



**Updated Report of Agreed-Upon Procedures regarding
The Settlement between the U.S. Army Corps of Engineers
and Kellogg Brown & Root related to the
Task Force – Restore Iraqi Oil Project**

for

U.S. Defense Reconstruction Support Office

and

International Advisory and Monitoring Board

By

Crowe Chizek and Company LLC

November 16, 2006

**Updated Report of Agreed-Upon Procedures regarding the Settlement between
U.S. Army Corps of Engineers and Kellogg Brown & Root**

TABLE OF CONTENTS

I.	Executive Summary	1
A.	Introduction and Background.....	1
B.	Project Objectives.....	4
C.	Findings	4
II.	Scope of Work	7
A.	Review of Settlement between KBR and USACE.....	7
B.	Review Work Performed by DCAA.....	7
C.	Confirm Physical Existence of Deliverables under Task Order 6	8
III.	Background of KBR’s Contract with USACE.....	8
IV.	Sources of Information	9
V.	Findings	11
A.	Review of Settlement between KBR and USACE.....	11
B.	Review Work Performed by DCAA.....	22
C.	Confirm Physical Existence of Deliverables under Task Order 6	35

List of Acronyms

Appendix 1



**Updated Report of Agreed-Upon Procedures regarding the Settlement between the
U.S. Army Corps of Engineers and Kellogg Brown & Root
for
U.S. Defense Reconstruction Support Office
and
International Advisory and Monitoring Board**

I. Executive Summary

A. Introduction and Background

At the direction of the U.S. Defense Reconstruction Support Office (DRSO) acting at the request of the International Advisory and Monitoring Board (IAMB), we have carried out the scope of work established in the Performance Work Statement contained in our contract with the U.S. Army Contracting Agency.¹ This report is an update to, and replacement of the report issued on October 20, 2006 and discussed with the IAMB at its meeting in Paris on October 30, 2006. It contains additional information in response to questions raised at the meeting with respect to the cost of fuel transported into Iraq from Kuwait and Turkey (addressed on pages 24 -35).

DRSO was established in May 2005 to provide a single Department of Defense (DoD) focus for the coordination of the Department's operational support of U.S. reconstruction activities in Afghanistan and Iraq.

IAMB was established in October 2003 as an independent oversight body for the Development Fund for Iraq (DFI). The DFI was established pursuant to United Nations Security Council Resolution 1483 to hold the proceeds of petroleum export sales from Iraq, as well as remaining balances from the UN Oil-for-Food Program and other frozen Iraqi funds. Disbursements from the DFI must be used for the benefit of the Iraqi people. When the Coalition Provisional Authority (CPA) transferred sovereignty to the Iraqi Interim Government on June 28, 2004, it also transferred administration of the DFI.

IAMB continued to function after the dissolution of the CPA on June 30, 2004 and is working with the Iraqi Interim Government, as set out in United Nations Security Council Resolution 1546. United Nations Security Council Resolution 1637 extended the mandate of the IAMB until December 31, 2006.

¹ Contract No. W74V8H-06-C-0038 between the US Army Contracting Agency and Crowe Chizek and Company, LLC, July 21, 2006.

The principal role of the IAMB is to ensure that:

- The DFI is used in a transparent manner for the benefit of the people of Iraq, and
- Export sales of petroleum, petroleum products, and natural gas from Iraq are made consistent with prevailing international market best practices.

As part of Operation Iraqi Freedom, the U.S. Army Corps of Engineers' (USACE or "the Corps") Task Force – Restore Iraqi Oil (TF RIO) received multiple oil-related missions in Iraq. In January 2003, USACE was informed of the possibility that its Southwestern Division (SWD) in Dallas, Texas would be assigned responsibility for the Iraqi oil missions. This assignment occurred on February 13, 2003. The mission tasking originated from the U.S. Department of Defense (DoD) to the Department of Army to USACE.

One of the TF RIO contracts issued by USACE was to Kellogg, Brown & Root (KBR), based in Houston, Texas.² At the time of the KBR award for the TF RIO contract (March 8, 2003), KBR was already providing services to DoD under its Logistics Civil Augmentation Program (LOGCAP) program. Under this program, KBR had prepared a Contingency Support Plan. This required KBR to develop a plan to repair and restore Iraq's oil infrastructure. Because KBR was knowledgeable of the U.S. Central Command's planning for conducting military operations, DoD officials determined that KBR was uniquely positioned to develop the Contingency Support Plan.

USACE then entered into a non-competitive bridge contract with KBR as an integral part of the TF RIO program. To meet the pressing need for rapidly restoring Iraq's oil infrastructure, there was insufficient time to conduct a competitive bid. With KBR's existing base of operations and personnel on the ground in Kuwait coupled with its familiarity with the Contingency Support Plan, KBR was the logical choice for rapidly launching the program.

In September 2005, the Special Inspector General for Iraq Reconstruction (SIGIR) was asked by DRISO to perform agreed-upon procedures to determine whether the above-mentioned non-competitive award of the KBR contract was appropriately justified and whether the goods and services delivered and billed for were those required under the contract. DRISO had initially contacted the accounting firm KPMG to conduct this assignment but KPMG recused itself from performing the work because of an appearance of a conflict of interest. In its report of September 30, 2005, SIGIR concluded that the use of the non-competitive contract was appropriately justified and that the goods and services delivered and billed for were those required under the contract.

In addition, the U.S. Government Accountability Office (GAO) (formerly General Accounting Office) concluded in its June 2004 report, "Rebuilding Iraq – Fiscal Year 2003 Contract Award Procedures and Management Challenges," that the award of the

² In the initial contract of March 8, 2003, the USACE contract was awarded to Brown & Root Services, a Division of Kellogg, Brown & Root. The contract was later novated (on December 22, 2005) to reflect the contractor name as Kellogg Brown & Root Services, Inc. The company is referred to as KBR in this report.



KBR contract for restoring the oil infrastructure on a sole-source basis generally complied with applicable legal standards.³

KBR's TF RIO contract with USACE, contract number DACA63-03-D-0005, was performed under the following ten task orders:

Task Order	Description
1	Training and advice for safe shutdown; oil spill equipment pre-positioning
2	Design for quick repair of oil facilities
3	Damage assessment, oil well fire fighting and repairs
4	Base camp facilities and life support
5	Import and distribute fuel
6	Restore essential oil infrastructure
7	Import and distribute fuel
8	Import and distribute fuel
9	Import and distribute fuel
10	Import and distribute fuel

Task orders 1 through 4 and part of Task Order 5 were funded using U.S. Army Operations and Maintenance funds (U.S. appropriated funds). Task Order 5 was also funded with DFI funds as well as Iraqi seized and vested funds. Task orders 6 through 10 were funded exclusively from DFI funds. From September 2003 through March 2004, approximately \$1.4 billion⁴ in DFI funds were expended for the procurement and distribution of fuel products and for the restoration of Iraq's oil infrastructure.

Noting the use of DFI funds for this non-competitively awarded contract, DRSO has requested that we perform these agreed-upon procedures regarding the KBR TF RIO contract following the agreed-upon procedures conducted earlier by SIGIR, and that we perform the procedures described below for each of the task orders under the KBR RIO contract funded from the DFI.

³ "Rebuilding Iraq - Fiscal Year 2003 Contract Award Procedures and Management Challenges," GAO-04-605, June 2004, page 20.

⁴ SIGIR Report - "Attestation Engagement Concerning the Award of Non-Competitive Contract DACA63-03-D-0005 to Kellogg, Brown, and Root Services, Inc.," Report Number SIGIR-05-019, September 30, 2005, page 4.

B. Project Objectives

The Scope of Work addressed in this report includes the following objectives related to the KBR contract with USACE for the DFI-funded task orders 5 through 10. These objectives and work tasks are explained in greater detail below and are as follows:

- Review the settlement between KBR and USACE
- Review the work performed by the DCAA (Defense Contract Audit Agency) and referred to in the September 2005 SIGIR report⁵
- Confirm the physical existence of deliverables under Task Order 6

C. Findings

Review the settlement between KBR and USACE

We reviewed the settlements between KBR and USACE relating to each of Task Orders 5 through 10. In conducting this review, we reviewed the salient terms of the settlements and evaluated these terms for reasonableness and basis of settlement. Based upon our review of the negotiated terms of these settlements and the related supporting documentation, including review of the procedures followed by USACE, the USACE Award Fee Evaluation Board and DCAA,⁶ we determined that the settlements were reasonable.

Based on our review of the procedures carried out by DCAA in support of USACE in its contracting with KBR (addressed below), we found that the conclusions reached by DCAA and documented in DCAA's audit reports were supported by the underlying accounting and auditing records. Though DCAA questioned certain costs incurred by KBR under these task orders, these costs were incurred for the benefit of the mission and were not disallowed. Questioned costs are costs incurred by a contractor that DCAA recommends for further consideration by the contracting

⁵ Referring to the report: "Attestation Engagement Concerning the Award of Non-Competitive Contract DACA63-03-D-0005 to Kellogg, Brown and Root Services, Inc.," Report Number SIGIR-05-019, September 30, 2005.

⁶ Per CFR 387.1, the mission of the DCAA is to: "(a) Perform all necessary contract audit for the Department of Defense and provide accounting and financial advisory services regarding contracts and subcontracts to all Department of Defense components responsible for procurement and contract administration. These services will be provided in connection with negotiation, administration, and settlement of contracts and subcontracts; (b) Provide contract audit service to other Government agencies as appropriate."

officer in negotiating with the contractor. The contracting officer within USACE has the authority to negotiate prices based on information from a variety of sources and based on conditions that exist at that time. As indicated in the USACE Price Negotiation Memoranda (PNM) for Task Order 5 used for the determination of the base and award fee pools:

“Although the DCAA questioned costs for the purpose of establishing the amounts on which the base and award fees would be calculated, neither the DCAA proposal audits nor its financial advice to the contracting officer included not reimbursing KBRs for the large majority of the costs it had incurred in executing the mission. DCAA did not issue a Form 1, Notice of Costs Suspended and/or Disapproved under Cost Reimbursement Contracts.”⁷

At the time of the DCAA audits of the costs from the humanitarian fuel mission, the majority of costs had been incurred, billed and paid due to the urgency in which the mission was carried out. By reaching a negotiated settlement based on the proposed prices for fuel and transportation, USACE effectively concluded that the incurred costs were reasonable based on the known facts and circumstances at the time. The Form 1 was not issued at the request of the USACE since it was in the process of settling the issues concerning fuel and transportation costs.⁸

Thus, despite DCAA’s questioning of certain costs incurred by KBR (as explained in greater detail below), based on our analysis, the prices of fuel products and related costs of transportation into Iraq in these wartime conditions, which were obtained through a competitive bidding process and based on current market prices, were a reflection of existing market conditions.

Review the work performed by the DCAA and referred to in the September 2005 SIGIR report

We reviewed the September 2005 SIGIR report and the related DCAA audit work referenced in that report. We obtained and reviewed the extensive audit workpapers

⁷ “Addendum Price Negotiation Memorandum for DACA63-03-D-0005, Task Order 0005, with Kellogg, Brown & Root Services, Inc.’s Proposal dated 23 Nov 04.”

⁸ Per CFR 387.4 (d), it is DCAA’s responsibility to: “Examine reimbursement vouchers received directly from contractors, under cost-type contracts, transmitting those vouchers approved for payment to the cognizant disbursing officer and issuing DCAA Form 1, “Notice of Contract Costs Suspended and/or Disapproved,” with a copy to the cognizant contracting officer, with respect to costs claimed but not considered allowable. Where the contractor disagrees with a suspension or disallowance action by DCAA, and the difference cannot be resolved, the contractor may appeal in writing to the Administrative Contracting Officer (ACO) who will make his determination in writing. In addition, the contracting officer may direct the issuance of DCAA Form 1, “Notice of Contract Costs Suspended and/or Disapproved,” with respect to any cost which he has reason to believe should be suspended or disapproved.”

prepared by DCAA in performing its audits of the task orders. We analyzed and conducted certain tests of the audit procedures performed by DCAA. We also analyzed the prices paid for the procurement and transportation of fuels to Iraq. When performing this analysis, we considered the many factors influencing the price of fuel and its transportation in the region at that time. Foremost among these factors was the hazardous environment in which fuels were being delivered to Iraq, the price of refined products in the region, and, in Kuwait, the availability of only one company authorized by the Kuwait Petroleum Company to transport fuel into Iraq.

Confirm the physical existence of deliverables under Task Order 6

The Corps and KBR were not successful in fully completing the pipeline crossing near the Al-Fatah Bridge across the Tigris River since only six of the 15 pipelines originally envisioned were drilled under the river using horizontal directional drilling (HDD). KBR discovered that unforeseen subsurface geologic conditions, particularly loose, unconsolidated gravels and cobbles, made it impossible to retain an open hole for the larger diameter pipelines, foremost of which was the 40-inch crude oil pipeline. Because of delays and issues associated with the Al-Fatah crossing, KBR was instructed not to commence construction of the three canal crossings along the 50 km Turkey/Iraq pipeline. However, the third component of Task Order 6, the provision of back-up generation equipment to power plants and other facilities in Iraq, was successful and helped to ensure that these critical facilities remained operational.

