US Army Corps
of Engineers

LANDFILL 6 COVER IMPROVEMENTS
at the Former Griffiss Air Force Base
Rome, New York

Contractor Quality Control Plan
Document Series 4 of 5

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March 2004

Landfill 6 Cover Improvements

Former Griffiss Air Force Base
Rome, New York

CONTRACTOR QUALITY CONTROL PLAN

Conti Environmental, Inc.

March 2004

DOCUMENT SERIES OVERVIEW

The U.S. Army Corps of Engineers (USACE)–Kansas City District, issued Task Order No. 0001 under Contract No. DACA41-01-D-0004 to Conti Environmental, Inc. Under this Task Order, Conti Environmental, Inc. and its' subcontractor, EA Engineering, P.C. and its affiliate EA Engineering, Science, and Technology have been tasked to prepare documents to support landfill closure activities at the former Griffiss Air Force Base, Rome, New York.

A series of documents has been developed in support of each of the landfills to be closed. The series includes one primary document, and four supporting documents and associated appendices. The following is a list of the documents in the series developed in support of landfill closure, and an abbreviated description of the document. Bold highlighting indicates which document in the series the reader is currently reviewing.

The Closure Plan is the primary document and is the first document in a series of five documents. The Closure Plan has been developed in accordance with New York Codes, Rules and Regulations Part 360. The Closure Plan provides project history and background information for the site, the regulatory status, the proposed design elements with supporting calculations, specifications and design drawings.

The Project Work Plan is the second document in the series. The Project Work Plan has been developed to outline the scope of work to be implemented and the general methodologies used to execute the scope of work. The plan presents the work approach to be implemented by the Contractor and sequence of activities for accomplishing the construction of landfill cover improvements. The Project Work Plan also includes, as appendices, the Environmental Protection and Soil Erosion Control Plan and the Traffic Control Plan. The Environmental Protection and Soil Erosion Control Plan outlines the procedures to be implemented to minimize impacts on the surrounding environment during construction. The Traffic Control Plan details the policies and procedures for proper control of vehicles during construction to protect workers and increase efficiency.

The Site Safety and Health Plan is the third document in the series. The Site Safety and Health Plan has been developed to outline the health and safety requirements and guidelines to be followed during construction related activities associated with the landfill closures.

The Contractor Quality Control Plan is the fourth document in the series. The Contractor Quality Control Plan has been developed to outline the policies and procedures to be followed to ensure that proper quality control measures are implemented to provide usable defendable data, ensure compliance with contract drawings and specifications, and to meet contractual requirements with USACE.

The Sampling and Analysis Plan is the fifth document in the series. The Sampling and Analysis Plan has been developed to outline the sampling and analysis procedures to be conducted at each landfill during closure activities.

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Abbreviations and Acronyms

BS..... .....Bachelor of Science
CO..... Contracting Officer
COR .....Contracting Officer Representative
CQC ..... Contractor Quality Control
CQCC.....Chemical Quality Control Coordinator
CQCO .....Contractor Quality Control Officer
CQCSM .....Contractor Quality Control Systems Manager
DFOW..... Definable Features of Work
DQO.....Data Quality Objective
ENG ..... Engineering
ER .....Engineering Regulation
HTRW.....Hazardous, Toxic and Radioactive Waste
NAS.....Network Analysis System
NICA.....Non-Compliance Identification/Corrective Action
POC..... Point of Contact
PRAC.....Pre-placed Remedial Action Contract
QA..... Quality Assurance
QC.....Quality Control
RMS..... Resident Management System
SAP.....Sampling and Analysis Plan
SSHO ..... Site Safety and Health Officer
SSHP.....Site Safety and Health Plan
TPL ..... Testing Plan and Log
USACE ..... United States Army Corps of Engineers

1.0 Introduction

Conti Environmental, Inc. (The Contractor) has prepared this Contractor Quality Control Plan under US Army Corps of Engineers, Kansas City District (CENWK) contract # DACA41-01-D-0004 for the New York District of Army Corps of Engineers (NYD), the Former Griffiss Air Force Base and the Air Force Base Conversion Agency (AFBCA).

2.0 Purpose, Scope and Applicability

The purpose of this manual is to document the Contractor Quality Control (CQC) Plan that the Contractor will implement for accomplishing construction of landfill cover improvements at Landfill 6 at the former Griffiss Air Force Base in Rome, Oneida County, New York. The landfill cover improvements are to be implemented in accordance with the requirements contained in the Landfill 6 Closure Plan prepared to meet the requirements of 6 NYCRR Part 360. The CQC Plan is designed to ensure that all aspects of the project are performed in accordance with the plans and specifications provided by the USACE. The Contractor recognizes that no activities involving field demolition/construction will be permitted to begin until after acceptance of the CQC Plan by the USACE.

The scope of this plan includes all CQC aspects of the project. The specific aspects of chemical data quality control are presented in detail in the Sampling and Analysis Plan (SAP), a separate plan prepared for this project. However, as will be discussed later, chemical data quality control will be administered as part of the overall CQC Plan for the project.

This document is applicable to all activities and services performed and/or provided by The Contractor as the prime contractor and all subcontractors, suppliers, fabricators and purchasing agents associated with any and all work under The Contractor's control.

3.0 Organization, Authority and Responsibility

3.1 Organizational Structure

The QC organizational structure for this project includes the Project Manager, Project Superintendent, Contractor Quality Control System Manager (CQCSM), Chemical Quality Control Coordinator (CQCC) and additional internal and/or subcontracted QC personnel assigned to the project.

The Contractor will assign the Project Manager, Project Superintendent, and CQCSM to the project. The Contractor will review the qualifications for each position as described in the project specifications and verify that the personnel assigned satisfy all such requirements.

The Project Manager will be responsible for the execution of the project in accordance with the requirements contained in the plans and specifications and will reports directly to Contractor's Corporate Officer who is ultimately responsible to the USACE for the quality of the project. The Project Manager also serves as the Point of Contact (POC) for the USACE Contract Officer Representative (COR) and represents the Contractor in all matters related to the project.

The Project Superintendent for the project will report to the Project Manager. The Project Superintendent is responsible for ensuring that all field activities performed by the Contractor and/or subcontractors under contract with the Contractor are conducted in conformance with project plans and specifications. The Project Superintendent is also responsible for scheduling and coordinating all field efforts conducted by the Contractor and its subcontractors.

The CQCSM for the project is responsible for the implementation of the CQC Plan. The CQCSM reports to The Contractor's Corporate Officer on all project QC matters that may require involvement at a corporate level. The CQCSM will communicate with both the Project Manager and Project Superintendent on a daily basis regarding all QC aspects of the project and will be responsible for scheduling, coordinating, and implementing all aspects of the CQC Plan. In addition, the CQCSM will be the Contractor's POC for scheduling and coordinating chemical data quality control activities being implemented by the Contractor in the field to ensure that this element of the CQC Plan is properly executed.

The Contractor shall designate the Chemical Quality Control Coordinator (CQCC) for the project. The CQCC shall be qualified to ensure proper sample management, QC of sampling, chain-of-custody, and data management and evaluation. The CQCC shall be responsible for preparation and management of Chemical Data Quality Management Plans and Sampling and Analysis Plans consistent with USACE guidance documents. The CQCC will be responsible for all aspects of chemical data quality control and will report to and coordinate with the CQCSM on all such matters.

