FINAL CONSTRUCTION QUALITY CONTROL PLAN
FOR
CONSTRUCTION TASKS
GM-38 AREA GROUNDWATER REMEDIATION
AT
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

Issued:

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Prepared for:

Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19113-2090

Remedial Action Contract No. N62472-99-D-0032
Contract Task Order No. 96

Prepared by:

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Revision	Date	Prepared By	Approved By	Pages Affected
0	5/8/06	Joseph Gray	Stavros Patselas	All

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LIST OF ACRONYMS AND ABBREVIATIONS

AALA	American Association for Laboratory Accreditation
AASHTO	American Association of State Highway and Transportation Officials
AHA	Activity Hazard Analyses
CO	Contracting Officer
CQC	Construction Quality Control
CQCR	Construction Quality Control Report
CRF	Change Request Form
DCN	Design Change Notification
DFOW	Definable Feature of Work
EFANE	Engineering Field Activity, Northeast
NIST	National Institute of Standards and Technology
NTR	Navy Technical Representative
NVLAP	National Voluntary Laboratory Accreditation Program
NWIRP	Naval Weapons Industrial Reserve Plant
OSHA	Occupational Safety and Health Administration
PM	Project Manager
PQCM	Project Quality Control Manager
QC	Quality Control
QCPM	Quality Control Program Manager
RAC	Remedial Action Contract
RFI	Request for Information
SHSP	Site-Specific Health and Safety Plan
TtEC	Tetra Tech EC, Inc.

1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) has prepared this Construction Quality Control (CQC) Plan in accordance with Remedial Action Contract (RAC) Number N62472-99-D-0032, Contract Task Order (CTO) Number 0096.

This document presents the CQC Plan for the GM-38 Area Groundwater Remediation project at the Naval Weapons Industrial Reserve Plant (NWIRP), in Bethpage, NY. This CQC Plan will be considered one of the contract documents for this project. The purpose of this CQC Plan is to specify the methods, procedures and frequency of inspection and testing activities to verify the quality of the construction activities during this project in accordance with the approved Contract Drawings and Technical Specifications. The data and information collected during this program will be used as the basis to verify that the construction has been completed in accordance with the Contract Drawings and Technical Specifications.

The Quality Control (QC) program outlined in this CQC Plan was developed to verify that the placement and quality of the materials used in construction are in compliance with the Contract Drawings and Technical Specifications. This QC program applies to all work performed by TtEC on this project as well as all subcontractors to TtEC.

2.0 QC ORGANIZATION

2.1 General

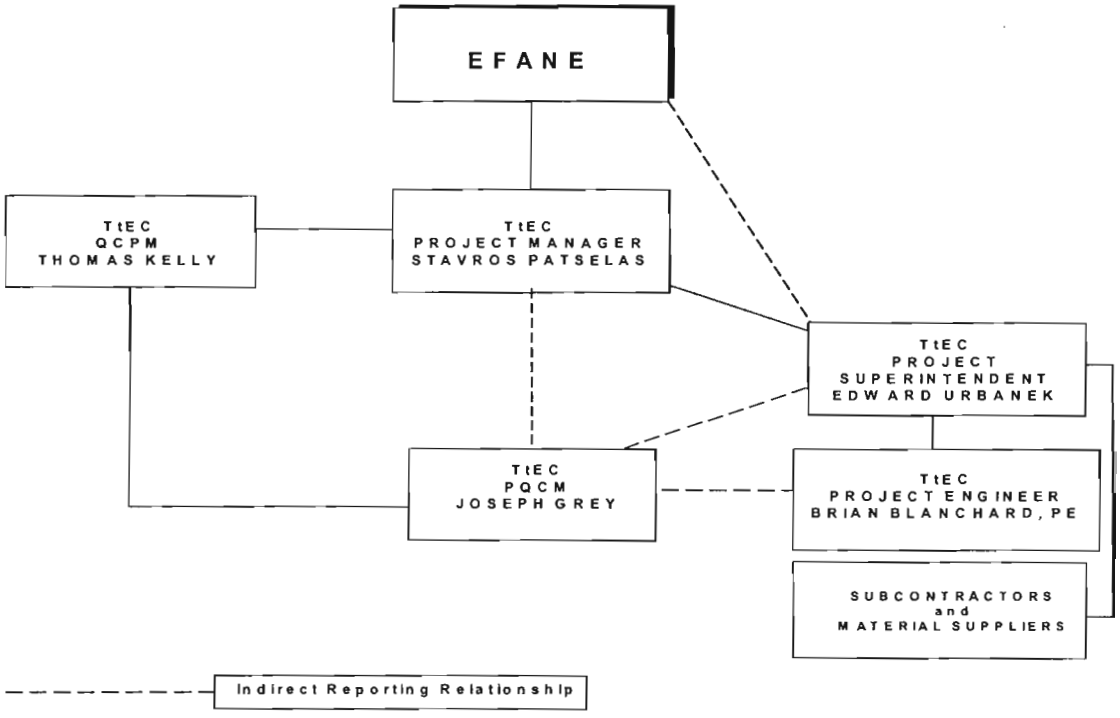
The organizations involved in this project include the Department of the Navy, Engineering Field Activity, Northeast (EFANE) and the Remedial Action Contractor (Contractor). TtEC is acting as the Contractor for the GM-38 Area Groundwater Remediation project. CQC representatives of the RAC will be the QC Program Manager (QCPM), the Project QC Manager (PQCM), and QC Specialists, as required.

The roles of the CQC personnel are described within this CQC Plan.

2.2 Project QC Organization Chart

The following Figure 1 shows the Project QC Organization Chart for this project.

FIGURE 1
PROJECT QC ORGANIZATION CHART
GM-38 AREA
GROUNDWATER REMEDIATION
BETHPAGE, NY



3.0 NAMES AND QUALIFICATIONS

3.1 QCPM

The QCPM for this project is Thomas Kelly. Reference Appendix A for Mr. Kelly's resume.

3.2 PQCM

The PQCM for this project is Joseph Grey. Reference Appendix A for Mr. Grey's resume.

4.0 DUTIES, RESPONSIBILITIES AND AUTHORITIES

4.1 General

TtEC is the Contractor for work at the GM-38 area. The Contractor is responsible for implementation of construction activities in strict accordance with design criteria, Contract Drawings and Technical Specifications using the necessary construction procedures and techniques. The Contractor is also responsible for formulating and implementing a CQC Plan which addresses the rules and responsibilities of project and CQC personnel, and outlines inspection and testing procedures to be conducted by CQC personnel and/or subcontractors.

4.2 QCPM

The QCPM, Thomas Kelly, reports to the TtEC RAC Program Manager on all quality-related matters. The QCPM interfaces with the PQCM and the TtEC Project Manager (PM) on all matters affecting quality. Specific tasks to be performed by the QCPM include the following:

- Review and approve the CQC Plan and any revisions.
- Assure all relevant portions of the CQC Plan are implemented on the project.
- Issue reports to the PM on any deviation of the approved plans.
- Authorize the PQCM to act on his behalf for all site-related QC activities.
- Assist the PQCM with resolving quality-related issues that are raised beyond resolution at the site level.

4.3 PQCM

The PQCM, Joseph Grey, reports to the QCPM on all matters affecting quality and interfaces on a daily basis with the Project Superintendent. The PQCM or designated representative will monitor site activities on a full-time basis. The results of inspections and surveillance will be documented in the daily Construction Quality Control Report (CQCR). The PQCM will also be responsible for the following:

- Implementation of the CQC Plan, including performance and documentation of the Three Phases of Control for all construction activities.
- Performance of CQC inspection/testing and preparation of inspection and testing reports.
- Assuring proper collection of samples for laboratory testing and review of test results.
- Preparation and maintenance of the Rework Items List and ensuring closure/compliance of all listed items.
- Maintenance of the latest applicable Contract Drawings and Technical Specifications with amendments and/or approved modifications at the job site and assuring that they are used for shop drawings, fabrication, construction inspections, and testing.
- Assuring maintenance and availability of Record Drawings.
- Maintenance of a Contractor-generated Submittal Register for the duration of the contract, reviewing the Submittal Register at least monthly and taking appropriate actions should slippages or other changes so necessitate.

- Reviewing all submittals for compliance with the Construction Drawings and Technical Specifications prior to approval or submission to the Contracting Officer (CO) or designated Navy Technical Representative (NTR).
- Scheduling, conducting and documenting periodic QC Meetings.
- Stop Work Authority in concert with the PM.

