

CH2M•WG

IDAHO, LLC

# Idaho Cleanup Project

## 2008 Progress Report



SAFELY DELIVERING THE IDAHO CLEANUP PROJECT

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CH2M-WG Idaho, LLC used corporate funds to produce this report for the benefit of its stakeholders.

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# Message from the President



Robert C. Iotti

The close of 2008 marks the midpoint of our contract to safely clean up the Idaho National Laboratory site. I would like to say thank you to the workforce, regulators, the Department of Energy, the State of Idaho, and so many other stakeholders for your efforts in 2008. Your contributions not only bring us closer to our cleanup goals but also help position the laboratory for future missions – contributing to a strong, vibrant economy for the region.

In our most critical area of focus – safety, we had a 26 percent decrease in injuries from 2007. By December, we improved our injury rate to 1.24, below our goal of 1.26, after an injury-free November. We will not be satisfied, however, until we reach our zero-injury target.

In 2008, we saw the disposition of all nuclear material items – completing our scope of work 13 months ahead of schedule and \$2 million below budget. The spent nuclear fuel team moved another 536 units from wet to safer dry storage, bringing our cumulative total to 2,337 units.

We helped negotiate and execute an agreement between the Department of Energy and the State of Idaho that solidified the final cleanup remedy for buried waste at the site. We also tackled the cleanup of another 23 contaminated environmental sites and five hazardous waste tank systems in addition to the demolition of the Power Burst Facility and disposal of its reactor vessel.

We continue to make progress on the Integrated Waste Treatment Unit; when operational in 2011, the facility will treat the 900,000 gallons of sodium-bearing waste stored onsite. By the end of the year, the waste management team had completed 184 (of 225 planned) shipments of remote-handled transuranic waste to the Waste Isolation Pilot Plant in Carlsbad, New Mexico.

Despite current economic conditions, I remain optimistic that the project will receive the necessary funding to continue cleanup progress. The track record of this workforce has impressed both Congress and our client and will aid in securing the funds required to move forward.

In January 2009, I will retire from day-to-day operations at the Idaho Cleanup Project. It has been my great pleasure to work with such a dedicated team of professionals, and I am confident in their ability to carry out this important mission.

John Fulton will succeed me as President and Chief Executive Officer of CH2M-WG Idaho. John has the knowledge and proven leadership to complete our cleanup goals.

Thank you again for your hard work and commitment, which made 2008 such a successful year for the project. I look forward to hearing of your accomplishments in 2009 and beyond.



Robert C. Iotti  
President and Chief Executive Officer  
CH2M-WG Idaho



# Work Scope and Progress

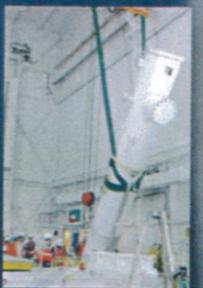
The Idaho Cleanup Project (ICP) involves the safe environmental cleanup of the Idaho National Laboratory (INL) site, contaminated with legacy wastes generated from World War II-era conventional weapons testing, government-owned research and defense reactors, spent nuclear fuel reprocessing, laboratory

research, and defense missions at other U.S. Department of Energy (DOE) sites.

The project, funded through DOE's Office of Environmental Management, focuses on reducing risks to workers, the public, and the environment, and protecting the Snake River Plain Aquifer, the sole drinking water source for many Idaho residents.

CH2M-WG Idaho (CWI) manages the seven-year cleanup effort for DOE. The cleanup focuses on five major geographic areas. CWI's scope of work also includes environmental remediation of several miscellaneous areas on the site, including underground storage tanks, firing ranges, and unexploded ordnance sites.

## Goals and Progress



\* Treatment planned for 2011  
 † Original scope: 235 (64 facilities and structures deferred beyond ICP contract window)  
 ‡ Based on final Buried Waste Cleanup Plan



## Small Business Program

CWI's management principles – and a key element in the company's strategy for the safe delivery of the Idaho Cleanup Project – include the integration of small business into the contract baseline.

After more than three and a half years on the job, CWI continues to maximize subcontracting opportunities for capable small businesses.