3.2 Authority

Each individual involved in the QC organizational structure has the authority necessary to execute his or her responsibilities. The Project Manager, Project Superintendent and CQCSM have full authority to secure the personnel, equipment and materials necessary to implement the project consistent with contractual requirements. Each has the authority to stop work not in compliance with quality standards contained within the project plans and specifications. The CQCSM has the authority to implement all aspects of the CQC Plan. The CQCC has the authority to conduct all aspects of chemical data quality control.

3.3 Qualifications and Responsibilities

The following personnel are directly responsible for various aspects of the quality achieved during execution of this contract. Consistent with the specifications, letters of assignment and resumes are to be included in Appendix A. These documents verify the individual's formal assignment to the project, their areas of responsibility and authority and their qualifications, in resume format, to assume the assignment. For individuals subordinate to the Contractor Quality Control Officer (CQCO) involved in aspects of the project, such as the Project Chemist and Environmental Sampler, their qualifications and responsibilities will be provided in the SAP.

3.3.1 Contractor Quality Control System Manager

Specific to the requirements of this project, the CQCSM shall be:

- A graduate engineer or construction manager with a minimum of 5 years experience on construction similar to this contract;
- On the site at all times during construction; and
- Employed by the prime contractor.

In addition, the CQCSM shall have completed the course entitled "Construction Quality Management for Contractors". An alternate for the CQCSM shall also be identified in the plan to serve in the event of the CQCSM's absence. The requirements for the alternate shall be the same as for the designated CQCSM.

The CQCSM is responsible for the development, execution and overall management of the CQC Plan for the project. The CQCSM has the authority to act in all QC matters for The Contractor as well as full stop work authority related to any work being performed that is not in compliance with project QC

requirements. Such authority is provided in the assignment letter contained in Appendix A. Duties for which the CQCSM is responsible include but are not limited to:

- Review and approval of all submittals prior to transmittal to the USACE;
- Providing the necessary initial information, subsequent data updates and transmit the current file via a diskette with each Pay Request (as a minimum frequency);
- Execution of the three phases of control (Preparatory, Initial and Follow-up) for all Defined Features of Work (DFOWs)
- Assignment of inspection and testing personnel to the project after verifying and documenting that their qualifications are consistent with project requirements;
- Scheduling and coordination of the activities of all QC personnel assigned to the project;
- Coordination of all QC activities with the Project Manager, Project Superintendent and Site Safety and Health Officer (SSHO) to ensure that QC activities are performed on a safe and timely basis and do not adversely impact the project schedule;
- Establishing and maintaining a document control system for all testing and inspection records and associated documentation and as-built drawings for the project;
- Development of QC related forms and reports required for the project
- Establishing and maintaining a test equipment calibration program for all QC equipment used on the project;
- Verification that onsite and/or subcontracted laboratories are in compliance with CQC Plan requirements;
- Supervision of QC testing as required by the contract;
- Inspection of materials/equipment received onsite to ensure contract compliance;
- Performance of punch out, pre-final and final inspections
- Implementation of changes to correct deficiencies discovered as a result of inspections
- Preparation of daily QC reports documenting the status and activities of the project

The CQCSM is also responsible for coordination and scheduling with the CQCC to ensure that all aspects of chemical data QC are performed in accordance with contract requirements. The CQCC will report directly to the CQCSM.

The CQCSM will be responsible for ensuring the QC system and process provides the information/data required to support preparation of the Engineer's Certification Report as defined in NYCRR Part 360. The Certifying Engineer will be responsible for preparation of the Closure Certification Report. The Certifying Engineer will report to the QCSM who will manage the QC process including the preparation of Closure Reports.

3.3.2 Project Manager

The Project Manager is trained in corporate administrative and safety and health procedures, technically qualified and possesses the necessary level of experience to manage the project in a manner that satisfies all contractual obligations related to safety, quality, cost and schedule.

The duties for which the Project Manager is responsible include but are not limited to:

- Acting as the Point of Contact (POC) for the Contractor with the USACE COR;
- Directing and managing of all aspects of the project in compliance with contractual and technical requirements;
- Representing the Contractor in all dealings with all organizations involved in the project;
- Procuring and managing all subcontractor services retained by the Contractor;
- Approving all invoices submitted to the USACE;
- Directing and overseeing all engineering, studies and field activities conducted for the project; and

- Coordinating and communicating with the Project Superintendent, SSHO and CQCSM in the performance of all work related to the project.

3.3.3 Project Superintendent

The Project Superintendent is trained in corporate safety and health and administrative procedures, technically qualified and possesses the necessary level of experience to implement all field work in a manner that satisfies all contractual obligations related to safety, quality, cost and schedule.

The Project Superintendent is responsible for the quality of all work performed in the field by all labor forces, including both the Contractor's and those of subcontractors working on the project and under the Contractor's control. The Project Superintendent reports directly to the Project Manager. The duties for which the Project Superintendent is responsible include but are not limited to:

- Directing all field work in compliance with all project requirements including subcontractor work efforts;
- Scheduling and coordinating all field work performed by the Contractor and its subcontractors;
- Ensuring that all field work is performed in accordance with the CQC Plan and the Site Safety and Health Plan (SSHP) and meets or exceeds all quality standards.

3.3.4 Chemical Quality Control Coordinator

The Chemical Quality Control Coordinator (CQCC) for this project possesses the following minimum qualifications:

- 4 years of experience related to investigations, studies, design and remedial actions at HTRW sites; and
- 2 field seasons (or one the continuous calendar year) experience in calibration and operation of various field monitoring devices as well as standard analytical chemistry methods common for analyzing soil, water, air and other materials for chemical contaminant assessment, including hazardous waste manifesting.

The CQCC is responsible for ensuring that all chemical-related objectives including responsibilities for Data Quality Objectives (DQO) definitions, sampling and analysis, project requirements for data documentation and validation, and final project reports are attained. The CQCC need not be present onsite during routine sampling, but shall be available for consultation with Government personnel and the CQCSM. The CQCC will report to the CQCSM on all chemical data QC matters for the project. The CQCC is also responsible for management and coordination of the chemical QC staff including subordinate personnel such as the Project Chemist and Environmental Sampler. When the CQCC is not present on-site, scheduling and coordination will be provided by the CQCSM.

3.3.5 Chemical QC Staff

Chemical QC staff qualifications and responsibilities for positions such as the Project Chemist and Environmental Sampler are described in detail in the SAP for this project. Related to the CQC Plan, all chemical QC staff will report to he CQCC. If the CQCC is not present on-site, the staff will coordinate scheduling and testing efforts with the CQCSM.

4.0 Quality Control System

The Quality Control System that will be utilized to ensure the quality of all work performed by the Contractor and its subcontractors, suppliers, and fabricators involves the following basic elements; Definable Features of Work, Submittals, Project Quality Control Meetings, Three Phases of Control,

Tests, Inspections, Documentation and Notification of Noncompliance. Each element is described below.

4.1 Definable Features of Work

All tasks defined in the project specifications and drawings that are separate and distinct from other tasks, have separate control requirements, may be identified by different trades or disciplines or may be work by the same trade or discipline performed in a different environment are identified as Definable Features of Work (DFOWs). All DFOWs are controlled during execution using the three phases of control discussed below and will undergo a completion inspection upon conclusion of the work associated with the DFOW. A listing of the DFOWs identified for this project is presented in a summary table contained in Appendix B. The CQCSM tracks the status of QC activities related to all DFOWs using this summary table. A copy of the table is provided as part of the daily QC report prepared by the CQCSM.