5.0 SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER

5.1 Types of submittals

Types of submittals include, but are not limited to, shop drawings, samples, catalog cuts, certifications, manuals, parts lists, laboratory results, inspections, and test reports.

5.2 Review and Approval Authority

The PQCM or designee is responsible for reviewing and certifying that the submittals are in compliance with contract requirements. The approving authority is the PQCM unless submission to the CO or designated NTR is required for the specific submittal.

5.3 Constraints

The following submittal constraints are defined for this project:

- Submission: Submittals will be complete for each definable feature of work (DFOW). Components of the definable features inter-related as a system will be submitted at the same time.
- Acceptability: If submittal acceptability is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be not be accepted and will be returned without review.
- Approval: Approval of a separate material, product, or component does not imply approval of the assembly in which the item functions.

5.4 Scheduling

Scheduling requirements are outlined below:

- Coordination: The preparation and processing of submittals will be coordinated with performance of the work so that submittal processing or the need for resubmission will not delay work.
- Review Period: Except as specified otherwise, the review period, beginning with receipt by the approving authority, is at least 15 working days for submittals requiring PQCM approval and 20 working days for submittals requiring CO or designated NTR approval. The period of review for submittals with Navy or designated representative approval begins when the Navy receives the submittal from TtEC's QC organization. The period of review for each re-submittal is the same as for the initial submittal.

5.5 PQCM Responsibilities

The various PQCM responsibilities include, but are not limited to the following:

- Verify Field Conditions: Determine and verify field measurements, materials and field construction criteria. Review each submittal and check and coordinate each submittal with requirements of the work and contract documents.
- Transmission: Transmit submittals to the CO or designated NTR in an orderly sequence, in accordance with the submittal register, in order to prevent delays in the work, delays to the Navy, or delays to separate subcontractors.
- Revisions: Correct and re-transmit submittals as directed by the CO or designated NTR. Direct specific attention, in writing on resubmitted submittal, to revisions not requested by the CO or designated NTR on previous or original submissions.
- Copies: Furnish additional copies of submittals when requested by the CO or designated NTR, to a limit of 20 submittals.
- Completion of Work: Plan to complete submittal preparation work in time to allow the submittal to occur as scheduled.
- Approval: Ensure no work has begun until submittals for that work have been approved by the PQCM or in the case where approval authority is with the CO or designated NTR.

5.6 Site QC Organization Responsibilities

The various Site QC Organization responsibilities include, but are not limited to the following:

- Receiving Date: Note the date on which the submittal was transmitted to the CO or designated NTR on each submittal for which the PQCM is the approving authority.
- Verify Field Conditions: Determine and verify field measurements, materials, and field construction criteria. Review each submittal and check and coordinate each submittal with requirements of the work and contract documents.
- Review: Review submittals for conformance with project design concepts and compliance with the contract documents.
- Action: Act on submittals, determining the appropriate action CO Officer or designated NTR.

    - When the PQCM is the approving authority, take the appropriate action on the submittal from the possible actions defined in the paragraph entitled "Government Submittal Actions".
    - When the CO or designated NTR is the approving authority or when a variation has been proposed, forward the submittal to the Navy with the certifying statement or act on a returned submittal marked "not reviewed" or "revise and resubmit".

- Legible: Ensure that material is clearly legible.
- Certification Stamp: Stamp each sheet of each submittal with the certification stamp, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

    - When the approving authority is the CO or designated NTR, the QC organization will certify submittals forwarded to the CO or designated NTR with the following certifying statement:

I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated into Contract Number N62472-99-D-0032, is in compliance with the Contract Drawings and Technical Specifications, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by Submittal Reviewer _____Date _____
(signature)

Certified by PQCM_____ Date _____
(signature)

- When the approving authority is the PQCM, the PQCM will use the following approval statement when forwarding submittals to the CO or designated NTR as "Approved" or "Approved as Noted."

I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated into Contract Number N62472-99-D-0032, is in compliance with the Contract Drawings and Technical Specifications, can be installed in the allocated spaces, and is approved for use.

Certified by Submittal Reviewer _____Date _____
(signature)

Approved by PQCM _____Date _____
(signature)

- Signature: Sign the certifying statement or approval statement. The person signing the certifying statements shall be the QCPM, PQCM or a person designated in writing by the QCPM as having that authority. The signatures will be in original ink. Stamped signatures are not acceptable.
- Submittal Register: Update the submittal register as submittal actions occur and maintain the submittal register at the project site until final acceptance of work by the CO or designated NTR.
- Retention: Retain a copy of approved submittals at the project site.
- Distribution: When the approving authority is the PQCM, forward two copies of each approved submittal, except "samples," where one set is required, to the CO or designated NTR, unless otherwise noted at the pre-construction meeting.

5.7 Government Submittal Actions

Submittals can be returned with one of the following notations:

- Not Approved: Submittals marked "not reviewed" will indicate the submittal has been previously reviewed and approved, is not required as a submittal, does not have evidence of being reviewed and approved by the PQCM, or is not complete. A

submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Returned submittals deemed to lack review by TtEC or to be incomplete will be resubmitted with appropriate action, coordination, or change.

- Approved: Submittals marked "approved" or "approved as submitted" authorize TtEC to proceed with the work covered.
- Approval as Noted: Submittals marked "approved as noted" authorize TtEC to proceed with the work as noted provided TtEC takes no exception to the notations.
- Revise and Resubmit: Submittals marked "revise and resubmit" or "disapproved" indicate the submittal is incomplete or does not comply with the design concept or the requirements of the Contract documents and will be resubmitted with appropriate changes.

5.8 Format of Submittals

5.8.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels, to the office of the CO or designated NTR. Transmit submittals with a transmittal form prescribed by the CO or designated NTR . The transmittal form will identify the submittal as being from TtEC, indicate the date of the submittal, and include information prescribed by the transmittal form and required in the following section, Identifying Submittals, 5.8.2.

5.8.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on the transmittal form. Mark each copy of each submittal identically, with the following:

- Project title and location.
- Construction contract number and CTO.
- The remedial specification section by which the submittal is required.
- The name, address, and telephone number of the subcontractor, supplier, manufacturer and any other second tier subcontractor associated with the submittal.
- Product identification and location in project.

5.9 Quantity of Submittals

Submit five copies of all submittals except when exceptions are noted in specific Technical Specifications.

5.10 Submittal Register

The initial Submittal Register will be determined based on requirements set forth in the various Technical Specifications. The final CQC Plan will include the Initial Submittal Register. A sample Submittal Register can be found in Appendix B.

6.0 TESTING LABORATORY INFORMATION

An independent qualified laboratory or laboratories will be provided to perform testing required by this project. All laboratories performing testing and analysis services will be accredited/certified in the methods specified by project requirements.

6.1 Accreditation/Certification

The CO or designated NTR will be provided with a copy of the certificate of accreditation, scope of accreditation, and the latest directory of the accrediting organization for accredited laboratories. The scope of the laboratory's accreditation will include the test methods required for the project.

Acceptable accreditation programs are as follows:

- National Institute of Standards and Technology (NIST).
- National Voluntary Laboratory Accreditation Program (NVLAP).
- American Association of State Highway and Transportation Officials (AASHTO).
- American Association for Laboratory Accreditation (AALA).

The CO or designated NTR must approve any deviation from the above in writing.

6.2 Capability Check

The CO or designated NTR retains the right to check laboratory equipment in the proposed laboratory and review the laboratory's testing procedures, techniques, and other items pertaining to testing, for compliance with project requirements.

6.3 Test Results

The PQCM will maintain all project test results at the project site. The actual laboratory test results will be submitted to the CO or designated NTR and placed on the updated submittal register. These results will be reviewed by the PQCM for conformance with the project requirements. The cover page for these results will be conspicuously stamped in red with 'Conforms' or 'DOES NOT CONFORM' to the project requirements, whichever is applicable.

A summary report of the results of all field testing will be attached to the last daily CQCR for each month.

7.0 TESTING PLAN AND LOG

The testing plan and log identifies all tests, on-site and off-site, to be performed on materials throughout the course of the project. The document includes the following information:

- Specification Section and relevant paragraph number.
- Test Required.
- Accredited laboratory requirements.
- Sampler and tester identification.
- Location of test (field vs. laboratory).
- Frequency of test.
- Date completed.

See Appendix B for the Sample Testing Plan and Log.

8.0 PROCEDURES TO COMPLETE REWORK ITEMS

8.1 Rework Item – General

A Rework Item is a part or aspect of a DFOW that does not comply with the contract. This item can be, but is not limited to placed or delivered material; a delivered, installed or fabricated piece of equipment; or deficient workmanship that can cause a material, equipment or functionality of a system to perform less than specified by the requirements for that item.