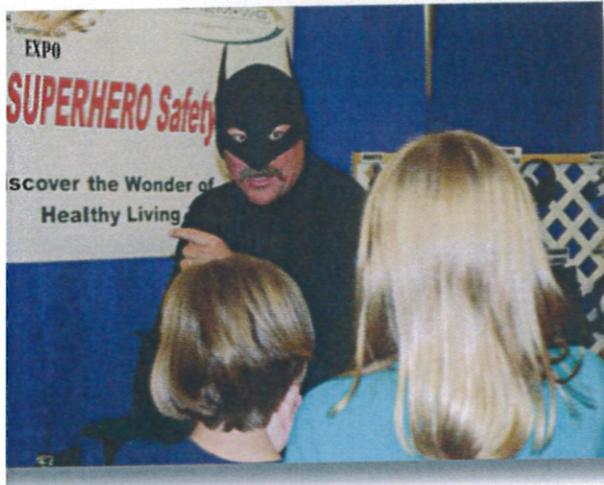
Since May 2005, CWI has awarded \$300 million, 63 percent of its total subcontracting dollars, directly to small business.

In 2008, DOE recognized CWI subcontractor, Clauss Construction, as its Service-Disabled Veteran-Owned Small Business of the Year. CWI nominated Clauss for its exemplary performance in demolishing the Test Area North Hot Shop. Demolition of the massive structure with seven-foot-thick steel reinforced concrete walls required extensive use of high-risk explosives.

Not a traditional project candidate to be reserved for small business, Clauss not only won with best value, expertise and technical approach but also with lowest price. The company executed all work with high skill, precision, and cooperation. Work scope of this magnitude is an excellent example of what small businesses are capable of achieving when given the opportunity.



# Working Safely



The workers of the Idaho Cleanup Project continue to demonstrate their commitment to safety excellence. In addition to outstanding safety ratings, the project received national recognition for its safety programs.

In 2008, the National Voluntary Protection Program Participant's Association (NVPPPA) awarded CWI DOE's **Star of Excellence** for "full dedication and total commitment to safety." The award recognizes outstanding performance in meeting established safety and health goals, helping other companies and surrounding communities with safety, and achieving an injury and illness rate 75 percent below the average of similar businesses and operations.

CWI also earned NVPPPA's **Innovation Award** for the employee-created CWI-Light Zone safety video series. The award is given to a site that has developed and successfully implemented an



innovation, encouraged others to try new approaches, and emphasized the value of creativity and flexibility in the resolution of worker safety and health problems.

As reported in 2007, the project holds Voluntary Protection Program Star status, DOE's highest approval rating.

## ICP Safety Performance



## 2008 Performance

The ICP continued to improve its safety performance in 2008, finishing the year with no injuries in November and the lowest number of first aid cases in December. From 2007 to 2008, the project reported a 26 percent decrease in recordable injury cases.

Management and workforce continue their focus on preventive efforts in areas where workers have been hurt as they strive for zero injuries – the project's ultimate goal.

*“Our workers are committed to actively caring for each other’s safety. They are creative – constantly coming up with safer, smarter ways to get the work done.”*



Kliss McNeel  
Acting Vice President  
Environmental, Safety, Health and Quality



# Buried Waste Retrieval and Disposition

## About the Subsurface Disposal Area

The Subsurface Disposal Area (SDA) at RWMC began receiving waste in 1952. The SDA contains radioactive and chemical wastes located in approximately 35 acres of disposal pits, trenches and soil vaults on the 97-acre site.

Waste targeted for retrieval includes plutonium-contaminated filters, graphite and process sludge; oxidized (depleted) uranium; and solvent wastes from Pits 4 and 6, located roughly in the middle of the SDA. These materials originated at the Rocky Flats Plant near Denver, Colo., during nuclear weapons production activities in the 1960s.