The CQCSM is responsible for the execution of the Preparatory, Initial, and Follow-up control activities, any and all testing required to demonstrate the adequacy of the DFOW, inspections related to the DFOWs, identification and correction of any noncompliance with contract requirements for the DFOW and documentation of all QC activities related to the DFOW. Additional qualified QC staff may be used to assist the CQCSM in the various QC activities to accommodate variations in workload and/or specific areas of technical expertise, however the CQCSM is ultimately responsible for ensuring the QC of all DFOWs.

4.2 Submittals

During the startup phase of the project, all requisite submittals contained within the contract drawings and specifications are identified and made using the procedures and format presented in the most current version of USACE ER 415-10, Construction Contractor Submittal Procedures and ENG Form 4288. ENG Form 4025 will be used for the transmitting the submittals. A copy of the submittal register prepared by the USACE for this project is presented in Appendix C. The Contractor recognizes that this register may not be all-inclusive and additional submittals may be required. Upon receipt of the diskette containing the computerized version of the project submittal register, the CQCSM will complete columns "a" and "s through u" and submit the forms in both hard copy and electronic file to the Contracting Officer Representative (COR) for approval within 15 calendar days after Notice to Proceed.

Tracking of all submittals is performed using both the Network Analysis System (NAS) established for the project schedule and an electronic version of the submittal register (ENG Form 4288). Both are modified as necessary to reflect the current status of all submittals.

The Submittal Register will be used as a scheduling document for submittals and will be used to control submittals throughout the life of the project. According to the project specifications, a minimum of 30 calendar days shall be allowed for review and approval of all submittals by USACE. Such timing will be included in the timetable for all submittals contained in the NAS to ensure that submissions, reviews, and approvals are in compliance with schedule and sequencing requirements. Prior to submission to the USACE, the CQCSM is responsible for certifying that all submittals are complete and in compliance with contract documents and drawings.

The CQCSM will also stamp, sign and date the submittals as required. The stamp is similar to the following:

Contractor
_____Approved
_____Approved with corrections as noted on submittal data and/or attached sheet(s)
Signature:_____
Title:_____
Date:_____

Submittals for interrelated items will be submitted concurrently. Certifications and/or warranties will be submitted and accompany the appropriate items for which they apply.

This submittal process includes all submittals prepared by the Contractor for its own work, as well as those required from its subcontractors, fabricators and suppliers. In addition, the Project Manager, Project Superintendent and the CQCSM will meet with the USACE at mutually agreed upon intervals to review the existing version of the submittal register based upon the required work items completed and those still to be performed. Following each meeting, a revised version of the submittal register will be issued to the USACE. At a minimum, a diskette containing the current version of the submittal register will accompany the monthly payment request submitted to the Government.

4.3 Project Quality Control Meetings

Project QC meetings will be conducted through the course of the project to first establish the means and methods that will be used to monitor QC related to the project and subsequently to verify that the QC program is being properly implemented.

4.3.1 Coordination Meeting

Following the Pre-Construction Conference and submittal of both the CQC Plan and SAP, but prior to the start of construction and acceptance by the Government of the CQC Plan and the SAP, a Coordination Meeting will be held. This meeting will be scheduled, convened and conducted by the Government. The purpose of the meeting is:

1) To achieve a mutual understanding of the QA and QC roles to be performed by the USACE and the Contractor, respectively related to both CQC and chemical data quality;
2) To review and discuss all elements of the CQC Plan and the SAP; and
3) To establish the professional and cooperative working relationships needed to achieve the mutual goal of constructing a quality product that conforms to contract requirements.

Attendance will include at a minimum, the CO or COR, CQCC and the CQCSM. However, the Contractor recognizes the benefits of also having the Project Manager, Project Superintendent and SSHO present as well as selected members of the CQC and chemical data QC staffs in attendance.

During the meeting a mutual understanding of all quality control system details shall be developed, including the forms used to record CQC operations, control activities, testing, administration of the

system for both onsite and offsite work, and the interrelationship of the Contractor's project management and QC staff with USACE QA personnel. Safety and health issues related to QC activities will also be identified and discussed with the SSHO.

The meeting will also address management of the chemical data QC program. This will discussions related to a list of DFOWs that involve chemical and radiological measurements, project DQOs, project submittals, chemical data documentation, chemical data assessment, required sampling and analysis protocols, and minimum reporting requirements, all of which will mutually agreed upon by the Government and the Contractor.

Minutes of the meeting will be prepared by the Contractor and signed by the CQCSM and the CO or COR. The minutes will become part of the contract file. Either the USACE or the Contractor may call subsequent meetings to reconfirm mutual understandings or address deficiencies in the CQC and/or chemical data QC systems and/or procedures.

4.3.2 On-Site Assurance Meetings

The Contractor will conduct weekly or bi-weekly QC meetings chaired by the CQCSM and attended by designated members of the Contractor's management, field, and QC staff, and if warranted, representatives from its subcontractors, vendors and/or fabricators. USACE QA personnel will also be invited to participate. The meeting serves as a means to coordinate quality-related activities and ensure that all requirements and milestones are being achieved. During the meetings the following items will be discussed along with other items as necessary based on the conduct of the project and items requiring resolution:

1) Safety and health issues related to QC activities;
2) Work accomplished and upcoming;
3) Information needs;
4) Last meeting action items;
5) Status of any deficiency notices;
6) Physical and analytical testing status and results; and
7) Project schedule and inspection schedules related to the Three Phases of Control discussed below.

Meeting minutes will be developed by the CQCSM and will be submitted to the USACE for information purposes.

QC is also an agenda item for the weekly on-site project meeting, during which time status of previous action items is presented and discussed, new issues are presented, and upcoming activities are identified and coordinated.

4.4 Three Phases of Control

The CQCSM will employ a minimum of three phases of control to complete each DFOW in accordance with project requirements. The three primary phases are Preparatory, Initial, and Follow-up are discussed in detail in the following subsections.

Project-specific checklists are used for each control phase of each DFOW. These checklists are submitted as part of the project CQC plan and, upon USACE acceptance, will assist in assuring that all relevant considerations for the control of work associated with each DFOW are systematically addressed. Checklists to be used in controlling the quality of the DFOWs addressed in this CQC Plan are presented in Appendix D.

The CQCSM will notify the USACE at least 2 working days prior to the initiation of Preparatory and Initial Phase control activities, and will advise the USACE's QA personnel daily as to the anticipated schedule of Follow-up activities. The inspection procedures that will be used in executing the three phases of control will be in accordance with contract requirements if specified.

4.4.1 Preparatory Phase

The Preparatory Phase of control will be performed prior to beginning work on each DFOW, after all required plans/documents/materials are approved/accepted and after copies are at the work site. All preparatory phase activities will be included in the NAS that is used to schedule the project, ensuring that adequate lead-time is provided for startup of all DFOWs. The USACE will be notified at least 2 working days in advance of beginning the preparatory control phase of each DFOW. This phase shall include a meeting conducted by the CQCSM and attended by the Site Superintendent, other CQC personnel participating in the QC activities related to the DFOW being initiated, the foreman responsible for the work activities on the DFOW and the SSHO. The purpose of this meeting is to assure an understanding of the quality and technical requirements, safety and environmental precautions, materials and equipment, testing requirements, acceptance criteria, workmanship, and quality certification documentation needed. Interfaces with USACE representatives will be identified, including third party inspection or regulatory personnel.