8.2 Control of Rework Items

During the conducting of field activities, if an identification is made of an item or a feature of work that does not comply with project requirements, it will be noted by a full description in the CQCR

If the item or feature of work is brought into compliance before the end of the work day, this will be noted in the CQCR and no further documentation is required.

If the item or feature of work is not brought into compliance by the end of the work day, it is logged onto the Rework Items List. See Appendix B for a Sample Rework Items List. The following information is required for initial logging of an item:

- Unique identifying number
- Date identified
- Description
- Requirement (i.e. technical specification section, construction drawing detail, etc.)
- Immediate action taken by the PQCM

Once the resolution is decided and acted on, the following is added to the rework item to close it out:

- Resolution to bring the item or feature of work into compliance
- Date of completion

8.3 Maintenance and Distribution

The rework items list is maintained by the PQCM at the project site. Items to be included on this list, also include those identified by the CO or designated NTR. A copy of the Rework Items list will be included with the last CQCR of each month.

9.0 DOCUMENTATION PROCEDURES

The PQCM will maintain a current and complete set of records that document the quality of the constructed project. A copy of these records will be maintained at the project site and will be readily available to the CO or designated NTR for review or audit purposes. At a minimum, these records include, but are not limited to the following sections:

9.1 Contractor Production Report

A Contractor Production Report is required for each day that work is performed and will be attached to the daily CQCR prepared for the same day. Each calendar day will be accounted for throughout the life of the project. The reporting of the work will be identified by terminology consistent with the construction schedule. Contractor Production Reports will be prepared, signed and dated by the Project Superintendent and will contain the following information:

- Date of report, report number, name of Contractor (TtEC), contract number, project title, project location and superintendent present.
- Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.
- A list of Contractor (TtEC) and subcontractor personnel on the work site, their trades, employer, work location, description of work performed and hours worked.
- A list of job safety action taken and safety inspections conducted. Indicate that safety requirements have been met including the results of the following:
    - Was a job safety meeting held? (If YES, attach a copy of the meeting minutes)
    - Were there any lost time accidents? (If YES, attach a copy of the completed Occupational Safety and Health Administration (OSHA) report)
    - Was trenching, scaffold, high-voltage electrical, or high work done? (If YES, attach a statement or checklist showing inspection performed)
    - Was hazardous material or waste released into the environment? (If YES, attach description of incident and proposed action)
- A list of equipment and material received each day that is incorporated into the job.
- A list of construction and plant equipment on the work site including the number of hours used, idle and down for repair.
- Include a 'Remarks' section, which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective action taken and a record of visitors to the work site.

See Appendix B for a Sample Contractor Production Reports.

9.2 CQCR

A CQCR is required for each day that work is performed and for every seven consecutive days of no-work, on the last day of that no-work period. Each calendar day will be accounted for throughout the life of the project. The reporting of work will be identified by terminology consistent with the construction schedule. CQCRs will be prepared, signed and dated by the PQCM and will contain the following information:

- Identify the control phase and the DFOW.
- Results of the preparatory phase meetings held, including the location of the DFOW, that drawings and specifications have been reviewed, submittals have been approved, materials comply with approved submittals, materials are stored properly, preliminary work has been done correctly, the testing plan has been reviewed and work methods have been discussed.
- Results of initial phase meetings held, including the location of the DFOW and a list of personnel present at the meeting. Verify in the report that for this DFOW, the preliminary work was done correctly, samples have been prepared and approved, the workmanship is satisfactory, test results are acceptable, work is in compliance with project requirements, the required testing has been performed and a list of who performed the tests.
- Results of follow-up phase inspections held, including the location of the DFOW. Verify in the CQCR for this DFOW that the work complies with project requirements as approved in the initial phase, required testing has been performed and a list of who performed the tests.
- Results of the three phases of control for off-site work, if applicable, including actions taken.
- List rework items identified, only if not corrected by close of business.
- As rework items are corrected, a revised rework items list will be provided along with the corrective actions taken.
- Include a 'Remarks' section, which will contain pertinent information including directions received, QC problem areas, deviations from the CQC Plan, construction deficiencies encountered, QC meetings held, acknowledgment that as-built drawings have been updated, corrective direction given by the PQCM and corrective actions taken.

See Appendix B for a Sample CQCR.

9.3 Record of QC Meetings

After the start of site work, the PQCM will conduct QC meetings as required by the CO or designated NTR at the work site, with the Project Superintendent and the foreman responsible for the upcoming work. Meetings conducted will be recorded within the CQCR. The CO or designated NTR will be notified at least 24 hours in advance of the QC meeting and may attend any of these meetings. These meetings may be held in conjunction with other meetings (i.e. tool box safety meetings). As a minimum, the following will be accomplished at each meeting:

- Review the minutes of the previous meeting.
- Review the schedule.
- Work or testing accomplished since last meeting.
- Rework items identified since last meeting.
- Rework items completed since last meeting.
- Review the status of submittals.
  - Submittals reviewed and approved since last meeting.
  - Submittals required in the near future.
- Review the work to be accomplished in the next two weeks and documentation required. Schedule the three phases of control and testing.
- Establish completion dates for rework items.
- Preparatory phases required.
- Initial phases required.
- Follow-up phases required.
- Testing required.
- Status of off-site work or testing.
- Documentation required.
- Resolve QC and production problems.
- Address items that may require revising the CQC Plan.
  - Changes in procedures.

See Appendix B for a sample Record of QC Meetings/Minutes form.

9.4 Testing Plan and Log

As tests and inspections are performed, the PQCM will update the Testing Plan and Log. A copy of the lasted updated Test Plan and Log will be attached to the last CQCR of each month.

9.5 Rework Items List

As new rework items are identified and old items are corrected, the PQCM will update the Rework Items List. A copy of the last updated Rework Items List will be attached to the last CQCR of each month.

9.6 As-Built Records

The PQCM will review the as-built records to ensure they are kept current on a daily basis and are clearly marked to show deviations that have been made from the contract drawings.

10.0 DESIGN CHANGES

Throughout the construction activities at the site, instances may arise when clarifications or changes to the design are required by TtEC in order to complete the project. If a clarification of a construction issue is required that is not provided by the contract documents, TtEC will submit a Request for Information (RFI) to the CO or designated NTR for review. If a change to the design is required, TtEC will present the proposed change to the CO or designated NTR using the Change Request From (CRF). The PM and the CO or designated NTR review proposed changes to the design. TtEC may also issue a Design Change Notification (DCN) if there is need to implement change to a completed design document prior to the issuance of a document revision.

10.1 RFI

The RFI form will be used to request clarification on construction issues that were not provided by the contract documents. The form is also used to request modifications in the materials or methods used to construct certain portions of the remediation system. RFI forms will be prepared and submitted by the PQCM for review by the PM and the Design NTR. TtEC, prior to a RFI being approved or denied, will convey recommendations regarding the RFI to the Design NTR. Signature of the RFI forms by the Design NTR will be required to constitute final approval. A sample RFI form is provided as Appendix B.

10.2 CRF

The CRF was developed to allow field changes to the methods outlined in the project documents to be proposed for implementation on the project. The CRF form will be submitted by the PQCM for review by the PM and the CO or designated NTR. TtEC, prior to a CRF being approved or denied, will convey recommendations regarding the CRF to the CO or designated NTR. The CO or designated NTR will provide a signature approval of the CRF. A sample CRF form is provided as Appendix B.

10.3 DCN

A DCN will be issued by TtEC to implement changes to a completed design document prior to the issuance of a document revision. A DCN may be processed to document a change initiated by TtEC, or it may be processed to document a major change initiated by the CO or designated NTR. A sample DCN is provided as Appendix B.

11.0 LIST OF DFOW

11.1 DFOW

A DFOW is a task which is separate and distinct from other tasks and requires separate QC requirements. A DFOW can be identified by different trades or disciplines; by an item or activity on the construction schedule; specification sections; or critical path activities.

11.2 DFOW Sources

DFOW's are determined from a review of the pre-construction documentation such as task related work plans, design drawings, shop drawings, statements of work, scopes of work, pre-construction letters of direction, and approved pre-construction change requests.

11.3 Listing

See Appendix B for the List of DFOW for the GM-38 Area Groundwater Remediation project.