Shortly after completing the six underground pipelines in the HDD project, a separate contract was issued to Parsons Iraqi Joint Venture (PIJV) to construct a crossing of the Tigris River upstream from the HDD pipeline crossing at the Al-Fatah Bridge. This crossing included the installation of nine large diameter pipelines, including the critical 40-inch crude oil pipeline which had been part of the KBR task order. These pipelines, each of which was encased in a six-inch concrete coating, were placed in a trench that was dredged across the river. This project also included the tie-in of the six pipelines previously installed during the KBR contract as well as crude oil manifolds on each side of the river to connect existing pipelines. This project, with incurred costs of approximately \$80 million, was funded with US appropriations rather than DFI funds. The three canal crossings at Kirkuk, Riyadh and Zegeton were also completed by PIJV for a cost of \$1.6 million, funded solely with U.S. appropriations.⁹

Thus, the original plan to construct a crossing under the Tigris River for 15 pipelines and construct three canal crossings over the 50 km pipeline was ultimately completed, albeit through two separate construction projects.

⁹ Interview of Project Engineer from PIJV, PCO Oil North Project and SIGIR Workpapers, October 25, 2005.

II. Scope of Work

The following Scope of Work was performed in accordance with the terms of reference described in the Performance Work Statement (PWS) established by DRSO at the request of IAMB. The sufficiency of this PWS is solely the responsibility of DRSO and IAMB.

The engagement was conducted in accordance with International Standards on Auditing.¹⁰ Under these standards, the auditor is to provide a report of the factual findings of agreed-upon procedures. Users of the report assess for themselves the procedures and findings reported by the auditor and draw their own conclusions from the auditor's work.

The following is the scope of work conducted under the contract and reported herein.

A. Review of Settlement between KBR and USACE

- (i) Perform a review of the settlement reached between the U.S. Army Corps of Engineers (USACE) and KBR Services on December 22, 2005. The review should include, at a minimum, the following steps:
 - a. Obtain the settlement documentation and provide a summary of the salient terms of the settlement, including the disposition of costs previously questioned by the DCAA and summarized in the September 2005 SIGIR report.
 - b. Comment on the reasonableness and basis for the settlement.
 - c. Based upon an appropriate and representative sampling, compare the processes and procedures for contract reconciliation and settlement of non-competitively awarded KBR RIO contract actions using DFI funds with the processes and procedures for contract reconciliation and settlement of non-competitively awarded KBR RIO contract actions using U.S. appropriated funds.
 - d. Document the procedures undertaken by the USACE contracting officer to establish that goods were delivered and services were rendered for each of the six task orders of the KBR RIO contract, and provide a summary of the results of those procedures.
 - e. Show how the management and performance award commission fees were calculated.
 - f. Obtain and summarize the terms for indirect costs, including overheads.

B. Review Work Performed by DCAA

- (ii) Review the work performed by the Defense Contract Audit Agency (DCAA) and reported in the September 2005 SIGIR report. For each of the task orders funded by the DFI (i.e., task orders 5 through 10), perform the following procedures:

¹⁰ Specifically, the International Standard on Related Services, Section 4400, addressing Engagements to Perform Agreed-Upon Procedures Regarding Financial Information.

- a. Obtain the contract files and review for completeness
- b. Obtain evidence that the contracting procedures were followed.
- c. Perform a review of the reasonableness of the price of imported fuel products compared to other sources, for example, the prices charged to the CPA or U.S. forces in Iraq at that time.
- d. Where no comparable price is available, assess the markup taking into account the wartime conditions.
- e. Obtain evidence that the goods were delivered and the services were rendered in terms of quality and quantity in accordance with the terms of the relevant task order under the KBR RIO contract.
- f. Determine by review of the agreement with the contractor that payments were properly justified.

C. Confirm Physical Existence of Deliverables under Task Order 6

The procedures performed and findings related to each item in this Statement of Work are addressed below.

III. Background of KBR's Contract with USACE

On March 8, 2003 the Southwest Division (SWD) of USACE in Fort Worth, Texas, entered into a contract (DACA63-03-D-005) with KBR. The contract was a cost-plus, indefinite delivery, indefinite quantity (IDIQ) contract. The contract was issued pursuant to United States Code Title 10, Section 2304(c) (1) which allows non-competitive contracting when only one responsible source is available and no other supplies or services will satisfy agency requirements.

Ten task orders were issued under the contract. Task Orders 1 through 4 and part of Task Order 5 were funded with U.S. Army Operations and Maintenance funds (U.S. appropriated funds). Beginning in September 2003, the Program Review Board (PRB) voted to fund some of the task orders with DFI funds. Task Order 5 was funded with DFI Funds as well as seized and vested funds. Task Orders 6 through 10 were funded with DFI Funds.

The statements of work for Task Orders 5 and 7 through 10 provide support for Iraq oil restoration and fuel distribution. These task orders required the repair of fuel products distribution systems and the procurement, importation and distribution of refined products (liquid products) and gas products (liquefied petroleum gas - LPG) to meet the domestic demand for commercial and private use of fuel within Iraq. These task orders are referred to collectively as the humanitarian fuel mission.

The statement of work for Task Order 6 provided for the restoration of essential oil infrastructure. This included three primary elements: 1) restoration of the pipeline crossing at the Tigris River near the town of Al-Fatah; 2) installation of the three

canal crossings of the 50 kilometer pipeline from Kirkuk to the Tigris River; and 3) installation of emergency back-up electrical generators at various locations throughout Iraq, e.g., at refineries and water utilities.

As noted above, the contract was a cost-plus award fee contract. Cost-plus reimbursement contracts are distinguished by special fee provisions that allow the government to unilaterally vary the amount of the award fee based on its evaluation of a contractor’s performance. In this case, KBR’s performance was evaluated by the USACE Award Fee Evaluation Board. The evaluation of performance was related to performance under each task order.

In addition to the incurred costs, there were two components of fee to be awarded in the KBR contract:

- Base Fee - in the amount of 2% of the total costs incurred in performing the work, and
- Award Fee - in an amount up to 5% above the base fee based upon the contractor’s performance.

Final payments made to KBR are presented in the Price Negotiation Memoranda prepared by USACE for each of Task Orders 5 through 10. These payments are as follows:

Task Order	Description	Total¹¹
5	Import and distribute fuel	\$871,123,108
6	Restore essential oil infrastructure	205,208,956
7	Import and distribute fuel	320,360,724
8	Import and distribute fuel	176,146,134
9	Import and distribute fuel	53,768,530
10	Import and distribute fuel	26,804,260
	Total	\$1,653,411,712

IV. Sources of Information

In performing our scope of work, we relied upon the following primary sources of information:

- Information from U.S. Army Corps of Engineers:
 - KBR contracts and subcontracts

¹¹ Total amounts paid by Task Order as contained in the Price Negotiation Memoranda by Task Order. For Task Order 5, total payments from DFI funds were \$715,599,289 of the \$871,123,108.

- Price Negotiation Memoranda
- Contract accounting documentation (e.g., invoices and related documentation)
- Correspondence pertaining to the KBR contract
- Interviews of USACE staff
- Background documents regarding the 50 km pipeline project

- Information from Defense Contract Audit Agency:
 - DCAA Audit Reports on individual task orders
 - Workpapers regarding DCAA's audit procedures performed on the KBR contract
 - Financial analyses in support of USACE's contract negotiations with KBR
 - DCAA audit manuals
 - Correspondence pertaining to the KBR contract
 - Interviews of DCAA staff

- Information from the Special Inspector General for Iraq Reconstruction:
 - Various SIGIR Project Assessment Reports regarding Iraq's oil infrastructure reconstruction
 - Workpapers supporting certain Project Assessment Reports
 - Interviews of SIGIR staff

- Information from a member of the U.S. State Department knowledgeable of the current status of the 40-inch crude oil pipeline and Tigris River and canal crossings

- Information from the Defense Energy Support Center:
 - Refined product pricing data
 - Interviews of DESC staff

- Information from KBR:
 - KBR accounting documentation
 - Correspondence pertaining to the contract with USACE
 - Fuel supply subcontract information
 - Interviews of KBR staff

- Information from external resources (e.g., articles, GAO reports, websites, etc.)

V. Findings

The results of our procedures are described below. Each element of our Scope of Work is presented in **bold** and is presented in the order prescribed in the above-mentioned Performance Work Statement.

A. Review of Settlement between KBR and USACE

(i) **Perform a review of the settlement reached between the U.S. Army Corps of Engineers (USACE) and KBR Services on December 22, 2005. The review should include, at a minimum, the following steps:**

a. **Obtain the settlement documentation and provide a summary of the salient terms of the settlement, including the disposition of costs previously questioned by the DCAA and summarized in the September 2005 SIGIR report.**

We obtained the following documentation related to the settlement between USACE and KBR and have summarized the salient terms below:

- Contract and related task orders
- Price Negotiation Memoranda
- DCAA audit reports and memoranda for the USACE contracting officer
- DCAA Contract Audit Manual

Based on our review of the above documents, we determined the salient terms to include the following:

- Direct costs incurred
- Indirect costs, including overheads
- Disposition of costs questioned by the DCAA and summarized in the September 2005 SIGIR Report
- Base fee
- Award fee

Direct costs incurred

The following table summarizes the final direct costs, indirect costs and fees paid under each task order in the KBR contract:¹²

¹² From Price Negotiation Memoranda regarding Task Orders 5 – 10. For Task Order 5, \$715,599,289 of the total payment was funded from the DFI.

Total Payments under Task Orders 5 - 10						
Task Order	Reimbursed Direct Costs	Indirect Costs	Base Fee	Award Fee	Total	As a % of Total
5	\$812,146,070	\$16,632,274	\$15,683,246	\$26,661,519	\$871,123,108	53%
6	196,429,125	4,511,831	3,880,000	388,000	205,208,956	12%
7	298,028,401	6,829,623	5,741,741	9,760,959	320,360,724	19%
8	164,092,535	3,760,353	3,071,573	5,221,673	176,146,134	11%
9	50,562,451	1,158,709	758,285	1,289,086	53,768,530	3%
10	25,356,608	581,082	320,952	545,618	26,804,260	2%
Total	\$1,546,615,189	\$33,473,872	\$29,455,797	\$43,866,855	\$1,653,411,712	100%
As a % of Total	94%	2%	2%	3%	100%	

The following paragraphs describe the reimbursed direct costs associated with each task order:

Task Order 5 – Import and distribute fuel

The order date for Task Order 5 was May 4, 2003. Total direct costs reimbursed were in the amount of \$812,146,070. These direct costs represent the reimbursed costs incurred for the purchase and transportation of refined fuel products throughout Iraq. It consists of subcontract costs in the amount of \$694 million (85.5%), primarily for fuel transportation,¹³ and cost of material in the amount of \$112 million (13.8%), primarily for the purchase of fuel (gasoline, kerosene, diesel and LPG).

Task Order 6 – Restore essential oil infrastructure

The order date for Task Order 6 was December 8, 2003. Total direct costs reimbursed were in the amount of \$196,429,125. These reimbursed direct costs represent costs incurred for the restoration of the essential infrastructure throughout Iraq. It consists of subcontract costs in the amount of \$123 million (62.9%), primarily for drilling at the Al-Fatah Bridge and procurement of back-up power generators.

Task Order 7 – Import and distribute fuel

The order date for Task Order 7 was December 4, 2003. Total direct costs reimbursed were in the amount of \$298,028,401. These reimbursed direct costs represent costs incurred for the purchase and transportation of refined fuel products throughout Iraq. It

¹³ With respect to fuel purchased from Turkey, the price of fuel and transportation were combined for each of the task orders. Similarly, for Task Order 5, the LPG delivered by barge was a single price for fuel and transportation.

consists of subcontract costs in the amount of \$254 million (85.4%), primarily for fuel transportation, and cost of material in the amount of \$42 million (14.3%), primarily for the purchase of fuel.

Task Order 8 – Import and distribute fuel

The order date for Task Order 8 is January 30, 2004. Total direct costs reimbursed were in the amount of \$164,092,535. Total direct costs incurred under Task Order 8 were in the amount of \$165,008,663. The reimbursed direct costs represent costs incurred for the purchase and transportation of refined fuel products throughout Iraq. It consists of subcontract costs in the amount of \$141 million (86.1%), primarily for fuel transportation, and cost of material in the amount of \$22 million (13.7%), primarily for the purchase of fuel.

Task Order 9 – Import and distribute fuel

The order date for Task Order 9 is March 2, 2004. Total direct costs reimbursed were in the amount of \$50,562,451. Total direct costs incurred for Task Order 9 were in the amount of \$52,494,449. The reimbursed direct costs represent costs incurred for the purchase and transportation of refined fuel products throughout Iraq. It consists of subcontract costs in the amount of \$33 (65.5%) million, primarily for fuel transportation, and cost of material in the amount of \$17 million (34.0%), primarily for the purchase of fuel.

Task Order 10 – Import and distribute fuel

The order date for Task Order 10 is March 19, 2004. Total reimbursed direct costs were in the amount of \$25,356,608. Total direct costs incurred for Task Order 10 were in the amount of \$26,322,608. The reimbursed direct costs represent costs incurred for the purchase and transportation of refined fuel products throughout Iraq. It consists of subcontract costs in the amount of \$15 million (60.3%), primarily for fuel transportation, and cost of material in the amount of \$9 million (36.3%), primarily for the purchase of fuel.

Indirect costs, including overheads

Indirect costs are defined by the Federal Acquisition Regulations (FAR) as follows:

“An indirect cost is any cost not directly identified with a single, final cost objective, but identified with two or more final cost objectives or an intermediate cost objective. It is not subject to treatment as a direct cost. After direct costs have been determined and charged directly to the contract or other work, indirect costs are those remaining to be allocated to the several cost objectives.”¹⁴

¹⁴ Federal Acquisition Regulations (“FAR”) Part 31.2.

A summary of indirect costs incurred by task order is set out in the above table. For example, Task Order 5 had \$16,632,274 of indirect costs. Indirect costs consist of two components: Overhead costs and General and Administrative (G&A) costs.

