, the surety bonding company is listed in the current United States Government, Department of Treasury's, Listing of Approved Sureties (bonding/insurance companies), Department Circular 570. This Circular 570 Listing is published annually every July 1, in the Federal Register solely for the information of providing a listing of companies holding certificates of authority as acceptable sureties on Federal bonds and as acceptable reinsuring companies required to provide surety bonds to the United States Government. Copies of the current Circular 570 Listing of

approved surety bonding/insurance companies and interim changes may be obtained through the internet web site at <http://www.fms.treas.gov/c570/c570.html>.

ARTICLE 6 INDEMNIFICATION

- (a) To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Professional in the performance of this Contract and that are attributable to the negligence or tortious acts of the Professional or any of its Subcontractors/Consultants, or by anyone else for whose acts any of them may be liable.

(b) Employee Indemnification

In any and all claims against the State of Michigan, its departments, divisions, agencies, boards, sections, commissions, officers, employees and agents, by any employee of the Professional or any of its Subcontractors/Consultants, the indemnification obligation under this Contract shall not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Professional or any of its Subcontractors/Consultants under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.

(c) Patent/Copyright Infringement Indemnification

To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that such action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Professional or its Subcontractors/Consultants, or the operation of such equipment, software, commodity or service, or the use or reproduction of any documentation provided with such equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or services, or its operation, become or in the State's or Professional's opinion be likely to become the subject of a claim of infringement, the Professional shall at the Professional's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if such option is not reasonably available to the Professional, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if such option is not reasonably available to Professional, (iii) accept its return by the State with appropriate credits to the State against the Professional's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Professional shall have no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; or (ii) use of the equipment in a configuration other than implemented or approved in writing by the Professional, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Professional under this Contract.

ARTICLE 7 OWNERSHIP OF DOCUMENTS

All Contract Documents/environmental engineering/remedial study drawings, specifications, and Project related documents prepared and furnished by the Professional shall become the property of the State upon their approval, in writing, by the State or upon the prior termination of the Professional's services hereunder, and the Professional shall have no claim for further employment or additional compensation as a result of this action taken by the State of full rights of ownership of these Contract Documents and materials. The Professional firm shall not use or copy the Contract Documents/environmental engineering/remedial study drawings, specifications, and any Project related documents for any purpose other than this Project. However, the Professional may retain a copy of all Project scope of work documents for their record keeping files.

ARTICLE 8 TERMINATION

The State may, by written notice to the Professional, terminate this Contract in whole or in part at any time, either for the State's convenience or because of the failure of the Professional to fulfill their Contract obligations. Upon receipt of such notice, the Professional shall:

- a) Immediately discontinue all professional services affected (unless the notice directs otherwise), and
- b) Deliver to the State all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Professional in performing this Contract, whether completed or in process.

- 8.1 If the termination is for the convenience of the State, an equitable adjustment in the Contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed professional services.
- 8.2 If the termination is due to the failure of the Professional to fulfill their Contract obligations, the State may take over the work and prosecute the same to completion by Contract or otherwise. In such case, the Professional shall be liable to the State for any additional cost occasioned to the State thereby.
- 8.3 If, after notice of termination for failure to fulfill Contract obligations, it is determined that the professional had not so failed, the termination shall be deemed to have been effected for the convenience of the State. In such event, adjustment in the Contract price shall be made as provided in Section 8.1 of this article.
- 8.4 The rights and remedies of the State provided in this article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE 9 SUCCESSORS AND ASSIGNS

This Contract shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns; provided, however, that neither of the parties hereto shall assign this Contract without the prior written consent of the other.

ARTICLE 10 GOVERNING LAW

This Contract shall be construed in accordance with the laws of the State of Michigan.

