

The real blood diamonds

TB, Silicosis, Asbestosis and De Beers

**Foreword for the 2007 Second Edition of Glitter and Greed
by Janine Roberts, Published by Disinfo Inc. of New York.**



Stop De Beers – appropriate sign outside its HQ in Kimberley

The US Clean Diamond Act, and the Kimberley Process, are supposed to guarantee that the diamonds we buy are morally clean, not associated with any foul deed, or so we have all understood it.

But, according to the US General Accounting Office, in a report dated September 2006, these guarantees are little more than worthless illusions. There are no verifiable checks done on diamonds. Most parcels of diamonds are not even inspected. The so-called guarantees cannot be checked. So, how can any shopper – or store – tell if their diamonds are clean?

And moreover, as I recently learned in South Africa, De Beers currently mines millions of the “guaranteed clean” diamonds we find in our stores in a cheapskate careless manner that wrecks the lungs of its mineworkers, causing incurable misery and death. I also have learnt that in Asia, where 90% of these diamonds are finely cut

for about 40c each, the most impoverished of the cutters are being killed by silicosis, caused by unprotected exposure to gem dust.¹

Yet, as I write, the mining industry, led by De Beers, is mostly concerned about the impact of a new Leonardo DiCaprio movie *The Blood Diamond*. Emails and faxes about it are flying agitatedly around De Beers' offices. They have organized among employees a campaign called "Project Horizon" to combat the movie's message. But this film deals only with diamonds sold to support former African wars – something done since Cecil Rhodes, the founder of De Beers, sold them to fight the Boers. The film does not highlight other issues – and so De Beers feels it can ignore the misery in its mines and the cutting workshops, and even what is happening with the Bushmen whose land it covets for its diamond wealth.

Today many celebrities have joined with Survival International to help protect the Bushmen, guardians of one of the earth's most ancient cultures, who were recently evicted from much of their lands.² In December 2006 they won recognition in a major legal battle of their rights to live on their ancient lands – only to have the Botswana government immediately impose impossible restrictions, severely limiting the numbers of those who can return, the water they can have and what they can do. De Beers says this is nothing to do with it³ – but right in the heart of these lands is a major diamond deposit that it currently holds tight in deep freeze, awaiting the moment when it's opportune to mine. When it does, it plans to use vast quantities of water that it has reported finding under the land where the government will not allow the Bushmen a borehole.

Not far from these lands, but over the border into South Africa, lies the giant De Beers' Finsch diamond mine. Here there is a very different but most dangerous problem. When I visited it first a shop steward told me, "Many of the diamonds we mine are sitting in asbestos. We go underground with inadequate masks. The ventilation is always breaking down. We are covered in asbestos dust." This shocked and horrified me. If true, it would give a lingering death to many. But at that time I found De Beers' doctors kept a tight hold on the miners' health records, so I could not verify this most serious allegation.

On the contrary, I found De Beers denied that asbestos was any problem in its mines. In a recent statement it said: "Despite the inherent risk and hazards of the mining industry, the diamond mining sector remains one of the safest in terms of occupational disease rates. The key areas of concern are well under control; lung diseases [are] very rare. ... Diseases due to respirable air-borne dust such as silicosis, asbestosis and chemical inhalation remain very rare."

It also stated: "Cardio-pulmonary tuberculosis [is] well below community rate – this is not a dust-associated disease in the diamond mining industry."⁴ This claim was extraordinary. Dust-related silicosis and TB are horrifically epidemic in other South African mines. But from what it claimed, diamond mining is surprisingly and uniquely safe,

Although I had doubts about asbestos, I long accepted their assurances about TB and silicosis. They were thus not mentioned in the first edition of this book. I was glad

these diseases were not present in their mines. I knew TB was particularly dreadful, that it consumed the bodies of its victims and thus was once called “consumption.”

But then in late 2006, while helping make a film about diamonds in South Africa, I interviewed Sandy Murray, the 28-year-old mother of two little girls aged 7 and 5, She had worked with her husband at the De Beers’ Koffiefontein Diamond Mine from 1996 to 2005, first as a mine secretary and then, from 2001 to 2005, as a Health and Safety Officer.

When we met, she had just recovered from having part of one of her lungs removed and from the shock of learning her lungs are permanently scarred and gravely weakened from mine dust and pulmonary TB. But she was very welcoming and acted as if she had no disabilities. Only when pushed did she admit, “I can no longer pick up and bathe the children. I cannot even change the duvet on our bed.”



Her diagnosis had been a total shock. It takes years for such illnesses to develop, and yet every year at the mine she had the mandatory chest x-ray and lung capacity test designed to pick up the first sign of lung damage while it is easy to treat – and “every year I was told I was clear.”

With hindsight, she now remembers she frequently had flu-like symptoms that would not go away, and that she was starting to feel increasingly weak. But she did not get the cough that often indicates silicosis, nor had she coughed up blood as often happens with TB. In early 2005 she was diagnosed with pneumonia – but still her now critical lung damage was not picked up.

But in 2005 she moved to a new job at De Beers Head Office in Johannesburg and had another medical check up. “This was on a Thursday. On Friday they told me I had TB and on Monday I was rushed into hospital to have part of my lungs removed.”