Indirect costs were calculated in two steps and were documented in PNMs. A PNM is prepared by the Corps' Administrative Contracting Officer (ACO) to document direct costs, indirect costs and fees for the purpose of negotiating the base and award fees with the contractor. The first step is to calculate the amount of overhead cost applicable to the task order. The amount of overhead is equal to the negotiated overhead rate times the direct costs incurred.

The second step in determining the indirect cost is calculating the G&A amount. G&A amounts are determined by multiplying a negotiated G&A percentage by the sum of the direct costs and overhead costs.

Disposition of Questioned Costs

We analyzed the disposition of costs questioned by the DCAA in the DCAA audit reports for each of the task orders and as summarized in the September 2005 SIGIR Report.

The DCAA Contract Audit Manual defines "questioned costs" as follows:¹⁵

"Those amounts on which audit action has been completed and which are not considered acceptable as a contract cost will be shown as questioned costs. This category includes amounts for:

- *Those items specifically identified as unallowable under the contract terms, statute, public policy, applicable Government regulations, or legal advice.*
- *Those items which, although not specifically unallowable, are determined to be unreasonable in amount, contrary to generally accepted government accounting principles, or not properly allocable to the contract considering the relative benefit received or other equitable relationship.*
- *The impact on the proposed costs of cost avoidance recommendations based on implementation of the cost reduction programs listed in 9-317.*
- *Those items questioned for other reasons, usually based on Government engineering or technical advice."*

It is important to remember that questioned costs, by definition, are not necessarily unallowable costs. Unallowable costs are those costs that have failed to meet the criteria for reimbursement under the applicable contract or program. Unallowable costs are not eligible for reimbursement; questioned costs remain eligible for payment.

¹⁵ DCAA Contract Audit Manual, January 2006, §10.304.8.

In its audits of the KBR Task Orders 5 through 10, DCAA questioned certain costs and documented findings in its audit reports. Below is a table showing the DCAA questioned costs for each task order.

Task Orders 5 - 10 Summary of Costs Questioned by DCAA							
Task Order	Labor	Material	Subcontract Costs	Overhead	G&A	Total	As a % of Total
5	\$35,799	\$4,458,828	\$78,174,864	\$471,216	\$1,305,309	\$84,446,016	41%
6	0	28,962	31,443,670	161,526	443,362	32,077,520	15%
7	49,004	(304,765)	35,272,826	175,085	489,171	35,681,321	17%
8	23,855	(172,490)	22,505,225	111,783	312,310	22,780,683	11%
9	9,280	307,443	19,215,458	97,661	272,855	19,902,697	10%
10	4,646	89,194	13,248,139	70,219	190,947	13,603,145	7%
Total	\$122,584	\$4,407,172	\$199,860,182	\$1,087,490	\$3,013,954	\$208,491,382	100%
As a % of Total	0%	2%	96%	1%	1%	100%	

The principal reasons described in the DCAA audit reports for questioning costs are as follows:

Task Orders 5, 7-10

Total questioned costs for Task Orders 5, 7-10 are in the amount of \$176,413,862. \$168,416,519 of the total questioned costs was due to questioned subcontractor costs. The questioned subcontractor costs were primarily due to the following:

- KBR’s failure to demonstrate reasonable pricing for the Kuwaiti fuel and transportation costs
- KBR’s unwarranted increases in the cost of fuel from the Turkey subcontracts.

Task Order 6

Questioned subcontractor costs in the amount of \$31,443,670 are due to the following:

- Change orders on subcontracts in excess of \$250,000 were issued without the advance consent of the USACE ACO as required by the contract.¹⁶
- Subcontract price or cost analyses were inadequate or not performed for change orders and included with proposal support as required by the contract.¹⁷

¹⁶ Referencing FAR 52.244-2 (e): “If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer’s written consent before placing the following subcontracts . . .”

- Costs for delay and damage were not identified and submitted separately; and
- Proposed subcontract costs included costs not allocable to Task Order 6.

With respect to unreimbursed costs, the table below presents the direct costs incurred by KBR that were questioned by DCAA and not reimbursed by USACE.

Unreimbursed Costs	
Task Order	Amount
5	\$0
6	0
7	0
8	916,128
9	1,932,000
10	966,000
Total	\$3,814,128

These incurred costs were documented in the PNM's and were not reimbursed for a variety of reasons, including rented diesel trucks that were not used in transporting diesel fuel and duplicate billings of certain Kerosene trucks. It should also be noted that in settling the DFI-funded task orders, KBR waived its potential claim for interest on invoices not timely paid in the amount of \$5,425,227.

Base Fee and Award Fee

The base fee and award fee are defined as follows:

- Base Fee - 2% of the total costs incurred in performing the work, and
- Award Fee - in an amount up to 5% above the base fee based upon the contractor's performance.

¹⁷ Referencing FAR 15.404-3(b): "The prime contractor or subcontractor shall: (1) Conduct appropriate cost or price analyses to establish the reasonableness of proposed subcontract prices; (2) Include the results of these analyses in the price proposal; and (3) When required by paragraph (c) of this subsection, submit subcontractor cost or pricing data to the Government as part of its own cost or pricing data."

The base fees and award fees for each task order are explained in detail below.

b. Comment on the reasonableness and basis for the settlement.

We reviewed the settlements between KBR and USACE relating to each of the Task Orders 5 through 10. As explained previously, the terms of settlement were contained in the Corps' PNMs for each task order and upon the final determinations of the USACE Award Fee Evaluation Board. The settlement price for each task order addressed the actual costs incurred as well as the base and award fees.

In conducting this review, we evaluated the basis of the settlements for reasonableness. Based upon our review of the negotiated terms of these settlements and related supporting documentation, we found the settlements to be reasonable and based upon standard USACE procedures for evaluating the allowability of costs and the payment of fees.

c. Based upon an appropriate and representative sampling, compare the processes and procedures for contract reconciliation and settlement of non-competitively awarded KBR RIO contract actions using DFI funds with the processes and procedures for contract reconciliation and settlement of non-competitively awarded KBR RIO contract actions using U.S. appropriated funds.

In an effort to identify similar contracts for this comparison, i.e., contracts that were non-competitively awarded to KBR for TF RIO projects and funded by DFI funds, we discovered that there were no such similar contracts meeting the above-described criteria. We therefore sought to identify other contracts or task orders which would provide a reasonable basis of comparison to the settlement of the non-competitively awarded KBR RIO contract.

We found that the only comparable contract action was the non-competitive award for KBR's TF RIO contract related to Task Orders 1 through 4 which had been funded by U.S. appropriations. Based on our review of the PNMs for Task Orders 1 through 4, we determined that the contracting and settlement procedures were consistent with the procedures used in negotiating the settlement of Task Orders 5 through 10. For example, consistent with the settlement of Task Orders 5 through 10, DCAA conducted audits of incurred direct costs and indirect costs in Task Orders 1 through 4 and provided audit reports which were relied upon by USACE in negotiating the settlements. The DCAA conducted audit procedures similar to those conducted for Task Orders 5 through 10. Similarly, the USACE Award Fee Evaluation Board was convened to assess KBR's performance in these task orders and issued performance ratings as follows:

Task Order 1: Score of 81

Task Order 2: Score of 88

Task Order 3: Score of 79

Task Order 4: Score of 79

The average performance rating issued to KBR for Task Orders 1 through 4 was 82. The average performance rating for Task Orders 5 through 10, explained below, was 84.

Furthermore, USACE contracting staff emphasized that the contracting and settlement procedures carried out for Task Orders 5 through 10 were consistent with the procedures performed for Task Orders 1 through 4 and adhered to all applicable U.S. federal government contracting regulations.

Thus, the processes, procedures and results for contract reconciliation and settlement between Task Orders 1 through 4 and Task Orders 5 through 10 were consistent.

It should be noted that the ACO excluded approximately \$107 million of the questioned costs from the amount used to determine the award fee (the Award Fee Pool). The table below presents the difference between the sum of direct and indirect costs incurred versus the amount used in the Award Fee Pool for purposes of computing the award fee.

Task Order	Reimbursed Direct Costs	Indirect Costs	Subtotal	Award Fee Pool	Difference
5	\$812,146,070	\$16,632,274	\$828,778,344	\$784,162,314	\$44,616,030
6	196,429,125	4,511,831	200,940,956	194,000,000	\$6,940,956
7	298,028,401	6,829,623	304,858,024	287,087,048	\$17,770,976
8	164,092,535	3,760,353	167,852,888	153,578,628	\$14,274,260
9	50,562,450	1,158,709	51,721,159	37,914,274	\$13,806,885
10	25,356,608	581,082	25,937,690	16,047,586	\$9,890,104
Total	\$1,546,615,189	\$33,473,872	\$1,580,089,061	\$1,472,789,850	\$107,299,211

- d. Document the procedures undertaken by the USACE contracting officer to establish that goods were delivered and services were rendered for each of the six task orders of the KBR RIO contract, and provide a summary of the results of those procedures.**

The procedures undertaken by USACE to establish that goods were delivered and services were rendered are described in the following steps. These steps were

documented in SIGIR Report 05-019, “Attestation Engagement Concerning the Award of Non-Competitive Contract DACA63-03-D-0005 to Kellogg, Brown, and Root Services, Inc.,” of September 30, 2005. We reviewed documentation for certain of these procedures to determine that the procedures were performed.

Review of Invoices by USACE and DCAA

In the early months of the humanitarian fuel mission, physical verification of fuel deliveries was performed by the USACE field ACO. DCAA performed extensive reviews of the pricing, billing and accounting for the fuel costs during its proposal, billing and incurred cost audits. During its audit of the fuel transportation costs, DCAA reviewed fuel receipt documents to verify that leased trucks were actually used to transport fuel. As noted above, certain fuel transportation costs were questioned by the DCAA and disallowed by USACE.

Invoices submitted to USACE by KBR presented subcontractor names and amounts owed. Attached to each invoice or group of invoices was a voucher signed and dated by a DCAA auditor approving “provisional payment subject to later audit.” DoD financial management regulations require approval of invoices and vouchers for cost-plus fixed-fee or other reimbursement contracts by the ACO or his authorized representative, in this case, by the DCAA auditor.

DCAA employed a six-step process in reviewing contractor invoices for provisional payment:

- The invoice was checked for mathematical accuracy
- The indirect rates were verified
- Cumulative invoice amounts were compared to amounts in DCAA records.
- Cumulative invoice amounts were verified to be within funding limits.
- The contractor’s job ledgers were tested to insure that invoiced costs did not exceed the job ledger amounts.
- A sample of transactions from larger invoices was tested to determine if subcontractor invoices support billed amounts

Receiving Reports

To track the receipt of materials, an electronic receiving report was generated by the Corps of Engineers’ Financial Management System (CEFMS). According to the ACO, the assisting field ACO in Iraq did not have access to CEFMS. Therefore, when an invoice was received from the contractor, the ACO in the U.S. would call the field ACO in Iraq, identify the invoice, and determine whether the goods or services were delivered. The field ACO, upon receiving a copy of the invoice, would confirm the receipt of goods or services. The ACO or other authorized USACE personnel would then acknowledge receipt on the receiving report in CEFMS. The field ACO maintained a daily log of work performed, and, in the case of the fuel procurement and distribution, he maintained an accounting of the amount of fuel received.

SIGIR’s review of the receiving reports generated in CEFMS revealed that the amount of goods and services approved in CEFMS matched the goods and services identified in the contract file. The goods and services received included the repair of fuel product distribution systems, the procurement and transportation of refined fuel products, the construction of a pipeline, and the installation of emergency back-up generation capability.”

Random Sampling of Invoices

DCAA auditors randomly selected samples of invoices to validate the receipt of goods and services. From the DCAA workpapers, we reviewed a sample of transactions contained in the DCAA workpapers, without exception.

Furthermore, in performing its attestation procedures regarding the award of the non-competitive contract to KBR and as described in its report of September 30, 2005, SIGIR evaluated the adequacy of documentation supporting the delivery of goods and rendering of services under the contract. The procedures for assessing transparency, which were previously agreed to by DRSO and IAMB, required that SIGIR obtain and examine authoritative receipt, invoicing, and disbursement documents related to DFI-funded contracting actions executed pursuant to this contract.

- e. Show how the management and performance award commission fees were calculated.**

A summary of the Base and Award Fees is as follows:

Base Fee and Award Fee Summary by Task Order

Task Order	Rating per the Award Fee Board	Base Fee	Award Fee	Award Fee as % of Total Award Fees
5	87	\$15,683,246	\$26,661,519	61%
6	71	3,880,000	388,000	1%
7	87	5,741,741	9,760,959	22%
8	87	3,071,573	5,221,673	12%
9	87	758,285	1,289,086	3%
10	87	320,952	545,618	1%
Total		\$29,455,797	\$43,866,855	100%

Base Fee

The KBR contract states the following with regard to Base Fees:

“the Cost Plus Award Fee (CPAF) type contract is applicable to the task orders issued. A CPAF contract is of the cost reimbursement category but is distinguished by its special fee provision that allows the Government to unilaterally vary the amount of award fee based on its evaluation of the Contactor’s performance. Contactor’s performance shall be continually monitored by an appointed Corps of Engineers Award Fee Evaluation Board. The base fee is equal to 2 percent of all fee bearing costs. Fee bearing costs shall be established based upon the negotiated estimated costs to execute the effort.”¹⁸

For example, in Task Order 5, the base fee was calculated to be \$15,683,246. This is equal to 2% of \$784,162,314, the award fee pool.

“The award fee pool, which includes both direct and indirect costs, is determined by the final negotiated cost, not the Rough Order of Magnitude. This provides the contractor the potential to earn a fee up to an additional five percent above the base fee of two percent based upon better than average performance. The Corps of Engineers Award Fee Evaluation Board will evaluate contractor performance on each task order no less than semi-annually.”¹⁹

We tested the base fee amounts as per the contractual formula, without exception.