ARTICLE 11 NONDISCRIMINATION

In connection with the performance of the Project scope of work under this Contract, and in accordance with the attached Appendix 6 - Certificate of Awardability, the Professional agrees as follows:

- a) The Professional will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. The Professional will provide equal employment opportunities to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- b) The Professional will, in all solicitations or advertisements for employees placed by or on behalf of the Professional, state that all qualified applicants will receive equal employment opportunity consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.
- c) The Professional or their collective bargaining representative will send to each labor union or representative of workers with which is held a collective bargaining agreement or other Contract or understanding, a notice advising the said labor union or workers' representative of the Professional's nondiscrimination commitments under this article.
- d) The Professional will comply with the Elliot-Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2201 et seq; the Michigan Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 et seq; and all published rules, regulations, directives and orders of the Michigan Civil Rights Commission which may be in effect on or before the date of award of this Contract.
- e) The Professional will furnish and file nondiscrimination compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission; said forms may also elicit information as to the practices, policies, program, and employment statistics of the Professional and of each of their Consultant's. The Professional will permit access to all books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain nondiscrimination compliance with this Contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended.
- f) In the event that the Michigan Civil Rights Commission finds, after a hearing held pursuant to its rules, that the a Professional has not complied with the contractual nondiscrimination obligations under this Contract, the Michigan Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the State Administrative Board of the State of Michigan, which the State Administrative Board may order the cancellation of the Contract found to have been violated, and/or declare the Professional ineligible for future Contracts with the State and its political and civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the Professional complies with said order of the Michigan Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the Professional is declared ineligible to Contract as a contracting party in future Contracts. In any case before the Michigan Civil Rights Commission in which cancellation of an existing Contract is a possibility, the State shall be notified of such possible remedy and shall be given the option by the Michigan Civil Rights Commission to participate in such proceedings.
- g) The Professional shall also comply with the nondiscrimination provisions of 1976 PA 220, as amended, concerning the civil rights of persons with physical or mental disabilities.

- h) The Professional will include, or incorporate by reference, the nondiscrimination provisions of the foregoing paragraphs a) through g) in every subcontract or Contract Order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and will provide in every subcontract or Contract Order that said nondiscrimination provisions will be binding upon each of the Professional's Consultant's or seller.

ARTICLE 12 CONTRACT CLAIMS AND DISPUTES

In any claim or dispute by the Professional which cannot be resolved by negotiation, the Professional shall submit the claim or dispute for an administrative decision by the Department of Management and Budget, Director of Office of Facilities within thirty (30) consecutive calendar days of the end of the disputed negotiations, and any decision of the Director of Office of Facilities may be appealed to the Michigan Court of Claims within one (1) year of the issuance of the Director's decision. The Professional agrees that the appeal to the Director of Office of Facilities is a prerequisite to filing a suit in the Michigan Court of Claims.

ARTICLE 13 AS-BUILT DRAWINGS (Article Text Not Required For This Project Scope of Work.)

ARTICLE 14 COMPLETE AGREEMENT: MODIFICATION

This Professional Services Contract constitutes the entire agreement as to the Project between the parties. Any Contract Modification of this Contract and the attached Appendix 1 – Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for the Professional's Contract Documents/environmental engineering/remedial study errors, omissions or neglect on the part of the Professional.

IN WITNESS, WHEREOF, each of the parties has caused this Professional Services Contract to be executed in blue pen and ink by its duly authorized representatives on the dates shown beside their respective signatures, with the Contract to be effective upon the date on which the Professional receives a copy executed by the authorized State representative(s) by regular, registered or certified mail or by delivery in person.

FOR THE PROFESSIONAL:

Signature

Date

Title

Federal Identification (I.D.) No. or Social Security No.

FOR THE STATE OF MICHIGAN:

Director, Department of Management and Budget

Date

APPENDIX 1

PROJECT/PROGRAM STATEMENT(S)

APPENDIX 2

PROJECT ORGANIZATIONAL CHART

APPENDIX 3

PROJECT STUDY SCHEDULE

APPENDIX 4

AUTHORIZED REIMBURSABLE TESTS/\$ EXPENSES

The professional services listed below are authorized by the Department of Management and Budget, Office of Facilities, Design and Construction Division for direct cost reimbursements times a 1.0 multiplier.

