TECHNICAL AND FINANCIAL REPORT FOR EUROPEAN ENVIRONMENTAL BUREAU

ADVISING AND MONITORING THE CLEAN UP AND DISPOSAL OF MERCURY WASTE IN KWAZULU-NATAL, SOUTH AFRICA.

THE CASE OF THOR CHEMICALS

PHASE ONE REPORTING

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The Proposal

Gaps and Strategy

The awareness of the general public on mercury issue in SA is general poor. However, groundWork has been working with hospitals and civil society organisations and the public to inform their thinking on waste management and the dangers of mercury in hospitals.

The public understanding of the impact of mercury contamination and its hazard at Thor Chemicals[1] plant in Kwa Zulu-Natal is limited and is very peripheral. The Thor chemicals mercury contamination and clean up as well as the responsible disposal process has been stagnant for more than a decade. What has been disappointing is government delay in taking action on the clean up of the contaminated land, water and buildings at the Thor Chemicals site.

Since the Deputy Minister of Environmental Affairs and Tourism handed over a directive in 2003 to clean up to the management of Thor Chemicals, little action has been undertaken with regard to the clean up process. One of the important reasons behind this is the lack of information and awareness on the issue, a slow process for inventory data collection and government failure to act openly with civil society on the findings of their interim investigations. The initial stage of the clean up process involves a waste categorisation process that will be followed by an Environmental Impact Assessment (EIA) process to determine the impact and the method of the waste disposal.

groundWork's aim is to encourage governments (both here and internationally) to tackle the issue of mercury pollution more seriously through strong public awareness among all the stakeholders (government, industry, community), an international framework on binding rules on the management of mercury with the aim to phase out its use within society and through mercury reduction strategies.

The challenges:

a) Lack of strong co-ordinated civil society work on mercury
b) Lack of technical expertise amongst civil society to strengthen their campaigns for appropriate cleanup and disposal options
c) Lack of appropriate hazardous waste disposal facilities in South Africa
d) Lack of adequate understanding of the issue and recognition of the problem regarding Thor mercury contamination amongst civil society.
e) Inadequate and up to-date data/documentation of environmental and health impacts resulting from Thor mercury contamination
f) Need to link with European and other international emerging strategies on mercury.
g) Need to communicate to SA developments at European and Global levels.
h) Making sure that mercury does not re-enter the market.

[1] Thor Chemicals was a British Based company who imported mercurial toxic waste into South Africa in the 80's and 90's. As a result of their incineration plant operations in Cato Ridge, 3 people died and many more injured as a result of Hg contamination.

Proposed actions:

1. Outreach to local organizations in order to create a stronger NGO network on mercury to give meaning to the new global instrument on mercury that was called for at the UNEP governing council gathering in February 2005.
2. Inform public/administrations about European and Global decisions and developments
3. Participate in international cooperation, including contribution to the European campaign.
4. Besides some of the work that groundWork has already done on this issue, we plan to reach out to South African civil society, governments, industry, media, etc, to further educate and raise awareness by developing materials such as pamphlets-reports-newsletter articles, drawing up press releases, conducting interviews, etc.
5. Through the involvement of civil society we will address some of the gaps such as education and awareness, co-ordination amongst civil society on mercury, networking, including gaps of documentation on the ground i.e. photographic documentation, etc.
6. Materials developed will aim to education the public and lobbying government and advocating appropriate technologies that could be used in the final waste containing mercury disposal process.
7. Advocacy would be done nationally and how it relates to the hazardous waste management regime in South Africa.
8. We will also employ the assistance of an independent technical expert during the EIA process - to verify reports, make valuable input into the process and advise civil society (government and industry) on how best to move forward regarding inventory data collection, containment, transportation, storage and disposal options. The consultants will send out a revised timetable for the Thor clean up process. The process is open and involves the public (Interested and affected parties). During the process the consultants as part of the input from interested and affected parties will distribute reports.

Expected outcomes – Deliverables proposed

Phase one: June 2005 – October 2005

The deliverables were said to include awareness raising regarding Thor Chemicals and mercury issues generally, and the opportunity for all the grassroots level groups to understand the impacts of mercury and its global implication.

PHASE ONE GOALS INITIALLY IDENTIFIED

Action goal 1 and 2

Organize and form network of groups more engaged on mercury issues in future.

D1: NGOs network creation to give meaning to global instrument on mercury management.

D2: NGOs collaboration for capacity building/awareness and better networking.