Award Fee

The KBR contract states the following with regard to the Award Fee:

“The award fee for this contract shall be composed of an award fee pool. The award fee pool is based upon the final negotiated cost, not the Rough Order of Magnitude. This provides the contractor the potential to earn a fee up to an additional five percent above the base fee of two percent based upon better than average performance. The Corps of Engineers Award Fee Evaluation Board will evaluate contractor performance on each task order no less than semi-annually.”²⁰

The contractor will receive ratings of “good” (70-79), “very good” (80-89), or “excellent” (90-100) from the Award Fee Evaluation Board. The higher the rating, the higher the award fee. The rating is calculated by taking a weighted average of three factors: Technical Performance (60%), Management (30%), and Cost Performance (10%).

The PNM is used by the Corps as a mechanism to evaluate and document the final base and award fees for a task order. The determination of the award fee pool and actual award fee for each task order is documented. As stated earlier, under the KBR contract, KBR could receive up to an additional five percent of the calculated award fee pool based upon its level of performance as determined by the Award Fee Review Board.

¹⁸ Contract DACA63-03-D-0005, § H.24 – Award Fee.

¹⁹ Id.

²⁰ Id.

As indicated in the above table, KBR received “very good” ratings for Task Orders 5 and 7-10 and a “Good” rating for Task Order 6. We tested the Corps’ computation of award fees, without exception.

f. Obtain and summarize the terms for indirect costs, including overheads.

Indirect Costs and Overheads were explained above in section (i).a.

B. Review Work Performed by DCAA

(ii) Review the work performed by the Defense Contract Audit Agency (DCAA) and reported in the September 2005 SIGIR report. For each of the task orders funded by the DFI (i.e., task orders 5 through 10), perform the following procedures:

In completing this task, we relied primarily upon the following sources of information:

- Task Orders 5 through 10
- DCAA workpapers for Task Orders 5 through 10
- DCAA Audit Reports for Task Orders 5 through 10
- SIGIR Reports
- DESC documents
- Interviews with DCAA, DESC, USACE, and KBR staff

We reviewed the contract audit work performed by DCAA as contained in its workpapers and as expressed in its audit reports for each task order. Furthermore, as explained above in section (i) d., we reviewed the procedures conducted by the DCAA in confirming that goods were delivered and services rendered.

DCAA’s Standard Contract Audit Procedures

DCAA offers a wide variety of products and services to contracting officers in U.S. federal government agencies. This includes: ²¹

- Pre-award contract audit services
 - Price proposals
 - Pre-award surveys
 - Forward pricing labor and overhead rates
- Post-award contract audit services
 - Incurred costs/annual overhead rates
 - Truth in Negotiation Act compliance
 - Cost Accounting Standards compliance and adequacy
 - Claims
 - Financial capability

²¹ <http://www.dcaa.mil>.

- Contractor internal control system audits
 - Accounting
 - Estimating
 - Electronic Data Processing
 - Compensation
 - Billing
 - Budgeting
 - Materials management
 - Labor
 - Purchasing
 - Indirect and other direct costs
- Negotiation Assistance

As described above, many of these services were applied to the USACE/KBR TF RIO contract. Foremost of these services were: audits of proposed costs used by the contracting officer to negotiate prices; reviews of invoices submitted by KBR for interim payments; audit of KBR's internal control systems; and audits KBR's incurred costs. The results of DCAA audits were presented in audit reports which were used by the contracting officer when negotiating final payments to a contractor. During the term of TF RIO, DCAA devoted approximately seven full-time equivalent auditors to the KBR contract.

a. Obtain the contract files and review for completeness.

We obtained the USACE files for the KBR contract related to Task Orders 5 through 10. We reviewed the files for evidence that appropriate approvals and authorizations were obtained. We observed that appropriate Notices to Proceed were obtained and that invoices submitted for payment were appropriately reviewed and authorized. We observed that each task order was audited and reported upon by the DCAA.

b. Obtain evidence that the contracting procedures were followed.

As described above in (i) c., USACE contracting staff emphasized that the contracting and settlement procedures carried out for Task Orders 5 through 10 were consistent with the procedures performed for Task Orders 1 through 4. Thus, the processes, procedures and results for contract reconciliation and settlement between Task Orders 1 through 4 and Task Orders 5 through 10 were consistently applied.

The working relationship between KBR and USACE was governed by a contract from which individual task orders were issued for specific delivery of goods or services. The task orders established KBR's scope of work for a given project.

We reviewed the statements of work for task orders 5 through 10 which included the specific work to be performed under the individual task orders as well as other contract documents. These included signed Order for Supplies and Services (OSS) forms for each task order authorized by the contract officer. We reviewed Task Orders 5 through 10 and

related modifications as well as a sample of Requests for authorization. All initial OSS forms and modifications as well as the sampling of Request for Consent orders were authorized.

- c. Perform a review of the reasonableness of the price of imported fuel products compared to other sources, for example, the prices charged to the CPA or U.S. forces in Iraq at that time.**

To determine the reasonableness of the price of imported fuel products procured under Task Orders 5 and 7 through 10, it is first necessary to understand the context and history in which these task orders were executed.

History of Humanitarian Fuel Mission

Brigadier General Robert Crear was USACE's SWD's Commander when SWD received the Iraq oil mission in late January 2003. He became the TF RIO Commanding General and was deployed shortly after his advance team members arrived at Camp Doha, Kuwait in February 2003. The Coalition Ground Forces invaded Iraq on March 19, 2003. TF RIO military, civilian and contractor personnel were in the Rumaylah Oil Fields in Iraq by March 22, 2003.

As Coalition Forces moved throughout Iraq, the industrial infrastructure, particularly that of the oil and electrical generation infrastructure, was left unprotected. This resulted in massive looting and destruction of these government facilities. TF RIO discovered that its pre-war assessments did not accurately anticipate a number of factors:

- The fragile and dated condition of the oil infrastructure.
- The dependency and vulnerability of the oil infrastructure on the national electricity grid.
- The requirement to develop stand-alone electricity for the oil infrastructure.
- The need to develop base camps to support the reconstruction effort instead of relying on military camps.
- The temporary inability of Iraq's Ministry of Oil petroleum companies to meet domestic needs for refined products, specifically liquid petroleum gas (LPG), benzene (gasoline), kerosene and diesel fuels.²²

It is important to recognize that electrical generation plants in Iraq are powered primarily by diesel fuel. The diesel fuel used to generate electricity from these facilities was produced by the refineries in Iraq. With the initiation of military actions by coalition forces in Iraq, crude oil piped to refineries was disrupted and diesel fuel could no longer

²² USACE "History of Task Force – Restore Iraqi Oil" (draft), January 24, 2005.

be produced in sufficient quantities. This severely handicapped the electrical power generation capabilities in the country and contributed to the destabilization of the power grid.

The impact of fuel shortages became evident in other ways. After the prior regime was removed from power, Iraqis began importing large numbers of cars and this led to a dramatic increase in gasoline consumption. This exacerbated the already over-burdened capacity for making refined products in the country. This factor, coupled with the reduction in refining production due to insurgent attacks against pipelines and other facilities, created a condition whereby the refining capacity could not meet the country's domestic needs.

To avoid the risk of civil unrest, the decision was made by the U.S. military (the Combined Joint Task Force – 7 (CJTF-7)) to initiate a program of importing refined products to meet the country's humanitarian needs, both commercial and domestic. This launched the humanitarian fuel mission wherein fuels were imported to Iraq from neighboring countries (Kuwait, Turkey and Jordan) for generating electricity and to provide gasoline for commercial and personal use. Meeting the domestic gasoline and LPG needs of the country became a major TF RIO objective.

To meet the fuel needs of Iraq, USACE suggested that the mission be managed by the Defense Energy Support Center (DESC). DESC's charter is to provide the Department of Defense and other government agencies with comprehensive energy solutions in the most effective and economical manner possible.²³ CJTF-7 and CPA initially turned to DESC but DESC was unable to provide support for the fuel mission at that time due to its other commitments. CJTF-7 made the decision to assign the mission to USACE. The only contractual vehicle in place to accomplish the fuel mission was the sole source contract with KBR which had been written broadly to take care of unforeseen needs such as this. Accordingly, on May 4, 2003, KBR was issued a Notice to Proceed (NTP) with the humanitarian fuel mission.

Under DACA63-03-D-0005, Task Order 5 was written to begin the fuel procurement and transportation process. However, according to the Corps' Colonel DuBose, the increased demand for fuels coupled with the continuing issues of sabotage, looting, and refinery equipment failure, the domestic production of fuel products was unable to meet the demand. This led to the issuance of subsequent task orders (7 through 10) to address the continued need for fuel products.

The fuel import and distribution mission initially was envisioned as a limited 21-day shipment of fuel. According to Colonel DuBose, the initial scope of this mission was intended to be a "*stop gap measure . . . a few weeks or a month at the most*" until pipelines and refineries could be brought on-line and production from Iraq refineries could provide for the domestic need for fuels.²⁴ For the first few months of the

²³ See the DESC website at <http://www.desc.dla/mil> for more information about DESC's services.

²⁴ Interview with Col. Emmett DuBose.

humanitarian fuel mission, the program was based on short-term (often two weeks) incremental delivery and funding schedules.²⁵ However, for a number of reasons, it expanded dramatically into an extended 10-month effort which continued for an additional six months after DESC assumed responsibility for the program in April of 2004.

As this problem had not been foreseen, money had not been initially budgeted to support the fuel mission. TF RIO therefore received funding for the fuel delivery program as it became available. As a result, there were 21 funding changes for Task Order 5, with 15 occurring during the first 90 days. The procedure of issuing new task orders was adopted after the funding situation became more predictable.

Under Task Orders 5 and 7 through 10, KBR contracted with various commercial organizations to provide and transport refined fuel products into Iraq primarily from Kuwait and Turkey but also from Jordan. Multiple sources of fuel supplies were deemed necessary in the event that one source was cut-off by insurgent attacks. The supply route from Kuwait was marginally longer than that from Turkey and was more hazardous because of insurgent attacks on convoys. From Turkey, many of KBR's drivers refused to transport fuel to Baghdad and instead delivered fuel only as far as Mosul in Northern Iraq.²⁶

Fuel from Kuwait

According to KBR's TF RIO procurement manager, by May 4, 2003, KBR had contacted at least twelve vendors in Kuwait to determine their ability to meet the short-term requirement of procuring and transporting fuels into Iraq.²⁷ Three companies responded to the solicitation: Altanmia, Ma'mar Specialties (Ma'mar), and Elaenco General Trading (Elaenco). These vendors provided written responses to the verbal submissions on May 5, 2003. Of these vendors, Altanmia offered the most favorable terms as well as a sound plan for the delivery of fuels into Iraq. Both Ma'mar and Elaenco proposed higher product prices and less favorable terms (e.g., Ma'mar required a one-year contract and a letter of credit in the total amount of the contract). In consultation with the TF RIO General Manager and with the approval of the Corps' ACO, the decision was made to proceed with Altanmia as the sole provider. The ACO in turn sent a letter to the Kuwait Oil Minister confirming that USACE supported KBR's decision to subcontract with Altanmia.

On May 5, the KBR procurement manager attended a meeting between Altanmia and the Kuwait Petroleum Company (KPC) to witness the execution of a sales agreement for the purchase of fuel. KPC is a government-owned entity and is the only source of fuel products in Kuwait. According to Kuwait laws, KPC is the only organization allowed to produce, transport, refine and trade Kuwait's petroleum products both locally (within Kuwait) and internationally. Through its fleet of tanker trucks (approximately 220 as of

²⁵ Based on interviews with USACE and KBR staff.

²⁶ Based on interviews with KBR staff.

²⁷ Statement of Chris Niakaras, KBR Procurement Manager, March 25, 2005.

May 2003), KPC provided fuel from wholesale to resale facilities to meet the domestic fuel requirements of Kuwait. At this meeting, the KBR procurement manager made inquiries concerning the possibility of purchasing fuel products directly from KPC rather than using a third party, Altanmia. It was explained that because fuel was subsidized by the Kuwait government for the Kuwait population, it could not be sold to organizations other than those resale outlets approved by the government of Kuwait. Since KBR was not an authorized resale outlet, was not a registered Kuwait business, had no financial instruments in place and lacked an Arabic-speaking staff to handle loading and processing, it did not meet the requirements necessary to purchase fuel directly from KPC, at least in the short time frame required by the mission. Furthermore, Altanmia was the sole distributor approved by KPC for this mission.

A fourth Kuwaiti company (El Hoss Engineering and Transport Co.) submitted an oral bid subsequent to May 5 but at higher prices than those offered by Altanmia.

Apparently KBR had initially considered performing the fuel transportation directly, using its own equipment. However, according to the procurement manager, KBR could not locate a sufficient number of trucks to perform the task. As a result, KBR directed Altanmia to carry out this responsibility.

We reviewed the written confirmations of the oral bids received from these vendors and verified that Altanmia was the low bidder and offered superior terms for the importation of fuels to Iraq relative to the other bidders.

Additional Suppliers Sought

After issuing the initial notice to proceed to Altanmia and upon learning that the humanitarian fuel mission would be expanded, KBR issued additional purchase orders for fuel. KBR then sought out additional bidders on May 7 and May 8, 2003. Four bidders, in addition to Altanmia, responded: Jassim Transport and Stevedoring Company (Jassim), Mohammed Al-Mojil Group (Al-Mojil), American United (bidding with Al-Mojil Group), and SABA. Jassim, like Altanmia, had contracts with KPC to deliver fuel to gas stations throughout Kuwait. Again, Altanmia offered the best prices and was deemed to be the most cost effective provider.