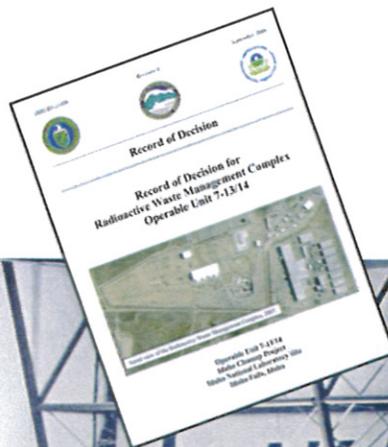
## Cleanup Agreement Signed

As Idaho Cleanup Project workers continued to exhume and repackage targeted waste buried at the Radioactive Waste Management Complex (RWMC), DOE, the Idaho Department of Environmental Quality, and the U.S. Environmental Protection Agency signed a record of decision (ROD) outlining the plan for final cleanup of the site.

The plan calls for retrieval of 7,485 cubic meters of targeted waste from a combined area of about 5.7 acres.\*† The decision

document was supported by decades of research on the contents of the landfill, thorough evaluation of engineering alternatives, and review of hundreds of public comments on the Proposed Plan prepared by CWT's buried waste team.

The buried waste team reviewed disposal records and geophysical evaluations to identify the potential areas for retrieving targeted waste. The team also conducted reviews of risks to cleanup workers, the public, and the environment. In addition to expanding current waste retrieval, the ROD addresses remaining contamination in the disposal area through a combination of continued vapor extraction, grouting of some mobile contaminants, and construction of a surface barrier over the entire landfill. Execution of the plan will cost approximately \$1.3 billion and will take about 20 years to complete.





## Buried Waste Retrieval Continues

The buried waste retrieval effort, known as the Accelerated Retrieval Project (ARP), involves retrieval, identification, repackaging, and shipment of targeted transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico and non-TRU waste to other off-site locations.

### ARP I Complete

ARP I crews completed phase one of the project's mission on April 29, 2008 – safely exhuming 0.50 acres. The team overcame significant challenges, including subsidence beneath the support structure and a drum fire within the exhumation footprint, to complete its scope.

### ARP II Continues

In ARP II, CWI will exhume waste from the eastern portion of Pit 4 and part of Pit 6 to remove

some of the highest accumulation of plutonium-contaminated waste and volatile organic compounds within the burial ground. Waste exhumation at ARP II began in 2007. By year end with 0.23 acres excavated, ARP II was 67 percent complete.

### ARP III Begins

In December, workers began the third phase of the project. In ARP III, CWI will excavate approximately 0.37 acres of the landfill and retrieve targeted waste from the eastern portion of Pit 6. Building on the lessons learned and successes of the first two phases, ARP III includes enhanced safety systems, a larger service bay for equipment maintenance, and an experienced workforce to increase productivity.



## Under the Big Tent

For excavations in the disposal area, ARP crews use modified equipment designed to protect workers from airborne contaminants. The retrieval enclosures consist of an industrial fabric skin over a prefabricated steel skeleton sitting atop a concrete foundation. The fabric skin is designed to withstand sunlight, snow, wind, and negative pressure.

The challenge of building directly over a landfill led to numerous innovations, including improved building foundations now anchored to steel beams driven to bedrock.



\* The plan identifies a range from 5.7 acres to 7.4 acres for shipment of no less than 7,485 cubic meters of targeted wastes most likely to be contaminated with transuranic elements (such as plutonium), as well as uranium, and volatile organic compounds (hazardous chemical solvents similar to cleaning fluids that move easily in groundwater). From DOE-Idaho Press Release dated July 1, 2008.

† CWI scope of work includes exhumation of 2.55 acres by Sept. 30, 2012.

# Sodium-bearing Waste Disposition

## Tank Grouting

The high-level waste tank farm at the INL site contains 15 underground tanks used to store radioactive liquid waste generated from spent nuclear fuel reprocessing activities. CWI's tank farm team has grouted 11 of the 15 tanks – three in late 2006 and eight in 2007.

In 2008, the team began grouting the remaining vaults, domes, and associated piping and equipment. By December, work on the west side of the tank farm was completed and ready for turnover to decontamination and decommissioning (D&D) crews.

After the sodium-bearing waste in the remaining tanks is treated in the nearby IWTU facility, the last four tanks (three containing waste, one spare) will be cleaned and grouted. Final closure of the tank farm is planned for December 2012.

