

**RENOVATION OF THE KHANDEK
INTERMEDIATE SCHOOL
UNDER THE ECONOMIC SUPPORT FUND PROGRAM
YOUSEFIYA, IRAQ**

SUSTAINMENT ASSESSMENT

**SIGIR PA-08-136
APRIL 21, 2009**

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 21 APR 2009		2. REPORT TYPE		3. DATES COVERED 00-00-2009 to 00-00-2009	
4. TITLE AND SUBTITLE Renovation of the Khandek Intermediate School Under the Economic Support Fund Program, Yousefiya, Iraq. Sustainment Assessment				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Office of the Special Inspector General for IRAQ Reconstruction,400 Army Navy Drive,Arlington,VA,22202-4704				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 31	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



SIGIR

Special Inspector General for Iraq Reconstruction

April 21, 2009

Renovation of the Khandek Intermediate School

What SIGIR Found

On 29 October 2008, SIGIR performed an on-site assessment at the Khandek Intermediate School. The total cost of this firm-fixed-price construction contract was \$295,840; it was awarded to a local contractor, and Gulf Region Central provided oversight. It was not possible to conduct a complete review of all work because security conditions limited the inspection team to 45 minutes on site; therefore, SIGIR performed an expedited assessment.

Although the project was accepted, the final inspection identified three deficiencies for the contractor to correct prior to final payment. However, the project file lacked documentation to determine if the deficiencies were corrected.

The renovation and construction work appeared to be adequate and to satisfy the work required by the Statement of Work. However, SIGIR noted deficiencies. First, the reinforced concrete beam along the front of the new restroom facility exhibited significant cracking and deflection. Second, one of the septic holding tanks was not equipped with an access hatch. Third, the water-supply pump was not anchored to a support, and wiring to the potable water-supply pump was not in a conduit. Finally, window screens were not provided. The contractor has since installed an access hatch.

The lack of consistent and reliable power has caused significant problems. SIGIR's site visit documented unsanitary conditions in the school's bathrooms because of a lack of water: there was no power to pump the water to the rooftop reservoirs. Even without water, children continued to use the bathrooms, and the urine and fecal matter remained stagnant in the eastern-style toilets. This unsanitary condition presents a potential health hazard.

The significant problems caused by the lack of a reliable power source were not part of the scope of SIGIR's assessment; however, SIGIR included these critical issues in this assessment. To sustain full-capacity operations of this facility over the long term, the Government of Iraq needs to address these problems.

Summary of Report: PA-08-136

Why SIGIR Did This Study

SIGIR is assessing projects funded under the Economic Support Fund. SIGIR conducted this assessment to determine if the project was at full capability or capacity when accepted by the U.S. government, when transferred to Iraqi operators, and during the site inspection on 29 October 2008.

The objective of the project was to rehabilitate and expand the Khandek Intermediate School, located in Yousefiya, a rural area southwest of Baghdad, Iraq, to benefit approximately 300 students and provide office space for teachers and administrators.

What SIGIR Recommends

SIGIR recommends that the Commanding General, Gulf Region Division require the contractor to take these actions:

- Ensure that the cracking and deflection of the reinforced concrete beam along the front of the new restroom facility does not present a safety hazard.
- Anchor the water-supply pump to a support and enclose the wiring to the potable water-supply pump in conduit.
- Provide the window screens required in the contract.

SIGIR received comments on the draft of this report from the Commanding General, GRD, concurring with its three recommendations and noting that GRD will require the contractor to take the actions outlined in the recommendations.

For more information, contact SIGIR Public Affairs at (703) 428-1100 or PublicAffairs@sigir.mil





SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

April 21, 2009

MEMORANDUM FOR COMMANDING GENERAL, UNITED STATES CENTRAL
COMMAND
COMMANDING GENERAL, MULTI-NATIONAL FORCE-
IRAQ
COMMANDING GENERAL, GULF REGION DIVISION,
U.S. ARMY CORPS OF ENGINEERS
COMMANDING GENERAL, JOINT CONTRACTING
COMMAND-IRAQ/AFGHANISTAN
DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE

SUBJECT: Report on the Renovation of the Khandek Intermediate School, Yousefiya,
Iraq (SIGIR Report Number PA-08-136)

We are providing this report for your information and use. It addresses the current status of the renovation of the Khandek Intermediate School, Yousefiya, Iraq. The assessment was made to determine whether the project was operating at the capacity stated in the original contract.

We received comments on a draft of this report from the U.S. Army Corps of Engineers, Gulf Region Division, which addressed the issues raised in the report and recommendations made. The planned actions are responsive and address the issues we identified. As a result, comments to this final report are not required.

We appreciate the courtesies extended to our staff. If you have any questions please contact Mr. Brian Flynn via e-mail at brian.flynn@iraq.centcom.mil or at DSN 318-239-2485. For public affairs queries concerning this report, please contact SIGIR Public Affairs at publicaffairs@sigir.mil or at 703-428-1100.

Stuart W. Bowen, Jr.
Inspector General

**Renovation of the Khandek Intermediate School
Under the Economic Support Fund
Yousefiya, Iraq**

Synopsis

Introduction. The Special Inspector General for Iraq Reconstruction (SIGIR) is assessing projects funded under the Economic Support Fund to provide real-time information on relief and reconstruction projects to interested parties to enable appropriate action, when warranted.

Project Assessment Objective. The objective of this project assessment was to determine whether the project is operating at the capacity stated in the original contract. To accomplish the objective, the assessment team determined whether the project was at full capability or capacity when accepted by the U.S. government, when transferred to Iraqi operators, and during the site inspection on 29 October 2008. SIGIR conducted this limited scope assessment in accordance with the Quality Standards for Inspections issued by the Council of the Inspectors General on Integrity and Efficiency. Security concerns limited the time allotted for the site visit to approximately 45 minutes. The assessment team comprised two engineers/inspectors and one auditor/inspector.

Project Objective. The objective of the project was to rehabilitate and expand the Khandek Intermediate School, located in Yousefiya, a rural area southwest of Baghdad, Iraq, to benefit approximately 300 students and provide office space for teachers and administrators.