It should also be noted that KPC lacked the capacity to supply the required amount of refined fuel products for Iraq's humanitarian mission, requiring KPC to purchase fuel on the open market at spot prices.

The first fuel was transported into Iraq in tanker trucks from Kuwait on May 7, 2003, just three days after KBR had been given the Notice to Proceed with the fuel supply mission. Fuel was transported to any of seven initial "download locations" in Iraq. These were storage facilities from which further "retail" distribution by others would take place.

Structure of Subcontract Changed

The initial purchase orders to Altanmia were structured to charge a per liter price that was inclusive of both fuel and delivery charges. However, according to the KBR procurement manager, because of the serious logistical difficulties and security issues related to fuel delivery that arose as shipments began, this arrangement proved unworkable. Foremost of these issues was security, as the convoys of KBR tanker trucks were regularly subjected to insurgent attacks and roadside bombs during their journeys into Iraq.²⁸ During the transit through Iraq, truck convoys would pass from one military-controlled zone to another and always required military escorts. This “hand-over” process was time-consuming and required scheduling and coordination and often led to delays. Because of these issues, KBR restructured the contract with Altanmia on May 15, 2003.

As noted by DCAA in its analysis of fuel transportation costs, another factor that contributed to the increase in these costs was the increase in the number of download points and the frequent diversion of trucks to different download points. Though there were initially seven delivery points for fuel in Iraq, KBR ultimately delivered fuel to more than 100 different sites because of military diversions. In addition, in many instances broken-down trucks were destroyed in place by the U.S. Army rather than waiting for repairs and risk endangering an entire convoy.

It was initially contemplated that tanker trucks traveling to Baghdad from Kuwait would make four round trips per month, each round trip taking approximately one week to cover the 840 miles. However, because of the many issues associated with moving fuel truck convoys within Iraq, it became evident that trucks would be capable of making no more than approximately two trips per month. The new agreement negotiated with Altanmia segregated the fuel purchase from the costs of transportation. The cost of leasing fuel trucks was a fixed price per tanker per month in the amount of \$25,575. The cost of fuel was set at \$.30 per liter (\$1.13 per gallon) for gasoline (benzene) purchased in Kuwait and transported to Iraq by Altanmia under the separate transportation contract.

Transworld Transport Subcontract

According to USACE, in May 2003, KBR was still attempting to get sufficient tankers to execute the mission and it issued another subcontract for fuel transportation for the lease of 50 trucks from a Dubai firm, Transworld Transport (Transworld). The agreed-upon price was \$16,400 per month, or 64% of the \$25,575 per month paid to Altanmia. However, when the Transworld trucks arrived at the Kuwait border, they were apparently delayed, subjected to special visa requirements and taxed. Trucks from other countries entering Kuwait must pass a safety inspection and be registered in Kuwait, which

²⁸ The KBR truck convoys were subjected to ambushes, sniper fire, roadside bombs, and rocket-propelled grenades. KBR lost more contractors than any other non-combatant organization in Iraq, many of whom were truck drivers. According to KBR, there were 85 reports of injuries to KBR employees and contractors, of which 21 were fatalities.

typically takes several weeks. Without the proper permits, trucks are not allowed entry to most KPC facilities. Due to the difficulties associated with getting Transworld trucks into Kuwait and the pressing demands of the mission, KBR terminated the Transworld subcontract for default.

Kuwait Establishment Company Bid

By October 2003, USACE had realized that the fuel supply mission was likely to continue indefinitely. It therefore allowed KBR to enter longer term subcontracts for transportation subject to the availability of funds. KBR then began a new competition on October 18, 2003. Several companies submitted bids but only two were responsive – Altanmia and Kuwait Establishment Company (KEC). The bid from Altanmia was \$23,610 per truck per month and the bid from KEC was \$13,527.

As a result of this new competition, on November 1, USACE requested KPC to authorize KEC to engage in the resale and transportation of fuel from Kuwait. However, KEC was unable to provide proof of authorization from KPC to purchase fuel from the government of Kuwait. As a consequence, KBR re-opened negotiations with Altanmia and ultimately issued Altanmia the follow-on contract. The pricing for this extension was the same as the previous contract at \$.30 per liter, which was consistent with the Platts Price Index at that time after considering the additional costs incurred for each liter supplied.

By early December 2003 the daily fuel requirements from Kuwait had doubled from two to four million liters per day of gasoline. KBR again attempted to obtain additional competition to supply fuel but in so doing triggered complaints from Altanmia to the Kuwait government and to the American Embassy in Kuwait. According to USACE, it was made clear that KBR was to continue to rely upon Altanmia to supply the critical fuel requirements to Iraq from Kuwait. As a result, KBR continued to rely upon Altanmia for this support.

Waiver of Certified Cost and Pricing Data

To ensure the reasonableness of Altanmia's pricing in order to award the expanded fuel requirements to Altanmia, KBR requested and received price and cost information. However Altanmia refused to certify the data although KBR's analysis of Altanmia's fuel prices relative to prices from the Platts Pricing Index indicated that the prices were fair and reasonable. KBR negotiated with Altanmia to obtain price concessions in early December. Despite an environment of rising prices, Altanmia agreed to keep its fuel price fixed at the existing rate and agreed to a reduction in the monthly tanker rental rate. On December 19, USACE issued a waiver of the requirement to submit certified cost and pricing data. This was the only way to fulfill the objectives of the humanitarian fuel mission by continuing the subcontract with Altanmia and remain in compliance with the provisions of FAR. Based on the waiver and Altanmia's price concessions, KBR awarded the additional fuel requirements to Altanmia.

Fuel from Turkey

To begin the procurement process for fuel from Turkey, KBR leveraged its already existing business operations and relationships with providers in Turkey through a competitive bidding process. During the humanitarian fuel mission, KBR was able to utilize five different Turkish vendors to obtain and transport fuel to download points in Iraq (Opet, Petrol Offisi, Tefirom, Kizil, and, Aygaz). These subcontracts were issued to the lowest bidders and were priced such that the cost of fuel and transportation were combined. The original period of performance for each subcontract was for 30 days. It should be noted that fuel supplied from Turkish vendors was a lower octane fuel (and thus less costly) than that supplied from Kuwait.

During the course of performance, as a result of generally increasing market prices during the period and in order to keep the fuel moving into Iraq, KBR elected to issue retroactive price adjustments to the Turkish suppliers based on published market data (Platts Pricing Index).

Fuel from Jordan

Fuel was also transported from Jordan into Iraq, albeit in small quantities. According to DCAA audit reports, KBR received bids from five companies in Jordan to deliver kerosene and diesel fuel to Iraq. Two suppliers were selected. Based on our review of DCAA workpapers and KBR contract files, DCAA concluded that the lowest bidders had been selected. The contracts were firm-fixed-price contracts. None of the DCAA audits questioned the prices or costs incurred for fuel purchases from Jordan.

The following charts provide information regarding the cost of fuel and related transportation from Kuwait and Turkey. This is presented in total amounts as well as on a per unit (liter and gallon) basis. LPG per unit information was not presented due to insufficient information on volumes.

Summary of Fuel and Transportation Costs

	Fuel & Transportation Costs				Liters			
	Kuwait	Turkey	Jordan	Total	Kuwait	Turkey	Jordan	Total
TO5								
Benzene	\$ 205,835,488	\$ 274,031,006	\$ -	\$ 479,866,494	323,978,099	866,624,227	-	1,190,602,326
Kerosene	\$ 25,268,967	\$ 58,771,099	\$ 4,009,712	\$ 88,049,778	43,299,919	161,334,340	9,469,170	214,103,429
Diesel	\$ -	\$ 77,926,634	\$ 9,930,024	\$ 87,856,658	-	230,799,582	24,217,374	255,016,956
Total	\$ 231,104,455	\$ 410,728,739	\$ 13,939,736	\$ 655,772,930	367,278,018	1,258,758,149	33,686,544	1,659,722,711
TO7								
Benzene	\$ 47,119,066	\$ 60,585,276	\$ -	\$ 107,704,342	82,890,252	176,690,805	-	259,581,057
Kerosene	\$ 38,734,952	\$ 61,113,804	\$ 809,216	\$ 100,657,972	67,675,525	155,807,572	1,973,698	225,456,795
Diesel	\$ -	\$ 42,515,316	\$ 3,116,433	\$ 45,631,749	-	107,594,112	7,601,056	115,195,168
Total	\$ 85,854,018	\$ 164,214,396	\$ 3,925,649	\$ 253,994,063	150,565,777	440,092,489	9,574,754	600,233,020
TO8								
Benzene	\$ 25,933,858	\$ 32,283,406	\$ -	\$ 58,217,264	38,884,625	89,601,152	-	128,485,777
Kerosene	\$ 19,056,044	\$ 35,685,087	\$ 1,862,411	\$ 56,603,542	29,461,785	93,345,996	4,921,807	127,729,588
Diesel	\$ 3,225,045	\$ 24,619,134	\$ 2,199,911	\$ 30,044,090	6,371,337	72,387,299	5,907,380	84,666,016
Total	\$ 48,214,947	\$ 92,587,627	\$ 4,062,322	\$ 144,864,896	74,717,747	255,334,447	10,829,187	340,881,381
TO9								
Benzene	\$ 21,113,450	\$ 1,960,478	\$ -	\$ 23,073,928	30,148,144	5,291,478	-	35,439,622
Kerosene	\$ 17,343,329	\$ 3,891,468	\$ -	\$ 21,234,797	30,244,369	10,213,347	-	40,457,716
Diesel	\$ 2,510,052	\$ 1,818,792	\$ -	\$ 4,328,844	1,379,358	5,267,879	-	6,647,237
Total	\$ 40,966,831	\$ 7,670,738	\$ -	\$ 48,637,569	61,771,871	20,772,704	-	82,544,575
TO10								
Benzene	\$ 12,666,694	\$ -	\$ -	\$ 12,666,694	18,031,501	-	-	18,031,501
Kerosene	\$ 10,181,764	\$ -	\$ -	\$ 10,181,764	12,522,455	-	-	12,522,455
Diesel	\$ 1,640,442	\$ -	\$ -	\$ 1,640,442	1,950,000	-	-	1,950,000
Total	\$ 24,488,900	\$ -	\$ -	\$ 24,488,900	32,503,956	-	-	32,503,956
Total								
Benzene	\$ 312,668,556	\$ 368,860,166	\$ -	\$ 681,528,722	493,932,621	1,138,207,662	-	1,632,140,283
Kerosene	\$ 110,585,056	\$ 159,461,458	\$ 6,681,339	\$ 276,727,853	183,204,053	420,701,255	16,364,675	620,269,983
Diesel	\$ 7,375,539	\$ 146,879,876	\$ 15,246,368	\$ 169,501,783	9,700,695	416,048,872	37,725,810	463,475,377
Total	\$ 430,629,151	\$ 675,201,500	\$ 21,927,707	\$ 1,127,758,358	686,837,369	1,974,957,789	54,090,485	2,715,885,643

Fuel and Transportation Costs Per Unit

	Cost Per Liter			Cost Per Gallon		
	Kuwait	Turkey	Jordan	Kuwait	Turkey	Jordan
TO 5						
Benzene	\$0.64	\$0.32	N/A	\$2.42	\$1.21	N/A
Kerosene	\$0.58	\$0.36	\$0.42	\$2.20	\$1.36	\$1.59
Diesel	N/A	\$0.34	\$0.41	N/A	\$1.29	\$1.55
TO 7						
Benzene	\$0.57	\$0.34	N/A	\$2.16	\$1.29	N/A
Kerosene	\$0.57	\$0.39	\$0.41	\$2.16	\$1.48	\$1.55
Diesel	N/A	\$0.40	\$0.41	N/A	\$1.51	\$1.55
TO 8						
Benzene	\$0.67	\$0.36	N/A	\$2.54	\$1.36	N/A
Kerosene	\$0.65	\$0.38	\$0.38	\$2.46	\$1.44	\$1.44
Diesel	\$0.51	\$0.34	\$0.37	\$1.93	\$1.29	\$1.40
TO 9						
Benzene	\$0.70	\$0.37	N/A	\$2.65	\$1.40	N/A
Kerosene	\$0.57	\$0.38	N/A	\$2.16	\$1.44	N/A
Diesel	\$1.82	\$0.35	N/A	\$6.89	\$1.32	N/A
TO 10						
Benzene	\$0.70	N/A	N/A	\$2.65	N/A	N/A
Kerosene	\$0.81	N/A	N/A	\$3.07	N/A	N/A
Diesel	\$0.84	N/A	N/A	\$3.18	N/A	N/A
Total						
Benzene	\$0.63	\$0.32	N/A	\$2.38	\$1.21	N/A
Kerosene	\$0.60	\$0.38	\$0.41	\$2.27	\$1.44	\$1.55
Diesel	\$0.76	\$0.35	\$0.40	\$2.88	\$1.32	\$1.51

Evaluating the Reasonableness of prices

To determine if the prices paid for fuel imported to Iraq under Task Orders 5 and 7 through 10 during the humanitarian fuel mission were reasonable, we interviewed officials at DESC. As described previously, DESC supplies fuel to U.S. military forces and maintains extensive data on fuel prices. Following the completion of the KBR task orders for fuel supply, DESC became the fuel supplier for the humanitarian fuel mission (effective April 1, 2004). DESC procured fuel products from KPC and, like KBR, relied upon Altanmia for fuel transport.

DESC officials explained that during the period in which KBR was purchasing fuel from Kuwait and Turkey and transporting it into Iraq (May 2003 through March 2004), there were no other valid price comparisons because of the unique conditions under which the USACE/KBR fuel mission took place, i.e., with respect to the immediacy of need, the uncertainty surrounding the period of performance, and the hazardous security environment in which fuel was being delivered.

