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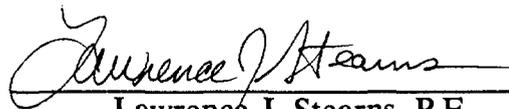
QUALITY CONTROL PLAN
BUILDING 121 REMEDIATION
U.S. NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

Prepared for:

Department of the Navy Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia
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20 January 1994
OHM Project No. 15591

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1

QC Organization Structure

1.0 QUALITY CONTROL ORGANIZATION

OHM Remediation Services Corp. (OHM), a subsidiary of OHM Corporation, is contracted by the U.S. Department of the Navy (LANTDIV) to provide remediation of Building 121 at U.S. Naval Station Roosevelt Roads, Cieba, Puerto Rico. The purpose of this is to present the practices that will be implemented for quality control (QC) during the Building 121 remediation work. This Contractor Quality Control Plan (CQCP) is prepared in accordance with NAVFAC Specification No. 05-93-3199 (as amended) Section 01010 - Part 3.6.5 and the Basic Contract Part 6.0 - Quality Control.

1.2 WORK DESCRIPTION

The scope of work generally includes: preparation of various pre-construction, construction, and post-construction plans and submittals; attendance and participation at pre-construction and various other meetings; mobilization and demobilization; site preparation; cleaning the interior surfaces of Building 121; various sampling and analyses for air, soil, water, and concrete media; removing a portion of the concrete from the surface of the building floor; excavating contaminated soil outside the building; transportation and disposal of generated hazardous and non-hazardous wastes; erosion and sediment control; health and safety control; quality control; site restoration; and incidental work. Further discussion of the work and its implementation can be found in the OHM Work Plan.

1.3 DUTIES, RESPONSIBILITIES, AUTHORITIES OF QUALITY CONTROL PERSONNEL

OHM will implement the CQCP by establishing a QC organization which reports directly to the Navy's on-site representative and the OHM Project Manager. The QC basic organization will consist of the site superintendent who will be on the job site while work is in progress to verify compliance with the contract requirements, the program QC manager, and the project manager. OHM recognizes that the NTR reserves the right to replace a member of the QC staff who, in the opinion of the NTR, is not accomplishing their assigned duties.

The CQCP includes an inspection system, which will be available for review prior to the start of construction and throughout the life of the project. The inspection and testing processes will monitor the overall quality of work, and project controls will be instituted to assure correction of deficiencies identified during the inspections and testing. Project scheduling will be instituted to assure proper sequence and performance of work activities.

The NTR will be notified in writing prior to proposed changes to the CQCP, and the proposed changes will be subject to the NTR's approval prior to implementation.

1.0 QUALITY CONTROL ORGANIZATION

1.1 PURPOSE

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OHM's QC organization chart for Delivery Order 004 is included as Figure 1. The responsibilities of each key person identified in the QC organization are presented below.

1.3.1 Program Manager, George E. Krauter, P.E.

The program manager has ultimate responsibility for QC of project deliverables. Specific responsibilities include:

- Reviewing all deliverables prior to submittal
- Communicating with project manager to ensure project schedule and scope compliance
- Communicating with contracting officer (CO), contracting officer's technical representative (COTR), and/or NTR on a regular basis to review project progress and contract compliance
- Reviewing program QC procedures
- Providing cost accounting updates to verify project is within budget.

1.3.2 Project Manager, Lawrence J. Stearns, P.E.

The project manager is responsible for:

- Providing deliverables which are both responsive and on schedule
- Reviewing all project activities including, but not limited to, sampling, decontamination, documentation, chain-of-custody procedures, site rules and compliance, and compliance with the OHM site-specific health and safety plan and the work plan
- Monitoring project progress to ensure schedule and budget maintenance
- Ensure CQCP is being performed.

1.3.3 Site Superintendent, Brien Kilkenny

The site superintendent is responsible for day-to-day on-site activities. He communicates with the project manager to update him on project progress and QC activities.

1.3.4 Program Quality Control Manager, Mike Gillman

The program QC manager is responsible for delivery order quality and, for this delivery order, will provide support to the project manager on an as-needed basis. If an independent site audit were to take place during site activities, the QC representative would perform the audit. The program QC manager will oversee work performed by the site QC representative. The QC manager will also monitor the correction of any nonconforming work. He will also be responsible for reviewing the laboratory QC program to ensure its conformance with the contract program requirements.

1.3.5 Quality Control Representative, Brien Kilkenny

The responsibilities of the QC representative will include:

- Perform, or cause to be performed, daily inspections and tests of the scope and character necessary to achieve the quality of construction outlined in the plans and specifications for work under the contract.
- Maintain the latest applicable drawings and specifications with amendments and/or approved modifications at the job site and assure that they are used for shop drawings, fabrication, construction, inspections, and testing.
- Maintain marked-up drawings at the site depicting as-built conditions. The drawings will be available for review by the NTR at all times.
- Maintain a Government furnished submittal register for the duration of the contract. A review of the register will be performed at least every 14 days in conjunction with the scheduled dates on the register and in relation to the actual work status. Appropriate actions will be undertaken should slippages or other changes so necessitate.
- Review shop drawings and/or other submittals for compliance with the contract requirements prior to their transmission to the Navy.
- Perform or cause to be performed, inspection of the work for compliance with the HASP. Deficiencies and/or violations will immediately be brought to the attention of the site supervisor/health and safety officer.
- Authorization to temporarily shut down a portion of work after consultation with the project manager if work practices or procedures are determined to be incorrect or out of compliance with the specifications.
- Authorization to stop a work task or series of tasks after consultation with the project manager and NTR in the event that severe weather conditions interfere with quality of work.