4.1 SUMMARY OF AUTHORIZED REIMBURSABLE EXPENSE ITEMS

(Complete for each firm)

Professional/Consultant Firm:
City, State

Multiplier: 1.0

<u>Project Phase No.</u>	<u>Description of Professional Services Provided</u>	<u>Total \$ Amount</u>
100*	Printing and Reproduction of Study Phase Final Report Documents	\$ _____
600*	Printing and Reproduction of Construction/ Remediation Administration-Laboratory Services Phase Final Report Documents	\$ _____
700*	Printing and Reproduction of Environmental Response/ Remedial Action-Field Services Phase Final Report Documents	\$ _____
	Total of Authorized Reimbursable Expense Items	\$ _____

*See the Article 2 – Compensation Format for the Authorized Reimbursable Expense Items of this Contract.

APPENDIX 5

PROJECT HOURLY BILLING RATE \$ COMPENSATION

APPENDIX 6

CERTIFICATE OF AWARDABILITY

APPENDIX 7

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICE CONTRACTOR'S HOURLY BILLING RATE CALCULATION

The following instructions are to be used by the Professional Service Contractors to determine the hourly billing rate to use on State of Michigan Projects.

All of the Professional firm's Consultants providing Project services must submit a separate hourly billing rate for the Consultant services they will provide. No mark-up of the Consultants hourly billing rates will be allowed.

The Department of Management and Budget, Office of Facilities, Design and Construction Division will reimburse the Professional for the actual cost of printing and reproduction of the Contract Bidding Documents, soil borings, surveys and any required laboratory testing services. No mark-up of these Project costs will be allowed.

2005 HOURLY BILLING RATE

Based on 2004 Expenses

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICE CONTRACTORS' HOURLY 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

SUPPLIES:

Postage
Drafting Room Supplies
General Office Supplies
Library
Maps and Charts
Magazine Subscriptions

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

HOURLY BILLING RATE DOES NOT INCLUDE AND THE DEPARTMENT OF MANAGEMENT AND BUDGET, OFFICE OF FACILITIES, DESIGN AND CONSTRUCTION DIVISION WILL PAY FOR (UNDER REIMBURSABLE COSTS):

1. Printing and reproduction of Phase 100 Survey and/or Study Final Reports.
2. Printing and reproduction of Phase 500 Final Design Contract Bidding Documents/Drawings, and Specifications.
- 3.* Travel mileage costs for State of Michigan Projects more than one-hundred (100) miles in each direction from the Professional firm's Michigan office 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" versus an adjustment to the Professional firm's hourly billing rates.

APPENDIX 8

QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

INDEX

1. Guidelines for Project Quality
Control/Quality Assurance (QC/QA) Plan. Appendix 8A
2. Guidelines for Preparation of the Project
Quality Control/Quality Assurance (QC/QA) Plan Appendix 8B
3. Base Project Plan for Quality
Control/Quality Assurance (QC/QA).. Appendix 8C
4. Amendments to Project Quality
Control/Quality Assurance (QC/QA) Plan. Appendix 8D

APPENDIX 8A

GUIDELINES FOR QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

The Guidelines for Quality Control/Quality Assurance (QC/QA) Plan is prepared to prescribe criteria and procedures for efficient, cost effective, and reliable, acquisition, and accurate analysis, of data from a specific contaminated site, and to govern the implementation of that process. The Quality Control/Quality Assurance (QC/QA) Plan describes, in specific detail the following items:

1. Policy
2. Organization
3. Functional Activities (sample collection, chemical analysis, description of the laboratory, field methodologies, etc.)
4. Quality Control and Quality Assurance (QC/QA) Procedures necessary to achieve intended Project data quality goals.

This Quality Control/Quality Assurance (QC/QA) Plan must be prepared by the Professional, and accepted by the governing enforcing agency before any sampling, data analysis, or monitoring may begin at any site, or combination of sites which comprise a Project.

APPENDIX 8B

GUIDELINES FOR PREPARATION OF THE PROJECT QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

This guideline specifies sixteen (16) elements that must be addressed in a Quality Control/Quality Assurance (QC/QA) Plan. The Project description, Project organization and responsibility and the Quality Control/Quality Assurance (QC/QA) Plan objective should be written first. Other elements are self explanatory and must be consistent with the Project description and especially the intended use of the data.

