

# The Depleted Uranium Threat

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"The DoD, the nation's biggest polluter, is now cleaning up 29,500 currently or formerly contaminated sites in every state and territory. California alone has 3,912 contaminated sites on 441 current and former DoD installations. Many of DoD's facilities have already contaminated groundwater sources of drinking water.... The cost to clean up toxic munitions contamination and unexploded ordnance at active and former military installations around the country may reach \$200 billion." - The National Resources Defense Council, April 21, 2004.

"The Defense Department is refusing to comply with orders or sign contracts to clean up 11 hazardous waste sites, including one in Hawaii, and has asked the White House and Justice Department to intervene on its behalf." - The Associated Press, July 1, 2008

While attempting to act as the planet's nuclear watchdogs, the United States and Great Britain have become two of the world's largest, cancer-causing radiated dust and rusty depleted uranium projectile polluters.

Using tanks and planes, the US and British military have fired hundreds of tons of radioactive depleted uranium munitions (DU) while fighting the first Gulf War, the Balkans War, and the more recent wars in Afghanistan and Iraq. For two decades, successive US and British government leadership has done little overall to clean up the hazardous war waste. And, when repeatedly asked questions about it, spokespersons for Britain's Prime Minister Gordon Brown and US President George W. Bush, as well as the two presidential candidates, Senator Barack Obama (D-Illinois) and Senator John McCain (R-Arizona), didn't respond to a large number of e-mails and telephone calls over a month's time.

Ironically, while firing this nuclear by-product all over Iraq, Afghanistan and the former Yugoslavia, both Britain and the US regularly criticized and put financial or political pressure on Iran, Syria, North Korea and Pakistan for developing nuclear weapons. Of those four countries, only Pakistan is said to possess depleted uranium munitions, but their military forces have not been notorious for using them.

Depleted uranium is a by-product of the enrichment of natural uranium for nuclear reactor-grade or nuclear weapons-grade uranium. It is additionally used as an armor to protect tanks. Its metallic density is ideal for manufacturing munitions that readily pierce tank and other armor by burning and burrowing through it. But, while doing so, the munition creates large quantities of radioactive dust that the wind can carry for 20 to 30 miles. Sometimes the projectiles didn't explode. Instead, they buried themselves and degraded. Now they pollute or threaten water supplies, soil, plants, birds and animals in war-torn regions.

Potentially Serious Health Impacts

Dangerous DU debris is credited by some with creating higher child cancer and other illness rates in Europe and the Middle East. DU's fine particles can be harmful as well to the kidneys, skin and the lenses of the eyes. And, when inhaled or swallowed by humans, animals or fish, that dust can create serious and permanent health hazards. Expended DU is a permanent terrain contaminant with a half-life of 4.5 billion years. Uranium dust can linger in the lungs, the blood and other organs for years. It is reported to have caused some of the so-called mysterious ailments among the more than 350,000 US service members, many of whom unsuccessfully sought medical treatment after the first Gulf War.

At least four states – New York, California, Louisiana and Connecticut – passed bills in an unsuccessful attempt to force the Department of Defense to better test and care for war veterans for DU exposures. Their legislatures and governors were all concerned about sick service members exposed to DU wartime dust.

“Large numbers of corroding depleted uranium penetrators embedded in the ground might pose a long-term threat if the uranium leaches into water supplies,” a British Royal Society scientific study says. After shell firings, the ground becomes polluted with depleted uranium particulate waste and some parts of the munitions themselves. DU contamination should be removed from areas around known penetrator impact sites,” says the Royal Society. “Long-term environmental sampling, particularly of water and milk, is required and provides a cost-effective method of monitoring sensitive components of the environment, and of providing information about uranium levels to concerned local populations. Monitoring may need to be enhanced in some areas, by site-specific risk assessment, if the situation warrants further consideration.”

Although the Royal Society insists threats of health damage to those inhaling depleted uranium dust is remote and limited to those who took in large quantities, a study of Iraqi children, exposed to wartime DU dust, contradicts that assessment. Dr. Souad N. Al-Azzawi, a member of the Brussels Tribunal Advisory Committee, says that children breathing or swallowing those radiated particles in areas of intense United States DU munitions firings “offer strong evidence of the correlation between low level radiation exposure and result(ing) health damages.” DU exposures created “a shift of leukemia incidence rates towards younger children during the recent years,” said the doctor. Another inquiry by three professors at the University of Massachusetts and Tufts University concludes: “In aggregate the human epidemiological evidence is consistent with increased risk of birth defects in offspring of persons exposed to DU.”