## Tank Farm project facts:

- Grouted 7.1 miles of piping
- Poured more than 24,000 cubic yards of concrete
- Zero injuries

In 2008, CWI made significant progress on construction of the Integrated Waste Treatment Unit (IWTU), the facility that will treat and prepare for permanent disposal the remaining liquid radioactive waste stored on the INL.

Since October 2007, crews have placed 600 tons of reinforcement steel and poured 4,000 cubic yards of concrete to complete the facility's Process Building base slab and walls as well as the foundations of ancillary structures such as the Product, Mechanical, and Off-gas buildings. In addition, the team has placed 3,500 cubic yards of lean concrete (used as backfill) and erected 300 tons of structural steel in the Mechanical Building.

The Power Distribution Center arrived in October 2008; each of its three sections weighed more than 50 tons. The project has also placed major procurements such as air handling units, HEPA filter housings, a chiller, process vessels, a canister fill system, and cranes.

The 53,000-square-foot facility is designed to stringent seismic

criteria – able to withstand a 2,500-year seismic event.

When complete, IWTU will use steam-reforming technology to treat 900,000 gallons of sodium-bearing, radioactive waste being stored in three underground tanks. The technology uses a thermal source to heat both liquid radioactive and hazardous constituents, converting them into a more stable solid, granular form. Once treated, the waste will be placed in canisters and stored awaiting disposal.

CWI will complete construction of the IWTU in August 2010. Facility testing and startup will commence immediately thereafter. Treatment of sodium-bearing waste will begin in April 2011 and take approximately 15 months to complete.



# Decontamination and Decommissioning

## Power Burst Facility

Built in the 1970s, the Power Burst Facility (PBF) supported studies of reactor fuel during extreme operating conditions. The unique test reactor facility was designed to subject fuel samples to extraordinary power surges in milliseconds, causing the fuel to fail in an isolated, contained system. Knowledge gained from PBF tests have helped determine safe operating limits for the commercial nuclear industry. The facility was shut down in 1998.

In July, D&D crews demolished the last structure at the PBF complex – the 19,000-square-foot reactor building. Its demolition paved the way for CWI's most significant challenge at PBF, removal of the 61-ton reactor vessel.

The reactor lift required two cranes – one to pull the vessel out of the basements of the reactor building, and the other to swing the vessel into a horizontal position for placement onto a trailer for transport. The reactor vessel was disposed at the Idaho CERCLA Disposal Facility, a lined landfill designed for waste and debris from cleanup work across the site.