- Responsible for testing construction and backfill materials for compliance with specifications and authorized to reject materials to be used if they are not in compliance.
- Establish and maintain a Rework Items List program and a tracking and/or suspense system to monitor and assure inspection and testing activities and frequencies are in accordance with the contract requirements. This list will be submitted with the daily QC Report, as appropriate.
- Attend and assist the Government at the prefinal inspection and the final acceptance inspection.
- Assist in preparing Contractor Production Report.
- Prepare and submit daily Contractor QC Report.
- Prepare, maintain, and continually update the Testing Plan and Log for the field activities.

Copies of the Contractor Production Report, Contractor QC Report, and Testing Plan and Log are provided in Appendix B. Alternate formats of these forms may be used as substitutes.

2.0 REVIEWING, APPROVING, AND MANAGING SUBMITTALS

The OHM project manager is the person responsible for reviewing, approving, and managing submittals for the pre-construction, construction, and post-construction phases of the remediation. Prior to commencement to field activities, completion and submittal of all applicable pre-construction submittals will be verified as presented on the Pre-Construction Submittal Register by the OHM project manager. All information contained in each submittal will be reviewed and certified in compliance with the Contract requirements. Once field activities have begun, the OHM project manager will maintain contact with the OHM site superintendent and program QC manager to ensure that all requirements for construction submittals are being met. Finally, all post-construction submittals will be reviewed and certified as required by the Contract documents in conjunction with the OHM site superintendent and OHM site QC manager.

3.0 METHODS OF INSPECTION

A three-phase control system will be implemented for each major work task and will include preparatory, initial, and followup inspections. The QC representative will assure that no work proceeds until the appropriate inspection phase has been performed. In addition to and independent of the QC representative, the SSO and site supervisor will implement this same control system as part of their normal duties/responsibilities. The inspection phases are discussed in the following paragraphs.

A preparatory inspection will be performed by the QC representative prior to beginning physical work. This will include a review of contract requirements; a check of the data sheets to assure that materials and/or equipment have been tested, submitted, and approved; a check to assure that provisions for required control testing have been made; examination of the work area to ascertain that preliminary work has been completed; and a physical examination of materials and drawings or submittal data and that materials and/or equipment are on hand.

As a part of this preparatory work, the QC representative will review shop drawings, certificates, and other submittal data prior to submission to the NTR. Each submittal presented to the NTR will bear the date and the signature of the QC representative indicating that the submittal has been reviewed and is in compliance with plans and specifications or show the required changes to meet the specifications. The NTR will be notified a minimum of 24 hours prior to the beginning of the preparatory inspection.

An initial inspection will be performed by the QC representative as soon as a representative segment of the particular item of work has been accomplished. The initial inspection will include examination of the quality of workmanship and a review of control testing results for compliance with contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.

Follow-up inspections will be performed by the QC representative daily or as frequently as necessary to assure continuing compliance with contract requirements, including control testing, until completion of the particular segment of work.

Safety inspections will be performed by the site safety officer and/or the QC representative on a daily basis to assure compliance with occupational health and safety requirements of the contract. Daily QC reports will be used to document the safety inspection and other inspections, and will address the safety deficiencies observed and corrective actions taken.

In addition to this three-phase inspection control system, special inspections or testing may be conducted in the event of an approved change or modification to work plans or field operations. The QC representative will coordinate scheduling of special

inspections with the Contracting Officer at the time when a change or modification in work operations has been approved.

It is OHM's responsibility to identify and correct deficiencies in the work. To ensure that defective work is corrected and not built upon, a Rework Items System will be implemented. Rework items identified in the work during any of the inspections or testing programs by a party to this contract will be corrected as soon as practicable and recorded by completing a Rework Items List. The list will be issued to the site supervisor and a copy attached to the inspection report. The QC representative will be responsible for obtaining correction by the responsible party and will return the notice report upon correction with a description of the action taken and date completed. The list will be updated accordingly. Rework items will be corrected prior to the final inspection.

4.0 SAMPLING PROCEDURES

Project sampling procedures are given in the Field Sampling and Analysis Plan (FSAP).

5.0 THIRD-PARTY QUALITY CONTROL ORGANIZATION

The third-party QC organization is responsible for duties outlined in Part 7.4.5 of the Contract. For this remediation project, the third-party QC organization is Pedro Panzardi and Associates of Santurce, Puerto Rico.