ACTION TAKEN:

In October 2005, groundWork hosted a national civil society organization workshop on mercury.

The aim of the meeting was not only to educate and raise and awareness regarding mercury issues, but also to develop a civil society position on the way forward. Some of the important objectives of the workshop included the understanding of the health and environmental impacts of mercury, incineration and mercury, the exploration of case studies regarding mercury pollution, the start of collaborations on mercury issues, the development of a unified position for government, and planning of civil society activism on mercury issues.

Participants at the workshop were shocked to hear of the health effects associated with mercury and mercury pollution and were able to link health problems in their families and communities to mercury pollution. Participants were also unaware of some of the various sources of mercury pollution presented at the workshop. There was agreement by participants of the workshop that civil society would need to be continually strengthened on this issue and that more education and awareness workshops should happen in future. It was proposed that since groundWork will be holding a Waste Workshop in 2006, and will also be hosting a gathering with international partner Health Care Without Harm (HCWH) around August 2006, that civil society networks are extended to inform them of such a workshop contributing towards further education and awareness. Participants also vowed to support the global cause to eliminate mercury and to put pressure on government to develop policy and legislation to help curb mercury pollution. This workshop laid the basis for a fledgling network focusing on the elimination of mercury from the health care sector, and to monitor mercurial linked industrial process generally.

The workshop resulted in the formulation of the "Glenmore Declaration on the Elimination of mercury and mercury pollution in Southern Africa communities". This position paper has since been sent to national government and will be distributed and extended further amongst civil society nationally for their adoption and sign on.

(ATTACHMENT 1: Agenda and national civil society position paper on the elimination of mercury in Southern Africa communities.)

ON-GOING ACTIONS TAKEN REGARDING MERCURY:

The Hg project is an ongoing part of our waste campaign. groundWork consistently visited the hospitals and showcased the work that was done in these hospitals to other staff. Furthermore, during the project time groundWork initiated discussions between provincial government and suppliers to start procurement on non-Hg based equipment. The phase out of Hg equipment is presently on the table within the Department of Health in the province of KwaZulu-Natal, who is responsible for policy, practice and procurement for State hospitals in the region.

Due to groundWork's intervention in the hospitals since 2001, this has led to continuous training programs on reduction of waste containing mercury, occupational health and safety, as well as continuous education on mercury clean up spills. New staff and students are on a monthly basis been given orientations on the hospitals waste management systems. In-service trainings are also being conducted on a monthly basis.

In May 2004, groundWork hosted a national health care waste (HCW) and incineration workshop, which took place at Edendale hospital in KwaZulu-Natal. The intention of this gathering was to highlight the problems regarding mercury in HCW and disposal by incineration and help institutions in South Africa towards establishing improved HCW and mercury management practices. Over 130 health care personnel attended the gathering. Participants were unaware of the dangers regarding mercury and the disposal by incineration. It was highlighted by participants that health care workers simply used a paper towel to clean up mercury spills and then dispose the mercury into the waste stream for incineration. Most hospitals who had no mercury policy in place at their institutions vowed upon returning to their hospitals to put measures in place for proper systems of clean up for spills, as well as eliminate mercury equipment in the long run.

groundWork has also been involved in delivering various papers regarding mercury and mercury pollution at various workshops, civil society gatherings and conferences so as to extend our education and awareness campaign. We have also written various newsletter articles for distribution.

A researcher was contracted to inform and support the ongoing action and to attend the EEB meeting in October 2005, and did presentations on toxicology and government's position on Hg at the national civil society workshop that was hosted by groundWork. The groundWork hospital based interns who are health care workers in the hospitals, facilitated ongoing training for health care staff and students using our health care waste manual. This manual was distributed to more than 136 health care staff at a groundWork workshop 2004. Since the original distribution of the health care waste manual all 1000 copies have been distributed during 2005 to state hospitals upon request by state hospital and clinics for their internal training.

Action goals 3, 4 and 5

Dissemination material

D3: Dissemination material as in proposed action 2 above.

D4: Dissemination material - material covering Thor chemicals issues and other relevant mercury issues.

D5: To disseminate updated information on Thor mercury contamination and other relevant concerns to civil society, governments, industry, media, etc.

ACTION TAKEN:

Development of mercury campaigning material for education and awareness.
- Pamphlet on Thor chemicals (ATTACHMENT 2)[2]
- Pamphlet on mercury generally (ATTACHMENT 3)
- Booklet on managing hospital waste: A guide for Southern African Health Care Institutions (ATTACHMENT TOO LARGE - TO BE POSTED TO EEB)

[2] This will be completed as soon as government releases the information documents on the waste inventory and disposal proposals for the waste at the Thor Chemicals plant.