Four years ago, Iraq's provisional government sought help from the United Nations in cleaning up wide swaths of its country, littered with expended munitions projectiles, DU destroyed equipment, broken random particles and wind showers of DU dust. The United Nations, without effective result, urged the British and U.S. military to clear many of the DU hazards they had created. In fact, United Nations environmental cleanup specialists asked U.S. and British officials for locations where the munitions were fired in Iraq, but they only reported receiving DU firing coordinates from Britain.

#### DU Cleanup Required But Ignored

Neither British nor U.S. authorities have offered to augment the \$4.7 million donated mainly by Japan to the United Nations to evaluate sites of wartime contamination that health experts say threaten the well-being of millions of Iraqi civilians. But, contrary to scientific evidence, in late October 2004, Army Lt. Col. Mark Melanson said a five-year, \$6 million

Defense Department experiment with a simulated DU tank explosion shows “the chemical risks of breathing in uranium dust are so low that it won’t cause any long-term health risks,” even for the tank crew.

However, U.S. Army regulation 700-48 and its Technical Bulletin 9-1300-278 have for years required cleanups of the residue of depleted uranium firings and destruction. “Radioactive material and waste will not be locally disposed of through burial, submersion, incineration, destruction in place, or abandonment without approval from overall commander,” says the regulation. “If local disposal is approved, the responsible commander must document the general nature of the disposed material and the exact location of the disposal.” Radioactive equipment under that same regulation must be cleaned up and disposed of as soon as practicable. Other crucial military regulations call for DU tank drivers to be medically examined if they are exposed to dust or other radioactive debris. Similar British requirements prohibit unauthorized collection of radioactive waste.

One of the most salient examples of the problems with depleted uranium munitions and their dangers to the public recently opened a new chapter in the munition’s long, nagging history. In the face of the Pentagon’s and the Army’s repeated denials of the need to follow their own regulations, that very same leadership was involved this spring in one final large and expensive DU munitions cleanup of Camp Doha, a 500-acre base in Kuwait.

Despite the potential health dangers to anyone walking close to the area, most of the particulate hazards remained right there in the soil above and below ground at this active military camp for more than a decade and a half. In the years since 1991, the site’s larger waste hazards have been cleaned up in varying incomplete manners. This sloppiness caused health issues for all living nearby or stationed there. The military camp is on a peninsula relatively close to Kuwait City, holding the capital’s government offices. Its population was about 191,000 people when a depleted uranium munitions accident occurred. Right around the corner is Kuwait City International Airport.

Seventeen years ago, during the first Gulf War, Doha was the site of one of the largest fires and explosions of a depleted uranium munitions and tank storage area ever. On July 11, 1991, at about 10:20 a.m., says a Pentagon inquiry, a defective heater in an M992 ammunition carrier loaded with 155mm artillery shells caught fire and set off a sustained series of explosions and fires. The blaze and blasts sent chemicals and radiation dust from munitions and tanks into the air for miles, as the black hazardous smoke rose high into the sky. Tanks, other equipment, vehicles and a huge store of munitions were scorched. Fifty American and six British soldiers were injured. Two American soldiers’ injuries were serious. It took many months and hundreds of millions of dollars to rebuild this significant military base. “The destruction was overwhelming,” said a Pentagon inquiry. “The fire and explosions damaged or destroyed 102 vehicles, including four M1A1 tanks and numerous other combat vehicles. More than two dozen buildings sustained damage as well. Among the estimated almost \$15 million in damaged or destroyed ammunition were 660 M829 120mm DU sabot rounds.”

Initially, the Army worked for months on a major cleanup. Then in late 1991, the second and final phase of hazardous equipment removal was assigned to the Environmental Chemical Corporation. And the Pentagon’s investigation report said: “Personnel packing the drums with DU penetrators wore surgeon’s caps, safety glasses, half face protective masks, coveralls, butyl rubber aprons, rubber surgeon’s gloves with cotton inserts, and rubber

'booties' over their normal work boots. A total of eight drums were filled with about 250 DU penetrators."

The Kuwaiti government hired its own U.S. private contractor, the Halliburton Corporation, to move most of the burned-out hulks in the vicinity of Kuwait City to a dump in the western desert. But, not until three years ago, when the U.S. planned to stop using the base, did the Army dispose of additional shell fragments. And, it was just in April of this year that the rest of this gigantic mess was finally neutralized on site. The cleanup, accomplished by MKM Engineers, headquartered in Stafford, Texas, was financed by the Kuwaiti government.

David Foster, an Army public affairs spokesman, said "under the circumstances, the Army had no legal obligation to clean up the (particulate) material" at Camp Doha. The Army originally brought the munitions and equipment to protect Kuwait, so it was now Kuwait's responsibility to pay for the cleanup, transportation of the hazards and final, safe burial, he said.