6.0 MOBILIZATION AND SITE PREPARATION

The OHM project manager will verify that all pre-construction submittals have been submitted and approved prior to site mobilization as outlined on the Pre-Construction. These include:

- Submittal Register
- EQB Permit (E&SP)
- Environmental Protection Plan
- Environmental Condition Report
- Schedule
- Contractor QC Plan
- Testing Labs SOQ's
- Digging Permit
- Work Plan
- Health and Safety Plan
- Field Sampling and Analysis Plan
- Waste Transportation and Disposal Plan
- Equipment Decontamination Plan.

7.0 BUILDING DECONTAMINATION

The following outlines the QC requirements for Building 121 decontamination. The task of decontamination of Building 121 include initial pre-cleaning of the entire building interior, cleaning of all interior surfaces using a high-pressure washer, scabbling of the interior concrete floor (if applicable), storing and analyzing of all rinse and wash waters, and transport and disposal of wash and rinse waters and scabbled concrete.

7.1 PRE-WASH OF BUILDING INTERIOR

The pre-wash of the building interior includes sampling and testing rinse water. The OHM QC manager will verify that all pertinent submittals relating to the pre-wash of the building have been submitted or will be submitted at the appropriate time. Specific forms and submittals to be provided relating to the pre-wash of the building include:

- SD-08 Clean Certification of Equipment (as per Section 02225, Part 1.2.3)
- SD-08 Clean Certification of Materials (as per Section 02220, Parts 1.3.1 and 2.2 (a/b))
- Test Result Summary Reports (as per Section 01010, Part 3.6.8)
- SD-10 Test Reports (as per Section 02225, Part 1.2.2).

7.1.1 Analytical Test Requirements

Upon collection of wash waters, OHM will obtain a wash water composite sample according to Part 3.6.2 - Initial Water Sampling and Analysis of Section 02225 of the specifications for categorizing initial wash waters as hazardous or non-hazardous. Refer to the Field Sampling and Analysis Plan (FSAP) for action levels for each parameter.

7.1.2 Analytical Test Methods and Documentation

The composite sample for the initial floor washing will be tested according to practices and requirements presented in Method SW-846. Appendix C includes the forms required upon collection of the sample for documentation purposes. Refer to the FSAP for procedures and equipment to be used for this sampling.

7.2 PRESSURE WASHING OF ALL SURFACES

The pressure washing of all surfaces includes completing up to three complete cycles of sampling upon completion of each of three individual pressure washes. The OHM QC manager will verify that all pertinent submittals relating to the pressure washing of all surfaces, rinsing of these surfaces, and wipe samples been submitted or will be submitted at the appropriate time. Specific forms and submittals to be provided relating to the pressure washing of all interior surfaces include:

- SD-08 Clean Certification of Equipment (as per Section 02225, Part 1.2.3)
- SD-10 Test Reports (as per Section 02225, Part 1.2.2).

7.2.1 Analytical Test Requirements

Upon collection of wash waters, OHM will obtain a wash water sample according to Part 3.6.4 - Subsequent Water Sampling and Analysis of Section 02225 of the specifications. Upon rinsing the entire building interior, OHM will collect rinsate samples for analysis according to Part 3.6.4. Wipe samples will be collected after each high-pressure washing according to Part 3.6.5 - Wipe Sampling of the Floor.

7.2.2 Analytical Test Methods and Documentation

The composite samples for the high-pressure washing, rinsing, and wipe samples will be collected according to practices and requirements presented in the FSAP. Refer to the FSAP for procedures and equipment to be used for this sampling.

7.3 SCABBLING OF THE ENTIRE CONCRETE FLOOR

The OHM QC manager will verify that all pertinent submittals relating to the floor scabbling process have been submitted or will be submitted at the appropriate time. Specific forms and submittals to be provided relating to the concrete floor include:

- SD-08 Clean Certification of Equipment (as per Section 02225, Part 1.2.3)
- SD-10 Test Reports (as per Section 02225, Part 1.2.2).

7.3.1 Analytical Test Requirements

Upon completion of all floor cleaning events, OHM will obtain chip samples according to the requirements outlined in the FSAP. The chip samples collected for the final washing will be analyzed for TCLP analysis for the following parameters listed in Table 2 of the specifications.

OHM will conduct wipe sampling as described in the FSAP. The wipe samples collected for the final washing include will be analyzed for parameters presented in Table 1 of the specifications.

7.3.2 Analytical Test Methods And Documentation

The chip samples will be analyzed using the Toxicity Characteristics Leachate Procedure (TCLP) method as listed in the FSAP. Wipe samples will be analyzed using SW-846 methods and listed in the FSAP. Refer to the FSAP for procedures and equipment to be used for this sampling.

8.0 SOIL REMEDIATION

The following outlines the QC requirements for the soil outside Building 121 decontamination. The tasks of remediation of the soil include collection of soil samples prior to excavation, excavate soil, containerize soil, properly dispose of soil, collect verification soil samples from bottom of excavation, backfill excavation, seed and restore the backfilled excavation.