Conclusions. The original intent of the Khandek Intermediate School project was to rehabilitate and expand the school, which was in a state of major disrepair from years of neglect and failure to maintain adequate upkeep. This school project was accepted by the U.S. government on 1 March 2008, after a final inspection performed by the United States Army Corps of Engineers (USACE), Gulf Region Central (GRC)¹. Although the project was accepted, the final inspection identified three deficiencies for the contractor to correct prior to final payment. On 2 March 2008, the U.S. government transferred this project to the Iraqi Ministry of Education. The project file lacked documentation to determine whether the deficiencies had been corrected prior to final payment.

During the site visit, SIGIR observed the school in session: the school was operating at full capacity, providing educational services to approximately 300 students. The renovation and construction work appeared to be adequate and to satisfy the work required by the Statement of Work, except for these deficiencies that SIGIR observed:

- The reinforced concrete beam along the front of the new restroom facility exhibits significant cracking and deflection.
- One of the septic holding tanks was not equipped with an access hatch.

¹ GRC is one of three districts under the United States Army Corps of Engineers Gulf Region Division (GRD). GRD and its three districts provide construction management services, as well as, assist the capacity of the Government of Iraq to maintain its own construction, operation, and maintenance program of essential services, and national infrastructure.

- The water-supply pump was not anchored to a support, and wiring to the potable water-supply pump was not in a conduit.
- Window screens were not provided.

SIGIR advised USACE GRC of the construction deficiencies identified during the site visit. GRC representatives visited the school the next day to determine the status of the deficiencies.

Regarding the reinforced concrete beam crack in the latrine building, GRC representatives stated they had “reviewed the contract and the BOQ [bill of quantities] in the contract. There is no mention of a new restroom.” The GRC believes that the schoolmaster told the contractor to build the latrine building. However, this statement is contradicted by the contractor’s design submittals, which clearly indicated on the school’s site plan “New W.C. [water closet].” The design, which the contractor submitted to GRC for review and approval prior to construction, refutes the statement that this water closet/latrine building was the idea of the schoolmaster and not part of the contract.

During its site visit, GRC representatives stated that the crack in the concrete beam was “currently being worked” by the contractor. GRC representatives took a photograph of the contractor’s corrections, which appeared to be stuffing the crack with gypsum and then painting over it. GRC representatives did not ascertain the depth of the crack. SIGIR does not believe the contractor’s “fix” is adequate. The depth of the crack needs to be determined in order to identify the most appropriate correction.

Regarding the lack of an access hatch for the new sewage tank, the contractor agreed to install an access hatch for the new sewage tank. GRC representatives verified that the contractor did install an access hatch. This access hatch will allow school personnel to periodically empty the tank so that residue will not accumulate at the tank’s bottom.

SIGIR’s site visit revealed significant problems caused by a lack of a consistent and reliable power source. This area of Baghdad receives approximately 1-2 hours of electricity per day from the national grid. A reliable power source is required to pump water to the school’s restrooms for flushing and cleaning purposes. SIGIR’s site visit documented unsanitary conditions in the school’s bathrooms because of a lack of water: there was no power to pump the water to the rooftop reservoirs. Even without water, children continued to use the bathrooms, and the urine and fecal matter remained stagnant in the eastern-style toilets. This unsanitary condition presents a potential health hazard.

The significant problems associated with a lack of a reliable power source were not part of the scope of SIGIR’s assessment; however, SIGIR included these critical issues in this assessment. These problems need to be addressed by the Government of Iraq in order to sustain full-capacity operations of this facility over the long term.

Recommendations. SIGIR recommends that the Commanding General, Gulf Region Division, require the contractor to take these actions:

1. Ensure that the cracking and deflection of the reinforced concrete beam along the front of the new restroom facility does not present a safety hazard.
2. Anchor the water-supply pump to a support and enclose the wiring to the potable water-supply pump in conduit.

3. Provide the window screens required in the contract.

Management Comments. SIGIR received comments on the draft of this report from the Commanding General, GRD, concurring with its three recommendations and noting that GRD will require the contractor to take the actions outlined in the recommendations.

Evaluation of Management Comments. GRD's planned actions are responsive and addressed the issues identified.

Table of Contents

Synopsis	i
Introduction	
Objective of the Project Assessment	1
Pre-Site Assessment Background	1
Contract, Costs and Payments	1
Project Objective, Pre-Construction Description	1
Statement of Work	2
Project Design and Specifications	2
Site Progress During Construction	6
Condition of School at Turnover	7
Site Assessment	7
Actions Taken since Site Visit	12
Conclusions	15
Recommendations	16
Management Comments	16
Evaluation of Management Comments	17
Appendices	
A. Scope and Methodology	18
B. Acronyms	19
C. GRD Comments on the Draft Report	20
D. Report Distribution	22
E. Project Assessment Team Members	24

Introduction

Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, the Special Inspector General for Iraq Reconstruction (SIGIR) determined whether the project was operating at the capacity stated in the original contract. To accomplish this, SIGIR determined if the project was at full capability or capacity when accepted by the U.S. government, when it was transferred to Iraqi operators, and during the site inspection.

Pre-Site Assessment Background

Contract, Costs and Payments

The U.S. Army Corps of Engineers (USACE) Gulf Region Central (GRC), on 29 August 2007, awarded contract W917BG-07-C-0017, a firm-fixed-price-contract in the amount of \$295,840, to a local contractor.

The contract required project completion within 120 calendar days from the date of the Notice to Proceed. According to GRC documentation, the Notice to Proceed was issued on 8 October 2007, and the project was completed on 6 February 2008.

Project Objective and Pre-Construction Description

The objective of this project was to rehabilitate and expand the Khandek Intermediate School, which was in a state of major disrepair from years of neglect and failure to maintain adequate upkeep. This project was designed to benefit approximately 300 students, and also provide office space for teachers and administrators. Specifically, this school's rehabilitation and expansion will provide students with a classroom environment more conducive to learning.

The Khandek Intermediate School is located in Yousefiya, a rural area near Baghdad, Iraq (Figure 1). The school is a one-story reinforced concrete and brick structure with a flat, concrete tile roof. The school is comprised of six classrooms and two administrative offices. The structure is generally configured in a U shape, opening to the rear courtyard and restroom facilities. The school is surrounded by a perimeter wall with steel entry gates.