12.0 PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL

The PQCM will perform the three phases of control for each DFOW to ensure that the work complies with contract requirements. DFOW are specified in the CQC Plan and approved by the CO or designated NTR. The three phases of control will adequately cover appropriate on-site and off-site work and will include the following sections:

12.1 Preparatory Phase

The CO or designated NTR will be notified at least two working days in advance of each Preparatory Phase. The PQCM will conduct the Preparatory Phase with the Project Superintendent and the foreman responsible for the DFOW. The results of the Preparatory Phase will be documented daily in the CQCR. This Preparatory Phase will be performed prior to beginning work on each DFOW and will include as a minimum the following:

- Review each paragraph of the applicable specification sections.
- Review the contract drawings.
- Verify the appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.
- Review the testing plan and ensure that provisions have been made to provide the required QC testing.
- Examine the work area to ensure that the required preliminary work has been completed.
- Examine the required materials and equipment, and sample work to ensure that materials and equipment are on hand and conform to the approved shop drawings and submitted data.
- Review the Site-Specific Health and Safety Plan (SHSP) and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.
- Discuss construction methods.

See Appendix B for the Preparatory Phase Checklist.

12.2 Initial Phase

The CO or designated NTR will be notified when crews are ready to start work on a DFOW. The PQCM will perform a surveillance/observation of the initial segment of the DFOW to ensure that the work complies with the contract requirements. The results of the Initial Phase will be documented daily in the CQCR. The Initial Phase will be repeated when acceptable levels of specified quality are not being met. This Initial Phase will be performed at least once on each DFOW and will include as a minimum the following:

- Establish the quality of workmanship required.
- Resolve conflicts.

- Review the SHSP and the appropriate AHA to ensure that applicable safety requirements are met.

See Appendix B for the Initial Phase Checklist.

12.3 Follow-Up Phase

The following will be performed for on-going work daily, or more frequently as necessary until the completion of each DFOW and documented daily in the CQCR:

- Ensure that the work is in compliance with contract requirements.
- Maintain the quality of workmanship required.
- Ensure that testing is performed.
- Ensure that rework items are being corrected.

12.4 Notification of the Three Phases of Control for Off-Site Work

The CO or designated NTR will be notified at least two weeks prior to the start of the Preparatory and Initial Phases for Off-Site work.

APPENDIX A
RESUMES

Thomas Joseph Kelly
Quality Control Program Manager

EXPERIENCE SUMMARY

More than 30 years of professional experience, including 18 years of construction management experience responsible for construction quality control (CQC) of large-scale, multi-site remedial projects, including Comprehensive Environmental Response Compensation and Liability Act of 1980 (Superfund) (CERCLA), Resource Conservation and Recovery Act (RCRA), and private client sites. More than 18 years of experience in CQC for the US Army Corps of Engineers (USACE) in the New York, Philadelphia, Baltimore, and New England Districts and the US Navy Engineering Field Activity - Northeast (EFANE). Includes onsite soil incineration, wastewater treatment, onsite soil low temperature thermal desorption, installation of lateral support systems for deep excavations, installation of landfill cap systems, installation of gas collection and thermal oxidation gas treatment systems, underground storage tank (UST) removal, drum excavation, overpacking and removal, demolition, leachate collection system, installation of groundwater extraction wells, and UXO work.

EDUCATION

BS, Civil Engineering, Drexel University, 1976

REGISTRATIONS/CERTIFICATIONS

Certified Operator of Nuclear Compaction Testing, Earned 1/1/88
Construction Quality Management Certificate, U.S., Earned 10/17/01, Expires 10/17/06

TRAINING

40-Hour Hazardous Waste Site Training Course, OSHA 29 CFR 1910.120(e)(3), 1987
8-Hour Hazardous Waste Refresher Course, OSHA 29 CFR 1910.120(e)(8), 2004
8-Hour Supervisory Training, OSHA, 1987
Competent Person Training for excavation, 1991
HM 181/126F Hazardous Waste Shipping Training, 2003
Sampling Training, 1994
USDOT/IATA HAZMAT Shipping Training, 2003
USACE Construction Quality Management for Contractors, 1996, 2001
Waste Management Training, 2004

CORPORATION PROJECT EXPERIENCE

Supervisory Remediation Engineer (1998 - Present)
Tetra Tech EC, Inc., Langhorne, PA
Responsible for providing construction quality control of large-scale, cost reimbursable, multi-site design/build remedial action projects. Responsible for developing, maintaining, and auditing QA/QC programs.

Program Quality Control Manager
U.S. Navy Engineering Field Activity Northeast, RAC, Pennsylvania
Responsible for the QC Program for this $125 million cost reimbursable contract. Responsible for managing QC issues for all work including investigation, engineering, construction, and O&M to achieve closures at military installations located in the Northeastern United States. Responsible for overseeing contract-wide QC compliance, identifying appropriate staff for assignment to task orders, preparing task order QC plans, and resolving any significant quality issues.

Quality Control Supervisor
USACE New England District, TERC, New England
Responsible for the QC Program for this $260 million cost reimbursable contract. Responsible for managing QC issues for all work including investigation, engineering, construction, and O&M to achieve

closures at Superfund and military sites. Responsible for overseeing contract-wide QC compliance, identifying appropriate staff for assignment to task orders, preparing task order QC plans, and resolving any significant quality issues.

Quality Control Manager
USACE Baltimore District, Aberdeen Proving Ground RAC, Maryland
Responsible for the implementation of the QC Program for this $25 million cost reimbursable contract. Responsible for managing QC issues for all work including investigation, engineering, construction, and UXO Clearance. Responsible for overseeing contract-wide QC compliance, identifying appropriate staff for assignment to task orders, preparing task order QC plans, and resolving any significant quality issues.

PREVIOUS EXPERIENCE

Roy F. WESTON, Inc., West Chester, PA
Quality Control (QC) Manager,1996 – 1998
USACE, Old O- Field Permeable Infiltration Unit Superfund Site Remedial Action (RA), Aberdeen Proving Ground (APG), Edgewood, MD
Responsible for ensuring project quality by verifying that all project activities are conducted in compliance with contract specifications; federal, state, and local regulations; WESTON Health, Safety, and Environmental policies; and Division standard operating procedures(SOPs). Responsible for conducting and supervising the inspection and testing of all aspects of field work for conformance with the applicable specifications, submittals, regulations, and standards. Developed and maintained a QC reporting and recordkeeping system to meet the requirements of the project. The project includes the construction of the permeable infiltration unit, startup of the system, 1 year of operations and maintenance (O&M) of the permeable infiltration unit on Old O-Field at the Edgewood Area of APG. Old O-Field is a 5-acre hazardous waste and ordnance disposal site that consists of approximately 35 disposal trenches that were used for the burial of chemical munitions, bulk chemical warfare materials, and contaminated materials. The work includes unexploded ordnance (UXO) clearance, site preparation, road construction, utilities installation, construction of the initial sand layer, construction of an auxiliary subsurface trickling system, construction of a subsurface air monitoring system, construction of the final sand layer, construction of the erosion control layer, and construction of a sprinkler system, pump house, and ground water storage tank. The initial site preparation and initial sand layer, will be accomplished using remotely operated low-ground pressure CAT D6H dozer and CAT 320 L excavator equipped with various end effectors.

OHM Remediation Services Corp. (Formerly known as Rust Remedial Services, Inc. & Chemical Waste Management, Inc.), Trenton, NJ
QC Manager, 1989 – 1996
USEPA, Cinnaminson Groundwater Contamination Superfund Site RA, Cinnaminson, NJ
Responsible for ensuring project quality by verifying that all project activities are conducted in compliance with contract specifications; federal, state, and local regulations; OHM health, safety environmental policies; and Division SOPs. Responsible for conducting and supervising the inspection and testing of all aspects of field work for conformance with, the applicable specifications, submittals, regulations, and standards. Developed and maintained a QC reporting and recordkeeping system to meet the requirements of the project. The work involved consists of providing all monitoring and analytical services, temporary facilities, utilities, access roadways, and site preparation. The construction of an expanded landfill gas management system for two adjacent landfills includes the installation of 28 new gas extraction wells, 5 new replacement gas extraction wells, and approximately 16,700 linear feet (lf) of high density polyethylene (HDPE) gas header pipe varying in diameter from 4 to 10 inches. Installed approximately 4,500 lf of double-walled HDPE condensate force main along with 4 HDPE condensate drains and 4 double-walled HDPE condensate pump stations. In addition, installed a landfill gas blower and enclosed flare system. The project also involves the abandonment of approximately 4,700 lf of

existing HDPE gas header pipe and the decommissioning of six condensate traps and one blower house; restoration of the landfill clay cap, sand drainage layer, and topsoil layer; grading of the site to facilitate drainage from the site after remediation; and revegetation of the site.