8.1 BORROW SOURCE

The geotechnical and analytical requirements remediation of the soil outside Building 121 include chemical screening of the clean off-site borrow source, and verification that the backfill material meets the physical properties set forth in the specifications. The OHM QC manager will verify that all pertinent submittals relating to the off-site borrow source screening process have been submitted or will be submitted at the appropriate time. Specific forms and submittals to be provided relating to the off-site borrow source screening process include:

- Test Result Summary Reports (as per Section 01010, Part 3.6.8)
- SD-10 Test Reports (as per Section 02225, Part 1.2.2)
- Imported Material Testing [as per Section 02220, Parts 2.2(b) and (c)].

8.1.1 Geotechnical Testing Requirements

OHM will collect soil samples as per Part 2.1.2 - Backfill and Fill Materials, Part 2.1.3 - Topsoil, and Part 2.1.3 - Sand of Section 02220 and test for the following parameters:

- Backfill
 - Classification
 - Liquid Limit
 - Plasticity Index
 - Sieve Analysis
- Topsoil
 - Ph Range
- Sand
 - Classification.

OHM will certify that the off-site borrow materials is in accordance with Part 2.2 of Section 02220 - General Excavation, Filling, and Backfilling of the specifications.

8.1.2 Geotechnical Test Methods And Documentation

The geotechnical testing laboratory will use the following test methods:

- Aggregate Sampling
- Classification
- Grain Size Analysis
- Liquid Limit
- Plasticity Index
- Sieve Analysis (ASTM D1140).

Appendix C includes the forms required upon collection of the sample for documentation purposes. Refer to the FSAP for methods, procedures, and equipment to be used for this sampling.

8.1.3 Chemical Screening Requirements

OHM will collect soil samples as required in Part 2.2, Section 02220 of the specifications. These samples will be analyzed for RCRA characteristics and the TCL/TAL list of compounds. The results of this analysis will be submitted to the NTR for approval of the borrow soil.

Appendix C includes the forms required upon collection of the samples for documentation purposes. Refer to the FSAP for procedures and equipment to be used for this sampling. The OHM QC manager will certify that the off-site borrow materials is in accordance with Part 2.2 - Imported Material of Section 02220 - General Excavation, Filling, and Backfilling of the specifications.

8.2 EXCAVATION AND BACKFILLING

The requirements for excavation and backfilling of the soil outside Building 121 include verification of initial borrow material physical characteristics, lift placement thickness, and initial soil analytical sampling as set forth in Parts 2.2 and 3.0 of Section 02220 of the specifications. The OHM QC manager will verify that all pertinent submittals relating to the off-site borrow source screening process have been submitted or will be submitted at the appropriate time. Specific forms and submittals to be provided relating to the excavation and backfilling of the soil outside Building 121 include:

- Test Result Summary Reports (as per Section 01010, Part 3.6.8)
- SD-10 Test Reports (as per Section 02225, Part 1.2.2)
- Imported Material Testing [as per Section 02220, Parts 2.2(b) and (c)].

8.2.1 Geotechnical Test Requirements

OHM will collect one soil sample from the borrow source as per Part 3.5 - Compaction of Section 02220 and test for the following parameters:

- Moisture-Density Relations of Soils And Soil Aggregate Mixtures - OHM will verify in-place density of backfilled material with:
 - Test Methods for density of soil and soil aggregate in-place by nuclear methods (shallow Depth) (ASTM D 2922) - achieve 85% of Standard Proctor
 - Test Method for moisture content of soil and soil aggregate in-place by nuclear methods (shallow depth) (ASTM D 3017).

OHM will verify that all lifts are placed and compacted in 6-inch lifts through the use of a depth checking device.

8.2.2 Geotechnical Test Methods and Documentation

The geotechnical testing laboratory will use the following test methods:

- Moisture-Density Relations of Soils And Soil Aggregate Mixtures (ASTM D 698)
- Method of Laboratory Determination of Water (Moisture) Content, of soil, rock, and soil aggregate mixtures (ASTM D 2216)

Appendix C includes the forms required upon collection of the samples and completion of in-place density relationships for documentation purposes. Refer to the FSAP for procedures and equipment to be used for this sampling and testing.

8.2.3 Analytical Test Requirements

OHM will perform initial soil sampling according to Part 3.7.1 of Section 02225 of the specifications, disposal analysis according to Part 3.7.2, and final verification sampling according to Part 3.7.4. Refer to the FSAP for locations, action levels, and parameters.

8.2.4 Analytical Test Methods and Documentation

All sampling and analysis will be performed in accordance with the requirements of SW-846 and the FSAP. Appendix C includes the forms required upon collection of the sample for documentation purposes. Refer to the FSAP for procedures and equipment to be used for this sampling.

9.0 REVIEW OF CONSTRUCTION CONTROL DATA

The QC representative will review the remediation QC data to verify that remediation specifications are being met, to determine when defective material or work may require removal and/or reconstruction, and to determine when additional testing may be required to confirm the quality of the material or work. The review will be made on a daily basis to prevent the construction of new work over defective material or work which is later found to be defective.