Site Photo 1 documents the poor condition of the school prior to rehabilitation. The school had moderate damage to the interior with cracking and spalling² in the walls and ceilings. Floor tiles were displaced and appeared to be heaving. The school did not appear to have a functioning restroom facility. The restroom facility for the students comprised of four toilets and an exterior common lavatory. The existing

² Spall are flakes of a material that are broken off a larger solid body and can be produced by a variety of mechanisms, including as a result of projectile impact, corrosion, weathering, or excessive rolling pressure (as in a ball bearing). Spalling and spallation both describe the process of surface failure in which spall is shed.

toilets showed a severe lack of maintenance, with some completely blocked with debris. The uncovered septic tank was full of sewage and debris, creating a significant health hazard, especially to the young children.



**Figure 1. Location of the Khandek Intermediate School
(Courtesy of GRC)**



**Site Photo 1. Open septic tank
(Courtesy of GRC)**

Statement of Work

The Statement of Work (SOW) required the contractor to provide the expertise, materials, labor, and equipment necessary to design and construct renovations to the Khandek Intermediate School. The contract's bill of quantities (BOQ) included but was not limited to the following:

- investigation and survey
- architectural renovations to the roof, security wall, floor, doors, classroom interior, and windows
- plumbing and electrical renovation
- design and construct two additional classrooms

Project Design and Specifications

The SOW required the contractor to submit, for approval by USACE, 100% design drawings. The design submittals were to include detailed drawings of electrical layouts and locations, sizes, and types of permanent electrical connection, generator, and transfer switches (if any). The contractor provided a series of submittals between 3 November 2007 and 27 November 2007. The designs were relatively complete, but lacked details regarding specific sizes and location of electrical wiring, conduit, pumps, and other associated items.

In addition, the contractor submitted architectural plans and structural details for the construction of the two classrooms. The plans show the overall size of the building and the location of structural members. The structural details indicate the reinforcing size, spacing, and location, but do not indicate the footing size or configuration. The footings are indicated on the scaled drawing, and appear to be mass concrete or

masonry footings, but the construction type is not indicated. Due to the lack of soil bearing capacity testing, it is unclear how the footings were sized.

The contractor submitted plans for the refurbished and new restrooms. These plans included the layout of the toilets and sanitary plumbing, and details on the construction of the septic holding tank(s). These plans, combined with the specifications in the BOQ, contained enough information to construct the restrooms.

The design of the water supply incorporated rooftop reservoirs and a supply pump. The supply pump fills the reservoirs until a float switch disconnects the pump. Water is then distributed to the various plumbing fixtures via piping, with pressure supplied to the system from the head created by the elevated reservoirs.

No provisions were made in the design for equalization between the municipal system and the supply pump; therefore, depending on the supply conditions, negative pressure can be exerted on the municipal system by the pump. Negative pressure on the municipal system could result in infiltration of groundwater into the water supply thus causing contamination. The rapid reversal of pressure in the municipal system from positive to negative and potential water hammer could cause additional stress on the system and may result in leaks or breakage near the connection. Backflow prevention was not incorporated into the design.

The sanitary sewer plumbing is a gravity design with piping for the various fixtures combining at manholes outside the buildings. The combined flows are directed to a septic holding tank for treatment and/or removal.

It does not appear that venting of the sanitary plumbing in the buildings was part of the design. The absence of vent piping through the roof of the building indicates that venting was not constructed. Figures 2 and 3 indicate a central vent in the septic holding tank, which would prevent the buildup of sewer gas in the plumbing system. Due to the expected low volumes of flow from the plumbing fixtures, the lack of venting should not excessively impact the capacity of the restroom.

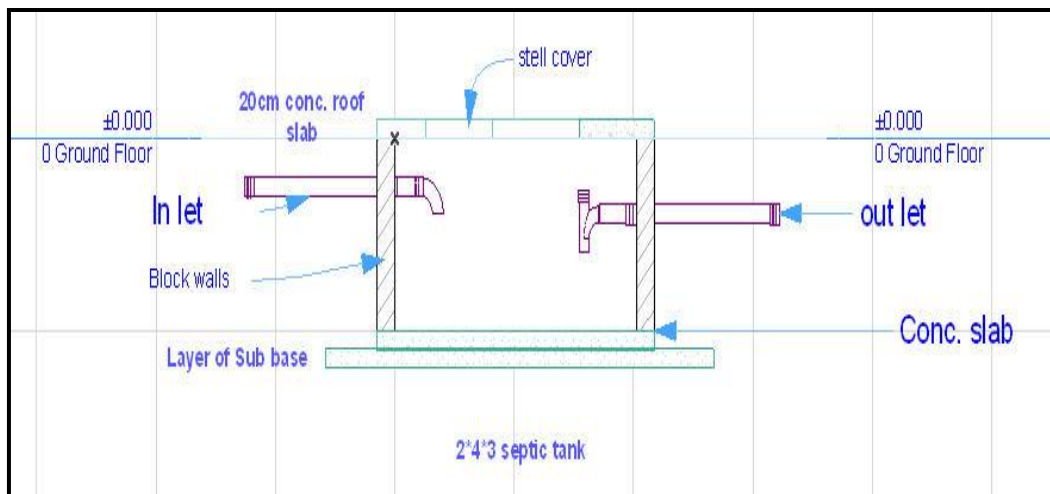


Figure 2. Septic tank section (Courtesy of GRC)

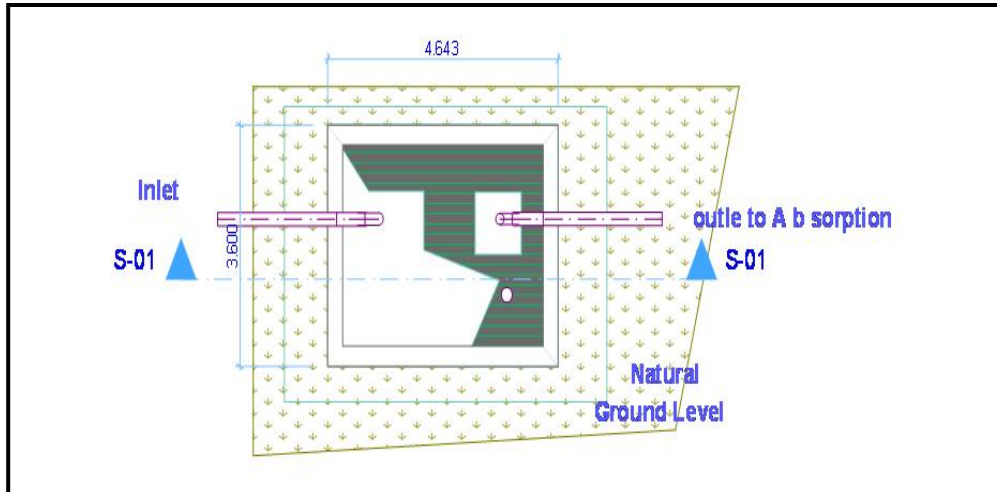


Figure 3. Septic tank plan (Courtesy of GRC)

The septic holding tank indicates that the outlet of the tank flows to an absorption area. The location and configuration of the absorption was not indicated in the design. It is unclear if this system is intended to treat sewage and promote absorption into the soil, or if the tank(s) function as holding tanks to be pumped out on a regular basis.