QC Manager
USACE, Drake Chemical Superfund Site RA, Lock Haven, PA
Responsible for ensuring project quality by verifying that all project activities are conducted in compliance with contract specifications; federal, state, and local regulations; RRS health, safety, and environmental policies; and Division SOPs. Responsible for conducting and supervising the inspection and testing of all aspects of field work for conformance with the applicable specifications, submittals, regulations, and standards. Developed and maintained a QC reporting and recordkeeping system to meet the requirements of the project. The work involved consists of providing all monitoring and analytical services, temporary facilities, utilities, access roadways, site security fencing, and site preparation; the excavation and onsite incineration of all soils within 9.63 acres of the site above elevation 545 ft mean sea level (msl) (approximately 194,520 cubic yards [yd3]); dewatering of a leachate lagoon (approximately 330,000 gallons); design and installation of a lateral support system for deep excavation around the perimeter of the site; design, construction, operation, and closure of an onsite thermal destruction facility; design, construction, operation, and closure of an onsite wastewater treatment plant (WWTP) and stormwater treatment facility; relocation of water and sewer line running through the site; backfilling site excavation with incinerated soil or decontaminated debris; grading of the site to facilitate drainage from the site after remediation; and revegetation of the site.

QC Manager
USEPA, IndustriPlex Superfund Site RA, Woburn, MA
Responsible for ensuring project quality by verifying that all project activities are conducted in compliance with contract specifications; federal, state, and local regulations; CWM health, safety, and environmental policies; and Division SOPs. Responsible for conducting and supervising the inspection and testing of all aspects of field work for conformance with the applicable specifications, submittals, regulations, and standards. Developed and maintained a QC reporting and recordkeeping system to meet the requirements of the project. The work involved consists of the construction of a permeable cover in developed areas comprising geotextile and soil, asphalt, or other cover equivalent totaling approximately 24 acres. Constructed a permeable cover comprising geosynthetics and soil on undeveloped areas consisting of 60 mil textured HDPE, other geosynthetics, and soil totaling approximately 4.4 acres. Other activities included: capping or dredging and capping in wetlands totaling approximately 8.4 acres; installation and startup of a gas collection and thermal oxidation gas treatment system; construction of clean utility corridors and culverts; decommissioning of approximately 120 groundwater wells and piezometers, structures, underground and aboveground tanks, and miscellaneous underground facilities; placement of approximately 3,430 lf of gravel/cobble lining in streams and channels; creation of approximately 5.8 acres of mitigation wetland involving excavation, capping, and vegetation; and revegetation of capped wetlands.

QC Manager
USACE, Waldick Aerospace Superfund Site RA, Wall Township, NJ
Responsible for ensuring that project activities are conducted according to contract specifications and all applicable regulations, corporate policies, and regional practices. Conduct and supervise inspection and testing of field work for conformance with requirements; and develop and maintain QC reporting and recordkeeping system. Project involves UST removal, drum overpacking and removal, asbestos abatement, structural decontamination and demolition, excavation of soils contaminated with metals and volatiles, low temperature thermal desorption, offsite stabilization and disposal of treated soils, design and installation of lateral support system for deep excavation.

QC Supervisory Engineer
USACE, Moyer Landfill Superfund Site RA, Collegeville, PA
Responsible for ensuring that project activities are conducted according to contract specifications and all applicable regulations, corporate policies, and regional practices. Conduct and supervise inspection and testing of field work for conformance with requirements; and develop and maintain QC reporting and recordkeeping system. Project involved regrading of existing landfill; backfilling with common and select fill; installation of 40mil very low density polyethylene (VLDPE) liner, upper and lower geotextile, geonet, and soil cover over a 65acre site; installation of leachate collection trench around perimeter, vertical gas vents, drainage ditches, culverts, groundwater cutoff test trench, and nine extraction wells; abandonment of monitor wells; and demolition of existing structures and utilities.

QC Manager
USACE, Heleva Landfill Supertund Site RA, Omrod, PA
Responsible for inspecting and testing all work items to ensure conformance with contract specifications and drawings. Project involved regrading of existing landfill; placing common and select fill; installing geotextile, HDPE liner, geonet, and select fill and topsoil over a 20-acre site; and installation of vertical gas vents, drainage ditches, and culverts.

Rollins Environmental Services, Inc.
Chadds Ford, PA
Project Manager, 1987 - 1989
Hazardous Management Site Services, Lockheed Missiles and Space Company, San Francisco, CA
Responsible for a hazardous waste site services contract for an operations and research facility. Performed day to day management of professional and technical staff analysis, packaging, transportation, and disposal of hazardous materials being generated at 56 different buildings.

Project Manager
Ford Motor Company, Milpitas, CA
Responsible for the removal, inspection, drainage, flushing, shipment, transportation, and disposal of 22 polychlorinated biphenyl (PCB) transformers. In addition, conducted health and safety spill control, and regulatory compliance management.

QC Engineer
Lanchester Landfill, Honey Brook, PA
Responsible for compaction testing, testing of lines and grades, and site management of field crews and subcontractors. Project involved the installation of a cap, including placement of clay, 50mil polyvinyl chloride (PVC) liner, sand with drainage pipes, geotextile, and cover soil over a 10-acre site.

QC Engineer
USACE, BROS Superfund Site RA, Bridgeport, NJ
Responsible for construction and operation of an aqueous waste treatment system processing 25 million gallons of liquid from a waste oil lagoon; subcontractor management; compaction testing; and staking of site for magnetometer survey.

Cape Atlantic Crane Co., Inc., Glassboro, NJ
Project Engineer, 1983 – 1987
Responsible for the installation of utility mains,(water main, gas lines, and sewer lines) in compliance with contract specifications and drawings at various, locations in New Jersey. Reviewed blueprints and engineering drawings, supervised crews, maintained and reviewed material inventory, obtained construction permits, and performed QC checks of site work.

Project Manager, 1980 – 1983
Krane Corp., Port Elizabeth, NJ
Responsible for the installation of foundation piles, bulkheads, and docks in compliance with contract specifications and drawings at various locations in New Jersey. Supervised subcontractors and inspected site work to ensure compliance with contract specifications and drawings. Acquired construction permits and scheduled manpower and equipment.

Project Manager, 1978 – 1980
Brian Michael Corp., Folcroft, PA
Responsible for the construction of new homes in Wildwood Crest, NJ. Supervised subcontractor and inspected site work to ensure compliance with contract specifications and drawings. Acquired construction permits and scheduled manpower and equipment.

A.V. Smith Engineering Company, Narberth, PA
Project Engineer, 1976 – 1978
Responsible for a cathodic protection system for an ocean outfall line in Bethany Beach, DE. Inspected and tested contractor's site work to ensure compliance with contract specifications and drawings.

Project Engineer, 1976 – 1978
Phase II Infiltration/Inflow (I/I) Analysis, Moultrie, Georgia
Responsible for Phase II I/I analysis of a municipal sewer system in Moultrie, GA. Responsible for inspecting and testing cathodic protection systems for municipal and industrial piping systems in Philadelphia, PA.

Co-op Engineer, 1974 - 1975
Betz Environmental Engineers, Plymouth Meeting, PA
Responsible for Phase I I/I analysis of a municipal sewer system and industrial wastewater collection systems.

Co-op Engineer, 1973 – 1974
Howard, Needles, Tamen and Bergendoff, Haverford, PA
Responsible for design of highways in Pennsylvania for the Pennsylvania Department of Transportation.

Co-op Engineer, 1972 – 1973
City of Philadelphia Engineering Department, Philadelphia, PA
Responsible for design of city sewer mains.

Joseph P.Gray
Project Engineer and Project QalityControl Manager

EXPERIENCE SUMMARY

Over nine years experience in environmental engineering, relating to hazardous waste investigation and remediation. Past duties involved aspects of project management, interfacing with clients and regulatory agencies, preparation of contract specifications, supervision of personnel and subcontractors and the preparation of project related technical documents.