The campaigning material's that have been developed above have been distributed through the groundWork website. groundWork has also raised mercury issues with the media and also have distributed materials to various journalists covering environmental and environmental justice issues.

The Hg and Thor pamphlet was developed with EEB support. The Hg pamphlet it is on the website at http://www.groundwork.org.za/Pamphlets/mercury.asp. The Thor chemicals pamphlet was started but has not been published as yet due to the delay by government.

The distribution of these materials has had a wide impact on civil society. Through our mailing list, we have been able to get the message of mercury pollution and effects distributed widely. Most people, most importantly especially hospital staff are unaware of the effects of mercury contamination. There has been general shock and awe to hear of the associated health problems, therefore, requests for these publications has been on an on-going basis. For example, requests for the hospital waste booklet has come from throughout South Africa as well as requests from other African neighbouring countries such as Kenya, Mozambique, Uganda and Tanzania.

Conclusion

In fulfilling the above actions groundWork has also:

- Got the KwaZulu-Natal Department of Health has tabled Hg phase out and procurement as one of its strategic objectives;
- groundWork has assessed Hg emissions in coal fired power stations
- groundWork has been invited to be at the launch of the National Chemical Profile, representing SA Civil Society Organisations;
- groundWork are the CSO focal point for Strategic Approach to International Chemical Management in SA and participate in regional and international SAICM processes and
- groundWork has supported and participated in EU NGO processes

FURTURE ACTIONS:

Phase two: November 2005 – February 2006

This is phase in dependent on time frames from government. In recent discussions with and press statements by government, it is likely that the work on this process will formally commence at the beginning of next year.

Action goals 6,7 and 8

Focus on Thor

D6: Report to be produced by independent consultant to feed into or to counteract potential faults by the official one. Information to provide technical input into EIA process relating to clean up, containment and conditions of disposal for the waste, including the best available technology to dispose of mercurial waste.

D7: Documentation of the campaigning process surrounding Thor chemicals: This would include initially the campaigning by civil society groups (nationally and internationally) as well as the updated process and final clean up process to date.

D8: Possible meeting with community around Thor – information gathering and support community via solidarity (i.e. letters to government, links with international solidarity, etc).

Action goals 9 and 10

D9: Organize meetings or write letters to government/authorities to feed into future policy for hazardous waste management and waste bill, and follow up on international commitments.

D10: Contribution to the European/International campaign by sending letters to EU governments when needed.

ATTACHMENT 1: NATIONAL MERCURY WORKSHOP AGENDA AND OUTCOME POSITION PAPER

National Civil Society Workshop on Mercury
Venue: Glenmore Pastoral Centre, Durban
Wednesday, 12 October 2005

Agenda

Time	Topic	Speaker
9:00 – 9:15	Welcome and purpose of workshop Introductions	Llewellyn Leonard, Rico Euripido, groundWork All
9:15 – 9:45	What is mercury? Health and environmental impacts	Rico Euripido groundWork
9:45 – 10:00	Questions and discussion	All
10:00 – 10:30	The case of Thor Chemicals and mercury contamination in South Africa	Llewellyn Leonard groundWork
10:30 – 10:45	Questions and discussion	All
10:45 – 11:00	Tea	
11:00 – 11:30	Mercury in hospitals	Llewellyn Leonard groundWork hospital Dinky Halimana Case study: Edendale hospital
11:30 – 11:45	Questions and discussion	All
11:45 – 12:15	South African government position on mercury and hazardous waste Cement kilns / Incineration and hazardous waste Update on UNEP global mercury conference and South Africa	Llewellyn Leonard groundWork Rico groundWork
12:15 – 12:45	Thor Chemicals: South Africa and chemicals management in relation to the Strategic Approach to International Chemicals Management (SAICM)	Zini Mokhini Earthlife Africa
12:45 – 13:00	Questions and discussion	All
13:00 – 14:00	Lunch	
14:00 – 16:00	Final discussions and way forward: Formulation of a civil society position paper	All

Outcome of workshop:

The Glenmore Declaration on the Elimination of mercury and mercury pollution in Southern Africa communities

We, the under-mentioned Southern African organisations represented at the National Civil Society Workshop on Mercury held at the Glenmore Pastoral Centre, in Durban, South Africa, on October 12, 2005 make this declaration:

Noting the following international government commitments:

Emphasizing that South Africa is a party to the Stockholm Convention on Persistent Organic Pollutants (POPs), the Rotterdam Convention on Prior Informed Consent (PIC) on chemicals, and the Basel Convention on the Trans-boundary movement of hazardous substances.