The design of the electrical system was submitted on several plans for both the existing classrooms and the proposed building. The plans identify fixture, switch, and receptacle locations. No reference was found on the plans to indicate circuit configuration, main panel layout, or anticipated loading. The design lacked specifics to determine if the facility was intended to support future heating and air-conditioning equipment.

The SOW also required the contractor to submit an operations and maintenance (O&M) manual, which includes the standard operating procedures for all equipment and systems, and standard maintenance procedures and recommended spare parts lists for all equipment.

The contractor must conduct site specific O&M training appropriate to the facilities and equipment installed, constructed, or rehabilitated. A three day on-site training session at the site was required to demonstrate normal O&M procedures for each element of the system to appropriate technical representatives from the city.

The contractor must provide O&M support for all facilities and equipment installed, constructed, or rehabilitated. This support will be during the construction, startup, and commissioning phases of the project, and continue for 90 days following issuance of the letter of project completion.

The SOW required that in areas of repair and refurbishment, the standards of the original design will be used. Material and equipment to be replaced would be replaced with equipment that meets the original design intent of the facility, if not specified in the SOW or BOQ. However, where new material or equipment has been specified for this project, or if the original material or equipment is determined to be inadequate for the proposed service, new items will be specified to Iraqi or equivalent international codes and standards.

Finally, the SOW required the contractor to submit the following:

- certified manufacturer's test results
- functional test results for all electrical appliances and outlets
- bearing pressure soil analysis and compaction test results
- concrete strength tests

SIGIR reviewed the project file documentation, which lacked the manufacturer's test results, electrical test results, or bearing pressure soil analysis test results. The contractor did provide satisfactory results for the soil compaction test and concrete strength test.

The contractor performed materials inspection and tested the concrete used. The project file documentation lacked concrete mix designs; however, from the available contractor quality control (QC) photos, it appears that the concrete was mixed onsite (Site Photo 2). Concrete test cubes were molded from the concrete used in the project. The BOQ required all concrete incorporated into this project to have a minimum 28-day compressive strength of 25 megapascals (amount of pressure an area can withstand). According to project file documentation, the contractor's compressive strength test results indicate the concrete had a minimum strength of 32.0 megapascals.



Site Photo 2. Site-mixed concrete and concrete test cubes (lower right corner)
(Courtesy of GRC)

The contractor performed compaction testing for the foundation for the newly constructed classrooms. The sand replacement method and modified proctor test were used to determine the degrees of density and compaction, respectively. The required

degree of compaction was 90%, and the test results stated the degree of compaction was 96.1%.

The project file documentation lacked any other documents showing materials testing or inspections. The contractor photographed materials and fixtures that had arrived onsite, but did not comment on the specifications, quality, and/or condition of the items.

With regard to warranties, the contract's SOW required the contractor to provide and certify warranties in the name of the appropriate ministry for all material or equipment, including any mechanical, electrical and/or electronic devices, and all operations for 12 months after final acceptance of the project. In addition, the contractor must provide any other commonly offered extended warranties for material, equipment, and purchased machinery.

According to project file documentation, the date of the final acceptance was 1 March 2008, which places the expiration date of the contractor's warranty at 1 March 2009. SIGIR identified several items that should be repaired under the contractor's warranty, which is detailed in the Site Assessment section of this report.

Site Progress During Construction

Throughout the project's construction, the contractor provided a weekly construction log, which documented QC, including photographs, and work activities performed. In addition, the USACE GRC Resident Office documented construction progress with quality assurance reports, which also included photographs taken during site visits. SIGIR reviewed and subsequently relied on selected photographs to document examples of construction performance before the project was turned over to the Ministry of Education on 2 March 2008.

Site Photos 3 and 4 document various construction work activities at the school, such as the demolition of existing tiles, installation of new lighting, and new foundation and formwork construction.



Site Photo 3. Demolition of tiles (Courtesy of GRC)



Site Photo 4. New lighting installation (Courtesy of GRC)

Condition of School at Turnover

According to project file documentation, a final inspection was conducted on 1 March 2008 and the project was accepted by the U.S. Army 3rd Brigade of the 101st Airborne Division (Air Assault) and the USACE. The following three deficiencies were identified during the final inspection:

- existing windows not replaced in the old building
- water tanks on the roof of bathroom building not painted with epoxy paint
- drinking water cooler not installed

On 2 March 2008, through a Beneficial Occupancy form, the USACE relinquished responsibility for the school from the contractor to the Ministry of Education. According to this document, the

“construction has been checked by myself [USACE Resident Office representative] and our Quality Assurance Representative and accepted as completed per the contract between the Ministry of Education, the U.S. Army Corps of Engineers and United Building Company.”

The project file lacked any documentation to confirm the contractor corrected the three deficiencies identified in the final inspection prior to the project being turned over to the Ministry of Education.

Site Assessment

On 29 October 2008, SIGIR performed an on-site assessment at the Khandek Intermediate School. Due to security concerns, the time allotted for the site visit was approximately 45 minutes. Consequently, SIGIR performed an expedited assessment of the areas available; therefore, a complete review of all work completed was not possible. The school's headmaster accompanied SIGIR during the site visit. During the site visit, SIGIR observed the school in session and educational services being provided to approximately 300 children.

The headmaster advised SIGIR that new construction was occurring on site in the recreation yard. This new project was being funded by the Government of Iraq.