10.0 AS-BUILT DOCUMENTATION

All appropriate documentation will be retained in the project records system to provide documentation of how the remedial action was actually built. Final as-built drawings and specifications will be prepared utilizing this information and retained as a permanent record of the final location, dimensions, and orientation of the construction.

At contract closeout, record documents will be delivered to the NTR. A transmittal letter in duplicate accompanying the submittal will contain:

- Date
- Contract name and number
- Contractor's name, address, and telephone number
- Number and title of each record document
- Signature of contractor or his authorized representative.

11.0 INSPECTION AND TESTING DOCUMENTATION

Daily records of inspections and tests performed for each shift or subcontractor operation will be signed by the QC representative and the original and one copy provided to the Government no later than the next working day. Samples of reports, and forms to be utilized are included in Appendix C.

The QC representative will prepare a daily CQC report/production report which will include, as a minimum, the following:

- Project identification.
- Data on weather and any delays attributable to such weather.
- Number of personnel on site (OHM and subcontractors).
- A listing of construction equipment and indication of equipment usage on the report day.
- Factual evidence that continuous QC inspection and tests have been performed. This includes, but is not limited to the following data:
 - Type and number of inspections or tests performed
 - Results of inspections or tests including computations
 - Evaluation of test results--accept or reject work
 - Nature of defects, if present
 - Causes for rejection
 - Safety inspections/violations
 - Proposed remedial action
 - Corrective actions taken.
- The records will cover both conforming and nonconforming work.
- A statement that supplies and materials incorporated into the work are in full compliance with the requirements of the contract.

12.0 MEETINGS/COORDINATION

12.1 COORDINATION AND MUTUAL UNDERSTANDING MEETING

After submission of the QC plan and prior to the start of construction, OHM's project manager, QC manager, and QC representative will meet with the COTR to discuss the QC program required by this delivery order. The purpose of this meeting is to develop a mutual understanding of the QC details, including forms to be used; administration of on-site and off-site work, and coordination of the OHM management, production, and the QC representative's duties with the NTR. Minutes of the meeting will be prepared by the QC manager and signed by both OHM and the COTR.

12.2 QUALITY CONTROL MEETINGS

After the start of construction, the OHM QC manager will conduct QC meetings once every two weeks or as required by the COTR/delivery order at the work site, or where specified, with the project superintendent and the foreman responsible for the upcoming work. The OHM QC manager will prepare the minutes of the meeting and provide a copy to the COTR within 2 working days after the meeting. The COTR may attend any of these meetings. The QC manager will notify the COTR at least 48 hours in advance of each meeting. As a minimum, the following will be accomplished at each meeting:

- Review the minutes of the previous meeting.
- Review the schedule and the status of work:
 - 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 2 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 QC plan:
 - Changes in procedures.

13.0 TRANSPORT AND DISPOSAL OF WASTES

Refer to the Waste Transportation and Disposal Plan (WTDP) for details outlining the QC requirements for storage, transport, and disposal of all waste materials to permanent disposal facilities. The task of transport and disposal of wastes includes furnishing proper the labor, equipment, materials, maintain proper records, temporary storage of materials, transportation, and disposal of all waste materials.

14.0 REWORK ITEMS

When a condition adverse to quality is noted by the OHM QC manager, Contracting Officer, or any other personnel during the remediation work, the condition will immediately be brought to the attention of the OHM site superintendent and QC manager. The cause of the condition will be determined and corrective action taken to remedy the situation and avoid repetition. It is OHM's responsibility to correct and document the work.

Corrective actions may be initiated under the following circumstances:

- Predetermined acceptance standards are not attained
- Procedures for compiled data are discovered to be faulty
- Equipment or instrumentation is found to be defective
- Samples and test results cannot be validated
- Quality assurance requirements have been violated
- Designated approvals have been circumvented.

FIGURE

PLOT SCALE: 1" = 1"