1. Title Page

At the bottom of the title page, provisions must be made for the approval signatures. As a minimum, the Quality Control/Quality Assurance (QC/QA) Plan must be approved by the Department of Environmental Quality, Remediation and Redevelopment Division and in the case of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site also, by the federal governing enforcing agency having governing jurisdiction at the Project site.

- A. Department of Environmental Quality, Remediation and Redevelopment Division, State Project Manager
- B. Department of Environmental Quality, Remediation and Redevelopment Division Quality Control/Quality Assurance Officer
- C. Construction Contractor's Project Officer
- D. Construction Contractor's Quality Control/Quality Assurance Officer

2. Table of Contents

The Table of Contents will address each of the following items:

- A. Introduction
- B. A serial listing of each of the sixteen (16) quality assurance Project plan components.
- C. A listing of any appendices included to augment the Quality Control/Quality Assurance (QC/QA) Plan as presented (i.e., standard operating procedures, etc.).

3. Project Description

Provide a general description of the Project. This description may be brief but must have sufficient detail to allow those individuals responsible for review and approval of the Quality Control/Quality Assurance Plan (QC/QA) to perform their Task. Where appropriate, include the following:

- A. A brief summary of background information from previous studies.
- B. Dates anticipated for start and completion.
- C. Intended end use of acquired data, such as future enforcement actions, remedial action alternatives, determination of hazardous waste characteristics, protection of public health, definition of the extent of environmental contamination or future regulatory action.
- D. A description of the monitoring network design and rationale.
- E. A discussion of the sample matrices and parameters to be measured and their frequency of collection, if appropriate. Parameters should include field measurements, hydrogeological measurements and laboratory parameters. Sample parameters and matrices are best listed in two (2) groups which may require different sampling, analytical and quality control procedures.

- F. Wastes including on-site sludges, barrels, liquids and contaminated soils, which are often analyzed to determine waste disposal alternatives.
- G. Ambient monitoring of air, ground water, soils, surface water, river sediments, fish, etc. These types of determinations usually are intended to measure the extent of environmental contamination and to assess public health risks. Specifications for filtered or unfiltered sample aliquots of ground water should be included.

Selection of analytical methods require familiarity with any regulatory requirements of intended data usage(s). For example, disposal of wastes during remedial removals will require testing of materials pursuant to the Resource Conservation and Recovery Act (RCRA). In this case, the Resource Conservation and Recovery Act (RCRA) codified regulations may dictate choices of analytical methods. Discharge of treated ground water to surface waters may require an National Pollutant Discharge Elimination System (NPDES) permit, monitoring requirements and use of Clean Water Act Methods. Similarly operation of an air stripper may require use of Clean Water Act Methods.

4. Project Organization and Responsibility

Include a table or chart showing the Project organization and line authority. List the key individuals, including the Quality Assurance Officer, who are responsible for ensuring the collection of valid measurement data and the routine assessment of measurement systems for precision and accuracy.

All laboratories including the State's contracted laboratory, the Professional's own, and all subcontracted laboratories must be identified. If a subcontractor laboratory has an existing Contract Laboratory Program (CLP) Contract and these same Contract Laboratory Program (CLP) protocols will be used, this arrangement should be described. If the Contract Laboratory Program (CLP) procedures are to be used then this element should identify final data review of routine Contract Laboratory Program (CLP) services.

5. Quality Control/Quality Assurance (QC/QA) Plan Objectives for Measurement Data in Terms of Provision, Accuracy, Detection Limits

For each matrix (or matrix groups) and parameter, objectives should be established for:

- A. Accuracy (sample spikes, surrogate spikes, reference sampled, etc.).
- B. Precision (replicate sample analyses, etc.).
- C. Sensitivity or Method Detection Limits.

These should be established on Project needs, if possible, but must be discussed with support laboratories so they are realistic. Quantitative limits should be established for these objectives.