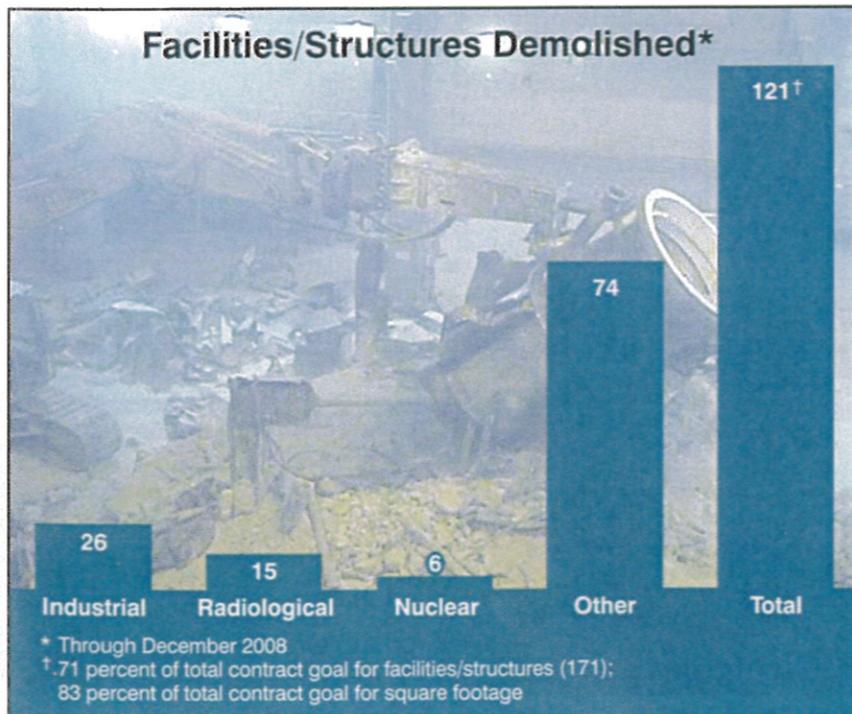
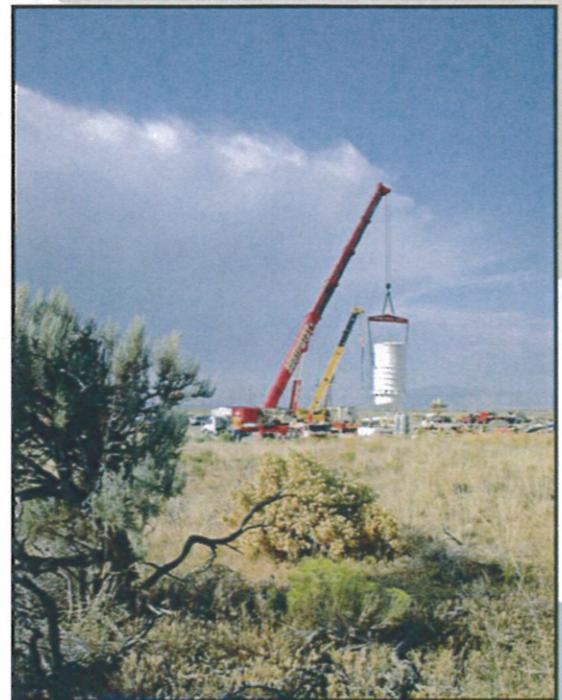
## Materials Test Reactor

After demolition of PBF, workers turned their attention to the final reactor demolition challenge in the current contract scope – the massive Materials Test Reactor (MTR).

Built in 1952, the MTR was the second reactor built at the INL site. Unlike the other reactor vessels, which were cast out of single

chunks of steel, the MTR was built as a series of connected tanks and had to be removed in pieces – making it the most complex and difficult of the reactor demolition projects.

By year end, D&D crews had removed the concrete monolith surrounding the above-grade portion of the reactor. Demolition of the MTR facility is scheduled for late 2010.



# Nuclear Material Disposition



DOE began accumulating its special nuclear material (SNM) inventory at the INL site in 1949 while fulfilling its reactor design, reactor testing, and fuel reprocessing missions. After half a century, DOE has managed more than 40 categories of surplus SNM.

In 2002, DOE committed to divesting its excess SNM inventory before October 2009. The inventory included unirradiated fuel rods and plates, laboratory samples, and source nuclear material.