OHM CORPORATION PITTSBURGH, PA	DRAWN BY <i>B.O'Connor</i> 1-17-94	CHECKED BY	APPROVED BY	DRAWING NUMBER 15591-A1
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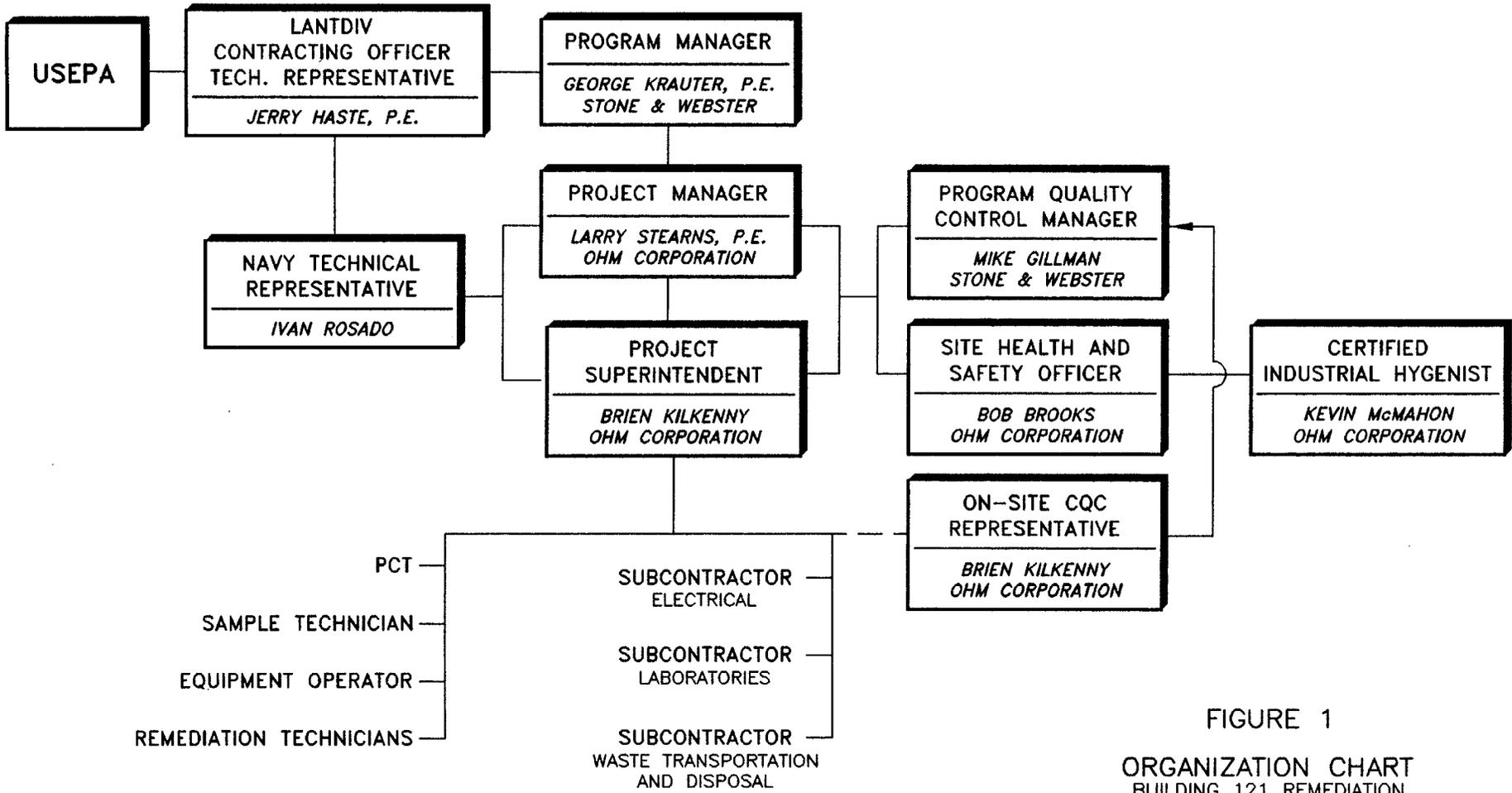
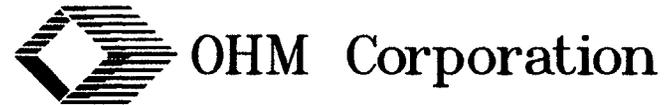


FIGURE 1

ORGANIZATION CHART
BUILDING 121 REMEDIATION
U.S. NAVAL STATION - ROOSEVELT ROADS

PREPARED FOR

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION - NAVFAC
NORFOLK, VIRGINIA



APPENDIX A
QC MANAGER QUALIFICATIONS

PROFESSIONAL PROFILE

BRIEN J. KILKENNY

TITLE

Project Manager

ACADEMIC BACKGROUND

B.S., Liberal Arts, University of New York, 1985

Course work in chemistry, physics, calculus, and computer science,
University of New York

EXPERTISE

Remedial construction management, oil and hazardous spill
response

Mr. Kilkenney joined OHM in 1987 with 4 years of previous experience. As a project manager, he is responsible for developing work scopes, estimates, and schedules; providing client relations; maintaining financial and technical performance; interacting with regulatory agencies; and preparing proposals and reports. He has previously been an account representative and site superintendent with OHM. He is familiar with CERCLA, RCRA, FWPCA, CWA, USEPA, and DOT regulations and has worked with USEPA officials and OSCs on various hazardous material responses.

Mr. Kilkenney held numerous positions with the USCG as a pollution investigator. He has worked in all phases of oil and hazardous materials responses. As a lead investigator for the USCG, he supervised a staff of six investigators in emergency response and site-assessment activities and prepared monitoring studies.