For example, mean spike recoveries for volatile halogenated organic compounds in water using purge and trap gas chromatography techniques, should be 90-100 percent (%), and range between 80 and 120 percent (%) recovery. Reference sample results should be accurate within 20 percent (%) of true values. Precision objectives should be that duplicate sample aliquot values do not differ more than 10 percent (%) at the 95 percent (%) confidence level when concentrations are measured significantly larger than the method detection limit. Except for methylene chloride, method detection limits objectives can realistically be established at 0.2 ug/l for this gas chromatography technique.

Screening of hazardous waste site liquids may well only require 50 to 150 percent (%) recoveries of spike surrogate compounds during the Gas Chromatograph/Mass Spectroscopy (GC/MS) determinations and method detection limits of 0 ug/l for volatile halogenated organic compounds.

Quality Assurance objectives must be consistent with the capabilities of the analytical methods identified in element number 9 below. Sound objectives require careful thought and the talents of analysts and the people who are going to use the resulting data. These need to be established in advance of monitoring.

6. Sampling Procedures

For each major parameter(s), provide a description of the sampling procedures to be used. Where applicable, include the following:

- A. Description of techniques used to select sampling sites.
- B. Inclusion of specific sampling procedures to be used.
- C. A description of containers, procedures, reagents, etc., used for sample collection, preservation, transport, and storage.
- D. Special procedures for the preparation of sampling equipment and containers to avoid or measure sample contamination.
- E. Sample preservation methods and holding times.
- F. Time considerations for shipping samples promptly to the laboratory.
- G. Forms, notebooks, and procedures to be used to record sample history, sampling and conditions and analyses to be performed.

7. Sample Custody

Sample custody is a part of any good laboratory or field operation. Where samples may be needed for legal purposes, "chain-of-custody" control procedures must be used. However, as a minimum, the following sample custody procedures will be addressed in the Quality Control/Quality Assurance (QC/QA) Plan:

- A. Procedures and forms for recording the exact location associated with sample acquisition.
- B. Standardized field tracking reporting system to establish sample custody in the field prior to shipment.
- C. Identification of responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming, field samples, and verify the data entered onto the sample custody records.
- D. Provision for a laboratory sample custody log consisting of serially numbered standard laboratory tracking report sheets.
- E. Specifications of laboratory sample custody procedures for sample handling, storage and disbursement for analysis.
- F. Custody procedures for final evidence files. Final evidence files include all originals of laboratory reports and are maintained in a secure area.

This element should provide examples of chain-of-custody control records or forms used to record chain-of-custody control for samplers, laboratories and evidence files.

8. Calibration Procedures and Frequency

Calibration procedures are usually a part of specific analytical methodology. This element can be combined with element number 9, analytical procedures.

9. Analytical Procedures

For each measurement parameter, reference the applicable standard analytical procedure(s) or provide a written description of the analytical procedure(s) to be used. Provide performance information for each analytical procedure in terms of accuracy, precision and detection limits. Method performance information should meet or exceed the Quality Assurance objectives identified in element number 5. For the sake of convenience, all or part of elements number 8, 9, 10, 11, and 13 may be incorporated into this element.

The choice of when to reference a manual's test procedure and when to document a complete Standard Operating Procedure (SOP) can only be made on a case-by-case basis. It has been observed that few laboratories, external to the Contract Laboratory Program (CLP), follow exactly, all important details of a standard reference method. Other times standard reference methods provide or allow options (example - the use of different gas chromatography columns for polychlorinated biphenyl (PCB) determinations).

Reference to analytical methods in the United States Environmental Protection Agency (USEPA) Publications, the American Society for Testing and Materials (ASTM) or "Standard Methods" can be appropriate; however, required sample preparation procedures (filtration, digestion, etc.) also need to be referenced. For example, the United States Environmental Protection Agency's "Methods for Chemical Analysis of Water and Wastes" provides three (3) different test procedures for most metal determinations and at least four (4) sample preparation protocols for each metal. Each combination of metal determination and sample preparation exhibits different degrees of accuracy, precision, and sensitivity of measurement. Different quality control audits are used for each combination of metal determination and sample preparation. The exact combination used for each metal must be specified.