Renovation Work

Roof

The roofs of the main school building and ancillary structures were finished with concrete roof tiles (stiegers), as required by the BOQ. Mastic (a type of adhesive) was used between the joints. It was raining during the site visit, and SIGIR observed no interior leaks. While the BOQ required the use of metal downspouts, SIGIR noticed the contractor used polyvinylchloride pipe. It appeared that the plastic pipe was functioning adequately; however, prolonged exposure to sunlight will degrade the material.

SIGIR did observe one downspout was disjointed from the roof scupper (Site Photo 5). Since this was located in a new construction area, it may have been caused by ongoing construction activities. However, due to the ease of separation of the downspout, it appears that the joints were not solvent welded. In addition, splash blocks or extensions were not provided to direct runoff away from the foundation.



Site Photo 5. Loose connection

Security Wall and Gate

The perimeter wall appeared to be sound and intact around the majority of the compound. SIGIR did observe one area of the security wall missing; however, it appears that this section was removed to facilitate the access of construction equipment and materials for the new Government of Iraq-funded project. Due to the demolition in this area, a cross section of the wall was visible, which revealed the wall was constructed by the local technique of brick and mortar core with plaster finish.

A steel gate was installed at the front entrance to the school. The gate appeared operable and substantially anchored to the wall. A second pair of gates was installed near the restroom facility toward the rear of the compound. The rear gates included both a vehicle gate and a personnel gate. Both appeared operable and sound and will permit access to the septic holding tanks.

Doors and Windows

The new steel exterior doors and hardware were installed and functioning. The window glazing appeared to be in-tact. The windows have been painted and latching hardware has been installed. SIGIR did not observe any of the BOQ required window screens (Site Photo 6).



Site Photo 6. Missing window screen

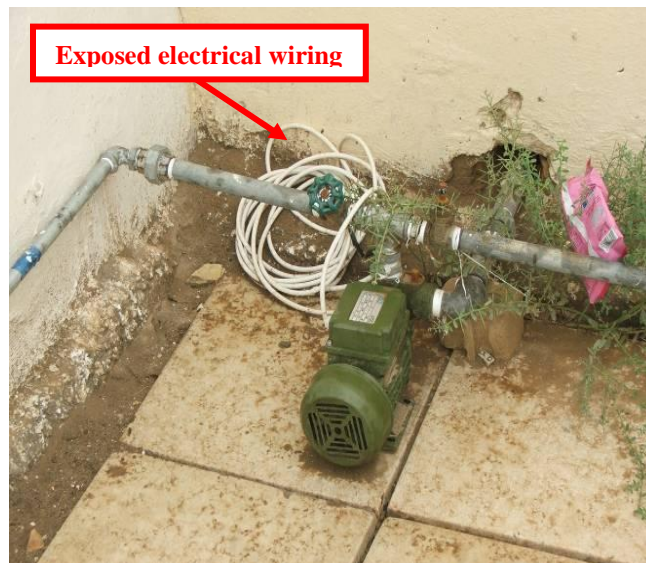
Classroom Interior

The interior of the renovated classrooms and administrative rooms appeared to have a sound finish. The new wall finish was well adhered to the wall with no noted areas of composite material or coating failure. The coatings for the exterior wall appeared sound. There was some chipping and peeling, but it appears that this is due more to abrasion and wear than coating failure.

The building's interior flooring was covered with tiles so the reconstructed concrete floor was not visible to SIGIR during the inspection. There was no cracking or offset of tiles to indicate failure of the supporting concrete slab. The flooring was reasonably level with no loose, cracked, or missing tiles noted.

Plumbing

The school has two exterior restroom buildings – one existing latrine toward the rear of the school and a newly constructed second latrine toward the front of the school (part of this contract). The existing restroom was renovated with galvanized metal reservoirs installed on top. A small electric pump supplied public water to the rooftop reservoirs (Site Photo 7). SIGIR noticed the pump was not anchored to a support and the electric wiring supplying the pump's power was not placed in conduit. Consequently, the pump and wiring are constantly exposed to the elements.



Site Photo 7. Supply pump

A new septic tank was constructed along with the new latrine. SIGIR identified a significant shear crack in the main beam along the front edge of the roof on the new latrine building (Site Photo 8).



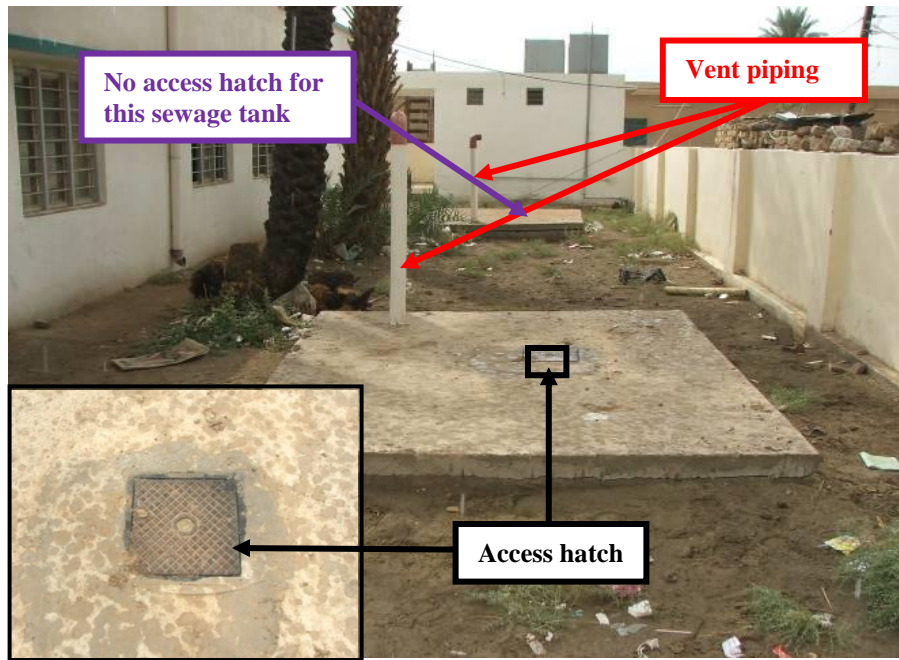
Site Photo 8. New latrine building with significant shear crack

The restrooms in both latrines contained eastern-style toilets (Site Photo 9) with wall hung water tanks. At the time of the site visit, water service was not available to either latrine building; therefore, SIGIR could not verify the operability of the plumbing fixtures. Even though water was not available, the toilets were still being used. This resulted in blockages to the sanitary sewer and standing water in the toilets, resulting in unsanitary conditions for the school children.