Mr. Kilkenney has managed remedial activities and emergency responses at factories, steel mills, warehouses, truck terminals, foundries, railroad yards, chemical and petroleum facilities, and laboratories. His on-site technical experience includes drum recovery and repackaging, sludge stabilization, impoundment construction, wastewater and ground-water treatment, PCB-cutting/bulking, hazardous waste disposal, filtration, air-monitoring, soil excavation, decontamination, derailments, and shock-sensitive/explosive/reactives handling and disposal. He is familiar with all types of personal protection equipment and is experienced in cost control and federally funded projects. Project-specific experience includes:

- Managed decontamination of steel mill including: removal of contaminated electrical substation, decontamination of galvanizing operation, decontamination of electric arc furnaces, contaminated soil excavation, and disposal of wastes. Superfund project.
- Managed closure of plating facility comprising decontamination of tanks, process equipment, and structures; excavation of contaminated soil, water treatment, and disposal of wastes. Superfund project.
- Managed RCRA-closure of settling lagoon including stabilization, backfill, geosynthetic and clay caps, and requisite reports. Managed crew of engineers, equipment operators, and laborers.

- Managed PCB decontamination segment of \$7-million steel mill modernization project; project included equipment decontamination, concrete removal/replacement, piping/hydraulic system decontamination. Project coordinated with mill operation to facilitate decontamination without requiring mill shutdown.
- Managed an emergency diesel oil cleanup project on the Ohio River; responsible for approximately 120 personnel (equipment operators, recovery technicians, and subcontractors); supervised crew conducting containment, vacuum recovery, and cleanup operations of the spilled product; total of over 4 million gallons of diesel fuel had been released.
- Supervised an emergency response cleanup involving the treatment of 12 million gallons of water from a lagoon following a chemical leak; supervised crews consisting of sampling technicians and laborers conducting treatment and analysis of the water and approximately 10,000 gallons of biological sludge.
- Project manager on a Ravenswood, West Virginia, site; retrofitted ponds with RCRA liners, directed excavation, cleaned tanks and piping, and stabilized over 16,000 cubic yards of sludge containing lead and fuel oils; supervised multidisciplinary crews consisting of engineers, equipment operators, laborers, and truck drivers; directed client and subcontractor interactions, QA/QC, and cost-accounting activities; project lasted 7 months
- Managed closure of an abandoned chemical treatment plan which involved recovery and bulking of 600 drums, excavation and shearing of 26 product tanks, demolition of buildings, and installation of a 60,000 cubic yard clay cap
- Supervised PCB water treatment and facility decontamination project; approximately 80,000 gallons of PCB/oil were detected; treated over 300,000 gallons of water; supervised, planned, and implemented decontamination protocols
- Supervised a Portsmouth, Ohio, site which involved the overpacking of 60 leaking drums, decontamination of railcars, and the neutralizing and disposing of the chemical cyclohexylamine; responsible for overall project supervision, development of work plans, and initial site assessment
- Site supervisor responsible for the recovery, staging, bulking, and shredding of 2,000 drums of paint solvents; directed crew of equipment operators and samplers; 2-month project

SPECIALIZED
TRAINING

OHM site safety and related training

OHM supervisor's training

OHM project management training

Marine Science Technical Course, chemistry, physics, meteorology, geology, mathematics, oceanography, and computer science, USCG

Marine Safety Petty Officer Course, vessel traffic movement, vessel boarding, segregation environmental investigations, federal regulations, oil spill response, hazardous chemical response, toxicological problems, respiratory and personal protection, flammable and toxic vapor detection and measurement, and hazardous chemical transportation, USCG

Marine Environmental Protection Course, environmental protection, oil pollution, contingency planning, role of on-scene coordinator, containment and cleanup procedures, and chemical identification, USCG

Hazardous Material Incident Response Course, response team function, respiratory protection, protective clothing, field-monitoring instruments, hazard analysis, toxicology, response organization, and standard operating safety guidelines, USEPA

Incident Mitigation and Treatment Methods Course involving containment, treatment, and disposal of hazardous materials; incident mitigation; treatment technologies, hazard evaluation, physical, chemical, biological treatment; disposal options; and safety during response operations, USEPA

USMC Non-Commissioned Officer Course, Quantico, Virginia, 1975

SELECTED
PUBLICATION

Kilkenny, B., J., "Response, Containment, and Cleanup: The Pittsburgh Oil Spill", Proceedings of Pittsburgh's Oil Spill: Past Response/Future Plans, March 1989.

APPENDIX B

LETTER APPOINTING QC MANAGER

(To be provided.)

January 18, 1993

Contracting Officer
Department of the Navy Atlantic Division
Naval Facilities Engineering Command
Norfolk, VA

RE: AUTHORIZATION OF OHM ON-SITE CQC REPRESENTATIVE
U.S. NAVAL FACILITIES, ROOSEVELT ROADS, PUERTO RICO
LANTDIV RAC CONTRACT NO. N62470-94-D-3032
OHM PROJECT NO. 15591

Dear Sir/Madam:

This letter authorizes that _____ meets the necessary qualifications to act as the on-site CQC Representative for the remediation of Building 121, U.S. Naval Station, Roosevelt Roads, Puerto Rico under LANTDIV RAC Contract No. N62470-93-D-3032, Delivery Order No. 004.

If you require further information or clarification on this matter, please do not hesitate to contact either myself or Mr. Lawrence Stearns, P.E., Project Manager.