Reiterate the lead role that South Africa has played in the Strategic Approach to International Chemicals Management (SAICM).

Recall paragraph 22 (g) of the Plan of Implementation of the World Summit on Sustainable Development, in which it was agreed by governments that the risks posed by heavy metals that are harmful to human health and the environment should be reduced.

Reiterate the conclusion of the UNEP Global Mercury Assessment that releases of mercury and mercury compounds constitute a global threat that warrants action at an international level;

- that national, regional and global actions, both immediate and long-term, should be initiated as soon as possible to protect human health and the environment through measures that will reduce or eliminate releases of mercury and its compounds to the environment;
- that immediate and longer-term actions should be developed and implemented on simultaneous parallel tracks, that the longer-term actions should be incorporated into a binding international instrument, and that the immediate actions should be initiated in advance of this instrument;
- urging all countries to adopt goals and accelerate national, bilateral, and multi-lateral actions, as appropriate, consistent with this decision and the global goals of achieving a 50% reduction in mercury consumption by 2010 and 80% reduction by 2015 versus 2000 levels

Noting the following challenges to the continued use of mercury in South Africa:

The continued emission of mercury from various polluting sources that has a detrimental effect on the communities and the environment;

The continued use of mercury in health care facilities, e.g. in thermometers, blood pressure cuffs, dental procedures and medicines;

The large percentage of health care waste containing mercury as a result of broken mercury containing devices which goes unaccounted for;

The frequency of illegal dumping of health care waste containing mercury on general landfill sites, unregistered dumps and open plots of land, exposing the public and especially children to harmful effects of mercury;

The incineration of enormous amounts of health care waste containing mercury in South Africa, thereby dispersing mercury back into the environment;

The further incineration of hazardous waste containing mercury and the release into the atmosphere;

The continued use of mercury in soaps, dermatological and topical applications, vaccines and other cosmetics;

The continued use of mercury in batteries, paints, switches, relays, and potentially other products and processes;

The establishment of mercury chloro-alkali plants in South Africa;

The establishment and operation of mercury mining sites;

The use of inappropriate technologies such as cement kilns to burn hazardous waste containing mercury;

The lack of appropriate hazardous waste disposal facilities;

The lack of technical expertise and contractors to contain and treat hazardous spills;

We hereby call upon the South African government to:

Give affect to our constitutional right to a clean, safe and healthy environment and to ensure the protection of present and future generations;

Immediately develop a policy on hazardous waste and develop a position on mercury;

Immediately implement a policy that will lead to the global agreements on the phasing out of mercury by 2010;

Review legislation that is in conflict with global agreements and processes on the phasing out of mercury;

Promote the development of mercury consumption and release inventories, and associated action plans, in the various provinces, including the product inventories, by providing technical and financial assistance that includes guidance for the development of such inventories and action plans, and maintaining an electronic clearinghouse containing a compilation of completed national or regional inventories or action plans;

Initiate an expeditious, open, transparent and inclusive process with all stakeholders to undertake such an assessment of mercury and its compounds and processing/operational facilities;

Establish an inter-ministerial mercury programme to facilitate and conduct technical assistance and capacity-building activities to support the efforts to take action regarding

mercury pollution by the United Nations Environmental Programme (UNEP) and the global community;

Identify locations where large amounts of mercury, mercury products, mercury compounds or wastes containing high concentrations of mercury have been abandoned that may require assistance to address these sites, and estimate the cost of measures that should be taken to ensure this mercury will be managed in a manner minimizing future mercury releases;

To halt the reintroduction of mercury into the global market by;

- Immediately terminating subsidies to primary mercury mines and phasing-out primary mercury production by 2010; and

- Storing excess mercury from decommissioned mercury chloro-alkali plants and potentially other sources instead of allowing such mercury to re-enter commerce.

Reduce global demand in the chloro-alkali sector by publicly benchmarking the relationship between mercury consumption and chlorine production at all facilities to encourage short-term improvements in operating practices, and by phasing out mercury use in the chloro-alkali sector by 2010.