EDUCATION

- M.S., Environmental Engineering, Temple University, In Progress (1995-present)
- B.S., Environmental Engineering Technology, Temple University, 1994

TRAINING

- Project Management Training, Level 100
- Project Management Training, Level 200
- PADEP Land Recycling (Act 2) Training
- Asbestos Hazard Emergency Response Act (AHERA) Asbestos Contractor/Supervisor Training, 8-Hour refresher, 2003
- AHERA Asbestos Contractor/Supervisor Initial, 40-Hour Training, 2002
- OSHA Hazardous Waste and Health and Safety Training, 8-hour refresher-Current.
- Gas Chromatograph Operation Training-1997
- Gamma Ray Spectrometer Operation Training-1994
- PADEP Hazard Ranking System Training, 1994

CORPORATION PROJECT EXPERIENCE

Pennsylvania Department of Environmental Protection (PADEP) GTAC-3, Industrial Solvents and Chemical Company Site, Newberry Township, PA, Resident Inspector - Provided bid phase services including, meeting support and site visits with subcontractors for the site closure project. Prepared a scope of work document for an asbestos survey and provided oversight during the survey. Assisted in the preparation of the cost estimate during the site closure project. Assigned as Resident Inspector to provide construction oversight of PADEP contractor for demolition, asphalt cap installation, and construction of stormwater management structures.

PADEP GTAC-3, Valley Forge Asbestos Release Site, Valley Forge National Historic Park, Valley Forge, PA, Field Operations Lead - FOL for work conducted during the Remedial Investigation. Supervised field crews and subcontractors during the soil waste investigation, geophysical investigation, ecological investigation, site survey, monitoring well installation and groundwater assessment, investigative derived waste management and disposal, and site restoration. Prepared reports daily to document activities, identify issues for resolution, present preliminary air monitoring results, and to track project progress. Provided support to Pennsylvania Department of Environmental Protection during interagency project status meetings. Authored several sections of the Remedial Investigation Report.

PADEP GTAC-3; Baghurst Alley Site, Upper Salford PA; Site Characterization; FOL and Environmental Safety Supervisor; - Supervised field crews and subcontractors during the characterization of a groundwater plume contaminated with chlorinated solvents. The scope of work for the project included monitoring well installation, preparation of boring logs, packer testing, and analysis of groundwater samples in an on-site laboratory.

PADEP GTAC-3, East 10th Street Site, Marcus Hook, PA, Field Operations Lead - Foster Wheeler Environmental Corporation's FOL for work conducted during the Site Investigation (SI). Prepared scope of work documents used by subcontractors to submit bids on various tasks of the SI. Supervised the following subcontractors during the data collection for the SI: site survey subcontractor, geophysical survey subcontractor, and geoprobe® subcontractor. Ensured subcontractor work was completed in compliance with the work plan and scope of work documents. Supervised field crews during the collection of groundwater, surface water, sediment, soil, and miscellaneous waste samples. Prepared Technical Direction Memorandums (TDM) for several phases of the SI. TDMs were used to present data and preliminary findings regarding individual phases of the SI.

PADEP GTAC-1, Multiple Locations in Pennsylvania; - Developed Hazard Ranking System (HRS) Scoring Packages to assist Pennsylvania Department of Environmental Protection in their assessment of the relative potential for site contamination to adversely impact human health and the environment. Completed HRS scoring packages in accordance with the federally mandated HRS final rule. Submitted HRS scoring packages for final review and acceptance by Pennsylvania Department of Environmental Protection.

USEPA; Multiple Locations; - Developed Site Investigation Prioritization reports to assess a site's relative threat associated with actual or potential releases of hazardous substances for potential placement on the National Priorities List. Supervised on-site reconnaissance. Researched site histories by performing regulatory file searches and review of historical and analytical data to determine HRS eligibility.

U.S Navy, Northern Division RAC I; Naval Air Warfare Center, Trenton, New Jersey Groundwater remediation Utilizing Carbon Adsorption Units; - Utilized a gas chromatograph to analyze groundwater samples for volatile organic compounds to monitor compliance for a National Pollution Discharge Elimination System permit. Prepared Scope of Work Documents that were used as guides by contractors to bid on subcontracts for the change over from remediation by carbon adsorption to remediation by air sparging followed by a catalytic oxidizer. Revised the Operations and Maintenance manual to reflect process changes.

AlliedSignal/Sumitomo Machinery Corporation of America, Industrial Sites Recovery Act; Low Level Radiation Assessment and Site Remediation, New Jersey: - Supervised craft and labor during on-site thermal desorption of mixed waste. Performed on-site analysis of soil samples for ^{226}Ra and ^{232}Th utilizing gamma-ray spectroscopy. Responsible for sample collection and documentation to comply with a New Jersey Department of Environmental Protection air pollution control permit and to determine disposal options. Supervised the excavation of mixed waste soil and the decontamination of rocks and debris to segregate the materials for hazardous and non-hazardous disposal.

Pennsylvania Department of Environmental Protection (Pennsylvania Department of Environmental Protection); Multiple Locations in Pennsylvania; - Developed Hazard Ranking System (HRS) Scoring Packages to assist Pennsylvania Department of Environmental Protection in their assessment of the relative potential for site contamination to adversely impact human health and the environment. Completed HRS scoring packages in accordance with the federally mandated HRS final rule. Submitted HRS scoring packages for final review and acceptance by Pennsylvania Department of Environmental Protection.

APPENDIX B
QC FORMS

T[illegible]A TE[illegible]C, IN[illegible]
SUBMITTAL REGISTER

Contract Number: N62472-99-D-0032 CTO No. 0096 Project Title: GM-38 Area Groundwater Remediation

Location: Bethpage, NY Contractor: Tetra Tech EC, Inc.

							CONTRACTOR ACTION			APPROVING AUTHORITY ACTION				CONTR	
Spec Section No.	Description Item Submitted	Spec Para No.	Classif/ Appr by CO*	Govt or A/E Revwr	Trans Control No.	Planned Submittal Date	Act. Code	Date of Action	Date Fwd to Appr Auth/Date Rec'd from Contr	Date Fwd to Other Reviewer	Date Rec'd from Other Reviewer	Act. Code	Date of Action	Mailed to Contr/Rec'd from Appr Auth.	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(l)	(j)	(k)	(l)	(m)	(n)	(o)	(p)

TESTING PLAN AND LOG

CONTRACT NUMBER
N[redacted]D-02 TO NO.0

PROJECT TITLE AND LOCATION
GM-38 AREA GROUNDWATER REMEDIATION

CONTRACTOR
TETRA TECH EC, INC.

SPECIFICATION SECTION & PARAGRAPH NO.	ITEM OF WORK	TEST REQUIRED	ACCREDITED/ APPROVED LAB		SAMPLED BY	TESTED BY	LOCATION OF TEST		FREQUENCY	DATE COMPLETED	DATE FORWARDED TO CO	REMARKS
			YES	NO			ON-SITE	OFF-SITE				

TETRA TECH EC, INC.
REWORK ITEMS LIST

Contract No. and Title: ____________________

Contractor: ____________________

NUMBER	DATE IDENTIFIED	DESCRIPTION	CONTRACT REQUIREMENT (Spec. Section and Par. No., Drawing No., and Detail No., etc.	ACTION TAKEN BY PQCM	RESOLUTION	DATE COMPLETED

TETRA TECH EC, INC.

CONTRACTOR PRODUCTION REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)			
CONTRACT NUMBER N62472-99-D-0032 Contract Task Order No. 0096	TITLE AND LOCATION GM-38 Area, Bethpage, NY		Report Number
CONTRACTOR Tetra Tech EC, Inc.	SUPERINTENDENT		
AM WEATHER	PM WEATHER	MAX TEMP (°F) / MIN TEMP (°F)	Precip. (in)

WORK PERFORMED TODAY

REMARKS	EMPLOYER	NUMBER	TRADE	HRS

JOB SAFETY	Was a Job Safety meeting held this date?	Yes	Total work hours	
	(If yes attach copy of minutes)	No	on job site this date	0.0
	Were there any lost time accidents this date?	Yes	Cumulative Total of work	
	(If yes attach copy of OSHA report)	No	hours from previous report	
			Total work hours from start of construction	0.0

Was trenching / scaffold / HV electrical ? High work done — Yes / No
(If Yes attach statements or checklist showing inspection performed)
Was Hazardous Material / Waste released into the environment?
(If Yes attach description of incident and proposed action) — Yes / No

List of Actions taken today / safety inspections conducted.

See daily safety report

Equipment / material received today to be incorporated in job.