Site Photo 9. Condition of the eastern-style toilet

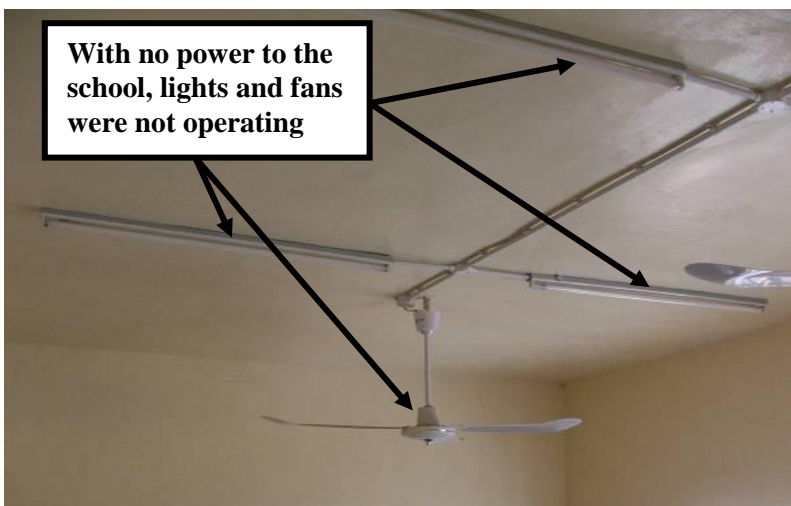
Two septic tanks were constructed on the site to service the two latrines (Site Photo 10). Vent piping was installed in the top slab of the tanks. SIGIR examined the tanks' top slabs, which did not exhibit any cracking or signs of failure; however, there was moderate curling of the top slab. A small access was provided for one of the tanks, which could be used for inspection and pumping; however, there was no access provided for the second tank. SIGIR believes this presents the school with future maintenance problems, since the school will be unable to fully empty the tank and residue will accumulate at the tank's bottom.



Site Photo 10. Septic holding tanks and tank access for one (lower left corner)

Electrical

A new main circuit breaker, lights, and ceiling fans were installed in the classrooms (Site Photos 11). At the time of the site visit, the school was operating without power; therefore, SIGIR was unable to verify the operability of the electrical system. It appeared that all wiring was in conduit; however, exterior wiring did not use elbows at changes in direction (Site Photo 12).



Site Photo 11. Electric fixtures (lights and ceiling fans)



Site Photo 12. Exterior conduit

New Classrooms

SIGIR inspected the newly constructed classrooms, which at the time of the site visit were being occupied by students. The construction of the classrooms' interior and exterior appeared sound and consistent with the remainder of the school. Both the interior and exterior were in good condition.

Actions Taken Since Site Visit

SIGIR briefed the results of this inspection to Gulf Region Division and GRC representatives on 7 December 2008. Specifically, SIGIR mentioned the following deficiencies:

- reinforced concrete beam along the front of the new restroom facility exhibits significant cracking and deflection
- one of the septic holding tanks was not equipped with an access hatch
- the water-supply pump was not anchored to a support and wiring to the potable water-supply pump was not in a conduit
- required window screens were not provided

GRC representatives visited the school on 8 December 2008 to determine the status of each deficiency.

Latrine Building

GRC representatives originally determined that the latrine building in question "was an existing building that Contractor did not construct..." SIGIR provided GRC with a contractor daily QC report, which documented work on 3 December 2007 as the following:

"Install the steel reinforcement in the new toilet foundations...Pouring the toilet foundations..."

Included in the contractor daily QC report were four photographs documenting the construction of the new toilet/latrine building.

GRC representatives then revised their original determination and stated that the contractor had, in fact, constructed a new latrine building. However, GRC representatives stated the following:

"[GRC] reviewed the contract and the BOQ in the contract. There is no mention of a new restroom. The contract calls for the renovation of the existing restroom which is in the rear of the school complex. What happens a lot is the school master tells the contractor that he wants a new restroom and the contractor does it even though it is not called for in the contract. We didn't pay him for this additional restroom so I don't see how we can have him correct anything in it without some means to pay him more for the work he was not contracted to do."

However, this statement is contradicted by the contractor's design submittals, which clearly indicated on the school's site plan "New W.C. [water closet]" (Figure 4). The design, which the contractor submitted to GRC for review and approval prior to construction, refutes the statement that this water closet/latrine building was the idea of the school master and not part of this contract.

The project file lacked any design review documentation advising the contractor that the contract did not require the construction of a new latrine building. In addition, the project file contained 16 daily quality assurance reports by GRC representatives, none of which mentioned that the contractor was constructing a building not required by the contract. Further, since this was a firm-fixed-price-contract to renovate the school and the contractor submitted its designs, which included the construction of a new latrine building, this building is part of the contractor's work for which he was paid. Consequently, the contractor is responsible for correcting the construction deficiency identified in the site visit.

During its site visit, GRC representatives stated that the crack in the concrete beam was "currently being worked" by the contractor. GRC representatives took a photograph of the contractor's corrections, which appeared to be stuffing the crack with gypsum and then painting over it (Site Photo 13). GRC representatives did not ascertain the depth of the crack.

SIGIR does not believe the contractor's "fix" is adequate. The depth of the crack needs to be determined in order to identify the most appropriate correction.