To end the manufacture, sale, and export of soaps, dermatological and topical applications and other cosmetics containing mercury; and requests government to promote policies and activities aimed at terminating the manufacture, sale, and export of such products, and the education of health professionals and populations at risk about the adverse human health effects attributable to use of these products;

Promote the phase-out of mercury use in batteries, paints, switches, relays, measuring devices, and potentially other products and processes where non-mercury alternatives exist or become available by 2010, and by researching information on alternative technologies and developing non-mercury alternatives.

Develop and implement a national strategy to promote the use of non-mercury and lower mercury use technologies in small-scale gold mining.

Control the largest global source of mercury emissions by employing best available technology on the larger coal-fired power plants by 2012 and all coal-fired power plants by 2017.

Implement the installation of scrubbers on existing coal fired power plants and boilers;

On a parallel track, support and adopt the global legally binding instrument to ensure coordinated international commitments and cooperation to minimize mercury production, trade, releases and consumption.

Adopted by:

Wildlife and Environment of South Africa (Durban – South Africa)
Wildlife and Environment of South Africa (Port Elizabeth – South Africa)
South Durban Community Environmental Alliance (South Durban – South Africa)
Edendale Hospital (Pietermaritzburg – South Africa)
Ngwelezane Hospital (Empangeni – South Africa)

groundWork (Pietermaritzburg – South Africa)
Earthlife Africa (Johannesburg – South Africa)
Earthlife Africa (Cape Town – South Africa)
Earthlife Africa (Durban – South Africa)
Third World Investment Gateway (Cape Town – South Africa)
University of Cape Town, Occupational Health (Cape Town, South Africa)

ATTACHMENT 2: THOR CHEMICALS MERCURY PAMPHLET

In February 2003, that the Department of Environmental Affairs and Tourism (DEAT) held a workshop for the development of a National Implementation Plan (NIP) for the management of Persistent Organic Pollutants (POPs) and strategies to clean up and prevent future accumulation of unwanted stocks of pesticides under the Africa Stockpiles Programme (ASP). The ASP was, initially initiated by the World Wide Fund for Nature (WWF) and the Pesticide Action Network (PAN) to clean up stockpiled pesticides and pesticide-contaminated waste (e.g. containers and equipment) that had been dumped in Africa by developed countries. Africa had been used and in some instances continues to be used, as a dumping ground for these chemicals that are no longer required by developed countries.

A classic example of dumping waste in Africa is the example of company Thor Chemicals, Inc of Great Britain, which was established in 1963, had been accused in 1987 of poisoning workers and putting surrounding communities at risk from mercury exposure. Thor SA was a subsidiary of the Thor group originally controlled by Thor Chemical Holdings (TCH) in the UK. Thor engaged in the manufacture and marketing of biocides, textile auxiliaries and metallic organic soaps.

The location of the damage was situated in the Umgeni catchment at Cato Ridge in the eastern province of KwaZulu-Natal. A mercury processing plant (Thor) was established in the late 1970s in Pinetown. In 1987 TCH relocated its UK mercury recycling operation to Cato Ridge. The company activity included the production of a range of mercury-based products for local and export markets, which included mercurial compounds.

Thor had received mercury-waste shipments from other countries at their plant in Cato-Ridge. As one of the only facilities in the world to form a large-scale mercury reclaiming process, Thor quickly became target for many international companies facing the dilemma of what to do with mercury waste. These exports and pollution caused by Thor had been disclosed as part of an investigation of toxic waste trafficking. A commission of enquiry had been set up to look into the company's history and background of its mercury recovery process as well as the stockpiles of hazardous waste on its property. Thor was receiving shipments as part of their mercury recovery (recycling) program, which included the importation of mercury waste to recover mercury. The amount of mercury waste at Thor accumulated as a result of increased production of mercuric compounds and spent catalyst waste returned by its customers after use.

According to **Albertyn 2000**, the mercury that Thor was receiving contained high levels of dangerous organic compounds. At the time there were said to be five mercury-recycling plants in the USA but not one of them would touch waste with an organic content higher than 3%. The mercury waste contained organic contents received by Thor was said to contain between 30 and 40% by volume.

Offences committed by Thor

- Relocation of operations to SA to escape health and safety criticisms from UK authorities
- Neglecting to adequately protect workers from the occupational health hazards associated with mercury
- Disregarding company urinary monitoring results that repeatedly indicated excessive levels of mercury

- Neglecting to adequately inform workers on the occupational health hazards associated with mercury
- Employing casual and untrained workers who were layed off or 'recycled' once they became ill
- Atmospheric emissions that exceeded existing regulations
- Using incineration as a primary method for disposal despite it being abandoned in most countries in the late 1980s due to the organic-generation (PCBs, dioxin) air releases and consideration of remaining ash disposal. Thor was also incinerating hazardous waste without a license. The incinerator did not meet required standards as set out by different government departments, and despite the shut downs, Thor continued accepting waste which accumulated.
- Environmental racism
- Contamination of local groundwater and surface water supplies
- Stockpiling of mercury waste and sludge, and treated waste.