A total of 6,700 tons of contaminated sand with particles of depleted uranium and lead from Kuwait was shipped in April to the Port of Longview in Washington. The barrels were then transferred to railway cars for final delivery to the American Ecology Corporation's Idaho's Grand View low-level radiation waste facility, 70 miles southeast of Boise in the Owyhee Desert.

"Based on the very low levels of contamination present," American Ecology spokesman Chad Hyslop, "the soil is not regulated as 'radioactive material' by the US Department of Transportation." Damaged depleted uranium penetrators were separated out by MKM and sent separately to the United States for disposal, said Army spokesman Foster. Both the Department of Environmental Protection and the Nuclear Regulatory Agency, accepting the Army's tests and descriptions of the hazards of the dust, allowed this form of disposal.

#### EPA and NRC Leave Cleanup and Burial to the Army

Those two agencies' officials took the Army's word that these shipments of depleted uranium dust did not pose a threat to humans or the environment while in transit or stored away in its final Idaho waste site. Mark MacIntyre, an EPA spokesman, said: "The Army is responsible for characterizing the material for the purposes of complying with transportation and disposal requirements.... The EPA does not have a specific standard related to depleted uranium. For the purposes of disposal, depleted uranium is considered a low level radioactive waste and is subject to U.S. Nuclear Regulatory Commission regulations." Neil Sheehan, a spokesman for the NRC, explained: "The sand - with small amounts of depleted uranium being sent to the U.S. Ecology Idaho facility for disposal - contains 'exempt' concentrations of uranium, less than 0.5-percent weight. If the concentrations were greater than this, we would have oversight."

Retired Army Maj. Doug Rokke, who has a Ph.D. in education - physics and technology - from the University of Illinois, fought the use of DU for years through the Internet and other means. He believes this current Doha DU waste-disposal operation violates safe guidelines. He worked with the special operations team, the 3rd U.S. Army captured equipment project team, and with the 3rd U.S. Army Depleted Uranium Assessment team during Gulf War One. As a result of his DU cleanup work, Rokke says he is ill with radiation damage to his lungs and kidneys. He also has radiation cataracts, fibromyalgia, rash, hearing loss, diarrhea, reactive airway disease, brain lesions, teeth breaking off and falling out, and neurological

abnormalities.

It is ludicrous, said Rokke, for the NRC, the EPA and the Army to deny the Doha depleted uranium's dangers. They are doing this, he said, even as the U.S. government is mandating a huge cleanup of the Concord, Massachusetts, depleted uranium munitions manufacturer Starmet's Superfund site, and is indeed taking those pains to ship DU from Camp Doha, Kuwait, to the United States while endangering the environment and all persons who come anywhere near that shipment.

### Health Destroyed by DU

Former First Lt. Todd Lightfoot is one of many Army veterans who believes he became sick from the aftermath of the fire while stationed at Camp Doha in 1991. He explains at his Internet web site that: "During my entire tour; one could say that, 'I was in the loop' (in the know about operations)." Lightfoot added that he has reviewed "my notes from all of the meetings we had ... and we had meetings twice a day every day ... and many times having a meeting or two in between. I can still not find one mention of potential health hazards from depleted uranium or the possible contamination of any area at Camp Doha." and "I've been sick now since about 1995," said Lightfoot. "I have what they call IBS (irritable bowel syndrome), but they've not been able to treat it with any success. (It creates constant) bad, bad cramping in the lower abdomen, severe fatigue, bad joint pain, all of the norms rolled up into the 'Gulf War Illness' tag!"

"As for what I believe is the cause of my declining health," said Lightfoot, "there were three constants when I arrived a DOHA. There were the burning oil well fires. There was a constant presence of insects/pesticides. And then there was the DU. I've always believed that there is more to the DU than the US government and DoD would like us to believe." Army spokesman Foster did not answer queries about Lightfoot.

### International Calls to Ban and Clean Up DU

Back as far as 1999, a United Nations committee called for a DU munitions ban worldwide because its long-term adverse health impact on civilians violates international law. More recently, in January, the United Nations voted to approve an inquiry among member nations to determine the harmful impacts of depleted uranium munitions. Three years later, the World Health Organization recommended that "young children's exposure to depleted uranium must be monitored and preventive measures taken, and heavily affected impact zones for depleted uranium munitions should be cordoned off and cleaned up." United States officials failed to effectively warn the government of Afghanistan about that very danger. BBC News reported in April: "Doctors in Afghanistan say rates of some health problems affecting children have doubled in the last two years. Some scientists say the rise is linked to use of weapons containing depleted uranium (DU) by the U.S.-led coalition that invaded the country in 2001. A Canadian research group found very high levels of uranium in Afghans during tests just after the invasion. A U.S. forces spokesman denied its weapons were affecting the health of Afghans or the country's environment."