The results of the preparatory phase actions will be documented by separate minutes prepared by the CQCSM and attached to the daily CQC report. The Site Superintendent and CQCSM shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

The results of the Preparatory Inspection will be attached to the daily QC report. At a minimum, the Preparatory Phase Inspection shall include:

- A review of each paragraph of the applicable specifications;
- A review of the Activity Hazard Analysis to assure safety requirements are met;
- A review of the SSHP related to control activities to be performed;
- A review of the applicable drawings;
- A check to assure that all materials and/or equipment have been tested, submitted and approved;
- A check to assure that provisions have been made to provide required inspection and testing;
- Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract;
- A physical examination of required materials, equipment, and sample work to assure that they are available, conform to approved shop drawings or submitted data and are properly stored;
- Discussion of procedures for controlling the quality of the work including handling of any repetitive deficiencies;
- Documentation of construction tolerances and workmanship standards for that feature of work;
- A check to ensure that the portion of the plan for the work to be performed has accepted by the CO; and
- A review of applicable regulatory requirements.

4.4.2 Initial Phase

The Initial Phase of control will be conducted at the beginning of a DFOW and after a representative sample of the work has been completed. The CQCSM will meet with the staff directly involved in the performance of the work and with USACE QA personnel and will verify conformance of the sample work with the requirements of the construction documents by reviewing the workmanship, inspection and test results and the adequacy of the safety and environmental precautions taken. Inspection results

shall be attached to the daily QC report. Exact location of the initial phase inspection shall be recorded for future reference and comparison with follow-up phases.

As a minimum the initial phase inspection shall include:

- A review of preparatory phase meeting minutes;
- A check of preliminary work to ensure that it is in full compliance with contract requirements;
- Verification of the adequacy of controls to ensure full contract compliance including verification of required control inspection and testing plans and results;
- Establishment of level of workmanship and verification that it meets minimum acceptable workmanship standards, including a comparison to sample work products if appropriate;
- Resolution of all differences identified during the initial control phase;
- A safety inspection to include compliance with and upgrading of the safety and health plan and activity hazard analysis as necessary;
- A review of the activity hazard analysis with each worker;
- The Initial Phase Inspection should be repeated for each new work crew to work onsite or at any time acceptable specified quality standards are not being met.

The USACE may determine that additional preparatory and initial phase controls must be conducted on the same DFOW. Reasons for repeating preparatory and initial control phases may include:

- The quality of ongoing work is unacceptable;
- There are changes in the acceptable CQC staff, onsite production supervision or work crew;
- Work on a DFOW is resumed after a substantial period of inactivity;
- Other problems develop.

4.4.3 Follow-up Phase

The CQCSM will use the QC staff to monitor each DFOW on a daily basis to verify the continuing conformance to the requirements established in the preparatory initial control phases. Daily checks shall be performed to assure control activities, including control testing, are providing the continued compliance with contract requirements, until completion of a particular DFOW. The checks shall be made a matter of record in the CQC documentation. USACE QA personnel will be advised at the conclusion of each workday as to the schedules of proposed follow-up activities that will be performed during the next workday.

Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional DFOWs that may be affected by the deficient work. The CQCSM is responsible to verify that any and all deficiencies have been corrected before the start of additional features of work in areas of prior non-conformity. Neither the Contractor, nor its subcontractors, suppliers or fabricators, will build upon or conceal non-conforming work.

4.5 Tests

All tests and inspections will be performed in accordance with the procedures contained within the project contract documents. For this project the Contractor will procure the services of USACE-and New York State-approved testing laboratories. The CQCSM will be responsible for the tracking, verification and documentation of all test and inspection activities and data. The Contractor will perform specified or required tests to verify that control measures are adequate to provide a product that conforms to contract requirements. Upon request, the Contractor will furnish to the USACE duplicate samples of test specimens for possible testing by the USACE. Testing includes operation and/or acceptance tests when specified.

The Contractor will perform the following activities and record and provide the following data:

- Verify that testing procedures comply with contract documents;
- Verify that facilities and testing equipment are available and comply with testing standards;
- Check test instrument calibration data against certified standards;
- Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared and personnel are trained in their appropriate usage;
- Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where the tests were taken, and the sequential control number identifying the test shall be given. If approved by the CO, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of the tests performed by an offsite or commercial test facility will be provided directly to the CO. The Contractor recognizes that failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

4.5.1 Identification of Testing Laboratories

For this project the Contractor has retained the services of USACE-and New York State approved testing laboratories [to be procured after approval of Work Plans] to perform the Atterberg limit, grain size, moisture content and density characteristics testing required for the borrow source assessment. The testing laboratory will also perform density control testing for placement of the cover soil. Letters of assignment and USACE laboratory approval are presented in Appendix E. All information related to the analytical laboratories that will be used in the acquisition of chemical data for this project is presented in the SAP.

The Contractor's CQCSM will ensure performance of the required density testing on the cover soil placement.

4.5.2 Testing Plan Log

All physical testing required for the project is summarized in the Testing Plan Log (TPL) presented in Appendix F. A similar TPL for all analytical/chemical testing is presented in the SAP.

Physical testing for the project involves borrow source assessment (common borrow, bedding layer, barrier protection layer and topsoil), control of density during cover soil placement, geosynthetic material testing, and testing of concrete and mechanical/electrical systems during construction of the treatment building and treatment system. The TPL will be used by the CQCSM to identify and track testing activities throughout the course of the project thereby ensuring that all testing is performed in accordance with project requirements. The TPL will be reviewed and updated to be consistent with site activities and to reflect applicable revisions of the CQC Plan.

A CQC Test Report List is also presented in Appendix F. This provides a listing of all of the CQC tests and procedures that will be employed for the project. The Contractor will maintain a copy of the most current version of each test procedure for use during execution of the tests.

As with the physical testing, the TPL for chemical testing will be reviewed by the CQCSM and CQCC during the Preparatory Control phase of each DFOW to identify what analytical sampling and/or testing is required. The CQCC will track and report the status of QC activities related to analytical sampling and analysis to the CQCSM such that analytical testing efforts are being monitored by the CQCSM.

4.6 Punch-List, Prefinal and Final Inspections

In addition to the three phases of control that will be employed to verify that all DFOWs are performed in accordance with contract requirements, a series of three individual inspections, as required in the project specifications, will be performed at prescribed intervals to ensure that work is continuing in an acceptable manner for the entire project and/or specific elements thereof. These inspections will be performed by the various Contractor and USACE personnel in accordance with the requirements of the inspection. The three inspections are identified as the Punch-list Inspection, Pre-final Inspection and Final Acceptance Inspection and are described in detail in the following sections. The results of all inspections will be documented by the CQCSM, included as part of the contract file and be provided to the CO or COR.

4.6.1 Punch-List Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQCSM will conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the QC documentation, as required in the section entitled "Documentation" presented below, and shall include an estimated date by which the deficiencies will be corrected. The CQCSM will make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the CQCSM will notify the USACE that the project or specific work element is ready for USACE Pre-Final inspection.

4.6.2 Pre-Final Inspection

The USACE will perform the Pre-Final Inspection to verify that the facility, project or specific work element is complete and in the case of a structure, is ready to be occupied. Specific to this contract, the Pre-Final Inspection will be taken to mean completion of the project or specific element of work. The CQCSM will ensure that all items on this list have been corrected before notifying the USACE so that a Final Inspection with the USACE can be scheduled. Any items noted on the Pre-Final Inspection will be corrected in a timely manner. These inspections and any deficiency corrections required as a result of the inspection will be accomplished within the time frame slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

4.6.3 Final Inspection

The CQCSM and the Site Superintendent or other primary management person (Project Manager) and the COR will be in attendance at the Final Inspection. The final acceptance inspection will be formally scheduled by the CO based upon the results of the Pre-Final inspection. Notice will be given to the CO at least 14 days prior to the final acceptance inspection and will include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

4.7 Documentation

All documentation associated with the project will be distributed to appropriate personnel with the original versions maintained within fireproof file cabinets. Computer generated documents will be copied to a separate electronic location within the Contractor's Wide-Area Network exclusive of the

project site. Procedures involving project correspondence and document control and QC documentation will be managed in accordance with the procedures indicated below.