Damage by Thor: Health and Environmental impacts

Firstly, mercury is converted by naturally occurring biological processes into highly toxic methyl mercury. Methyl mercury also in addition to being more toxic, bioaccumulates in tissues. The occupational and environmental exposure to mercury can lead to mercury poisoning. The symptoms of mercury poisoning can vary depending on the level of exposure. As a neurotoxin, mercury can affect the central nervous system, with symptoms, which include trembling, loss of muscle control, headaches, mental confusion, nausea, etc. As the exposure level increases affected individuals will suffer from mental difficulties, impaired motor skills, tremors, coma and ultimately death.

In 1988 mercury levels in the Umgeni River, 15 km downstream were reported to be 1000 times higher than WHO standards for drinking water. It was during the investigation by US journalists in 1989 that the breadth and severity of the resultant pollution came to light. Water samples, taken from the Mngeweni River behind Thor and analyzed for mercury, were found to contain 1.5 million parts per billion (ppb) – 1500 times higher than the US limit for "sediment to be declared toxic" (**Lambrecht, 2001**). In 1990 samples taken by Greenpeace and local activists revealed equally high levels of mercury.

This river flows into the Umgeni River, which winds through heavily populated areas – all of which use the river for drinking water – and is the source of Durban's drinking water. Around the plant cattle graze and drink from the river; just down the stream, people "drink from the stream. . .play in the water, and people wash clothes in it. Corn, sweet potatoes and other food grow on the rocky slopes leading to the stream" (**Lambrecht, 2001**). Mercury levels were found to be still 20 times the US limit as far as 40 miles downstream, near the coastal city of Durban.

Thor Chemicals: The workers

The profit motive and poor state control enabled Thor to cut health and safety requirements to the extent that 28% of the workforce was diagnosed as having mercury poisoning. They received R800 a month and were uninformed of the potential dangers of and precautions to take against mercury poisoning. Employees when sick were either removed to another part of the factory or disposed off. It was stated that when workers recorded high levels of mercury contaminating levels they were advised to drink orange juice in order to expedite the excretion of excess mercury. According to a worker at Thor **Siphiwe Sibiya**, "*if you touched your lips with your tongue or washed your face there was a bitter taste. My nails went black.*

Sometimes I would take off my mask to find blood in it. Then my nose bleeding, my hands shaking."

In 1990 Earthlife Africa received reports of workers 'going mad' at Thor. A doctor from the Industrial Health Unit (IHU) diagnosed mercury poisoning in 4 workers. Further investigation by IHU into 80 medical records revealed that 87% of workers had mercury levels that were above safe limit (**Butler, 1997**). In 1992, an IHU report stated that 28% of workers were in danger of permanent health damage due to poisoning. A 1992 government report revealed that 29 workers had suffered mercury poisoning (**Butler, 1997**). In 1993, the first death related to mercury poisoning was reported. In 1998 it was shown that workers had been exposed to mercury levels up to 12 times higher that WHO regulations. To date at least four workers have died and an unknown number are mentally and physically impaired. A total of 41 former workers were involved in claims against TCH and its chairman Desmond Cowley.

Why did this incident of neglect occur?

Who was responsible?

Thor:
TCH had been aware of the poor operations of its plant since 1978. In 1987 TCH was issued with an ultimatum by UK authorities to clean up or face court action and was forced to close its UK operations. Despite this TCH continued its mercury operations in SA.

Exporting companies:
American Cyanamid, Borden chemicals and the Calgon Corporation exported mercury waste to SA. Borden shipped over 2, 500 drums of mercury waste to SA between 1991 and 1994. It also failed to notify the EPA in the US of these exports, as required by the Resource Conservation Recovery Act.

Government culpability:
Thor had relocated its UK mercury operations to SA to escape health and safety criticisms from UK authorities. South Africa was seen as an 'easy' dumping ground. The apartheid State and provincial and local authorities poorly enforced State health, safety and environmental regulations. There was also little coordination between relevant departments.