See material receiving report

Construction equipment on job site today, including number of hours used today.

see equipment usage report

Remarks

00-Jan-00

Contractor / Superintendent — Date

TETRA TECH EC, INC. DAILY SAFETY REPORT	Project: CTO 0096	0	
	CONTRACT:N62472-99-D-0032		
Client: U.S. Navy Engineering Field Activity Northeast			
Subcontractor(s) See Daily Production Report	Visitors to Site: See Daily Production Report		
00-Jan-00	0	MAX TEMP (°F	MIN TEMP (°F

	WORK ACTIVITY	LEVEL OF PROTECTION
1		
2		
3		
4		
5		
6		
7		

AIR MONITORING RESULTS : none

PERSONNEL ON SITE :

DAILY INSPECTIONS :		

MONITORING EQUIPMENT USED :

ACCIDENTS OR BREACH OF PROCEDURES :

PHYSICAL CONDITION OF WORKERS :

REMARKS :

NAME :	SIGNED: _____

TETRA TECH EC, INC. GM-38 Area, Bethpage, NY NAVY RAC CONTRACT NO. N62472-99-D-0032 MATERIAL RECEIVING REPORT					0 Sheet __1__ Of __1__ Date: Receiving Date
Item No.	Brief Description of Material Received	Legend	Shipping Document ID Number	Transportation / Supplier Name	Purchase Order Number
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
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38					
39					

TETRA TECH EC, INC.					
EQUIPMENT USAGE REPORT					DATE
EQUIPMENT		STATUS HRS			Task Description
TYPE, MODEL NO.	ID NO. OR SERIAL NO.	IN USE	IDLE	REPAIR	(IN USE)

TETRA TECH EC, INC. CONSTRUCTION QUALITY CONTROL REPORT	Project: CTO No. 0096	DATE:	Page 1 of 2
	Contract: N62472-99-D-0032		
	Project: GM-38 Groundwater Remediation - Bethpage, NY		
Client: U.S. Navy, Engineering Field Activity Northeast	NAVFAC Spec: N/A		
Location: NWIRP - Bethpage, NY	Contract Task Order: 0096		
Subcontractor(s): See Daily Production Report	Visitors to Site: See Daily Production Report		
	MAX TEMP (°F)	MIN TEMP (°F)	

	FIELD INSPECTIONS PERFORMED:	Spec. Section	Paragraph	V	W	P
1						
2						
3						
4						
5						
6						
7						

DOCUMENTATION SUBMITTED
1
2
3

DOCUMENTATION RECEIVED
1
2
3
4

REWORK ITEMS IDENTIFIED TODAY	REWORK ITEMS CORRECTED TODAY	DATE IDENTIFIED
1	1	
2	2	
3	3	

V = Verified - Confirmed by evidence that function or requirements are true
W = Witnessed - Personal observation while task(s) or test(s) are performed
P = Personal performance of task(s) or function(s)

CQC REMARKS:

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during the reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in the report.

SIGNED: _____

GOVERNMENT QUALITY ASSURANCE REPORT;

REMARKS AND/OR EXCEPTIONS TO THIS REPORT:

TETRA TECH EC, INC.		Contract Task Order: 0096		DATE:		PAGE 2 OF 2
NUMBER	IDENTIFICATION OF FIELD INSPECTION	SPECIFICATION SECTION AND PARAGRAPH NO.		PHASE OF CONTROL		METHOD OF INSPECTION
1	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
2	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
3	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
4	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
5	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
6	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						
7	0	SECTION: 0 PARAGRAPH: 0		PREPARATORY INITIAL FOLLOW UP	0 0 0	VERIFIED WITNESSED PERFORMED
DETAILS OF ACTIVITIES :						

TETRA TECH EC, INC.

RECORD OF QUALITY CONTROL MEETINGMINUTES

EFANE
Contract No. N62472-99-D-0032

Contract Task Order No. 0096
Project Title: GM-38 Area Groundwater Remediation

Meeting Date: _____ Meeting No.: _____

	MEETING AGENDA	✓
1.	Review Minutes of previous meeting.	
2.	Review Schedule and status of work.	
3.	Review status of submittals.	
4.	Review work to be accomplished in the next 2 weeks and documentation required.	
5.	Resolve QC and production problems.	
6.	Address items that may require revising the QC Plan	
7.		
8.		

ATTENDEES

	PRINT NAME	SIGNATURE	REPRESENTING	TITLE
1.			TtEC	Project Quality Control Manger
2.			TtEC	Project Superintendent
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

	OLD BUSINESS &ACTION ITEMS	ACTION BY:

TETRA TECH EC, INC.
REQUEST FOR INFORMATION

TO: ROICC RFI: _____ DATE: _____

Contract: N62472-99-D-0032
CTO No. 0096

Attn: _____

FROM: _____
Project Engineer/PQCM

REFERENCES: _____
DRAWING: _____
SPEC SECTION: _____

Reply Needed By: _____

QUESTION (#1):

Name: _____

REPLY: Date: _____

This reply is given with the expressed understanding that it does not constitute the basis for a change to the price or time for the contract.

If you do not concur, DO NOT PROCEED, and notify the writer immediately.

Name: _____

Title: _____

TETRA TECH EC, INC.

Change Request Form

Section 1 through 4 to be filled out by Tetra Tech EC, Inc., Section 5 to be filled out by Navy

PROJECT:	OFS No.:	Change Request Form:
EFANE CTO NO. 0096		**CRF -** **Rev.**

To: _____ Dept.: _____ Location: _____ Date: _____

Re: ☐ Drawing No. _____ Title _____

☐ Spec. No. _____ Title _____

☐ Other _____

1. DESCRIPTION *(Items involved, submit sketch if applicable)*

2. REASONS FOR CHANGE *(If from disposition of nonconformance report, list report number)*

3. RECOMMENDED DISPOSITION

☐ Technical Clarification [NTR & COTR approval required]

☐ In Scope Adjustment [COTR approval required]

☐ Out of Scope [CO & COTR approval required]

☐ Cost Growth

☐ ROM Estimate (If Applicable) $_____

☐ Schedule Impact (describe below)

TtEC Initiator (Signature/Title):

4. TtEC Project Manager (Signature)	Date	Project Superintendent Concurrence (Signature)	Date

5. NAVY DISPOSITION

☐ Approved per recommended disposition

☐ Not approved (give reason)

☐ Approved with modification(s) [describe below]

NTR Concurrence *(signature)*	Date	ROICC Concurrence *(Signature)*	Date
Contracting Officer Technical Representative Approval *(Signature)*		Contracting Officer Approval *(Signature)*	Date

Engineer signs and transmits to Resident Engineer with copies to:

_____ Project Manager

_____ Project Superintendent

_____ Quality Control

Others as Required _____

File: _____

_____

TETRA TECH EC, INC.
DESIGN CHANGE NOTIFICATION

PROJECT	PROJ. NO.	DESIGN CHANGE NO.

TO _____ DEPT. _____ LOCATION _____ DATE _____

RE: ☐ DRAWING NO. _____ TITLE _____

☐ SPEC NO. _____ PAGE _____

☐ OTHER. ANTICIPATED REVISION DATE OF FORMAL DOCUMENTS

☐ ENGINEERING "HOLD" PLACED ON CONSTRUCTION ACTIVITIES IN AREA DEFINED HEREIN PENDING RECEIPT OF FORMALLY REVISED DOCUMENT(S) AND/OR REVISED DCN, PE SIGNATURE NOT REQUIRED.

☐ RELEASED FOR CONSTRUCTION ON BASIS OF MODIFICATION(S) PRESCRIBED BY THIS DCN.

APPLICABLE DOCUMENTS WILL BE REVISED BY:

☐ HOME OFFICE ☐ SITE (Project Engineer to assign Open Engineering Item No.) _____

☐ AS-BUILT DRAWING BY RESIDENT ENGINEER'S STAFF ☐ OTHER _____

PROPOSED CHANGE

DESCRIPTION

_____

_____

_____

_____

_____

_____

REASON FOR CHANGE

☐ FIELD CHANGE REQUEST (FCR No.) _____

☐ REQUIRED MODIFICATIONS TO DESIGN OR SPECIFICATION

☐ DISPOSITION OF NONCONFORMING ITEM

☐ CHANGES IN REGULATORY OR OTHER REQUIREMENTS

☐ OPERATIONAL EXPERIENCE

☐ OTHER _____

EXHIBITS ATTACHED ☐ NO ☐ YES - IF YES, CHECK APPLICABLE BOX(ES)

☐ COPIES OF MARKED-UP AREA OF DRAWING(S)

☐ FIELD CHANGE REQUEST (FCR No. _____) ☐ OTHER (Describe)_____

COMMENTS SCHEDULED ERECTED/PLACEMENT DATE(S)_____

ORIGINATOR_____ DATE_____

DISTRIBUTION (*Check as applicable and fill in name. Indicate with an asterisk (*) personnel who are to perform a QA review.*)

☐ Project Manager_____	☐ Health and Safety_____	☐ Chemical_____
☐ Project Engineer_____	☐ Construction_____	☐ Regulatory_____
☐ Architectural_____	☐ Electrical_____	☐ Structural_____
☐ CAD_____	☐ Environmental_____	☐ Scienca (Specify)_____
☐ Building_____	☐ I&C_____	☐ PQAE_____
☐ Mechanical_____	☐ Security_____	☐ Project Supt_____
☐ Process _____	☐ Estimating_____	☐ Vendor Supt_____
☐ Civil_____	☐ Quality Assurance_____	☐ Site Manager_____

NOTE: Personnel indicated with an asterisk (*) are to perform a QA review and inform Originator of any comments, or approve and sign, as applicable, by _____ (date).