According to DESC, a comparison of the cost of fuel and its transport into Iraq during the time of the humanitarian fuel mission carried out by KBR (May 2003 to March 2004) to the cost of fuel and transport in other regions or other time periods, including the period subsequent to KBR's contract when DESC was supplying fuel to Iraq, is not a reasonable basis of comparison. For example, in addition to the unique conditions described above, the following factors distinguish the DESC fuel supply project (commencing March 2004) to the KBR fuel supply contract (May 2003 through March 2004):

- DESC was able to secure fuel transportation service contracts from Altanmia for multiple three-month periods rather than the week-to-week commitments under the KBR contract. Funds provided to USACE and, in turn, KBR during Task Force RIO were provided in small amounts as they became available, resulting in numerous funding changes over the life of Task Order 5. The relatively long-term duration of funding commitments for DESC provided more favorable terms than the terms available to KBR which had executed its subcontract under urgent and compelling circumstances.
- KBR, which prior to the humanitarian fuel supply mission in Iraq had no comparable experience with such a project, was responsible for planning, coordinating and executing this unique, large-scale mission. When DESC assumed responsibility for the fuel supply mission in April 2004, it was able to capitalize on the lessons learned by KBR to craft the fuel and transportation services contracts.
- DESC was able to purchase fuel directly from KPC whereas KBR was required to deal through Altanmia to procure and transport fuel.
- When DESC commenced operations in April 2004, relationships with producers and trucking contractors were already in place. KBR had only a few days to identify and make arrangements with fuel suppliers.
- Contractors were not required by DESC to carry a specific amount of insurance coverage.
- DESC employed economic price adjustments in its contracts.
- Under the KBR contract with Altanmia, the cost of transportation was set at a level which included the risk of losing trucks. During the fuel mission, KBR reported that Altanmia lost 233 trucks at a cost of approximately \$15 Million. KBR did not bill USACE, and USACE did not pay for any of these lost trucks.

Since KBR conducted a competitive bidding process and obtained multiple bids from qualified bidders knowledgeable of the circumstances under which they would provide fuel to Iraq, the cost of fuel and transport was based on market prices. This provided a

reasonable basis for the costs of fuel and transport at that time. With respect to transporting fuel from Kuwait, KBR had no option other than to contract with the sole provider authorized by the government of Kuwait to perform this function, Altanmia.

As described above, tanker trucks leased by KBR from Altanmia were leased at an initial rate of \$25,575 per month per truck without regard to the number of deliveries made by each truck each month. In October 2003, KBR negotiated a new rate of \$23,610 per month. On January 2, 2004, KBR negotiated a reduction to \$22,900 per additional truck per month and on January 15, 2004, KBR negotiated a further reduction to \$20,700 per additional truck per month.

In evaluating the reasonableness of this amount, we observed that the lease rate was a reflection of the high-risk environment in which fuel was being delivered into Iraq. These risks included the risk of damage to trucks as well as the outright loss of trucks due to theft or destruction resulting from sabotage or insurgent attacks. In addition, the cost of labor was high due to the extremely dangerous conditions in which drivers and other employees were working. As with the price of fuel, KBR sought and obtained multiple bids for the transportation of fuel into Iraq, with Altanmia again providing the low bid.

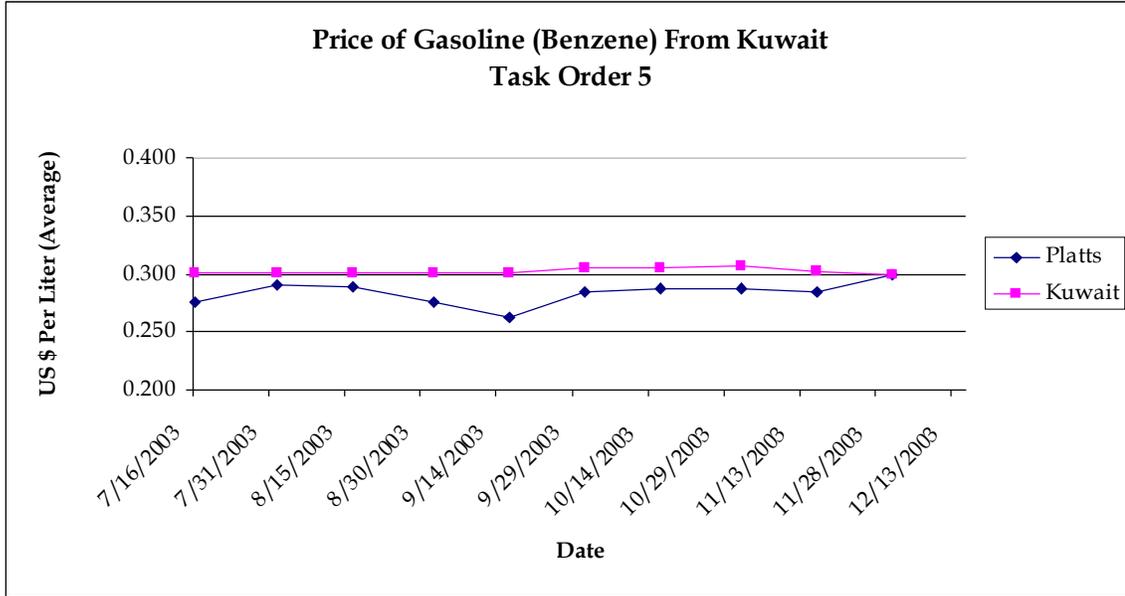
Furthermore, a modification to Task Order 5 was presented on August 3, 2003 for a period of performance of 90 days beginning August 3, 2003. This would have allowed KBR to potentially negotiate more favorable terms with its suppliers. However, the modification lacked the necessary funding for such a procurement. In fact, modifications that served to reduce the funding for fuel purchases were issued August 2, 2003, one day before the extension, and on August 8, 2003, five days later. A modification to increase the funding for the fuel mission was not issued until September 5, 2003, 33 days after the extension was provided.

d. Where no comparable price is available, assess the markup taking into account the wartime conditions.

As discussed above, due to the unique wartime conditions of the humanitarian fuel mission in Iraq, especially the dangerous and high-risk operating environment, the uncertain period of performance and the urgency to “*keep fuel moving into Iraq,*” no comparable benchmark for the price of fuel and the cost of transporting it into Iraq was available. However, because the contracts for the supply and transport of fuel into Iraq were obtained through a competitive bidding process, both in Kuwait and in Turkey, the prices paid reflect the market conditions in that geographic area and time. And, as noted above, only one vendor, Altanmia, was authorized to transport fuel into Iraq.

Below is a chart illustrating the price of gasoline (benzene) from Kuwait under Task Order 5, 90 days after the inception of the task order compared to Platts Pricing data. It should be noted that the fuel prices indicated in the chart from Platts are based on spot market prices whereas those from Kuwait include additional cost factors such as the cost of funds, insurance, and various labor costs. A similar chart for Turkish fuel supplies was

not prepared since invoices from Turkish suppliers reflected combined costs of fuel and transportation.



- e. Obtain evidence that the goods were delivered and the services were rendered in terms of quality and quantity in accordance with the terms of the relevant task order under the KBR RIO contract.**

The verification and evidence of quality and quantity of products and services received under Task Orders 5 through 10 is described above in section i., d.

- f. Determine by review of the agreement with the contractor that payments were properly justified.**

Based on our review of USACE’s contracting procedures for each of Task Orders 5 through 10, DCAA’s payment authorization and auditing procedures, and the settlement procedures discussed above, payments made to KBR were properly justified.

C. Confirm Physical Existence of Deliverables under Task Order 6

- a. Contractual Requirements of Task Order # 6**

As requested by IAMB, we conducted procedures to confirm the physical existence of deliverables under Task Order # 6. This task order was related to the restoration of essential oil infrastructure in Iraq. As described in the KBR contract, the purpose of Task Order # 6 was to restore the following:

- Installation of the pipeline crossing of the Tigris River in the vicinity of the Al Fatah Bridge.
- Provide assistance to the Iraq Ministry of Oil for the installation of 50 kilometers of the 40-inch crude oil pipeline from Kirkuk to the Tigris River, including three canal crossings.
- Installation of emergency, back-up generation capability at various locations.²⁹

The period of performance in the contract was within one year from award of the task order on December 8, 2003. It should be noted that the infrastructure repair work was commenced under Task Order 3 and then transferred to Task Order 6 and USACE retroactively adjusted the effective date of Task Order 6 to August 1, 2003. The incurred costs and estimates during the four months were transferred to Task Order 6. August 1 was also the day after use of DFI funds to accomplish this project was approved by the PRB for the CPA.

As set forth in the contract, the requirements for each of the above work elements were as follows:

Construct pipeline crossing of the Tigris River in the vicinity of the Al-Fatah Bridge³⁰

“In the original workplan approved for RIO, it was anticipated the Al Fatah Bridge would be repaired through the US AID program. The RIO portion of replacing the pipelines under the bridge was the only costs and effort envisioned with that plan. The timeline for the bridge replacement has been determined to be a year away and that timeline does not meet RIO requirements to have the functional replacement pipeline. The pipelines will be able to increase oil flow from 300,000 barrels per day to 500,000 barrels per day, so any delay has significant economic impact. No temporary bridging plan is available because the Iraqi Ministry of Housing and Construction has advised that only the bridge foundations will be used, so no significant structure will be available to hang new pipelines on. The task envisioned under this task order is to construct a new, pipeline-only bridge across the river or to tunnel under the river. The deciding factors for this decision will be time – in as much as the economic impact is stated above. There are up to 16 associated product pipelines to be included in the replacement river crossing. Provide plan for course of action, schedule, cost estimates and upon approval, execute the construction of the new river crossing.”

²⁹ Statement of Work, contract DACA63-03-D-005, December 8, 2003.

³⁰ Section 2.1 of Task Order #6.

Provide assistance to the Ministry of Oil staff, plan, procure and install 50 kilometers of 40-inch pipeline from Kirkuk to the Tigris River as required.³¹

“The pipeline is approximately 15 years old and has reached the end of its design life. Corrosion and poor condition has caused the pipeline capacity to be downrated and transfers can only be accomplished at low flow rates and decreased pressures. The Ministry of Oil (MOO) and the State Company for Construction Projects (SCOP) have begun work, both design and replacement of the pipeline. The determination has been made to completely replace the pipe and by replacing the, flow rates can be increased from approximately 500,000 barrel per day to 800,000 barrels per day, displaying a significant economic impact of having the new pipeline available for use. The underground pipeline will also provide significant security improvements over the exposed, above-ground pipeline. SCOP will continue to work on the project. The effort under this task order consists of design and construction of three horizontal, directionally drilled crossings at the Kirkuk Irrigation Canal, the Riad [Riyadh] Access Road and Irrigation Canal and the Zegeton River crossing. These crossings are to be closely coordinated with SCOP efforts to construct the pipeline and timelines are to coincide for the two efforts. Coordinate and assist activities of SCOP as required to assure coordination and timely completion of the two coincidental efforts. Procure materials as required to support the completion of the pipeline.”

Install emergency back-up generation capability.³²

“RIO and MOO efforts to restore the oil infrastructure have been adversely impacted by lack of stable power at key locations. The power grid improvements for the country have been delayed and stable power is required for many of the production facilities. For purposes of this task order, coordinate with MOO and ACO to develop a plan to procure and install emergency back up generation capacity at designated key infrastructure locations as directed by the ACO.”

³¹ Task Order #6, § 2.2.

³² Task Order #6, § 2.3.

b. Background of Task Order # 6

The Pipeline Crossing at Al-Fatah Bridge

i. A Brief History³³

The Tigris River pipeline crossing project at Al-Fatah was not part of the original Restoration of Iraqi Oil Infrastructure Work Plan (“Workplan”)³⁴ but was one of three projects assigned to the Corps of Engineers by an agreement with the CPA and the Oil Ministry. The other two projects included a 50-kilometer section of pipeline connecting to the Al-Fatah Crossing from Kirkuk, and the Qarmat Ali Water Plant in the Rumaylah Oil Fields. These projects were strategically important to the Iraqi Oil Industry and were unique in that they (as well as the fuel import task orders 5 and 7 through 10) were funded from the Development Fund for Iraq (DFI) instead of by US appropriations.

The Al-Fatah Bridge crossing, located close to the town of Al-Fatah, is strategically important because the Kirkuk Oil Fields produce approximately 40% of Iraq’s oil. Before the Gulf War, nearly all of the crude oil produced in northern Iraq crossed the Tigris River at Al-Fatah through pipelines for refining or export. Once refined, oil products then go elsewhere in Iraq or are transported back across the river by pipeline to Kirkuk and northern Iraq.

Without pipelines crossing the river at Al-Fatah to transport oil and oil products, the oil production from the Kirkuk fields is landlocked. Before the Gulf War, the oil pipelines were embedded in concrete conduits running beneath the surface of the bridge. On April

³³ The history of the pipeline crossing at the Al-Fatah bridge is drawn primarily from the following sources:

- The Scope of Work contained in the KBR subcontract to perform HDD drilling adjacent to the Al Fatah Bridge.
- “Background of Task Force – Restore Iraqi Oil,” a draft working history of TF RIO prepared by USACE.
- “Pipeline River Crossing – Al Fatah, Iraq,” SIGIR Report SA-05-001, January 27, 2006.
- Cost Proposal for Task Order # 0006 Rev 01 from KBR.
- The March 2, 2006 response by USACE to the January 27, 2006 SIGIR report.
- “Kirkuk to Baiji Pipeline Project” issued on July 31, 2006 by SIGIR.
- The USACE response to the draft report of SIGIR on July 31, 2006.
- KBR’s February 21, 2005 response to USACE’s Award Fee for Contract DACA63-03-D-005.
- Memoranda of interviews conducted by SIGIR representatives of key TF RIO participants.