The Davis commission report released in Parliament in 1997, found that in 1990 after government (DEAT) announced in parliament a total ban on hazardous waste, that government wrote to Thor to assure them that the ban did not apply to them. Government's gross mishandling of the matter meant that Thor was never adequately held account by the responsible departments of government (**Daily News, 1997**). The state permitted Thor to continue importing hazardous waste even after evidence of gross negligence had been revealed. The state also refused to release information pertaining to Thor that was in the interest of the general public.

Some action taken against Thor

Publicity

- Initial tactic in drawing attention to Thor relied on publicity both nationally and internationally. First indication of injustice by St. Louis Post dispatch, investigating reports of pollution resulting from US waste shipment.

- Earthlife Africa and Greenpeace began compiling information on Thor activities and transgressions – began building a case study against Thor and SA government.
- Protests against Thor spread to the US. Thor clients were pressurized by the public and investigated by federal government.
- In SA, protestors held vigils and met a shipment in Durban, forcing to turn away.
- Following the deaths of two workers in 1992 and months of investigation, Thor was criminally charged by Great Britain for culpable homicide and violations of machinery and Occupational Safety Act.
- In 1994, a claim was filed against Thor in the High Court in London on behalf of the first three victims
- Following the initial study by St Louise Post Dispatch, worldwide attention focused on the international shipping of toxic waste.
- Commission of Inquirer: On 24 March 1995, after public outcry of mercury waste poisoning, the government appointed a Commission of Inquiry into Thor Chemicals. The purpose of the commission was to investigate the history as well as the background of the acquisition of the mercury stockpiles on the Thor premises and to report on the further utilization thereof. One of the findings of the Commission was that since *"Government was aware of the problem and failed to deal with it accordingly, the Commission recommended that all other costs incurred incidental to the disposal including costs associated should be the responsibility by government. Thor should incur the costs of the operation of the plant and the disposal of the waste"*. This option was rejected.
- Court proceedings against Thor Chemicals SA (Pty.) Ltd. Took place between 1992 to 1995. All charges of homicide against three employees were dropped by the State Prosecutor
- In the 90s, compensation claims against the parent company of Thor Chemicals Ltd. were commenced in the English High Court on behalf of 20 workers affected by mercury poisoning. The claims alleged that the English parent company was liable because of its negligent design, transfer, set-up, operation, supervision and monitoring of an intrinsically hazardous process. In 1997, the claim was settled for £1.3 million. A further 21 claims were commenced by workers from the same factory, and settled on the first day of trial. In 2003 further work regarding compensation has been undertaken.

In March 2003, the deputy minister of Environmental Affairs and Tourism (DEAT) handed over a directive (section 28 (4) of NEMA) to clean up to the management of Thor. In terms of the directive, Thor will have to take specific steps within a specific time period to properly and safely store the waste and to clean up any and all traces of mercury contamination in the surrounding community. In terms of section s28 (5) of the Act, should Thor fail to execute this directive, the SA government can move in and take over all clean up and rehabilitation, and then seek to recoup its costs from Thor.

So far, government has contracted the services of specialist waste consulting engineers who will design and oversee all the cleanup activities at Thor on behalf of the department. An environmental Impact Assessment (EIA) will begin soon. The findings of the Commission report according to government will be ignored. Regulatory services are said to be still negotiating with Thor around cleanup costs.

ATTACHMENT 3: GENERAL PAMPHLET ON MERCURY

Fact Sheet: Mercury and safe disposal practises

What is Mercury?

Mercury is a silver white liquid metal that occurs naturally in small amounts in the environment. The symbol used to describe mercury is Hg. It can change easily from solid to liquid to gas, allowing it to circulate in the atmosphere and the environment. Mercury combines with other elements, such as chlorine, sulfur, or oxygen, to form inorganic mercury compounds or "salts," which are usually white powders or crystals. Mercury also combines with carbon to make organic mercury compounds. The most common one, methyl-mercury, is produced mainly by microscopic organisms in the water and soil. More mercury in the environment can increase the amounts of methyl-mercury that these small organisms make.

Where can Mercury be found?

Because Mercury remains liquid at room temperature, it is used in many consumer products. It can be found in hospitals and homes and is used in barometers, blood pressure instruments, thermometers, and other pressure sensing instruments. Batteries containing mercury are used in some small electronic devices like watches and children's toys. Mining sites, Power plants, incinerators and some industries release mercury into the environment causing air and water pollution. Dental amalgam tooth fillings are also a source of mercury exposure. Metallic mercury is used to produce chlorine gas and caustic soda.. Mercury salts are sometimes used in skin lightening creams and as antiseptic creams and ointments.