Respectfully submitted,

Frank McBride
Vice President and Officer

FM:pjm

APPENDIX C
TESTING LOGS/QC FORMS



OHM Corporation

PREPARATORY INSPECTION CHECKLIST

Project No. _____ Date _____

Project Name _____

Task Name _____

Specification Section _____ Contract Number _____

A. Personnel Present:

<u>Name</u>	<u>Position</u>	<u>Comapny</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Transmittals Involved:

<u>Number and Item</u>	<u>Code</u>	<u>Contractor or Government Approval</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Have all Items Involved been Approved? Yes No

List Items that have not been Approved

<u>Item</u>	<u>Status</u>
_____	_____
_____	_____
_____	_____

C. Are all Materials on Hand in Accordance with Approvals? Yes No

List Items not on Hand or not in Accordance with Transmittals:

D. Tests Required:

<u>Test</u>	<u>Paragraph</u>
_____	_____
_____	_____
_____	_____

E. Accident Prevention Preplanning:

CONTRACTOR QUALITY CONTROL REPORT		DATE
ATTACH ADDITIONAL SHEETS IF NECESSARY		
PHASE:	Y. YES N. NO SEE REMARKS. BLANK - NOT APPLICABLE	IDENTIFY DEFINABLE FEATURE OF WORK LOCATION AND LIST PERSONNEL PRESENT
PREPARATORY	THE PLANS AND SPECS I HAVE BEEN REVIEWED	
	THE SUBMITTALS HAVE I BEEN APPROVED	
INITIAL	MATERIALS COMPLY WITH I APPROVED SUBMITTALS	TESTING PERFORMED & WHO PERFORMED TEST
	MATERIALS ARE STORED I PROPERLY	
FOLLOW-UP	PRELIMINARY WORK WAS I DONE CORRECTLY	TESTING PERFORMED & WHO PERFORMED TEST
	WORKMANSHIP IS SATISFACTORY	
	TEST RESULTS ARE ACCEPTABLE	
	WORK IS IN COMPLIANCE I WITH THE CONTRACT	
	WORK COMPLIES WITH CONTRACT AS APPROVED I IN INITIAL PHASE	
REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)		REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)
REMARKS		
<small>On behalf of the contractor I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report</small>		
_____ AUTHORIZED QC MANAGER AT SITE		_____ DATE
GOVERNMENT QUALITY ASSURANCE REPORT		DATE
QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT		
_____ GOVERNMENT QUALITY CONTROL MANAGER		_____ DATE

CONTRACTOR QUALITY CONTROL REPORT CONTINUATION SHEET DATE _____
ATTACH ADDITIONAL SHEETS IF NECESSARY

CONTRACT NO _____ REPORT NO _____

PHASE	Y - YES N - NO SEE REMARKS BLANK - NOT APPLICABLE	IDENTIFY DEFINABLE FEATURE OF WORK LOCATION AND LIST PERSONNEL PRESENT
PREPARATORY	THE PLANS AND SPECS HAVE BEEN REVIEWED	
	THE SUBMITTALS HAVE BEEN APPROVED	
	MATERIALS COMPLY WITH APPROVED SUBMITTALS	
	MATERIALS ARE STORED PROPERLY	
	PRELIMINARY WORK WAS DONE CORRECTLY	
	TESTING PLAN HAS BEEN REVIEWED	
	WORK METHOD AND SCHEDULE DISCUSSED	

PHASE	Y - YES N - NO SEE REMARKS BLANK - NOT APPLICABLE	IDENTIFY DEFINABLE FEATURE OF WORK LOCATION AND LIST PERSONNEL PRESENT
INITIAL	PRELIMINARY WORK WAS DONE CORRECTLY	
	SAMPLE HAS BEEN PREPARED/APPROVED	
	WORKMANSHIP IS SATISFACTORY	
	TEST RESULTS ARE ACCEPTABLE	
	WORK IS IN COMPLIANCE WITH THE CONTRACT	
		TESTING PERFORMED & WHO PERFORMED TEST

CONTRACTOR QUALITY CONTROL REPORT CONTINUATION SHEET

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE

CONTRACT NO

REPORT NO

PHASE	Y - YES N - NO SEE REMARKS BLANK - NOT APPLICABLE	IDENTIFY DEFINABLE FEATURE OF WORK LOCATION AND LIST PERSONNEL PRESENT	
FOLLOW-UP	WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE		TESTING PERFORMED & WHO PERFORMED TEST

TESTING PLAN AND LOG

CONTRACT NUMBER		PROJECT TITLE AND LOCATION						CONTRACTOR				
SPECIFICATION SECTION AND PARAGRAPH NUMBER	ITEM OF WORK	TEST REQUIRED	ACCREDITED/ APPROVED LAB		SAMPLED BY	TESTED BY	LOCATION OF TEST		FREQUENCY	DATE COMPLETE	DATE FORWARDED TO CONTR. OFF	REMARKS
			YES	NO			ON SITE	OFF SITE				

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 QC MANAGER	RESOLUTION	DATE COMPLETED