³⁴ “Restoration of Iraqi Oil Infrastructure Final Workplan” of July 24, 2003. This Workplan was the result of the joint collective effort of the Iraq Ministry of Oil and its associated companies and organizations, the USACE and its Task Force RIO staff, KBR staff, and representatives from the Iraq Reconstruction and Development Council (IRDC). The plan was signed in Baghdad on July 24, 2003 by the Chief Executive Officer of Iraq’s Ministry of Oil, Thamir Abbas Ghadhban, Phillip Carroll, the Coalition Provisional Authority’s Senior Oil Advisor, and Brigadier General Robert Crear, Commanding General of the USACE Task Force RIO. The Workplan was the road map to completing the final piece of TF RIO’s mission – restoring Iraq’s oil infrastructure. It identified 220 projects to be completed by March 31, 2004 at a projected cost of \$1.14 billion.

3, 2003, the Coalition forces attacked the bridge in order to deny Iraq the capability of crossing the Tigris River. Aerial bombing destroyed one bridge span and concurrently severed all the pipelines contained within the bridge. The objective of this project was essentially to replace these pre-war pipelines crossing the Tigris River to restore the movement of crude oil and refined products.

The major crude oil pipeline crossing the river at Al-Fatah originates in Kirkuk and angles 75 kilometers to the southwest where it crosses the Tigris River. On the other side of the Tigris River is the Bayji Refinery (Iraq's largest) and Bayji Power Plant. The refinery and the electrical power plant are interdependent. Diesel from the refinery fuels the power plant, and electricity from the power plant runs the refinery and its processes. The refinery depends on receiving crude oil produced in the Kirkuk Oil Fields. Crude oil from Kirkuk goes either to the Bayji Refinery or to the Iraq-Turkey Export Pipeline after crossing the Tigris River.

ii. The Decision to Use HDD

Although the bridge supporting the pipelines was critical to TF RIO's mission of restoring Iraq's oil infrastructure, replacing bridges in Iraq was the responsibility of the U.S. Agency for International Development (USAID). Apparently USAID and the Iraq Ministry of Construction had decided that the Al-Fatah Bridge was not a high priority repair project at that time and that it would not be repaired for at least another year. This eliminated the most obvious way to restore the pipeline crossing of the Tigris River, i.e., by using the bridge to support the pipeline river crossing.

At the major oil reconstruction conference held in Baghdad in July 2003, the Al-Fatah pipeline crossing was among the projects considered. The decision to delay repair of the bridge was confirmed in a meeting with representatives from USAID, USACE, KBR, CPA and the Iraq Ministries of Oil and Construction. Once this decision was made, various options for the Al Fatah pipeline crossing were considered:

- Constructing a temporary pipeline bridge to house the pipes
- Constructing a temporary pipeline hung on the side of the bridge towers
- Constructing a more permanent pipeline whereby the pipes would be braced against the base of the bridge underwater
- Constructing a trench across the river and placing the pipelines in the trench, or
- Using horizontal directional drilling (HDD) to tunnel under the river and insert the pipes through the boreholes.

HDD is a trenchless construction method utilizing equipment and techniques from horizontal oil well drilling technology and conventional road boring. HDD construction

is used to install petroleum pipelines, fiber optic and electric cables, and water and waste water pipelines where conventional open trench construction is not feasible or will cause adverse disturbances to environmental features, land use or physical obstacles. HDD involves four main steps:

- Pre-site planning
- Drilling a pilot hole
- Expanding the pilot hole by reaming, and
- Pull back of pre-fabricated pipe.³⁵

The planned approach was to drill seven tunnels each approximately 1,000 yards in length and 60 feet underneath the bottom of the Tigris River. The plan was to insert 15 pipelines through these seven drilled tunnels.

The options utilizing the bridge were rejected for the following reasons:

- These options were temporary and would require replacement at some time in the near future. At the time, the plan was to repair the bridge in one year, but this could not be assured. This would significantly add to the overall costs of the repair.
- The pipelines would be exposed and easy targets for sabotage. Apparently the Iraq Ministry of Oil staff was strongly supportive of alternatives that would reduce this threat. (Underscoring the benefits of underground drilling, on October 18, 2005, insurgents bombed and destroyed three temporary gas pipelines that had been placed across the Al-Fatah Bridge. The resulting heat plume caused one of the bridge spans to collapse. These lines are being repaired by temporarily connecting them to lines routed by KBR during the HDD project.)³⁶
- The option of attaching the pipeline underwater at the base of the bridge was dismissed because of the concern of damage and instability during high water flows.

The trenching option was rejected because of the requirement to encase the trench in a protective coating which would require more time and money.

The HDD option offered a number of important advantages which, at the time, persuaded the decision-makers to select it as the best option. These included:

³⁵ Description of HDD from: "Planning Horizontal Directional Drilling for Pipeline Construction," Canadian Association of Petroleum Producers, September 2004.

³⁶ Interview of Project Engineer from PIJV, PCO Oil North Project; SIGIR Workpapers, October 25, 2005.

- Speed – Relative to the other options, HDD was a far quicker alternative.
Speed of construction was important for two primary reasons:
 - It would allow rapid restoration of Iraq’s crude oil exporting operations to provide badly needed funds to Iraq, and
 - It would reduce the duration of exposure by the construction teams to insurgent hostilities
- Security - By drilling underneath the Tigris River, the pipelines would be safeguarded from future sabotage and acts of terrorism. This was a critical advantage over the other options.
- Permanence – Placing the pipelines under the river by use of HDD would provide a permanent solution. A temporary solution was deemed unattractive and costly.
- Cost – HDD was viewed as a less costly alternative compared to the other permanent options. Underground routing would also contribute to reduced long-term maintenance requirements thereby reducing the overall life-cycle cost of this alternative.

Information regarding HDD had also been gathered by the CPA’s senior oil advisor working in conjunction with TF RIO and Iraq MOO staff to develop a prioritized plan for restoring the oil infrastructure. The advisor contacted representatives of Laney Directional Drilling Company (“Laney”), one of the leading pipeline directional drilling contractors in the U.S. Laney had recently utilized HDD drilling under the Houston Ship Channel as part of a commercial project to move pipelines that might interfere with a USACE project to dredge the channel. Within a short time thereafter, the decision to pursue HDD was made by senior officials of the CPA in Baghdad in collaboration with MOO officials. KBR was instructed to start the HDD procurement in July 2003.

Thus, in conjunction with Ministry of Oil staff, senior oil advisors to CPA selected HDD as the option that would best meet security objectives in the least amount of time and for equal or less cost than other permanent solutions. Indeed, the short time frame initially allotted for the completion of the project (10 weeks) made the HDD solution the only feasible solution to installing the pipelines across the river. At the time of this decision, there was no information regarding the soil/geology condition at the site.

iii. Selecting the subcontractors

During August through September 2003, the HDD subcontract was put out to competitive bid by KBR to four contractors with HDD capability: two in the U.S.: Laney and Michels Corporation; and two in the U.K.: Land & Marine Project Engineering, Ltd. and Visser &

Smit Hanab, Ltd. All four bidders were afforded the opportunity to visit the site. As described in the HDD Scope of Work, *“Time is of the essence for this project. Maximum resources must be applied to complete the crossings as soon as possible. To the maximum extent possible, bundling of the pipelines shall be employed to minimize the total number of borings thereby accelerating the time for completion.”*³⁷ The emphasis in the HDD subcontract on rapid completion of the project was consistent with language in KBR’s contract with USACE, described above, which stated: *The task envisioned under this task order is to construct a new, pipeline-only bridge across the river or to tunnel under the river. The deciding factors for this decision will be time – in as much as the economic impact is stated above*

Included in KBR’s Request for Proposal (RFP) information was borehole data from the location of the Al-Fatah Bridge, a desktop study prepared by a geotechnical consultant (Fugro South, Inc.), topographic data, aerial and road maps and other materials. Satellite images of the site were to be made available. Two of the contractors visited the site prior to bidding. The contract was to be awarded by September 1, 2003 and completed by February 29, 2004.

The project was ultimately awarded to Willbros Middle East and its HDD drilling subcontractor Laney, under a firm fixed price contract in the amount of \$45,972,000 for six months of drilling effort and convertible to time and materials after the six month period expired. The subcontractor mobilized in early October 2003 but was unable to start due to security issues³⁸ and due to delays in constructing secured living quarters at Al Fatah. Willbros and Laney remained in Kirkuk on standby for over two months awaiting the site to be secured.

iv. The Fugro Report

The desktop study provided to the HDD drilling subcontractors was entitled “Geotechnical Desktop Study – Directional Drilling – Al Fatha Bridge, Tigris River Crossing, Baiji, Iraq” (the “Fugro Report”) and was issued by Fugro South, Inc. on August 9, 2003 from its offices in the U.S. Salient findings from the report include the following:

We have prepared this report for Halliburton/KBR for use as a guide for geotechnical aspects of the preliminary design and construction considerations for the proposed directional drilling at the Al Fatha Crossing near Baiji, Iraq. The soil/geology conditions presented in this report are based on the information gathered near the general area of the site. This information should not be used for design of facilities.

³⁷ “Scope of Work, Tigris River HDD Pipeline Crossings Adjacent to the Al-Fatha Bridge in Northern Iraq,” August 20, 2003.

³⁸ It was indicated in KBR’s Cost Proposal for T.O. 6 that “A series of unexpected and increasingly serious attacks on project personnel and equipment occurred in the area during October and November 2003. In spite of setbacks, equipment and materials were delivered to the construction site in November and December 2003.”

Furthermore, our study indicates that the subsurface stratigraphy near the site is highly complex and variable, especially due to past tectonic activities near the site. For instance, rock outcrops may be present at the surface in some areas whereas in other areas significant overburden solids may be present. Field exploration and laboratory testing must be carried out prior to developing the final design of the structures and construction activities for the above-referenced pipeline.

And,

The regional geology and the generalized soil conditions presented herein are intended to aid in the development of conceptual plans for the proposed directional drilling at the Al Fatha Bridge near Baiji in Iraq. However, we must emphasize the necessity of a detailed geophysical/geotechnical investigation at the site in order to generate specific subsurface soil conditions to allow the development of the final design for the construction activities for this project. It may be prudent to take a phased approach for this project.

And later,

Due to past tectonic activities, the subsurface stratigraphy is expected to vary significantly over short distances both in terms of composition and depth/thickness of materials. There is also some reference in the literature about the presence of caverns within the formations. For these reasons, information derived from discrete, widely spaced borings may not give true representation of subsurface stratigraphy. Geophysical surveys coupled with soil borings and a comprehensive understanding of the site geology will be needed to better characterize the site and to understand the risks associated with the directional drilling and foundation construction.

Based on review of memoranda of interviews conducted by SIGIR as well as our interviews with USACE and KBR officials, the findings in the Fugro Report were viewed as unsurprising qualifiers to be expected of a study of this nature (i.e., a desktop study) and that the comments were not considered significant enough to overturn the decision to use HDD. For example, the Fugro Report's reference to ". . . consolidated conglomerates and lenses of sandstones . . . alluvial deposits composed of clay, sand and pebbles"³⁹ were not considered to be unusual conditions for a river bed. And, none of the HDD drilling subcontractors contemplating bidding on the project raised concerns about the findings in the Fugro Report.

It should also be noted that the recommendations set forth in the Fugro Report regarding the need to conduct detailed geophysical/geotechnical investigations of the site, excavation of test pits, cone penetration tests, geophysical seismic surveys, and sample borings would require additional time to perform, especially in an environment as dangerous as Iraq. These tests would also require the time to prepare, coordinate and

³⁹ Fugro Report, page 4.

review an extensive report of findings. This process could take as much as two or three months to complete, under the best of circumstances. As noted above, speed of execution was the highest priority for the Al-Fatah pipeline crossing. Based on the combined wisdom of the decision-makers, HDD was viewed as the only feasible alternative.

Furthermore, KBR officials noted that task orders were issued unilaterally by USACE and that they understood that the Task Order simply called for HDD. KBR engineers also advised that they had limited experience with HDD and thus relied upon their drilling consultant to assist in developing final drilling plans.

v. Drilling Begins

The planned configuration of 15 tunnels included: a 24-inch gas pipeline, a 26-inch crude oil pipeline, a 30-inch crude oil pipeline, a 32-inch crude oil pipeline, a 40-inch crude oil pipeline and two 40-inch lines containing bundles of five pipelines each. These bundles were to contain an 8-inch natural gas pipeline, a 12-inch refined product pipeline, a 14-inch LPG pipeline, a 16-inch fuel pipeline and a 20-inch crude line. The second set of the five bundle lines of the same configuration were to be backup lines.

Despite the high priority of completing the project in a short time period, poor security at the construction site was an important factor. The KBR and drilling subcontractor team first arrived on site on October 18, 2003 but were unable to commence work until the end of January 2004 due to the dangerous security situation and absence of base camp facilities. It should be noted that, for these reasons, this also would have been the earliest opportunity that a geotechnical consulting firm could have conducted any on-site investigations and taken borehole samples.

HDD drilling began using the first of two drill rigs on January 30, 2004. The first borehole was expected to be completed in four days, with back-reaming taking another fourteen days and pulling the pipe to take another day after the hole was reamed to the appropriate diameter. Problems with the dulling of bits and lost drill bits, structural voids, and cobble caused the first borehole attempt to be abandoned. After multiple attempts, the first borehole for the 26-inch pipe was completed on February 24, 2004. The pipe was successfully pulled through a month later, on March 24, 2004. Contributing to the delays was the abandonment of the original borehole trajectory due to encountering a massive man-made concrete block. Other factors reported to be hampering progress included transportation coordination issues, delays waiting for spare parts, slow contractor cost reporting, insufficient crews to drill concurrently with the two HDD rigs and security problems including explosions of improvised explosive devices (IEDs) and small arms attacks.