4.7.1 Project Correspondence and Document Control

All contract documents and correspondence will be channeled through the Project Manager. The Project Manager will be responsible for assuring that the current revision of all contract design drawings and shop drawings are provided to the CQCSM who will in turn distribute them to all project management personnel including the Site Superintendent and SSHO as well as construction crews, subcontractors and vendors as required. Subcontractors and vendors will be responsible for distribution of current revision documents to their crews and production facilities. The Project Manager will maintain a log of all incoming and outgoing correspondence for the project and will assign a number to all incoming and outgoing correspondence and log the entry into a bound logbook or computer file. Incoming documents will be stamped "Received" with the date and time recorded.
A master set of design and shop drawings will be maintained at the site. Upon receipt or changes in either the project specifications and/or drawings the current revision specification page/drawing will be placed over the previous revision with the previous revision stamped "Superseded By Revision No." and dated by the CQCSM. QC Inspectors will be required to check the master set and obtain current revision drawings prior to performing any inspections on work covered by the drawing. The project management team will review current revision design or shop drawings upon receipt to determine changes that may require amending subcontracts and/or purchase orders.

Project correspondence generated will be maintained in hard copy and electronic version with copies of all such documentation being provided to the Project Manager and other project management staff as appropriate.

4.7.2 Project QC Documentation

The CQCSM shall maintain current records of QC operations, activities and tests performed including work of suppliers and subcontractors. These records shall include, but are not limited to all inspections, conformance tests, delivery documents, Certificates of Compliance and Certified Mill tests. The records will be identified with, and referenced to, the DFOW or NAS element they represent. The records will be kept on site in a fireproof file cabinet and will be available to the USACE at all times. Upon completion of the project, the original documents will be turned over to the USACE, after reproductions have been made for the contract file.

The CQCSM shall prepare and maintain daily quality control reports that include records providing factual evidence that required QC activities and/or tests have been performed. The daily QC report, an example of which is contained in Appendix G shall include the work of subcontractors and suppliers as well as at a minimum the following information:

- Contractor/subcontractor and their area of responsibility.
- Operating plant/equipment with hours worked, idle or down for repair.
- Work performed each day, giving location, description, and by whom. Each phase of work performed will be identified by its activity number.
- Test and /or control activities performed with results and references to specifications/drawing requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements. Also, quantities of materials removed from the site and its ultimate destination. Quantity records will include daily and cumulative totals for each material.
- Submittals reviewed, with contract reference, by whom and action taken.

- Off-site surveillance activities including actions taken.
- Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- Instructions given/received and conflicts in plans and/or specifications.
- Contractor's verification statement.
- A description of trades working on the project.
- The number of personnel working.
- Weather conditions encountered.
- Any delays encountered and the reason(s) for the delay.

The report shall also include both conforming and deficient features as well as a statement verifying that equipment and materials incorporated in the work and the workmanship comply with contract requirements. The original and one copy of these records, in report form, will be furnished to the USACE within 24 hours after the date(s) covered by the report, except that reports will not be submitted for days on which no work is performed. However, as a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendars days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQCSM. The report from the CQCSM shall include copies of test reports and copies of reports prepared by all subordinate QC personnel.

Documentation prepared will be printed and hard copies maintained in the project contract filing system. Depending upon the reporting requirements established by the COR, copies of test reports and inspection reports prepared by subordinate QC staff will be copied and transmitted daily. Additional QC forms typically required for proper documentation of work activities are included in Appendix G and include such items as the Permanent Materials Report and Trip Report.

5.0 Non-Compliance Identification/Corrective Actions

The CQCSM is ultimately responsible for the identification, correction, and documentation of any deficiencies in the work performed by the Contractor, its subcontractors, suppliers and/or fabricators. However, subordinate QC staff, along with field supervisory personnel, has individual responsibilities in this regard as well. During implementation of the three-phased control process, any individual who identifies a deficiency is responsible for formally conveying its existence to the CQCSM via a Non-compliance Identification / Corrective Action (NICA) Report form, an example of which is presented in Appendix H. The report is structured to collect critical information relating to the deficiency, such as the DFOW involved as well as when, where, and by whom the deficiency was identified. This report is then immediately given to the CQCSM who: 1) enters it into a master deficiency tracking log (presented in Appendix H) and uniquely identifies it by issuing the next consecutive number in the log to the document, 2) notes the existence of the deficiency in the DFOW tracking log, 3) advises the USACE's QA personnel of the deficiency, and 4) includes a copy of the NICA report and NICA tracking log in the daily QC report.

The CQCSM then notifies and discusses the existence of the deficiency with the appropriate work force individual(s) responsible for its correction. A corrective plan of action is developed and implemented following USACE approval, if needed. All of these activities are fully documented in the original NICA report form and noted in the deficiency tracking log used to identify the current state of resolution of the deficiency. NICA Reports for outstanding deficiencies are issued daily during the period from identification through resolution, so that the USACE is kept abreast of the state of corrective action for each deficiency. In addition, the completed NICA report serves as the means to document all aspects of the deficiency. Copies of all such documentation is transmitted to the USACE and maintained in the project QC document filing system by the CQCSM.

The CQCSM indicates the resolution of each deficiency in the master deficiency tracking log as well as in the DFOW tracking log. This redundancy provides a means for readily identifying the existence and resolution of any deficiencies related to a particular DFOW. By reviewing the DFOW tracking log prior to conducting a Completion Inspection, the CQCSM is able to verify that any outstanding deficiencies have be corrected and that the DFOW is ready for inspection. The deficiency resolution and monitoring process is also used to respond to Quality Assurance comments from the client and provides an effective means of acknowledging, tracking, resolving, and documenting any such issues should they arise.