LEAD DISCIPLINE ENGINEER OR DESIGNEE (Signature)	DATE	PROJECT ENGINEER OR DESIGNEE (Signature)	DATE

QA REVIEWER (if indicated above) ☐ COMMENTS (Attached) ☐ NO COMMENTS		PROJECT MANAGER (After acceptance of all reviews)	
SIGNATURE	DATE	SIGNATURE	DATE

FIELD EVALUATION

☐ IMPLEMENT RECOMMENDED DISPOSITION ☐ DEFER RECOMMENDED DISPOSITION

_____ _____

RESIDENT ENGINEER (signature) DATE

Tetra Tech EC, Inc.
GM-38 Area, Bethpage, NY
CTO 0096
List of Definable Features of Work

Task 1 – Mobilization and Demobilization

a. Mobilization
b. Site Setup
c. Office Facilities
d. Demobilization

Task 2 – Site Work

a. Equipment/Material Storage Area
b. Erosion Control
c. Clearing and Grubbing (including construction of Temporary Access Road)
d. Construction of Permanent Access Road
e. Pre-Design Cleanup (includes Landscaping, Tree Plantings, installation of fence along NYSDOT right-of-way)
f. Surveying
g. Building Perimeter Fencing
h. Shoring to support and Excavation of Interior Building Sumps (2)

Task 3 – Treatment Plant Building Footings & Foundations

a. Plant Concrete and Reinforcement
b. Pre-Engineered Steel Building (75' x 75' x 25')

Task 4 – Treatment Building Systems

a. Building Utilities
b. Building Fire and Security Systems

Task 5 – Extraction System

a. Trench Excavation and Backfilling and Compaction
b. Pipe and conduit from Treatment Bldg. to Recovery Wells (2)
c. Pre-cast concrete vaults with Aluminum doors
d. Submersible Well Pumps
e. Carbon Steel Pipe in Well Vaults with Heat Trace
f. Pipe and Pump Support Systems in Well Vaults
g. Pre-cast well vaults for future expansion (2)

Task 6 – Injection System

a. Install three (3) Additional Injection Wells each to a depth of 210 feet bgs
b. Pre-cast concrete vaults with Aluminum doors (3)
c. Trench Excavation and Backfilling and Compaction
d. Pipe and conduit from Treatment Bldg. to Injection Wells (4)

Tetra Tech EC, Inc.
GM-38 Area, Bethpage, NY
CTO 0096
List of Definable Features of Work

Task 7 – Groundwater Treatment Equipment

a. 20,000 gallon Equilization Tank w/ Ladder & Mixer
b. Chemical Feed System
c. Erect Air Stripping Tower
d. Remove old Tower Packing and Replace with New
e. Particulate Filtration Unit with Filters
f. 20,000 lb Liquid-Phase Carbon Vessels (2)
g. 18,000 lb Vapor-Phase Carbon Vessels (3)
h. Centrifugal Process Pump/Sump Pumps
i. Air Compressor/Drier System
j. Air Steam Heaters

Task 8 – Electrical (including MCC)/Mechanical Construction

Task 9 – Process Control System

Task 10 – Site Grading/Restoration

Task 11 – System Startup and Shakedown

Task 12 – Prepare and Implement Operation, Maintenance and Monitoring (OM&M) Plan

a. Install 6 new groundwater monitoring wells
b. Well Vaults

Task 13 – Off-Site Transportation & Disposal

a. Cleared and Grubbed Material
b. General Trash/Construction Debris
c. Drill Cutting in Roll-off Boxes
d. Development/Purge Water in 21,000 gallon Frac Tanks (4)
e. Renew POTW Discharge Permit
f. Old Stripper Tower Packing

TETRA TECH EC, INC.

PREPARATORY INSPECTION CHECKLIST

CONTRACT No:N62472-99-D-0032 CTO NO. 0096 DATE: _____

TITLE: _____ SPEC SECTION: _____

MAJOR DEFINABLE SEGMENT OF WORK _____

A. PERSONNEL PRESENT:

	NAME	POSITION	COMPANY
1.			
2.			
3.			
4.			
5.			
6.			

(List additional personnel on reverse side)

B. SUBMITTALS INVOLVED REVIEW - SPECIFICATIONS AND DRAWINGS:

	NUMBER & ITEM	CQ APPROVAL	NAVY APPROVED
1.			
2.			
3.			
4.			
5.			
6.			

B.1 HAVE ALL ITEMS BEEN APPROVED? YES: _____ NO: _____

B.2 WHAT ITEMS HAVE NOT BEEN APPROVED?

	ITEM	STATUS
1.		
2.		
3.		
4.		
5.		

C. ARE ALL MATERIALS ON HAND? YES: _____ NO: _____

C.1 ARE ALL MATERIALS ON HAND IN ACCORDANCE WITH APPROVALS?
YES: _____ NO: _____

C.2 ITEMS NOT ON HAND OR NOT IN ACCORDANCE WITH SUBMITTALS:

1. _____
2. _____
3. _____

D. TESTS REQUIRED IN ACCORDANCE WITH CONTRACT REQUIREMENTS:

	TEST	PARAGRAPH
1.		
2.		
3.		

E. ACCIDENT PREVENTION PREPLANNING - HAZARD CONTROL MEASURES:

E.1 WHAT ARE THE HAZARDS AND CONTROLS? (or attach activity hazard analysis)

1. _____
2. _____
3. _____
4. _____

F. EXAMINED THE WORK AREA TO ENSURE THAT THE REQUIRED PRELIMINARY WORK HAS BEEN COMPLETED. YES: _____ NO: _____

G. DISCUSSED THE PROCEDURES FOR CONTROLLING QUALITY OF THE WORK INCLUDING REPETITIVE DEFICIENCIES. YES: _____ NO: _____

H. DISCUSSION OF THE INITIAL CONTROL PHASE.
YES: _____ NO: _____

_____
QUALITY CONTROL MANAGER

Tetra Tech EC, Inc.

INITIAL INSPECTION CHECKLIST

OBSERVE THE INITIAL SEGMENT OF THE DEFINABLE FEATURE OF WORK TO ENSURE THAT THE WORK COMPLIES WITH CONTRACT REQUIREMENTS.

CONTRACT No: N62472-99-D-0032 CTO.: 0096 DATE: _____

TITLE: _____ SPEC SECTION: _____

MAJOR DEFINABLE SEGMENT OF WORK: _____

DESCRIPTION AND LOCATION OF WORK INSPECTED: _____

_____

REFERENCE CONTRACT DRAWINGS: _____

A. PERSONNEL PRESENT:

	NAME	POSITION	COMPANY
1.			
2.			
3.			
4.			
5.			
6.			

(List additional personnel on reverse side)

B. MATERIALS BEING USED ARE IN STRICT COMPLIANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS: YES: _____ NO: _____

IF NOT, EXPLAIN _____

_____

_____

C. PROCEDURES AND/OR WORK METHODS WITNESSED ARE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS:

YES: _____ NO: _____

IF NOT, EXPLAIN _____

_____

_____

D. WORKMANSHIP IS ACCEPTABLE: YES: _____ NO: _____

STATE AREAS WHERE IMPROVEMENT IS NEEDED: _____

_____

E. ENSURE THAT TESTING HAS BEEN PERFORMED BY APPROVED LABORATORY:

YES: _____ NO: _____

F. SAFETY VIOLATIONS AND CORRECTIVE ACTION TAKEN: _____

_____

REPEAT THE INITIAL PHASE FOR EACH NEW CREW TO WORK ON-SITE, OR WHEN ACCEPTABLE LEVELS OF SPECIFIED QUALITY ARE NOT MET.

_____

QUALITY CONTROL MANAGER