

## Frequently Asked Questions

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factors. Importantly, both on and off site, very fine dust known as PM10 is monitored. Elevated PM10 in the atmosphere can sometimes cause people to experience nose and throat irritation. When communities are exposed to elevated PM10



Backfilling treated soil on the Allied Feeds Project.

levels over long periods of time, some individuals may develop more serious health problems such as respiratory or cardiovascular disease.

### Who guarantees the sites will be safe after the clean up?

Standards of remediation are in accordance with modern international and Australian "best practice." Site auditors accredited by the Environmental Protection Authority, part of the NSW DECC, provide the rigour of expert independent review. They have a legal liability under the NSW Contaminated Land Management Act 1997 to ensure that once the Rhodes Remediation Projects are complete, the sites will be suitable for residential occupation.

## The Rhodes Community Consultative Committee (RCCC)

The RCCC is comprised of approximately 20 residents from communities surrounding the Rhodes Peninsula including Rhodes, Concord West, Homebush Bay, Liberty Grove, Meadowbank, West Ryde and Melrose Park. An additional 20 members represent developers and remediators working in the area; State Government Departments such as the Department of Planning, the Department of Health, and the Department of Environment & Conservation; and Local Government Councils such as the City of Canada Bay Council and Ryde Council.

At monthly meetings the committee is presented with updates and data on the remediation and development projects by the proponents involved. The RCCC has an independent Chairperson, **Mr John Kent**. John's contact details are 0419 497 033 or [jk@wwsydney.com](mailto:jk@wwsydney.com). You are most welcome to join the committee or attend a meeting as a visitor.

For information about the next meeting, please call the Thies Services Community Contact Line on 1800 009 414.

## Project Activities - the next 3 months

### Lednez & Homebush Bay project

- License full scale operations;
- Commence full scale thermal treatment operations;
- Start depleting stored soil requiring thermal treatment;
- Continue Stage 3 excavations;
- Progress Stage 3 backfilling operations;
- Progressively validate Stage 3 area;
- Construct sections of seawall in Stage 3 area;

- Install sewer in Stage 3 area;
- Continue environmental monitoring;
- Continue bay works excavation and reinstatement (southern stage).

### Allied Feeds project

- Complete excavation of contaminated soils for thermal treatment along the southern boundary;
- Process soil for thermal treatment in the pre-treatment building;
- Complete full scale thermal treatment operations;
- Test excavated surfaces and treated

- materials;
- Progressively backfill validated areas to the final development site ground levels;
- Construct the final southern section of the seawall;
- Continue water treatment plant operations;
- Install the sewer in the southern portion of the site;
- Progressively decontaminate and decommission the treatment plant, facilities and infrastructure;
- Continue environmental monitoring, including compliance testing of the DTD plant.

## Community Contact Details

We value your feedback. If you have any questions or concerns, please let us know.

**Ph:** 24 hour toll free line: 1800 009 414 **E-mail:** [rhodesremediation@thiess-services.com.au](mailto:rhodesremediation@thiess-services.com.au)

**Web:** [www.rhodesremediation.com.au](http://www.rhodesremediation.com.au) **Post:** 40 Walker Street, or PO Box 3064, Rhodes NSW 2138

Thank you for your cooperation and patience during these environmental remediation works.



24 hour toll free line  
**1800 009 414**  
[www.rhodesremediation.com.au](http://www.rhodesremediation.com.au)

# NEWSLETTER

December 2008, Issue 13

To the Community Member:  
Rhodes Remediation Projects Community News

Welcome to issue 13 of the newsletter for the Thiess Services Rhodes Remediation Projects ...aimed at keeping the community informed of the remediation activities underway.

## Frequently Asked Questions

**This month marks three years since environmental clean up activities commenced on the Rhodes Remediation Projects. Although soil treatment on the Allied Feeds Project is almost 90% complete and should finish in February, treatment of soil and bay sediment on the Lednez/Union Carbide Project is ongoing. It is therefore worthwhile reviewing questions frequently asked by residents when they call the Projects' community contact line, 1800 009 414.**

**What dangerous chemicals are being cleaned up?** The main reason the remediation is required is the concentration of dioxin found within the soil and bay sediment needs to be reduced. Other chemicals of concern also being cleaned up include volatile organic compounds (VOCs) such as benzene, toluene, ethylbenzene and xylene; and semi-volatile organic compounds (SVOCs) such as organochlorine pesticides, phenols, chlorophenols, polycyclic aromatic hydrocarbons, chlorinated hydrocarbons and chlorobenzenes.

**Sometimes I can smell odour from the project sites, does this mean I am being exposed to dangerous chemicals?** The most odorous chemicals found on the project sites are volatile organic compounds (VOCs), not dioxins, which have no smell.

When soil or sediment containing VOCs is excavated, the chemical compounds "volatilise," or become vapour, causing odour to be emitted to the atmosphere. Hours after excavation activities have finished, volatilisation may still be occurring, although at a reduced rate. The human nose can usually smell chemical odours at concentration levels well below those that may cause health problems. Since the Rhodes Remediation Projects commenced, Thiess Services has monitored VOC levels in the air as part of its Air Quality



Southern view of the Rhodes Remediation Projects.