Appendix A

TO BE PROVIDED AFTER PERSONNEL ARE ASSIGNED

LANDFILL 6 - Landfill Cover
DEFINABLE FEATURES OF WORK
TRACKING LOG AND SUMMARY TABLE

Specification Section Scope of Work	Defineable Feature of Work	Submittals/Subtasks	Subtasks	Submittal Status	Preparatory Phase		Initial Phase		Follow-up Phase		Non-conformance Reports		
					Scheduled Date to begin	Status	Scheduled Date to begin	Status	Scheduled Date to begin	Status	Non-conformance Report #	Date Identified	Date Corrected
01050	***Survey and Determination of Boundaries***	Submittals	1. Surveyor Qualifications 2. Initial topographic Map - Grading Plan on 50' x 50' grid 3. Topographic Map after installation of subgrade material 4. As-built Topographic Map(final grades) 5. Benchmarks										
		Field Activities	1. Verify locations of site references and survey control points prior to starting work 2. Install elevation benchmarks and horizantal control points 3. Locate and layout all site features to be constructed 4. Provide grade and offset stakes to control the location and depth of fill 5. Install permanent elevation benchmarks										
02670	***Decommission Monitoring Wells***	Submittals	1.Well Decommisioning Report										
		Field Activities	1. Excavate the ground surrounding each well 2. Pull out and dispose the riser and screen 3. Remove all remaining material and dispose 4. Place the cement/bentomite grout										
	Site Preparation Activities	Field Activities	1. Install temporary construction facilities 2. Implement traffic control plan 3. Install staging and decontamination facilities 4. Restoration of staging areas 5. Identify & mark resources not to be disturbed 6. Install erosion and sedimentation control devices 7. Implement and maintain water and air resources protection measures 8. Implement waste handling and disposal methods										
02230	***Clearing and Grubbing***	Field Activities	1. Clear and grub work areas 2. Transport and Dispose of material on-site										
02300	***Earthwork - Cut/Fills Waste Consolidation***	Submittals	1.Chemical Test Results of Imported Material 2. USCS Classification, Atterberg Limits, Particle Size, and Moisture Content of Imported Material 3.Post excavation/reclamation chemical Test Results										
		Field Activities	Subgrade: 1. Excavate, Regrade, & Compact Waste Material 2.Excavate, remove and transport ash from area north of Landfill 3. Import, Place and Grade Borrow Material in Former ash area 3. Compact subgrade (Waste and Borrow) 4. Establish subgrade elevation 5. Survey and prepare final subgrade topographic map 6. Retore area north of Landfill 7. Construct vernal pool complex as per Remedial Action at Three Mile Creek Work Plan										
	Installation of Fill Layers												
02301	Bedding/Gas venting Layer	Submittals	1.Chemical Test Results of Imported Material 2. USCS Classification, Atterberg Limits, Particle Size, and Moisture Content of Imported Material										

LANDFILL 6 - Landfill Cover
DEFINABLE FEATURES OF WORK
TRACKING LOG AND SUMMARY TABLE

Specification Section Scope of Work	Defineable Feature of Work	Submittals/Subtasks	Subtasks	Submittal Status	Preparatory Phase		Initial Phase		Follow-up Phase		Non-conformance Reports		
					Scheduled Date to begin	Status	Scheduled Date to begin	Status	Scheduled Date to begin	Status	Non-conformance Report #	Date Identified	Date Corrected
02301	Bedding/Gas venting Layer	Field Activities	Bedding Layer 1. Place Bedding Layer Material 2. Verify installation thickness										
02302	Barrier Protection Layer	Submittals	1.Chemical Test Results of Imported Material 2. USCS Classification, Atterberg Limits, Particle Size, Moisture Content, & Hydraulic Conductivity of Imp. Material 3. Compaction Characteristics, In-place density results, & rapid moisture content results										
		Field Activities	Barrier Protection Layer 1. Place Barrier Protection Layer Material 2. Compact Material 3. Perform density control and geotechnical testing 4. Verify installation thickness										
02921	Installation of Topsoil	Submittals	1.Chemical Test Results of Imported Material 2. Organic Content, Particle Size										
		Field Activities	Topsoil 1. Place topsoil layer from stockpile 2. Place topsoil import 3. Verify installation thickness 4. Final As-built Survey										
	Installation of Geosynthetic Materials												
02372	Geomembrane	Submittals	1. Manufacturer/Resin Supplier Certificates 2. Multi-Axial Test (Manufacturer) 3. Qualifications of Installer 4. Interface Friction Test Results 5. Manufacturer Certificates 6. Proposed Panel Layout Drawing										
		Field Activiities	1. Verify Subgrade/Subgrade Acceptance Form 2. Deploy Liner over approved areas 3. Perform required daily trial field seam welds 4. Field Seam liner panels 5. Perform nondestructive field seam testing 6. Perform destructive field seam testing. 7. Install boots around penetrations 8. Properly anchor liner in anchor trench 9. Verify locations of destructive field seams 10. Panel layout and as-built boundaries										
02373	Geocomposite	Submittals	1. Manufacturer Certificates 2. Transmissivity Test Results										
		Field Activiities	1. Deploy geocomposite over approved/lined areas 2. Install fasteners as required 3. Install geocomposite in anchor trench 4. Install boots around penetrations										
02374	Geotextile	Submittals	1. Manufacturer Certificates										
		Field Activiities	1. Deploy geotextile over approved areas (verify subgrade) 2. Overlap seams as required										
06654	Geogrid	Submittals	1. Manufacturer Certificates										

LANDFILL 6 - Landfill Cover
DEFINABLE FEATURES OF WORK
TRACKING LOG AND SUMMARY TABLE

Specification Section Scope of Work	Defineable Feature of Work	Submittals/Subtasks	Subtasks	Submittal Status	Preparatory Phase		Initial Phase		Follow-up Phase		Non-conformance Reports		
					Scheduled Date to begin	Status	Scheduled Date to begin	Status	Scheduled Date to begin	Status	Non-conformance Report #	Date Identified	Date Corrected
06654	Geogrid	Field Activiities	1. Deploy geogrid over approved areas 2. Placed on slopes steeper than 3H:1V 3. Place directly over geocomposite layer 4. Temporarily secure geogrid in place with sand bags										
	Site Restoration Activities	Submittals	1. Material Certificates for Seed/Fertilizer 2. Erosion Control Matting Specification										
		Field Activities	Fertilizer and Seeding: 1. Apply fertilizer 2. Seed and mulch 3. Provide erosion control lining 4. Survey to confirm final grades										
			Outlet Protection: 1. Install Rip-Rap at base of proposed swale 2. Install new culvert										
			1. Post-Construction Cleanup 2. Restoration of Landscape damage 3. Removal of Erosion and control measures										
Drawing C-4	**Passive Gas Vents**	Submittals	1. Manufacturing Material Certificates										
		Field Activiities	1. Excavate/prepare subgrade for Vent insatllation 2. Install Gas vents										
Drawing C-4	**Gas Monitoring Probes**	Submittals	1. Driller Certifications/ plans										
		Field Activiities	1. Prepare area for gas probe installation 2. Install Gas monitoring probes 3. Place concrete pads at grade 4. Restore area										

SUBMITTAL REGISTER

Contract No.

Title and Location:
Landfill 6 Area Cover Remedial Action
Former Griffiss Air Force Base, Rome, New York

Contractor:

Specification Section
Scope of Work

Transmittal No.	Item No.	Scope of Work Section 1 Para. No.	Description of Item Submitted	TYPE OF SUBMITTAL									CLASSIFICATION		CONTRACTOR SCHEDULE DATES				CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOVERNMENT APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	Code	Date	
a	b	C	D	e	f	g	h	i	j	k	l	m	n	o	p	q	r	S	T	u	v	w	x	y
		1.11.1	Work Plan						X					X										F = Field Office E = Engineering & Planning Div
		1.11.2	Traffic Control Plan						X					X										
		1.11.3	Sampling and Analysis Plan						X					X										
		1.11.3	Monitoring/ Sampling Results	X										X										
		1.11.4	Site Safety and Health Plan						X					X										
		1.11.5	Environmental Protection and Erosion Control Plan						X					X										
		1.11.6	Project Management Submittals				X		X					X										
		1.11.7	Contractor Quality Control Plan						X															
		1.11.8	Soil Testing Data	X					X	X				X										

SUBMITTAL REGISTER

Contract No.