In a lessons learned summary, KBR stated that unforeseen subsurface geologic conditions, particularly loose, unconsolidated gravels and cobbles, made it impossible to retain an open hole for the larger diameter pipelines. To achieve any level of success and to eliminate construction of interconnecting manifolds on each side of the river, they

modified the plan configuration by drilling smaller holes.⁴⁰ Though the possibility of abandoning the HDD project and using alternative approaches was apparently discussed with the CPA, the response was that HDD was a superior approach for security and environmental reasons and that alternative approaches would provide only a temporary solution.⁴¹

When drilling problems arose in March 2004, it is apparent that USACE relied upon KBR which in turn relied upon its drilling subcontractors to complete the job. With past successful HDD experience at other job sites in the U.S., confidence remained that the job could be completed. However, by the end of June, 2004, KBR proposed to USACE that modifications to the HDD project be made. This included extending the drilling subcontract through August 15, deletion of the spare bundle drilling bore, moving the drilling upstream to a location with less cobble to accommodate the larger diameter pipelines, particularly the 40-inch Iraq/Turkey pipeline, pulling one line per bore hole instead of bundling, and other changes. KBR would complete as many lines as possible within the available funding.⁴²

Furthermore, it is apparent that USACE did not have a copy of the Fugro Report until sometime after March 31, 2004 and that it was not until July 2004 that USACE, through a report from Dr. Sanders (described below), learned of the findings in the Fugro Report.

vi. Dr. Robert Sanders' Review

In July, USACE commissioned one of its employees, Dr. Robert Sanders, Ph.D., a retired Certified Professional Geologist, to evaluate the drilling problems at Al-Fatah. Before visiting the site, Dr. Sanders studied the materials contained in the KBR contract with Willbros as well as the geotechnical study by Fugro. Based on his analysis of these materials, Dr. Sanders found evidence that suggested that the gap in the ridges at Al Fatah was the manifestation of a fault. In his pre-site visit memo of July 4, 2004, Dr. Sanders noted that *“Had the advice of Fugro been heeded by KBR, the unfavorable geologic conditions apparently present would have been identified and it is unlikely that directional drilling would have been undertaken. Given the warning provided in the Fugro report, it was folly beyond the point of culpable negligence to have undertaken directional drilling without further studies.”*⁴³

Based on his site visit, Dr. Sanders suggested that horizontal directional drilling was not an appropriate method for installing the lines. Although small diameter lines might be maintained, anything greater than 26” would be problematic with the probability of

⁴⁰ SIGIR Report, “Pipeline River Crossing – Al Fatah, Iraq,” SIGIR Report SA-05-001, January 27, 2006

⁴¹ “SWD/RIO Response to SIGIR Report No. SA-05-001, January 27, 2006.”

⁴² From KBR’s “Responses to ACO Letter Concerning 90 Days Lost Productivity at Al Fatha,” June 30, 2004.

⁴³ “Interpretation of Geologic Conditions at the Al Fatah Bridge Site,” July 4, 2004, by Robert B. Sanders, Ph.D.

success decreasing exponentially with a line's increasing diameter. He concluded that 40 inch borings were highly improbable.

vii. Discontinuation of the Project

Faced with increasing difficulties and delays in reaming the larger bore holes, various subcontractor problems (including delays in delivery of the second HDD rig, sufficient quantities of bentonite and drill pipe), and the severe wartime security conditions, the HDD project was discontinued on August 14, 2004. USACE issued KBR a cure letter and an interim unsatisfactory rating for its management of the project. TF RIO transferred responsibility for the incomplete work to the Project and Contracting Office (PCO).⁴⁴

At the time of demobilization, six pipelines had been successfully installed beneath the Tigris River: the initial 26-inch crude oil pipeline, a 24-inch dry gas pipeline, a 14-inch LPG (sour gas) pipeline, a 12-inch refined product pipeline, a 16-inch fuel gas line and one 8-inch natural gas line. Based on a ratio of completed throughput to planned throughput, these pipelines represented a 28% completion rate.⁴⁵ While this accomplishment fell significantly short of the original goal, it was viewed as a partial success in light of the difficulties encountered with the soil conditions, delays due to inadequate living facilities and the dangerous security conditions. At the time of demobilization, approximately \$75 million had been spent on the HDD project.⁴⁶

viii. Current Status

As described above, KBR was successful in only partially completing the Al Fatah pipeline crossing, installing six of the 15 pipes that were planned. However, less than three months later, on November 19, 2004, a task order (Task Order # 14) under a separate contract was issued by the Project and Contracting Office to a different contractor, Parsons Iraqi Joint Venture (PIJV) to complete the project. PCO elected to install the pipelines across the Tigris River using the conventional "cut-and-cover" method which involves excavating a trench across the river, installing the pipeline, and covering it with gravel. The project included planning, engineering design, detailed design, construction and commissioning of pipelines across the Tigris River upstream from the site of the HDD project.

This replacement project provided for the installation of nine large diameter pipelines placed in a trench that was dredged across the river. These pipelines included a 14-inch LPG line; 20-inch, 30-inch, 32-inch, and 40-inch crude oil pipelines and four spare pipelines: 8-inch, 12-inch, 16-inch and 20-inch. This project also include the tie-in of the

⁴⁴ Chronology from USACE presentation on the Tigris River Crossing Project at Al Fatah.

⁴⁵ SIGIR Report, "Pipeline River Crossing – Al Fatah, Iraq," SIGIR Report SA-05-001, January 27, 2006.

⁴⁶ Facility ID Summary Cost Report, Task Order 06 – Final Work Plan, June 26, 2004.

six pipelines previously installed using HDD under the KBR contract as well as crude oil manifolds on each side of the river to connect existing pipelines.⁴⁷

Each of the nine pipelines placed in the trench were encased in a six-inch concrete coating to increase their density so as to remain submerged in the trench. The nine pipelines were pulled across the river in December 2005 and covered by river rock to stabilize them and to minimize the scouring effects of the river. During the course of the construction project, terrorist attacks were so frequent as to require the dispatch of the US Army's 101st Airborne division to provide necessary security to carry out the work.

Significantly, this task order, in the amount of approximately \$80 million, was funded with US appropriations rather than DFI funds. Thus, the original plan to construct a crossing under the Tigris River for 15 pipelines was ultimately completed, albeit through two separate construction projects, one funded from the DFI (the KBR project), the other from U.S. appropriations (the PIJV project).

50 kilometer Pipeline and Canal Crossings

As mentioned above, the 50 km pipeline project was an Iraq Ministry of Oil project to be carried out by SCOP utilizing Iraqi funds. This was established in July 2003. TF RIO, through KBR's Task Order 6, was assigned the responsibility to supply welding rods, equipment, training and limited quality assurance assistance regarding pipeline welding. SCOP had previously completed 25 km of the total 75 km pipeline. All organizations were in agreement that SCOP would be responsible for this effort because it would allow Iraq to participate in the oil infrastructure reconstruction process.

It was USACE's decision not to issue a Notice to Proceed to KBR to complete the canal crossings (utilizing HDD) until after the HDD project at the Tigris River crossing at Al Fatah had been completed. This decision was based on the cost of bringing a third HDD drilling rig and crew (two were already in operation at Al Fatah) into Iraq from the U.S. as well as the dangerous security situation in the areas of the canal crossings.

Furthermore, as noted by General William H. McCoy in response to SIGIR's Draft Assessment Report on the Kirkuk to Baiji Pipeline Project, utilizing a third HDD rig and team would not have enabled exports to begin any sooner as the canal crossings would not be useful until the crossing at Al Fatah and the 50 km. pipeline were completed. Once the HDD project at Al Fatah was completed, it was the plan to move the HDD rigs to the canal crossings for drilling. However, since KBR did not complete the full scope of the Tigris River HDD crossing, KBR did not commence any construction on the three canal crossings.

⁴⁷ SIGIR Report, "Pipeline River Crossing – Al Fatah, Iraq," SIGIR Report SA-05-001, January 27, 2006; also, "On-Bottom Stability Report for the Tigris River Crossing" by Universal Ensco, Inc., on behalf of PIJV, July 27, 2005.

In August 2004, USACE terminated KBR's obligation to provide quality assurance to SCOP's work on the 50 km. pipeline as well as construct the three crossings.⁴⁸ As noted above, the Project and Contracting Office subsequently awarded the project to PIJV.

The PIJV work at the Al-Fatah Tigris River crossing was completed and is operational today. The Kirkuk canal crossing was completed by PIJV in April 2006. The Zegeton and Riyadh canal crossings were completed by a subcontractor from the Republic of Georgia, TriQuest International Group, Ltd. All of the canal crossings require testing before they can be placed into operation. The remaining work to be completed on the 40-inch pipeline includes inspection of 14 welds, cleaning and testing, at which time it will be commissioned.⁴⁹

Back-up Power Generators

As described in the task order, KBR was to coordinate with MOO and USACE to procure and install emergency back-up generation equipment for designated key infrastructure locations. The Iraqi electric power infrastructure had, similar to the oil infrastructure, suffered setbacks due to looting and sabotage of power distribution facilities. Lack of stable power was severely impacting the country's oil production and refining operations. As a result, TF RIO determined that back-power generation capability at key production and refining facilities sufficient to maintain plant operations was essential.

This project was successfully completed and was based largely on subcontracted procurements from General Electric, Electrical and Instrumentation International, Inc., Almeer Technical Services and other subcontractors and suppliers. It included the procurement, shipment and installation of the following back-up generators:

- Nine trailer-mounted General Electric 18 MW TM500 gas turbine generators. These generators were in full operation by December 2003. Three were installed at the North Ramaila NGL plant, four at the South Rumaila plant, and two at the Qarmat Ali water injection facility used to pump water into southern Iraq's oil fields to aid in oil extraction.
- One GE 10 MW GE10 gas turbine generator to provide power to the crude product pumping station in Az Zubair.
- One GE 10 MW GE10 gas turbine generator to provide power to the crude product pumping station in North Ramaila.
- One GE 18 MW TM500 gas turbine generator to provide power for degassing, compressor and water injection at Zubair Mishrif.

⁴⁸ SIGIR Assessment Report – "Kirkuk to Baiji Pipeline Project," SIGIR Report PA-06-063, PA-05-013, and PA-05-014; July 31, 2006.

⁴⁹ Current status information on the Al-Fatah bridge crossing and three canal crossings provided by the U.S. State Department in Baghdad.

- One Pratt & Whitney FT8 TwinPak gas turbine generator for the North Ramaila cluster pump stations.
- Miscellaneous diesel generators (1 MW) including:
 - 34 diesel generators and auxiliary items, installed at various locations by the Southern Oil Company (SOC)
 - 14 step-up, step-down transformers used by SOC
 - Six diesel generators, switchgear and day tanks installed at Um Qasar and Al Nasiryah.
 - Two diesel generators leased and installed at Az Zubair and Al Fao.

c. Work Completed to Confirm Physical Existence of Deliverables under Task Order # 6

The following procedures were carried out to confirm the physical existence of the above-described deliverables completed under Task Order #6:

- Review of USACE and DCAA procedures, documentation, and workpapers regarding the procurement and receipt of deliverables
- Review of selected receipt and payment documentation such as invoices, receiving reports, and accounting records
- Review of selected subcontracts (and related change orders) between KBR and its subcontractors
- Review of Requests for Consent for selected subcontracts between KBR and subcontractors
- Review of SIGIR assessment reports and supporting workpapers
- Review of photographic evidence from the following sources:
 - USACE
 - SIGIR
 - KBR
 - PIJV

- Interviews of cognizant officials in the U.S. and in Baghdad from the following organizations:
 - USACE
 - DCAA
 - DESC
 - SIGIR
 - KBR
 - US State Department

List of Acronyms

Acronym	Definition
ACO	Administrative Contracting Officer
AUP	Agreed Upon Procedures
CEFMS	Corps of Engineers Financial Management System
CFLCC	Coalition Forces Land Component Command
CJTF	Combined Joint Task Force
CPA	Coalition Provisional Authority
CPAF	Cost Plus Award Fee
DCAA	Defense Contract Audit Agency
DESC	Defense Energy Support Center
DFI	Development Fund for Iraq
DoD	Department of Defense
DRSO	Defense Reconstruction Support Office
FAR	Financial Acquisition Regulation
G&A	General & Administrative
GAO2	Government Accountability Office
HDD	Horizontal Directional Drilling
IAMB	International Advisory and Monitoring Board
IDIQ	Indefinite Delivery Indefinite Quantity
IED	Improvised Explosive Device
KBR	Kellogg, Brown, and Root
KPC	Kuwait Petroleum Company
LOGCAP	Logistic Civil Augmentation Program
LPG	Liquefied Petroleum Gas
MOO	Ministry of Oil
NOC	North Oil Company
NTP	Notice to Proceed
PCO	Project and Contracting Office
PIJV	Parsons Iraq Joint Venture
PNM	Price Negotiation Memorandum
PRB	Program Review Board
RFP	Request For Proposal
SCOP	State Company for Oil Projects
SIGIR	Special Inspector General for Iraq Reconstruction
SOC	Southern Oil Company
SWD	Southwestern Division (of U.S. Army Corps of Engineers)
TF-RIO	Task Force – Reconstruction Iraqi Oil
TO	Task Order
USACE	U.S. Army Corp of Engineers
USAID	U.S. Agency for International Development