10. Data Reduction, Validation and Reporting

For each major parameter, briefly describe:

- A. The data reduction scheme planned on collected data, including all equations used to calculate the concentration or value of the measured parameter and reporting units.
- B. The principal criteria that will be used to validate data integrity during collection and reporting of data.
- C. The methods used to identify and treat outliers.

11. Internal Quality Control Checks

The specific quality control procedures actually being followed for each test or determination should be specified i.e., sample spikes, surrogate spikes, independently prepared reference samples or controls, blanks, etc. The frequency of these audits should be specified. The compounds used for surrogate and sample spikes should be specified where appropriate - arsenic, mercury, priority pollutant organic compounds, etc. The acceptance limits or control chart limits for these audits should be in place so that analyses can be validated prior to reporting of data.

12. Performance and System Audits

This Quality Control/Quality Assurance (QC/QA) Plan must describe the performance audits which will be required to monitor the capability and performance of the total measurement system(s). The Quality Control/Quality Assurance (QC/QA) Plan should include a schedule for conducting performance audits for each parameter, including a performance audit for all measurement systems. Project plans should also indicate, where applicable, scheduled participation in inter-laboratory performance evaluation studies.

The Environmental Protection Agency performance evaluation samples, National Bureau of Standards reference samples or samples from inter laboratory studies may be used for this purpose.

13. Preventive Maintenance

The following preventive maintenance items should be considered and addressed in the Quality Control/Quality Assurance (QC/QA) Plan:

- A. A schedule of important preventive maintenance tasks that must be carried out to minimize downtime of the measurement systems.
- B. A list of any critical spare parts that should be on hand to minimize downtime.

14. Specific Routine Procedures Used to Assess Data Precision and Accuracy

For each major parameter, the Quality Control/Quality Assurance (QC/QA) Plan must describe the routine procedures used to assess the precision, and accuracy. These procedures should include the equations to calculate precision and accuracy, and the methods used to gather data for the precision and accuracy calculations.

15. Corrective Action

Corrective action procedures must include the following elements:

- A. The predetermined limits for data acceptability beyond which corrective action is required.
- B. Procedures for corrective action.

16. Quality Assurance Reports to Management

The Quality Control/Quality Assurance (QC/QA) Plan should provide a mechanism for periodic reporting to the Department of Environmental Quality, Remediation and Redevelopment Division's, State Project Manager on the performance of measurement systems and data quality. These reports should include:

- A. Periodic assessment of measurements data accuracy and precision.
- B. Results of performance audits.
- C. Results of system audits.
- D. Significant Quality Assurance problems and recommended solutions.