Title and Location:
Landfill 6 Area Cover Remedial Action
Former Griffiss Air Force Base, Rome, New York

Contractor:

Specification Section
Scope of Work

Transmittal No.	Item No.	Scope of Work Section 1 Para. No.	Description of Item Submitted	TYPE OF SUBMITTAL										CLASSIFICATION		CONTRACTOR SCHEDULE DATES				CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS		INFORMATION ONLY	GOVERNMENT APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	Code	Date	
a	b	C	D	e	f	g	h	i	j	k	l	m		n	o	p	q	r	S	T	u	v	w	x	y
		1.11.9	Geomembrane Testing Data	X					X	X					X										
		1.11. 10	Geotextile Testing Data	X					X	X					X										
		1.11. 11	Meeting Minutes									X		X											
		1.11. 12	Surveying						X					X											
		1.11. 13	QA/ QC Data						X						X										
		1.11. 14	Closure Report and Final Documentation	X					X						X										
		3.3.2	Daily Chemical Quality Control Reports						X						X										
		4.19.4	Site Personnel Log									X		X											
		App H	Accident Prevention Plan					X						X											

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO:

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the Contractor)

TO:	FROM:	CONTRACT NO:	CHECK ONE: __ THIS IS A NEW TRANSMITTAL __ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SECTION NO: (Cover only one section with each transmittal)	PROJECT TITLE AND LOCATION:		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOVT. APPROVAL

ITEM NO. a.	DESCRIPTION OF ITEM SUBMITTED (Type, size, model number, etc.) b.	MFG. OR CONTR. CAT. CURVE DRAWING OR BROCHURE NO. (See instruction No. 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. e.	CONTRACT REFERENCE DOCUMENT DRAWING SHEET NO. f.	FOR CONTRACTOR USE CODE g.	VARIATION (See instruction No. 6) h.	FOR CE USE CODE i.

REMARKS	I certify that the above submitted items have been reviewed in detail and correct and in strict conformance with the contract drawings and specifications except as otherwise stated. _____ NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

RECORD OF PREPARATORY AND INITIAL INSPECTIONS – LANDFILL 6

DATE OF INSP	TYPE OF INSP	DEFINABLE FEATURE OF WORK (DESCRIBE)	REPORT NOS		PERSONS ATTENDING INSP	WAS MATL &/OR EQUIPMENT PHYSICALLY INSPECTED?
			QA	QC		

NAD FORM 826
22 JULY 86

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK PREP/INIT INSP'S
ATTACH ADDITIONAL RESULTS OR COMMENTS AS REQUIRED

PREPARATORY PHASE CHECKLIST

Contract No: _____ Date: _____

Definable Feature(s):

1.

Government Rep Notified: _____ Days in Advance Yes _____ No _____

I. Personnel Present

	Name	Position	Company/Government
1			
2			
3			
4			
5			
6			

(List additional personnel on reverse side)

II. Submittals

1. Review submittals and/or submittal log 4288. Have all submittals been approved?
   Yes _____ No _____

If no, what items are missing?

a. _____
b. _____
c. _____

2. Are all Materials on hand and available? Yes _____ No _____

If no, what items are missing?

a. _____
b. _____
c. _____

3. Check approved submittals against delivered material (This should be done as material arrives).

Comments: _____

III. Material Storage

Are Materials/equipment stored properly? (See comments below) Yes _____ No _____

If no, what action is taken? _____

IV Specifications

1. Review each paragraph of specifications.

2. Discuss procedure for accomplishing the work.

3. Clarify any differences

V. Preliminary Work and Permits

Ensure preliminary work is correct and permits are on file. – Verify all necessary local building code Permits have been applied for and secured to the degree necessary for these activities.

If not, what action is taken? _____

VI. Inspection and Testing

1. Identify test and inspection to be performed, frequency and by whom. _____

2. When required? _____

3. Where required? _____

4. Review Testing Plan. NA

5. Has test facilities been approved? Yes.

VII. Safety

1. Review applicable portion of EM 385-1-1. _____

2. Activity Hazard Analysis approved? Yes _____ No _____

VIII. Corps of Engineers comments during meeting.

_____

CQC Representative

INITIAL PHASE CHECKLIST

Contract No.: _____ Date: _____

Definable Feature(s):

1.

Government Rep Notified: _____ Hours in Advance Yes _____ No _____

I. Personnel Resent

	Name	Position	Company/Government
1			
2			
3			
4			
5			
6			

(List additional personnel on reverse Side)

II. Identify full compliance with procedure identified at preparatory. Coordinate plans, specification and submittals.

Comments: _____

III. Preliminary Work. Ensure preliminary work is complete and correct. If not, what action is taken?

IV. Establish Level of Workmanship.

1. Where is work located? Yes _____ No _____
2. Is a sample panel required? Yes _____ No _____
3. Will the initial work be considered as long as possible? Yes _____ No _____
   (if yes, maintain in present condition as long as possible)

V. Resolve any differences.

Comments: _____

VI. Check Safety.

Review job conditions using EM 385-1-1 and job hazard analysis.

Comments: _____

_____

_____

_____

CQC Representative

FOLLOW-UP PHASE CHECKLIST

Contract No.: _____ Date: _____

Definable Feature(s):

1.

Government Rep Notified: _____ Hours in Advance Yes _____ No _____

I. Personnel Resent

	Name	Position	Company/Government
1			
2			
3			
4			
5			
6			

(List additional personnel on reverse Side)

Identify compliance with procedure identified at preparatory and initial control phases

Comments: _____

III. Verification of Level of Workmanship.

1. Where is work located? _____
2. Is work consistent with initial control phase sample? Yes _____ No _____

Comments: _____

IV. Document Differences Identified (if any) and Describe Resolution.

Comments: _____

V. Check Safety.

Comments: _____

Follow-Up Inspection performed by: _____

Appendix E

TO BE PROVIDED AFTER LABORATORIES ARE CONTRACTED

APPENDIX F

TESTING PLAN LOG
LANDFILL 6 - Landfill Cover

DFOW to be Tested	Specification Section	Test Name	Test Procedure to be used	Person/Facility Responsible for Testing	Test Frequency
Common Borrow Fill	02300	Compaction Characteristics of Soil Standard Proctor (Three Mile Creek sediment only)	ASTM D-698	Approved Off-site Geotechnical Lab - TBD	1 test per 5,000 CY of borrow, Minimum of 2 tests per source
		Atterberg Limits	ASTM D-4318	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
		Particle Size Analysis	ASTM D-422	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		USCS Classification	ASTM D-2487	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		Moisture Content	ASTM D-2216	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
Bedding Layer/Gas Venting Layer	02301	Atterberg Limits	ASTM D-4318	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
		Particle Size Analysis	ASTM D-422	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		USCS Classification	ASTM D-2487	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		Moisture Content	ASTM D-2216	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
		Hydraulic Conductivity	ASTM D-2434	Approved Off-site Geotechnical Lab - TBD	1 test per 5,000 CY of borrow, Minimum of 2 tests per source
Barrier Protection Layer	02302	Compaction Characteristics of Soil Standard Proctor	ASTM D-698	Approved Off-site Geotechnical Lab - TBD	1 test per 5,000 CY of borrow, Minimum of 2 tests per source
		In-place density by Nuclear Methods	ASTM D-2922	Approved Off-site Geotechnical Lab - TBD	9 tests per acre per lift
		Rapid Moisture Content	ASTM D-3017	Approved Off-site Geotechnical Lab - TBD	9 tests per acre per lift
	02302	Particle Size Analysis	ASTM D-422	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		Atterberg Limits	ASTM D-4318	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
Barrier Protection Layer	02302	USCS Classification	ASTM D-2487	Approved Off-site Geotechnical Lab - TBD	1 test per 2,500 CY of borrow, Minimum of 2 tests per source
		Moisture Content	ASTM D-2216	Approved Off-site Geotechnical Lab - TBD	1 test per 1,000 CY of borrow, Minimum of 2 tests per source
		Hydraulic Conductivity	ASTM D-5084	Approved Off-site Geotechnical Lab - TBD	1 test per 5,000 CY of borrow, Minimum of 2 tests per source