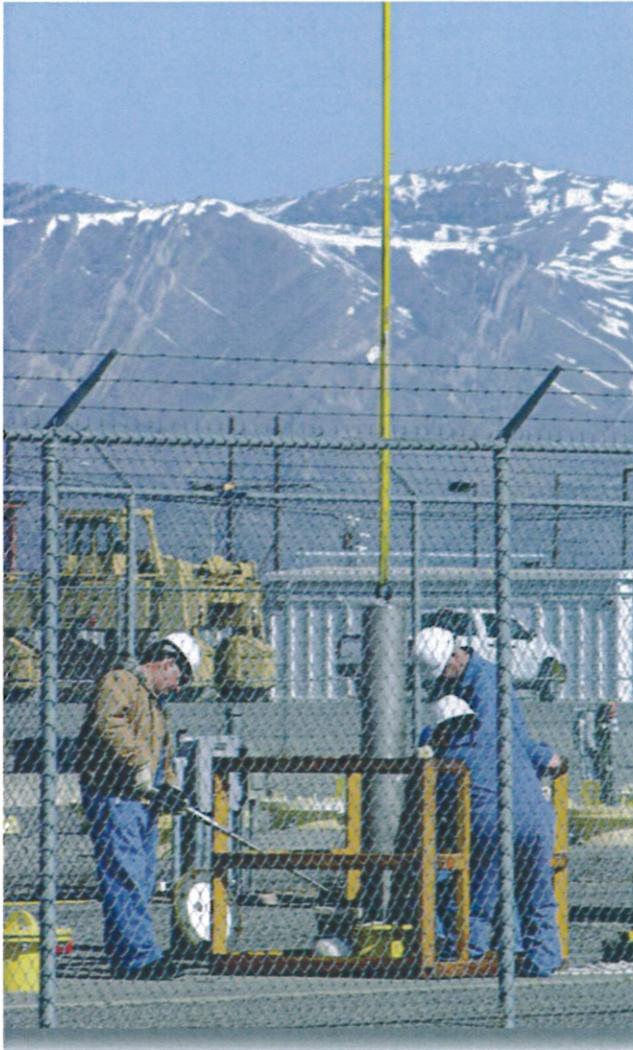
CWT's Nuclear Materials Completion team planned to safely package and dispose of 652 special nuclear material items by the 2009 deadline, including 52 items that had been stored in a DOE-secured storage vault since reprocessing activities ended in 1992. The group's first major achievement came in July 2005 when it safely dispositioned these items to the Oak Ridge National Laboratory in Tennessee. Movement of the items allowed

the facility to be downgraded in security – saving nearly \$2 million in maintenance costs.

By the end of 2006, the team had dispositioned 240 total items and was on track to meet its 2009 commitment. The next year another 250 items were dispositioned.

In June 2008, the team successfully dispositioned 40 unirradiated light water breeder reactor items for disposal at the Nevada Test Site. The items came from the Shippingport Atomic Power Station in Pennsylvania and had been stored onsite for 20 years.

The team completed its mission in September 2008 – a full year ahead of schedule. The achievement met DOE's original commitment and brought the ICP one step closer to reaching its cleanup goals.



# Waste Management

On Jan. 3, 2008, the 100th remote-handled (RH) transuranic (TRU) waste shipment left the State of Idaho en route to WIPP. Almost a year later, the waste management team had upped that number to 184 – leaving only 41 shipments to achieve contract goals.

Argonne National Laboratory-East in Chicago generated about 90 percent of RH-TRU waste at the INL site during defense missions.

In 2008, focus shifted from addressing Argonne National Laboratory-East RH-TRU waste to sampling smaller populations of resin, sludge, and other small volume waste streams from on-site sources.

The first 600-plus drums contained one waste stream, but the final 69 drums consist of six individual waste streams. With more waste streams to address, characterization becomes more

complex as does the approval process and acceptance into WIPP.

Despite the new challenge, the RH-TRU team will complete its contract goal of 225 shipments by March 2010. The ICP remains the largest shipper of RH TRU to WIPP.

Other waste management accomplishments included continuation of contact-handled TRU waste shipments to WIPP from the Accelerated Retrieval Project. On Sept. 30, the Waste Disposal Group met one of its major contract milestones by closing the Low-Level



Waste Active Disposal Facility – an on-site landfill – to all receipts of contact-handled low-level waste, paving the way for disposal at the Nevada Test Site.

## 2008 Waste Management Accomplishments

- Completed 184 of 225 shipments of remote-handled transuranic waste to WIPP
- Resumed shipment of contact-handled transuranic waste to WIPP (143 shipments)
- Dispositioned nearly 28,000 cubic meters of low-level and mixed low-level waste

## About TRU Waste

TRU waste generally consists of protective clothing, tools, glassware, equipment, soils, and sludge contaminated with plutonium, neptunium, americium, curium, and/or californium. Transuranic waste is divided into two categories, based on its level of radioactivity. RH TRU emits more radiation than contact-handled transuranic waste and must therefore be both handled and transported in shielded casks. Surface radiation levels of unshielded containers of RH-TRU waste exceed 200 millirems per hour.