APPENDIX 8C

**BASE PROJECT PLAN
FOR QUALITY CONTROL/QUALITY ASSURANCE**

APPENDIX 8D

AMENDMENTS TO QUALITY CONTROL/QUALITY ASSURANCE

APPENDIX 9
PROJECT SITE HEALTH AND SAFETY PLAN

INDEX

1. Base Project Health and Safety
Plan Appendix 9A
2. Amendments to Project Health
and Safety Plan.Appendix 9B

APPENDIX 9A

BASE PROJECT HEALTH AND SAFETY PLAN

APPENDIX 9B

AMENDMENTS TO PROJECT HEALTH AND SAFETY PLAN

APPENDIX 10

STANDARD REFERENCE OF ACRONYMS

Acronyms

AE.....	Authorized Expeditor	OF	Office of Facilities
AHERA.....	Asbestos Hazard Emergency Response Act	O&M.....	Operation and Maintenance/Manual
AIA	American Institute of Architects	OSHA.....	Occupational Safety and Health Administration
AOC.....	Administrative Order of Consent	PA	Public Act
ARA.....	Acute Risk Abatement	PAHS	Polynuclear Aromatic Hydrocarbons
ARAR	Applicable or Appropriate, Relevant and to be Considered Requirement	PCB	Polychlorinated Biphenyls
AST.....	Aboveground Storage Tank	PE.....	Licensed Professional Engineer
ASTM	American Society for Testing and Materials	PPE.....	Personal Protective Equipment
BOA.....	Basic Ordering Agreement	PM.....	Project Management
BTEX.....	Benzene, Toluene, Ethylbenzene, Xylene	PRP	Potentially Responsible Parties
CA.....	Corrective Action	PSC	Professional Service Contractor
CAD.....	Computer-Aided Design	QAPP	Quality Assurance Project Plan
CAP	Corrective Action Plan	QA/TC.....	Quality Assurance/Technical Consultant
CD.....	Compact Disc	QC.....	Qualified Consultant
CERCLA.....	Comprehensive Environmental Response, Compensation, and Liability Act of 1980	QC/QA	Quality Control/Quality Assurance
CM	Construction Management	RA	Remedial Actions
CMS.....	Corrective Measures Study	RAP.....	Remedial Action Plan
CPA	Certified Public Accountant	RBCA.....	Risk-Based Corrective Action
CPFF.....	Cost Plus Fixed Fee	RBSLs	Risk Based Screening Levels
CPG	Certified Professional Geologist	RC	Remedial Construction
CPM.....	Critical Path Method	RCRA.....	Resource Conservation and Recovery Act
CS	Contract Specialist	RD	Remedial Design
CSI.....	Construction Specifications Institute	RFI	RCRA Facility Investigation
CWA	Clean Water Act	RFP	Request for Proposal
DMB	Department of Management and Budget	RI.....	Remedial Investigation
DCD.....	Design and Construction Division	RI/FS	Remedial Investigation/Feasibility Study
DNAPL.....	Dense Non-Aqueous Phase Liquid	RP.....	Responsible Party
EE/CA.....	Engineering Evaluation/Cost Analysis	RRD	Remediation and Redevelopment Division
ESA.....	Environmental Site Assessment	SA	Site Assessment
EVA.....	Earned Value Analysis	SARA.....	Superfund Amendments and Reauthorization Act
FAR	Final Assessment Report	SDWA.....	Safe Drinking Water Act
FM	Financial Manager	SHSC.....	Site Health and Safety Coordinator
FP.....	Fixed Price	SI.....	Site Investigation
FS.....	Feasibility Study	SM.....	Site Manager
FFS.....	Focused Feasibility Study	SOW.....	Scope of Work
GDRRA	Greater Detroit Resource Recovery Authority	SPCC.....	Spill Prevention Control and Countermeasures
GSI.....	Groundwater-Surface Water Interface	SSTLs.....	Site Specific Target Levels
H&S	Health and Safety	SVE.....	Soil Vapor Extraction
HASP	Health and Safety Plan	TAT.....	Technical Assistance Team
HAZWOPER ..	Hazardous Waste Operations and Emergency Response	TCE	Trichloroethylene
HSM.....	Health and Safety Manager	TM.....	Time and Materials
LOE	Level-of-Effort	TS.....	Technical Specialist
LS.....	Legal Specialist	TSCA	Toxic Substances Control Act
LUST	Leaking Underground Storage Tank	UP	Unit Price
MCL.....	Michigan Compiled Law	U.S. ATHAMA ..	U.S. Army Toxic and Hazardous Material Agency
MDEQ.....	Michigan Department of Environmental Quality	U.S. EPA.....	United States Environmental Protection Agency
MDMB.....	Michigan Department of Management and Budget	UST	Underground Storage Tank
MDNR	Michigan Department of Natural Resources	USPS	United States Postal Service
MIOSHA.....	Michigan Occupational Safety and Health Act	VOC	Volatile Organic Compounds
MOP.....	Miscellaneous Operating Project yd ³	VSR.....	Verification of Soil Remediation
NEPA.....	National Environmental Policy Act	WPO.....	Work Plan Outline
NIOSH.....	National Institute for Occupational Safety and Health	yd ²	Square Yards
NREPA	National Resources Environmental Protection Act (Act 451 PA 1994 as amended)	Cubic Yards	

APPENDIX 11

ORIGINAL CERTIFICATES OF INSURANCE