

KBR's Response to NBC's Questions Regarding Sodium Dichromate Exposure at the Qarmat Ali Water Treatment Plant

It is important to note the United States Army Corps of Engineers (USACE) contracted with KBR to provide support in the military's efforts to restore the Iraqi oil program following the commencement of military operations in March 2003. The contract defines the duties and responsibilities not only of KBR, but also of the United States. In particular, before ordering KBR to perform work at a site in Iraq, the contract required the military to ensure that the site was "benign," e.g., free from environmental and industrial hazards. Further, KBR was forbidden from entering a site until after it was secured by the military.

Second, it appears that the "KBR supervisor" referred to in NBC's questions is Johnny Morney, and that NBC has been provided with excerpts of his deposition in a related arbitration brought by 10 former KBR employees against KBR (*Langford et al v. KBR*). Mr. Morney was a mid-level Health and Safety Manager for Project RIO. In his deposition in the arbitration, Mr. Morney said that he first learned of the presence of sodium dichromate from Jake Duhon, another HSE employee who worked under and reported to him. He had a conversation with Mr. Duhon and read Mr. Duhon's daily health and safety report that mentioned the presence of sodium dichromate. Mr. Duhon's report was dated June 22, 2003. Mr. Duhon did not report the presence of sodium dichromate in May 2003. In his daily report, Mr. Duhon said that workers with the Southern Oil Company of Iraq ("SOC") told him that sodium dichromate was one of the chemicals mixed with water from a nearby river in chemical vessels/agitators housed in the chemical injection building at the Qarmat Ali Water Treatment Plant. Throughout Mr. Morney's deposition, Mr. Langford's lawyer mistakenly referred to these events as occurring in May 2003, even though Mr. Duhon's daily report was clearly dated June 22, 2003. Mr. Morney did not catch the error and correct the Plaintiffs' attorney. Despite this error, which was clarified during the *Langford* arbitration, plaintiffs' counsel continue to use this testimony to misrepresent the facts in this case.

1. Given that sodium dichromate is classified as a hazardous chemical - potentially harmful to humans through even short-term exposures - why was there a two-month delay between when KBR first detected the chemical (05/xx/03) and when KBR informed the Army about the contamination (07/25/03)?

This question is based on inaccurate information. KBR disagrees with the premise that "even short-term exposures" to sodium dichromate are known to be harmful. The most recent and reliable scientific literature indicates that much longer periods of exposure are required for the development of acute symptoms or an increased risk of future ailments. According to data from the military, the average soldier spent less than one month at Qarmat Ali. Based on deposition testimony taken from plaintiff guardsmen to date, the guardsmen were at the site in intermittent periods of 1 or 2 days at a time due to being on a rotation between different sites. The testing conducted by the US military and the British military, as well as that conducted by KBR, all found no harmful levels of exposure.

Furthermore, KBR does not believe that any of its engineers or other employees learned of the presence of sodium dichromate in May 2003. KBR engineers learned that sodium dichromate

was previously used by the SOC around June 1, 2003. This information was recorded in a trip report, which KBR provided to the military at that time pursuant to directions it had received from the USACE contracting officer. The SOC had used sodium dichromate as an anti-corrosive agent in the chemical injection process, but it was no longer being used and the water plant was not operational. In the weeks that followed, KBR personnel spent an increasing amount of time at the Qarmat Ali facility and learned that the sodium dichromate that had been used in the past may have contaminated certain areas of the plant.

KBR then informed the military of the contamination and worked with the military to conduct air and soil testing to confirm the presence and extent of the contamination. Some of the necessary testing equipment was not readily available, and KBR could not obtain it without first securing military approval and then ordering the equipment from outside of Iraq.

In short, KBR notified the USACE in early June 2003 that sodium dichromate was one of the chemicals used by the SOC before the war, and it notified the USACE when it learned about the potential contamination of the soil by sodium dichromate in late July 2003.

2. Why was there another delay of three weeks between when KBR informed the Army (07/25/03) and when KBR requested authorization for remediation (08/12/03)?

This question is based on inaccurate information. KBR strongly disagrees with the suggestion that there was a delay in remediation efforts. In consultation with the USACE, KBR elected to take the most cautious approach. KBR sought authorization from the military to commence remediation efforts, which included encapsulating the contaminated soil, on August 12, 2003, one day after obtaining the initial soil sample results. KBR did this even though all of the soil results at that time were below the Texas Risk Reduction Program Tier 1 Residential Protective Concentration Levels (“PCL”).

3. Why was there another delay of one month between when KBR requested authorization for remediation (08/12/03) and when KBR removed most workers and required Personal Protective Equipment (PPEs - aka chemical suits with respiratory protection) for remaining workers (09/08/03)?