# Commitment to Community



*"I am thrilled to be part of a company and workforce that demonstrates such strong support and generosity to its communities."*

**Natalie Packer**  
Manager  
Business Outreach and Communications

CWI, a company recognized for its community giving and involvement, infused \$150,000 into dozens of community organizations and activities to support economic development initiatives, promote education, sustain the arts, encourage cultural diversity, and assist humanitarian efforts.

Just as valuable as financial contributions are the countless hours employees donate by working with their hearts and hands at company-sponsored events and for their own worthy causes. Through donations and a strong spirit of volunteerism, communities can grow into even stronger, better places in which to live and work.

CWI's commitment to community unfolds through its support of many organizations, including: the Museum of Idaho, the Idaho Falls Arts Council, the Idaho Falls Symphony,

the Art Museum of Eastern Idaho, Breaking Boundaries (devoted to AIDS awareness programs), local chambers of commerce, Grow Idaho Falls, the Partnership for Science and Technology, the Idaho Meth Project, the YMCA, and the Shoshone Bannock tribe.





Some community highlights from 2008 include:

- **Christmas giving programs** – CWI employees adopted 29 area families, providing food, clothing, and gifts for 77 children through the Christmas for Families program. Employees also donated gifts to 38 children through the Salvation Army’s Angel Tree program.
- **Canal Cleanup** – For the third consecutive year, more than a dozen employees put their “cleanup” skills to work clearing trash and debris from a section of the canal in support of the Idaho Falls Adopt-A-Canal program.
- **United Way** – Despite an economic downturn, tighter budgets, and the greater needs of many charities, CWI and its employees raised \$169,099, exceeding its 2008 goal.

- **Relay for Life** – Also, for the third year in a row, CWI supported the American Cancer Society’s signature event and largest community fundraiser in the world. Volunteers – some wearing purple cancer survivor shirts – walked the track day and night, managed a raffle/silent auction, and served food to re-energize participants. The event featured 38 teams and raised roughly \$60,000.

- **The Write Start School Supply Drive** – Volunteers collected more than \$5,000 in donated school supplies – from crayons and paper to scientific calculators – to help hundreds of underprivileged K-12 students in eastern Idaho.

CWI continues its quest to make a lasting difference in the community. Through investment of funds and time, CWI hopes to unite residents to usher in a brighter future.



- **The Development Workshop** – CWI volunteers painted the exterior of the Idaho Falls Development Workshop headquarters building. With two donated scissor lifts, the team completed the job safely in a show of gratitude for the Workshop’s service to eastern Idaho. The Workshop provides retraining for displaced workers and training for disabled or disadvantaged individuals.



# CWI and the Future



John C. Fulton

I am excited about joining this very successful team in Idaho. In talking with people during tours and visits, employee commitment to excellence in safety and project performance is evident. I am eager to help this team reach the next level.

My delivery strategy is simple: performing work safely and working hard every day to support the folks on the frontline will lead to cleanup progress. Each of us from management to worker to client to regulator plays a key role in making this project successful.

With straightforward and honest communication, a quality workforce, and support from our client and Congress, we will meet the challenges ahead of us in 2009. Working together, we can achieve our cleanup goals for the site and for southeastern Idaho.

John C. Fulton  
President and Chief Executive Officer (2009)  
CH2M-WG Idaho

## Who We Are



CH2M-WG Idaho (CWI) combines the capabilities of CH2M HILL and the Washington Division of URS Corporation – leaders in risk reduction and accelerated cleanup of large, complex nuclear facilities.



CH2M HILL is an employee-owned, global project delivery firm headquartered in Denver, Colo. The company has more than 25,000 employees working in 200 offices worldwide ([www.ch2mhill.com](http://www.ch2mhill.com)).



Washington Division

Washington Group International is now Washington Division of URS Corporation. Headquartered in San Francisco, the new company operates through three divisions: the URS Division, the EG&G Division and the Washington Division. URS Corporation has approximately 55,000 employees in a network of offices in more than 30 countries ([www.urscorp.com](http://www.urscorp.com)).



Premier Technology, CWI's small-business partner based in Blackfoot, Idaho, provides specialty design and fabrication services to a wide range of clients and industries in the U.S. and abroad ([www.premiertechology.cc](http://www.premiertechology.cc)).

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