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Management Plan. Special monitoring "response levels" have been set to keep VOC emissions below levels that may cause irritation or adverse health impacts.

### Where do dioxins come from?

Dioxins are not manufactured intentionally. Generally, they are by-products of chemical manufacturing or combustion. In nature, dioxins will be created during bushfires. The dioxins found at the Rhodes sites were



Excavation face showing layers of lime wastes from past chemical manufacturing.

## 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 previous land reclamation using wastes from chemical manufacturing 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](http://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 Waterways, the Department of Planning and NSW Health.

produced over many decades during chemical manufacturing on the Lednez/ Union Carbide site.

### Why are dioxins a human health risk?

Dioxins accumulate in the human body through two main exposure pathways: inhalation and ingestion. Inhalation is a minor pathway, accounting for up to 5% of a person's lifetime exposure, whilst ingestion of food is the major pathway, accounting for over 95% of exposure. Foods from animals - such as fish, pork, beef and dairy - contain the highest dioxin concentrations because levels tend to increase up the food chain. There are more than 200 chemical compounds classed as dioxins and of these, at least 10% have sufficient toxicity values to be of concern. These more toxic dioxins are not easy for the human body to metabolise or excrete. They have been linked to increased cancer rates in animal studies and in studies of people exposed to high levels eg. levels 100 to 1000 times higher than average exposure levels in developed countries.

If ingestion of food is the main dioxin exposure pathway, why do the sites at Rhodes need to be

cleaned up? The NSW Department of Environment and Climate Change (NSW DECC) has determined that the sites pose risks for human health and the environment based on:

- the potential for direct contact with contaminated soil and bay sediment; and
- evidence that dioxins have entered the food chain and could be consumed by humans and wildlife eg. elevated dioxin levels have been found in fish from Homebush Bay and the Parramatta River.

Without remediation, the land based sites could not be residentially developed or used for public purposes because they do not meet the required standards. Remediation is also essential to prevent the ongoing movement of chemicals from the land into Homebush Bay.

**What is the significance of the Stockholm Convention?** Article 5 of the Stockholm Convention on Persistent Organic Pollutants (POPs), to which Australia is a signatory, requires that parties to the Convention take measures to minimise or eliminate certain POPs in the environment, including dioxins.

**How is the work done?** Soil and bay sediment is dug up. It is then tested to determine what contaminants it contains and at what levels. On the Allied Feeds project, all of the contaminated soil is being treated. After treatment, the soil can be safely backfilled on site or transported to landfill. On the much larger Lednez/Union Carbide project, soil and sediment with the greatest degree of contamination is being treated, whilst material with lesser concentrations is being contained deep underground, where it cannot be accessed. The material "reuse criteria" for untreated soil and sediment was approved by the NSW Department of Environment and Climate Change (NSW DECC).



Drilling a core soil sample for testing.

**How are the contaminants removed from the soil and bay sediment?** The material is treated in a directly heated thermal desorption (DTD) plant. DTD is a complex process but put simply:

- the soil or sediment is heated up in a rotary drum to between 450 and 550 degrees Celsius by natural gas;
- the heating process removes the contaminants from the soil or sediment and turns them into a gas;
- the gas is then further heated to 920 - 980 degrees Celsius, eliminating the contaminants and turning the gas into

carbon dioxide and water;

- the gas stream of carbon dioxide and water is cooled down within seconds to prevent the contaminants from reforming;
- gas discharge quality is monitored to ensure compliance with stack emission criteria set by the NSW DECC.

### After directly heated thermal desorption (DTD) treatment, how

**much dioxin remains in the soil or sediment?** Dioxin is reduced to less than one part per billion (1 ppb), which is at least ten times less than what is allowed at commercial or council landfills.

**What is in the smoke that is coming out of the emission stacks?** The emission stacks for the DTD plants emit steam, not smoke. Emissions are monitored for particulates, fluoride, sulphuric acid, volatile organic compounds, nitrogen dioxide, carbon dioxide, hazardous substances such as lead, hydrogen chloride, chlorine and dioxins. So long as the DTD plants

operate at optimal temperatures, emissions should remain below set limits. If pressures, temperatures or flows fall outside a predetermined range, an alarm will be activated. Corrective action must be taken or the soil feed will be stopped automatically.

### Is there any monitoring of human health while the remediation is ongoing?

Due to community concerns about living in the vicinity of a contaminated area and the affects of remediation, the NSW Department of Health is undertaking the Rhodes Serum Dioxin Study over the life of the Rhodes Remediation Projects. Phase 2 of the study found no increase in levels of blood (serum) dioxin in residents

since remediation began. Levels of dioxins in local residents remain well below the levels known to be associated with adverse health effects. In addition, Thiess Services has a health monitoring program in place for personnel working on the project sites. It includes periodic blood testing for a range of contaminants including dioxin.

**What sort of environmental monitoring is undertaken on and off site?** As well as monitoring stack emissions from the treatment plants and volatile organic compound levels (VOCs) in air during excavations, Thiess Services monitors many other environmental

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