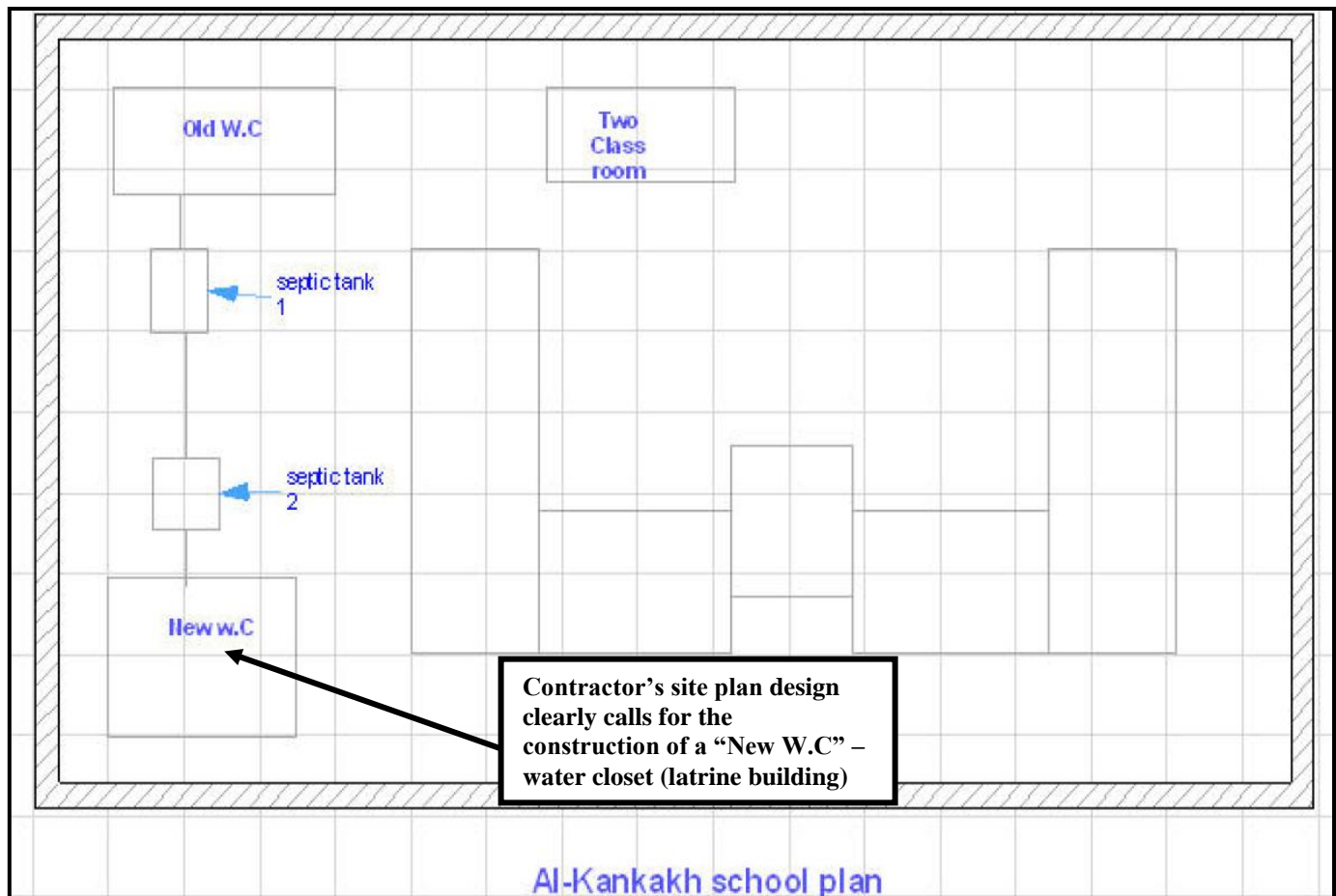


Figure 4. Contractor's site plan submittal clearly showing the construction of a new water closet (latrine building) (Courtesy of GRC)



Site Photo 13. Contractor's fix for the reinforcement beam crack (Courtesy of GRC)

Missing Access Hatch/Manhole for New Sewage Tank

The contractor agreed to install an access hatch for the new sewage tank. GRC representatives verified that the contractor did install an access hatch (Site Photo 14). This access hatch will allow the school to periodically empty the tank so that residue will not accumulate at the tank's bottom.



Site Photo 14. Newly installed access hatch for the sewage tank (Courtesy of GRC)

General Observations

According to the school's headmaster, this school receives electricity from the national grid; however, power from the national grid is intermittent and susceptible to surges. The headmaster stated this school receives approximately 1-2 hours of electricity per day. SIGIR observed the adverse effects of the lack of consistent power during the site visit. Water to the restrooms, which has to be routed to rooftop reservoirs via electric pumps, was not available due to a lack of a power source. In order to provide the school children with consistent power for water in the restrooms and air conditioning to cool classrooms, SIGIR believes any future work for this school should include a provision for generators and air-conditioning units.

Conclusions

The original intent of the Khandek Intermediate School project was to rehabilitate and expand the school, which was in a state of major disrepair from years of neglect and failure to maintain adequate upkeep. This school project was accepted by the U.S. government on 1 March 2008, after a final inspection performed by the United States Army Corps of Engineers (USACE) Gulf Region Central (GRC)³. Although the project was accepted, the final inspection identified three deficiencies for the contractor to correct prior to final payment. On 2 March 2008, the U.S. government transferred this project to the Iraqi Ministry of Education. The project file lacked documentation to determine whether the deficiencies had been corrected prior to final payment.

During the site visit, SIGIR observed the school in session: the school was operating at full capacity, providing educational services to approximately 300 students. The renovation and construction work appeared to be adequate and to satisfy the work required by the Statement of Work, except for these deficiencies that SIGIR observed:

- The reinforced concrete beam along the front of the new restroom facility exhibits significant cracking and deflection.
- One of the septic holding tanks was not equipped with an access hatch.
- The water-supply pump was not anchored to a support, and wiring to the potable water-supply pump was not in a conduit.
- Window screens were not provided.

SIGIR advised USACE GRC of the construction deficiencies identified during the site visit. GRC representatives visited the school the next day to determine the status of the deficiencies.

Regarding the reinforced concrete beam crack in the latrine building, GRC representatives stated they had "reviewed the contract and the BOQ [bill of quantities] in the contract. There is no mention of a new restroom." The GRC believes that the schoolmaster told the contractor to build the latrine building. However, this statement is contradicted by the contractor's design submittals, which clearly indicated on the school's site plan "New W.C. [water closet]." The design, which the contractor

³ GRC is one of three districts under the United States Army Corps of Engineers Gulf Region Division (GRD). GRD and its three districts provide construction management services, as well as, assist the capacity of the Government of Iraq to maintain its own construction, operation, and maintenance program of essential services, and national infrastructure.

submitted to GRC for review and approval prior to construction, refutes the statement that this water closet/latrine building was the idea of the schoolmaster and not part of the contract.

During its site visit, GRC representatives stated that the crack in the concrete beam was “currently being worked” by the contractor. GRC representatives took a photograph of the contractor’s corrections, which appeared to be stuffing the crack with gypsum and then painting over it. GRC representatives did not ascertain the depth of the crack. SIGIR does not believe the contractor’s “fix” is adequate. The depth of the crack needs to be determined in order to identify the most appropriate correction.