Some cleanups were conducted in the Balkans, but otherwise the recommendations found little cooperation. Finally, in late May, the European Parliament passed a global ban on such weapons with a landslide approval vote. The rationale: "Ever since its use by the allied forces in the first war against Iraq, there have been serious concerns about the radiological and chemical toxicity of the fine uranium particles produced when such weapons impact on



hard targets. Concerns have also been expressed about the contamination of soil and groundwater by expended rounds that have missed their targets and their implications for civilian populations. Despite the fact that scientific research has so far been unable to find conclusive evidence of harm, there are numerous testimonies as to the harmful and often deadly effects on both military personnel and civilians. The last few years have seen great advances in terms of understanding the environmental and health hazards posed by depleted uranium, and whereas it is high time that this was reflected in international military standards, as they develop. The use of depleted uranium in warfare runs counter to the basic rules and principles enshrined in written and customary international, humanitarian and environmental law.”

Press spokespersons for both President George W. Bush and Vice President Dick Cheney have told this reporter in the past they rely upon the Pentagon for advice about the use of depleted uranium munitions, their health impacts and cleanups. Neither British Prime Minister Gordon Brown nor the British Environment Agency specifically answered this reporter’s repeated queries about their policies toward DU munitions and cleanups.

The British Ministry of Defense says on its Internet site: “There is no reliable scientific or medical evidence to link DU with the ill health of either Gulf or Balkans veterans or people living in these regions. Many independent reports have been produced and researchers continue to consider the battlefield effects of using DU munitions. These reports include work by the Royal Society, the European Commission, the United Nations Environment Programme (UNEP) and the World Health Organization (WHO). None of these organizations has found a connection between DU exposure and illness, and none has found widespread DU contamination sufficient to impact the health of the general population or deployed personnel.”

Jasem Al-Budaiwi, first secretary of the Kuwaiti Embassy in Washington, sent this reporter’s inquiries to his government, but no reply came back. Repeated inquiries to presidential candidates Senator Barack Obama (D-Illinois) and Senator John McCain (R-Arizona) over a month’s time netted no answer to phone calls or e-mails.

It was not until October 2006, after decades of complaints about the hazards that President Bush signed into law a Congressional bill calling for a study of the health effects of depleted uranium munitions’ firings on American troops, but not on the millions of foreign civilians exposed. As a result, a legislative committee is expected to ask the Army to review the accuracy of acute exposures and the cancer risks posed by them.

This summer, a Canadian Member of Parliament, Alex Atamanenko (British Columbia Southern Interior, NDP) called on his government “to undertake every measure possible to ensure that depleted uranium weapons of mass destruction are banned forever.” Atamanenko continued: “Belgium has banned the use of uranium in all conventional weapon systems. However, at least 18 countries, including the U.S., use depleted uranium in their arsenals. They are considered weapons of mass destruction under international law. According to a Canada-U.S. agreement, Canadian uranium exports may only be used for peaceful purposes.” Nonetheless, he said, Canada provides raw uranium to the United States and other countries for processing and the resulting depleted uranium is then used in weapons.

DU Munitions Abandoned by Some

Now says Dai Williams, a British uranium expert, who posts on [www.eoslifework.co.uk](http://www.eoslifework.co.uk), most DU munitions are becoming pass[ed], but in their wake, undepleted uranium shells made of natural uranium have been fired and are being manufactured by arms makers worldwide. "Why is this a problem?" asks Williams. "Because natural uranium in the general environment is mostly in large particles created from natural weathering processes. The body seems to be able to eject these. But weapons uranium dust is formed at very high temperature into ultra-fine particles described as aerosols that can pass through cell walls etc. In the lungs these will go into soft tissue and stay there, rather than being coughed out," Williams explains. In the meantime, he says, tons of the old DU munitions are still in storage for potential firing by countries including the Great Britain and the United States. The British, he said, are now using the hard metal tungsten to manufacture munitions formerly made of uranium. Even the U.S. Navy and Marines have abandoned depleted uranium munitions in light of their potential health hazards.

A Government Accountability Office investigation two years ago found the military's and the Department of Energy's handling of depleted uranium and other nuclear waste a fiscal quagmire to clean up. In the United States, DU munitions manufacturing operations have created numerous hazardous-waste concerns. The military has had to deal with firing range cleanups of DU, while the Energy Department is responsible for oversight of nuclear installations. "The nation's military installations and nuclear weapons production facilities," said the GAO, "have accumulated many types of waste and contamination over the years. The federal government estimated its environmental liability to clean up this waste at \$249 billion in fiscal year 2004, representing the federal government's third-largest reported liability. It represents a significant future outflow of funds at the same time as many other competing demands for federal dollars, but is currently not auditable," the GAO said. »

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