Notes: Additional tests will be performed when material characteristics change.
ASTM - American Society for Testing and Materials
AASHTO - American Association of State Highway and Transportation Officials

APPENDIX F

TESTING PLAN LOG
LANDFILL 6 - Landfill Cover

DFOW to be Tested	Specification Section	Test Name	Test Procedure to be used	Person/Facility Responsible for Testing	Test Frequency
Geomembrane	02372	Interface Friction Testing	ASTM D-5321	Approved Off-site Geotechnical Lab - TBD	See Specification Section 02372
	02372	Manufacturing, Sampling & Testing			
		- Resin Materials		Manufacturer in accordance with their QC Manual	See Specification Section 02372
		- Geomembrane Sheets		Manufacturer in accordance with their QC Manual	See Specification Section 02372
		- Multi-Axial Tensile Test	ASTM D-5617	Manufacturer	1 per 200,000 square feet
	02372	Field Seaming - Trial			
		- Trial Seams		Qualified installer	1 per 5 hours
		- Shear Strength Test	Field Tensiometer	Qualified installer	3 per Field Trial
		- Peel Adhesion Test	Field Tensiometer	Qualified installer	3 per Field Trial
	02372	Non-Destructive Field Seam Testing			
		- Vacuum Box Testing	Field Devices	Qualified installer	Over entire Length of Seam
		- Pressure Testing	Field Devices	Qualified installer	Over entire Length of Seam
	02372	Destructive Field Seam Testing(In the Field)		Qualified installer	Every 500 lf of seam per welding machine
		- Shear Strength Test	Field Tensiometer	Qualified installer	5 per every sample
		- Peel Adhesion Test	Field Tensiometer	Qualified installer	5 per every sample
	02372	Destructive Field Seam Testing (Off-Site)			
		- Shear Strength Test	ASTM-D4437	Approved Independent Lab	5 per every sample
		- Peel Adhesion Test	ASTM-D4437	Approved Independent Lab	5 per every sample
Geocomposite	02373	Sampling and Testing			
		- transmissivity	ASTM D-4716	Approved Independent Lab	minimum of two samples
Topsoil & Seeding	02921	Topsoil			
		- Organic Content	AASHTO - T194	Approved Independent Lab	1 per 20,000 CY
		- Gradation	ASTM D-422	Approved Independent Lab	1 test per 2,500 CY Minimum of 2 tests per source

Notes: Additional tests will be performed when material characteristics change.
ASTM - American Society for Testing and Materials
AASHTO - American Association of State Highway and Transportation Officials

Conti Environmental, Inc.

DAILY QUALITY CONTROL REPORT

Daily Report No.: Date:
Contract No.:

Project Title and Location:
Weather: _____ Precipitation: _____ Temp: _____ Min._____ Max._____

1. Contract/Subcontractors and Area of Responsibility:

Number:	Trade:	Hours:	Employer	Location/Description of Work:

2. Operating Plant or Equipment. (Not hand tools)

Plant/Equipment	Date of Arrival/Departure	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

3. Work performed today: (Indicate location and description of work performed by prime and/or subcontractors by letter in table above).

4. Results of control activities: (Indicate whether P-Preparatory, I-Initial, or F-Follow-up Phase. When a P or I meeting is conducted, complete attachment 1-A or 1B, respectively. When network analysis system is used, identify work by use of I-J numbers.)

5. Test performed as required by plans and/or specifications:

6. Material Received:

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	By Whom	(d) Action

8. Offsite surveillance activities, including action taken:

9. Job Safety: (Report violations; corrective instructions given; corrective actions taken).

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or Specifications).

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

Authorized CQC Rep at Site Date

PERMANENT MATERIALS REPORT

Project: _____

Location: _____

Materials: _____

_____

_____

Supplier: _____

Subcontractor: _____

Freight Line: _____

Damage Report: _____

_____

_____

_____

_____

_____

Inspected By: _____

_____

Quality Control Systems Manager

LIST OF OUTSTANDING DEFICIENCIES

SH ____ OF ____ DATE: _____

PROJECT TITLE: _____ CONTRACTOR: _____

LOCATION: _____ CQC REPORT #: _____ CONTRACT #: _____

SPEC REF OR DWG #	LOCATION ON PROJECT	DESCRIPTION OF DEFICIENCY	DATE FOUND	DATE TO BE CORRECTED	DATE CORRECTED	REMARKS

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK OUTSTANDING CONSTRUCTION DEFICIENCIES

Conti Environmental, Inc.

Report No. _____

Date _____

TRIP REPORT

COMPONENT

VENDOR

SPEC. REF. _____

PURPOSE OF TRIP _____

CONTACT _____

PERSONNEL PRESENT _____

SUMMARY _____

_____

Quality Control Systems Manager

DEFICIENCY REPORT NO.

Contractor: _____

Date: _____ Contract No.: _____

Location: _____

Reference Specifications Paragraph: _____

Reference Contract Drawing Sheet No.: _____

Deficiency: _____

_____

_____

_____

_____

Corrective Action: _____

_____

_____

_____

_____

Acknowledged: _____

_____ _____

Area Representative & Date Corps of Engineers Field Representative

CONCRETE SUMMARY

Report No. _____

Date _____

Test	Date	Class	Field Spec	7 Day	28 Day	Other	Location & Remarks

DENSITY TESTING SUMMARY LOG

DFOW TESTED _____

DATE _____

TESTED BY _____

Test Type	Depth Elevation	Max. Dry Density	O.M.C. %	Dry Density	Moisture %	Compact %	Soil Type	Spec. Reg.	Passed Failed	Remarks

NON-COMPLIANCE IDENTIFIATION / CORRECTIVE ACTION REPORT

Report No. _____

Identification of Unsatisfactory/Non-compliant Condition

1. Condition is: Unsatisfactory Non-compliant (Circle appropriate term)
2. Condition identified by (name & title): _____
3. Date and time condition identified: ___ / ___ / ___ ; ___ : ___ AM PM
4. DFOW/WBS ID affected: _____
5. Description of condition: _____

Notification of Client and Project Management Staff

6. Name of client representative notified: _____
7. Date and time notified: ___ / ___ / ___ ; ___ : ___ AM PM
8. Name(s) of Project Management Staff notified:

   8A. Name: _____ : Title: _____

   8B. Name: _____ : Title: _____

   8C. Name: _____ : Title: _____

Proposed Corrective Action

9. Description of Proposed corrective Action: _____

Client approval of Proposed Corrective Action (complete if approval required)

10. The proposed corrective action(s) have been reviewed and are approved for use

by: _____ on: _____

Verification of Implementation of Proposed Corrective Action

11. The undersigned has verified that the Corrective Actions indicated above have been implemented and the Unsatisfactory/Non-compliant condition no longer exists.

Verified by: _____ on: _____

CQCSM

Closeout of Unsatisfactory/Non-conformant Condition Report

12. The conditions necessitating this report have been satisfactorily resolved and the status of this report is considered as closed out.

by: _____ on: _____

CQCSM

LANDFILL 6 - LANDFILL COVER IMPROVEMENTS
NON-COMPLIANCE IDENTIFICATION/CORRECTIVE ACTION TRACKING LOG

Non-conformance Report #	DFOW Involved	Date Identified	Date Corrected	Correction Inspected/Verified by	Date Verified