WHERE MERCURY POLLUTION COMES FROM, ACCORDING TO INDUSTRY: LIES AND DECEPTION

Mercury- From a series of secret space probes that were sent to planet Mercury by government administrations that have kicked up clouds of "mercury dust," which have now drifted back to earth.

What happens to mercury when it enters the environment?

- Inorganic mercury (metallic mercury and inorganic mercury compounds) enters the air from mining ore deposits, burning coal and waste, and from manufacturing plants.
- It enters the water or soil from natural deposits, disposal of wastes, and volcanic activity.
- Methyl-mercury may be formed in water and soil by small organisms called bacteria.
- Methyl-mercury builds up in the tissues of fish. Larger and older fish tend to have the highest levels of mercury.

How can you be exposed to Mercury?
Mercury exposure can occur by breathing vapours, by direct skin contact or by eating food such as fish or shellfish contaminated with methyl-mercury and by drinking water contaminated with mercury. Mercury vapours are readily absorbed by the lungs as a result of exposure to breathing vapours in air from spills, incinerators, and industries that burn mercury-containing fuels. Mercury can enter the body through the skin, especially a wound or cut.

What health problems are associated with exposure to Mercury?

Health problems caused by Mercury depend on the amount that has entered your body, how it entered your body, how long you have been exposed to it, and how your body responds to it. The nervous system is very sensitive to all forms of mercury. Methyl-mercury and metallic mercury vapors are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems.

Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation

Children are more susceptible to mercury poisoning than adults because their brains are not yet fully developed. Exposure to small amounts of mercury over a long period of time may cause negative health effects. These include damage to the brain, kidneys and lungs. The foetus of pregnant women can also be damaged.

The symptoms of mercury include

- Impairment of vision
- Disturbances in sensations (prickling feeling, numbness) usually in the hands and feet and sometimes around the mouth
- Lack of co-ordination of movements such as writing
- Impairment of speech, hearing and walking
- Muscle weakness
- Skin rashes
- Mood swings
- Memory loss and mental disturbances

Mercury poisoning accidents
On March 2001, residents of a Vancouver apartment block were evacuated from their suites after mercury poisoning killed one of their neighbours. Cleanup crew found mercury in a dentist apartment from which mercury vapours had wound their way up plumbing and ventilation shafts to the top floor of their three storey building.

In 1996, a United States cancer researcher spilled mercury on her hand. The compound soaked through her rubber glove and into her skin. A few months later, she began losing her balance and having trouble speaking and hearing. Ten months after the accident she was dead.

In June 2001, Dewey police had found the mercury that had contaminated an apartments carpet had left a child in critical condition. The 23 month old toddler suffered from poisoning because she crawled and played on the contaminated carpet and breathed the fumes.

In 1993, the British-owned company Thor Chemicals, the world's biggest mercury recovery plant situated in Cato Ridge, Natal, appeared before a magistrate court on charges of "culpable homicide". They were charged in British courts with the murder of three employees who had died from mercury poisoning.

In 1982, a suit was filed in the Japanese Supreme Court against chemical maker Chisso Corp for pouring tons of mercury compounds since the 1930s into Japan's Minamata Bay. Since the early 1950s, hundreds of Japanese from the Minamata Bay area have died after eating mercury-tainted fish. Others suffered spasms and blurred vision, and babies of poisoned mothers were born with gnarled limbs.

Other examples of mercury poisoning is the Iraqi poisoning events where wheat treated with a seed dressing containing organic mercury compounds were used for bread. Also, new research has shown that methylmercury can be released directly from municipal waste landfills (**Lindberg et al, 2001**) and sewage treatment plants (**Sommar et al, 1999**).

How can you prevent mercury spills and exposure to mercury?
Mercury containing products should be replaced with safer alternatives such as electronic devices. Mercury containing items such as florescent bulbs and old electronic switches should be recycled instead of thrown into the household trash.

Carefully handle and dispose of products that contain mercury, such as thermometers or fluorescent light bulbs. Do not vacuum up spilled mercury, because it will vaporize and increase exposure. If a large amount of mercury has been spilled, contact your health department. Teach children not to play with shiny, silver liquids.

Properly dispose of older medicines that contain mercury. Keep all mercury-containing medicines away from children.

Pregnant women and children should keep away from rooms where liquid mercury has been used.

Learn about wildlife and fish advisories in your area from your public health or natural resources department

FOR MORE INFORMATION:

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