There was no delay by KBR, and this question is based on inaccurate information. In compliance with its Hazard Communications Plan and Accident Prevention Plan, which were reviewed, edited, and approved by the U.S. military, and in order to ensure both KBR and military personnel were aware of possible contamination, KBR posted signs warning about the contamination and required that the subcontractor employees working in the chemical agitators wear Personal Protective Equipment (PPE). There was no need for everyone on the plant to wear PPE because the soil samples did not show dangerous levels of contamination. As acknowledged by the Army, KBR had no authority to direct military personnel to wear PPE or take other protective measures.

Between August 12, 2003, and September 8, 2003, again, KBR initiated a medical surveillance program for its workers and the U.S. military initiated a medical surveillance program for military personnel who had been at the plant. The results were negative for signs and symptoms

of exposure to sodium dichromate or hexavalent chromium. Urine tests were negative for high levels of total chromium. Blood tests for many of the workers were positive for elevated levels of total chromium, although the tests could not confirm that the levels were the result of exposure to chromium compounds at Qarmat Ali. Blood tests indicate whether a patient has been exposed to chromium containing compounds within 3-4 months of the test. Many everyday items can cause a blood test to result in elevated chromium levels. Chromium compounds can be found in multi-vitamins, beer, cigarette smoke and urban pollution, for example. Many of the KBR workers had been in the United States 3-4 months prior to their blood test. Therefore, the blood test results did not conclusively establish that the workers had been exposed to hexavalent chromium while working at the plant.

Out of an abundance of caution, the military and KBR decided that the best course of action would be to close the facility until further testing could be performed. While testing was being performed, PPE was required of anyone entering the plant.

4. Overall, how does KBR explain a four-month-long delay between detection of sodium dichromate at Qarmat Ali WTP and the requirement that workers wear PPEs?

Again, there was no delay by KBR. The request for remediation on August 12, 2003 was initiated after the results of the initial soil sample test became available on August 11, 2003. However, the initial soil sample results did not indicate a dangerous condition requiring KBR to discontinue the work.

Out of abundance of caution, and despite the strategic significance of the Qarmat Ali water treatment plant to the U.S. military's "Restore Iraqi Oil" program, the U.S. Army and KBR decided to discontinue all work at the plant pending additional air and soil testing. The plant was closed on September 8, 2003 and remained closed until mid-October 2003.

During the time that the plant was closed, KBR and the U.S. Army performed numerous air and soil sample tests. Air samples were taken in all types of weather, including windy conditions. Although some areas of the plant, particularly near the chemical injection building, showed elevated levels of hexavalent chromium in the soil, all air sample tests were negative for the chemical. Most air sample tests performed by KBR resulted in non-detectable levels of hexavalent chromium in the air. These results indicated that there was no danger from airborne contamination of the plant.

5. Why did the HSE supervisor make no effort to determine where and how much sodium dichromate was present after the initial detection of the chemical at Qarmat Ali WTP?

Again, this question is based on false and inaccurate information. Under KBR's contract with the USACE, the USACE was to provide a site free of all environmental and war hazards. KBR was neither requested nor authorized under the contract to conduct a site assessment for environmental hazards.

Assuming that NBC is referring to Johnny Morney and his deposition testimony in the *Langford* arbitration, Mr. Morney stated repeatedly that when he first learned of the presence of sodium dichromate from Mr. Duhon, he was informed that the chemical was limited to the vessels/agitators in the chemical injection building. This occurred in or around June 22, 2003. At the time, there was no indication that sodium dichromate had contaminated soil in some portions of the plant. Mr. Morney immediately instructed Mr. Duhon to implement measures to protect employees of Kharafi, a subcontractor, who were working with the chemical vessels/agitators. This included requiring Kharafi's employees to wear PPE. Mr. Morney also testified that KBR workers and soldiers of the U.S. Army were not working or patrolling in this area at the time.

6. Is there any explanation for the HSE supervisor's failure to do so - besides negligence?

KBR strongly disagrees with your assertion that it was negligent. See our responses to the previous three questions.

7. Why is there no mention of the results of SOIL sample tests? How can KBR offer a conclusion which suggests "no dangerous levels of airborne chromium hexavalent" at Qarmat Ali without mentioning these soil sample results?

Soldiers who have sued KBR for their alleged exposure to hexavalent chromium at the plant claim that their primary route of exposure was through airborne contamination. That is, they contend that sodium dichromate contaminated the soil of the plant and became airborne by windy conditions, and that they were exposed to hexavalent chromium by breathing the contaminated air. For this reason, KBR previously provided information regarding the air samples and not the soil sample test results.

Although soil tests indicated that some portions of the plant, principally near the chemical injection building, contained elevated levels of hexavalent chromium, air sample testing proved conclusively that there was no contamination of the air. Again, all of the air sample testing performed by KBR, the United States Army, and the British Military indicated that there was no contamination in the air.

8. How can KBR offer a conclusion which suggests "no dangerous levels of airborne chromium hexavalent" at Qarmat Ali without mentioning these soil sample results?

