

THE CLEAN UP CONTINUES

Thiess Services has been contracted to remediate two neighbouring sites at Walker Street, Rhodes. The sites are known as the former Lednez/Union Carbide site and the former Allied Feeds site. Both sites require remediation (a clean-up of the soil) as a result of past chemical manufacturing works on the former Lednez/Union Carbide site. Remediation works commenced in 2005.

For more details on the history of these sites, to view environmental information or to download copies of the newsletters, visit www.rhodesremediation.com.au

Strict environmental controls and standards are being implemented on both sites to ensure the health and safety of workers and the community. All work is being undertaken in close consultation with Local Government and community members, as well as with State Government agencies including the Department of Environment and Climate Change, NSW Maritime, the Department of Planning and the NSW Health Department.

Rainy June

- A total of 455mm of rain was measured on the project sites in June compared to the June average of 112mm for the local Bureau of Meteorology Observatory at Riverview.
- 212mm, approximately 47% of the onsite total, fell over just three days, 7th to 9th June.
- The highest daily rainfall, 94mm, was measured on Saturday 9th June.
- The total rainfall on the project sites for June last year was 142mm.

Testing, Validating and Auditing the Sites

Remediation of contaminated sites is often complex, involving a number of different specialist companies. This is why so many representatives of the environmental industry are engaged on the Rhodes Remediation Projects.

And how, with so many companies involved, can people be assured that the clean-up is being done properly?

This is where the site audit process becomes important, because on each project, a site auditor accredited by the Environment Protection Authority (EPA) must certify that the land, after it has been remediated, is suitable for its proposed use.

The Allied Feeds and Lednez sites are being remediated by Thiess Services to a standard suitable for proposed land uses that include residential and open space usage. Potential risks to human health and the environment were formally assessed to determine each site's clean-up criteria and the criteria were approved by the EPA's parent organisation, the NSW Department of Environment and Climate Change (DECC).



Above: Luke Clements and Duncan Boss-Walker, validation consultants, pack samples.

"The site audit process is a rigorous, formal process that is set out in the NSW site auditor guidelines,"

says Bill Ryall, geochemist, HLA ENSR principal and auditor for the Lednez site. "Auditors must follow these guidelines, and that entails, before any soil is removed, reviewing the original consultants' reports. If investigations were not undertaken properly early on, then the chemicals of concern may not have been identified correctly."

When it was decided that the Rhodes Remediation Projects should definitely proceed, the auditors also reviewed the Remedial Action Plans, sets of documents that described *how* Thiess Services was going to clean up each site and *what* was going to be cleaned up.

To fulfil its obligations under the plans, Thiess is relying on two separate companies to undertake the soil testing and validation necessary for the audit process: CH2M HILL on the Lednez project and Environmental Resources Management Australia (ERM) on the Allied Feeds project.

"On a typical day, Thiess will have excavated some soil into a stockpile or removed contaminated fill down to a clean, natural surface,"

explains Duncan Boss-Walker of CH2M HILL. "Our role is to inspect the excavation, take photos, note observations and collect samples to verify that the stockpile or surface meets the criteria."

"From a 10,000 cubic metre stockpile, we

will have 50 sample jars. We also take separate samples in plastic bags which we screen with the PID or Photoionisation Detector. You can stick the PID in the bag and measure the volatile organic compounds (VOCs) that are coming off the sample," says Luke Clements of CH2M HILL.

Screening with a PID monitor is a *first pass* screening tool since a high VOC reading means that a sample will probably fail a chemical analysis test for dioxins or other contaminants. Instead of testing the sample, the material it came from can be moved immediately into the treatment storage area.

"The remedial works strategy and the soil re-use criteria are different for each project," explains Brad Eismen, auditor on the Allied Feeds project and Principal Hydrogeologist for HLA ENSR. "All areas of fill are excavated out of the Allied Feeds site and the material that tests positive for contamination gets treated in the thermal desorption plant whilst the material that tests negative gets reinstated on site. So in essence, *all* the contaminated material gets treated. However, my understanding of the Lednez project's soil re-use criteria is that it varies for different depths, and whether or not soil gets treated depends on its degree of contamination."

The site auditors make inspections during excavations to ensure that work areas have at least been cleaned up to the point where there is no visually evident contamination. An auditor can also call on an EPA-approved team of experts if assistance is required in areas such as geotechnical engineering or analytical chemistry.

"I make sure that CH2M HILL has taken samples in the way I need them taken. That they have gone to reliable laboratories, that there has been quality control in the field and that the laboratory work is satisfactory," states Bill Ryall.



Above: Brad Eismen and Bill Ryall, site auditors.

"And at that stage, when the chemical analysis results have been reported, and CH2M HILL have satisfied themselves that the results are reliable, they prepare what is called a validation report for a segment of the site. I then review the validation report."



Above: A site lot that has been completed and certified for its proposed use.

"Reporting on the Lednez project has to be an ongoing process. If we gave all of the data and a single report to Bill Ryall it would be two metres high,"

explains Luke Clements.

"A validation report needs to be detailed," says Peter Lavelle of ERM. "The first of the validation reports for the Allied Feeds site has actually just been completed and submitted to the site auditor."

After reviewing the validation reports, a site auditor will prepare a site audit report if he or she agrees that validation has been achieved. Final certification comes in the form of a site audit statement.

"I think it is very important for people to understand that we are independent and that there are a number of different layers of

scrutiny the work goes through," says Bill Ryall. "At the bottom level if you like is Thiess, then there are the companies that do the testing and validating. Then there is me – and I look very hard at a validation consultant's work – but above

me there is the EPA." Brad Eismen agrees: "The site audit process in NSW provides the rigour of expert independent review. I don't have anything to gain by not making sure that the job gets done right and the outcome protects all stakeholders."

"We have a legal liability under the Contaminated Land Management Act, a responsibility to the industry itself, as well as a huge responsibility to the people who

will eventually live on the site," explains Bill Ryall. "And people can be assured that when the site auditor says the site is suitable for its intended use, then that is the case."