Regarding the lack of an access hatch for the new sewage tank, the contractor agreed to install an access hatch for the new sewage tank. GRC representatives verified that the contractor did install an access hatch. This access hatch will allow school personnel to periodically empty the tank so that residue will not accumulate at the tank’s bottom.

SIGIR’s site visit revealed significant problems caused by a lack of a consistent and reliable power source. This area of Baghdad receives approximately 1-2 hours of electricity per day from the national grid. A reliable power source is required to pump water to the school’s restrooms for flushing and cleaning purposes. SIGIR’s site visit documented unsanitary conditions in the school’s bathrooms because of a lack of water: there was no power to pump the water to the rooftop reservoirs. Even without water, children continued to use the bathrooms, and the urine and fecal matter remained stagnant in the eastern-style toilets. This unsanitary condition presents a potential health hazard.

The significant problems associated with a lack of a reliable power source were not part of the scope of SIGIR’s assessment; however, SIGIR included these critical issues in this assessment. These problems need to be addressed by the Government of Iraq in order to sustain full-capacity operations of this facility over the long term.

Recommendations

SIGIR recommends that the Commanding General, Gulf Region Division require the contractor to take these actions:

1. Ensure that the cracking and deflection of the reinforced concrete beam along the front of the new restroom facility does not present a safety hazard.
2. Anchor the water-supply pump to a support and enclose wiring to the potable water-supply pump in conduit.
3. Provide the window screens required in the contract.

Management Comments

SIGIR received comments on the draft of this report from the Commanding General, GRD, concurring with its three recommendations and noting that GRD will require the contractor to take the actions outlined in the recommendations.

Evaluation of Management Comments

GRD's planned actions are responsive and addressed the issues identified.

Appendix A. Scope and Methodology

SIGIR performed this project assessment from May 2008 through March 2009 in accordance with the Quality Standards for Inspections issued by the Council of the Inspectors General on Integrity and Efficiency.

In performing this Project Assessment SIGIR reviewed the following:

- Contract documentation to include the following: Contract W917BG-07-C-C0117 and amendment;
- Contractor photographs documenting construction progress, quality control and quality assurance reports, materials testing reports, and submittals;
- Closeout documentation including: release of claims, notice of beneficial occupancy, and acceptance by the Ministry of Education; and
- Conducted an on-site assessment and documented the results of the Khandek Intermediate School project, in Yousefiya, Iraq.

Scope Limitation. Due to security concerns, SIGIR performed an expedited assessment. The time allotted for the site visit was approximately 45 minutes; therefore, a complete review of all work completed was not possible.

Appendix B. Acronyms

BOQ	Bill of Quantities
GRC	Gulf Region Central District
GRD	Gulf Region Division
O&M	Operations and Maintenance
QC	Quality Control
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Statement of Work
USACE	United States Army Corps of Engineers

Appendix C. GRD Comments on Draft Report



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
GULF REGION DIVISION
BAGHDAD, IRAQ
APO AE 09348

CEGRD-CG

3 April 2009

MEMORANDUM FOR Special Inspector General for Iraq Reconstruction, US Embassy Annex II, Room 1013, APO AE 09316

SUBJECT: SIGIR Draft Project Assessment Report – Renovation of the Khandek Intermediate School, Yousefiya, Iraq (PA-08-136)

1. The Gulf Region Division reviewed the subject draft report and agrees with the recommendations. GRD provides its response in the enclosure.
2. Thank you for the opportunity to review the draft report and provide our written comments for incorporation in the final report.
3. If you have any questions, please contact Mr. Robert Donner at (540) 665-5022 or via email Robert.L.Donner@usace.army.mil.

Encl
as

Michael R. Eyre
MICHAEL R. EYRE
Major General, USA
Commanding

Appendix C. GRD Comments on Draft Report

COMMAND REPLY
to
**SIGIR Draft Project Assessment Report –
Renovation of the Khandek Intermediate School,
Yousefiya, Iraq
SIGIR Report Number PA-08-136
(SIGIR Project PA-08-136)**

Recommendations:

SIGIR recommends that the Commanding General, Gulf Region Division require the contractor to:

1. Take action to ensure that the cracking and deflection of the reinforced concrete beam along the front of the new restroom facility does not present a safety hazard.
2. Anchor the water supply pump to a support and enclose the wiring to the potable water supply pump in conduit.
3. Provide the window screens required in the contract.

Concur with all recommendations. The Gulf Region Central will require the contractor to take the actions outlined in the recommendations.

Appendix D. Report Distribution

Department of State

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

Director of U.S. Foreign Assistance/Administrator, U.S. Agency for
International Development

Director, Office of Iraq Reconstruction

Assistant Secretary for Resource Management/Chief Financial Officer,
Bureau of Resource Management

U.S. Ambassador to Iraq

Director, Iraq Transition Assistance Office

Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

Department of Defense

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International
Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

Principal Deputy to the Assistant Secretary of the Army for Acquisition,
Logistics, and Technology

Deputy Assistant Secretary of the Army (Policy and Procurement)

Commanding General, Joint Contracting Command-Iraq/Afghanistan

Assistant Secretary of the Army for Financial Management and Comptroller

Chief of Engineers and Commander, U.S. Army Corps of Engineers

Commanding General, Gulf Region Division

Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force-Iraq

Commanding General, Multi-National Corps-Iraq

Commanding General, Multi-National Security Transition Command-Iraq

Commander, Joint Area Support Group-Central

Other Federal Government Organizations

Director, Office of Management and Budget
Comptroller General of the United States
Inspector General, Department of the Treasury
Inspector General, Department of Commerce
Inspector General, Department of Health and Human Services
Inspector General, U.S. Agency for International Development
President, Overseas Private Investment Corporation
President, U.S. Institute for Peace

Congressional Committees

U.S. Senate

Senate Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Foreign Relations
Senate Committee on Homeland Security and Governmental Affairs

U.S. House of Representatives

House Committee on Appropriations
House Committee on Armed Services
House Committee on Oversight and Government Reform
House Committee on Foreign Affairs

Appendix E. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

Angelina Johnston

Shawn A. Sassaman, P.E.

Todd Criswell, P.E.