All of the testing showed that there is no relationship between chromium hexavalent in the soil and airborne contamination. Again, all of the air sample testing performed by KBR, the United States Army, and the British Military indicated that sodium dichromate in the soil did not contaminate the air of the plant.

9. Why was the KISR (Kuwaiti Institute for Scientific Research) Laboratory, which analyzed the soil/sediment/precipitate samples from these tests, "unable" to analyze KBR test samples for hexavalent chromium, the more hazardous form of chromium?

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Not all laboratories have equipment that can separate and analyze hexavalent chromium from total chromium. KISR did not have the necessary equipment. Thus, the initial soil sample test analyzed total chromium, which includes hexavalent, trivalent and other forms of chromium. Subsequent soil samples were sent to laboratories in the United States that could separate hexavalent chromium from total chromium.

10. What about KBR employees? Did the medical test results of any KBR employees who worked at Qarmat Ali indicate sodium dichromate exposure? If so, what were the level(s) of exposure?

None of the KBR workers showed evidence of acute exposure to hexavalent chromium. Acute exposure symptoms include skin ulcerations, severe nosebleeds, nasal septum perforation and respiratory difficulties. As explained in the response to Question #3 above, the blood test results showed some elevated levels of total chromium but did not establish that the workers had been exposed to hexavalent chromium .

Furthermore, in the *Langford* arbitration ten former KBR workers made the same allegations that are now being made by the soldiers. An arbitrator heard the claims of the workers and rejected them. The arbitration included a review of the complete medical history of each of the plaintiff workers. After reviewing their complete medical histories, and after hearing testimony from medical experts on both sides, the arbitrator concluded that none of the workers suffered an injury caused by hexavalent chromium.

11. Was KBR contractually obligated to adhere to OSHA standards and requirements, including performing an environmental site survey prior to commencing work at Qarmat Ali WTP?

Under KBR's contract with the USACE, KBR was not required to conduct an initial environmental assessment of Qarmat Ali. Instead, the contract required the USACE to provide KBR with a "benign" site free of all environmental hazards.

Furthermore, KBR was not required to comply with OSHA directly. However, it was required to comply with its Hazard Communications Plan and Accident Prevention Plan, which previously had been reviewed, edited, and approved by the U.S. military for use at the Qarmat Ali site. Those plans incorporate various OSHA provisions, which otherwise would not apply because the worksite is outside the United States. However, none of the incorporated OSHA provisions required performing environmental site surveys prior to commencing work.

12. Did KBR conduct an environmental site survey assessment of the Qarmat Ali site prior to beginning work on 05/19/03? If so, please provide a copy of whatever report exists. If not, why did KBR not conduct such a site survey prior to beginning work?

Regarding a site assessment, KBR did not conduct an environmental site assessment prior to commencing its work because the military had not authorized or directed KBR to do so and because the contract was predicated upon the military securing the facility and ensuring that it was benign **before** directing KBR to commence work there.

When operating in a war zone, all contractors, including KBR, are subject to military regulations, tactical instructions, and other military constraints that control the activities of contractors on the battlefield. In addition to U.S. military control over KBR, KBR's activities, including those at the Qarmat Ali water treatment plant, were controlled by the occupying British forces and the Iraqi Ministry of Oil.

13. If it turns out that soldiers ARE suffering from exposure to this deadly chemical, does KBR have any obligation to compensate them for medical costs or other expenses?

KBR does not believe that the soldiers currently are suffering, or will suffer in the future, any injuries from exposure to sodium dichromate or hexavalent chromium. The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) tested the military personnel to determine if they were exposed to sodium dichromate during this time period. The testing showed that no personnel were injured as a result of their exposures to sodium dichromate and were unlikely to develop future injury from the limited exposure they received. The CHPPM results were further reviewed by the Defense Health Board of the Department of Defense. The most recent scientific studies have concluded that an individual must be exposed to the chemical continuously for 90-180 days before the most common acute symptoms of exposure develop. In this case, USACHPPM studied the soldiers' alleged exposure and concluded that each soldier spent an average of less than one month at the plant. Since there is currently no evidence of short term injuries and all the testing shows that there was minimal exposure, we do not believe the soldiers have been injured. Nonetheless, KBR understands that both the U.S. military and the British military are aggressively and thoroughly responding to this issue to ensure that any soldiers exposed to sodium dichromate receive proper care.

However, even if there are some soldiers who fall outside of the scientific studies and who truly have an injury caused by exposure to hexavalent chromium, those soldiers' claims would not be against KBR. KBR is not responsible for the presence of sodium dichromate at the plant. The chemical was used by the SOC prior to the war. It was not used by KBR as it repaired the plant. Further, the USACE was contractually obligated to provide KBR with a "benign" work site that was free from all environmental hazards.

KBR acted appropriately and on a timely basis as information about sodium dichromate became known. KBR's priority was for the safety of its own workers, as well as others who were at the plant.