Her x-rays had revealed large scars and other damage from mine dust, and that her lung capacity had shrunk. It seemed the cuts had left her lungs open to infection from TB.

She told me how astonished she was at her critical diagnosis – for it is generally said that white miners do not get TB. She explained, “TB is a shameful disease that no white wants to admit to.” It is generally thought to only infect impoverished blacks. “When I went to a hospital clinic, I was the only white among 200 blacks.”

But when she gathered her courage to tell what had happened, one by one close white friends in the mining industry confessed what they had long kept hidden even from her, that they too had TB in the family. (I have since found among South African gold miners 18.8% of black workers had silicosis – and 17.6% of white.⁵)

She then sought access to her medical records for she wanted to know how long she had carried TB, worried that she might have infected others.

Her records revealed her lungs were perfect in 2001 – with a lung capacity test result of 102%. But she was shocked to find in 2002, a year after she took up her post as a Health and Safety Officer and started going underground, her x-rays showed clear damage – and during the next three years they had revealed more and more damage.

Thinking back, she remembers how the De Beers’ doctor put her x-rays away with no more than a casual glance. It has since been discovered, I was told, that De Beers did not employ qualified radiographers.

When she looked at her lung capacity test results, the evidence was even clearer. Her air capacity “was down to 89% in 2002. In 2004 it dropped to just 73%, and in 2005 to only 64%.” She added: “I also lost weight. I was 70 kg but dropped to 49 kg.” She is now only about 54 kg. The evidence was starkly clear – if anyone had looked. These were the unmistakable symptoms of major lung disease. If these had been noted when they first became obvious in 2002, she could have been medically treated with success, removed from further danger, would not have needed an operation and would still have her lungs intact.



A photo that Sandy had taken for her family in case anything went wrong during her TB operation.

She will now never recover what she has lost. Her remaining lungs are very damaged. She simply cannot absorb the oxygen she needs. Yet she is only 28. When she gets older, it may well get much harder. She remains highly vulnerable. With her permanent lung damage she will not get a job at another mine.

She was very surprised at how little exposure to diamond mine dust it had taken to make her so dangerously ill. "I only went underground twice a week to check health and safety matters. Only once a week did I go down as far as the 52nd level (about 600 feet down) to where the train dumped the ore for the crusher."

But the latter level was extremely dusty. A senior contact at the Koffiefontein mine told me the dust extractor installed on that level was "constantly getting its filters blocked and breaking down." This would cause the high peak dust exposure that can be the critical element in lung disease.

Sandy asked me: "But what about the black mineworkers? They went underground for much longer than me and for 5 days a week. If the company doctor did not look at my x-rays, those of a white woman, he was scarcely likely to look carefully at their x-rays."

I would go afterwards down to Koffiefontein to research the extent of lung damage there by going house to house. I found one or two out of every five homes contained a black mineworker with damaged lungs.

She also told me: "When I changed my job within De Beers to come to Johannesburg, I lost all my medical benefits. I had to pay myself for the operation to remove the scar from my back and side and to help repair the muscle. It cost me 80,000 Rand (\$7,500) for my medical treatment. De Beers did not help." Only a small compensation payment of around \$5,000 is due to her under apartheid-era legislation that protects mine owners from paying any kind of realistic compensation.

After listening to Sandy, it seemed to me most ironic that in the 2001 film *Moulin Rouge* the beautiful Satine, played by Nicole Kidman, sung in the last hours of her life "Diamonds Are A Girl's Best Friend" immediately before she coughed blood and died of consumption.

With Sandy Murray's permission, I went to meet the expert who looked at her x-rays, Professor Emeritus Tony Davies, one of South Africa's most eminent specialists in occupational health, and asked him to comment on what he had found.

He said Sandy was very lucky to discover in time the great danger she was in. "Most mineworkers only get diagnosed with TB when it is too late, within a few months of their death, so they get no treatment at all. Many are not diagnosed even then, their TB is only discovered at autopsy." Retired mineworkers are rarely monitored, even though it is well known that silicosis or TB might take 15 years or more to develop. It is simply presumed that, as these diseases are fatal and have no cure, there is no value in monitoring their potential victims.

He told me that TB mostly starts in mineworkers after sharp particles from recently broken silica have severely damaged both their lungs and immune systems. Our immune system will try to remove any silica that gains entry to the lungs – and at low levels of dust it often succeeds. Macrophage cells in the lungs will engulf any dust that has made its way in. The lymphocyte T-cells also help to remove it. But if much dust accumulates in the lungs, it will eventually overwhelm the immune cells. The silica will cut up and scar the lung cells, making them useless for absorbing oxygen. The lymph nodes supplying vital immune system cells are frequently damaged.⁶ Many immune cells die, thus releasing the dust they have entrapped, allowing it to do yet more damage.

The victims of silicosis will face years of night sweats and chills, violent bloody fits of coughing, and the possible spread of infections to other parts of their bodies. Autopsies have revealed virtual sand beds in mineworkers' lungs.

Tuberculosis mycobacteria might then infect the wounded lung cells, as happened with Sandy, “while the macrophages are engaged elsewhere combating the dust” as Professor Davies put it.

“How common are these bacteria?” I then asked. His answer was shocking: “By the time they are twenty years old, 100% of all South Africans have been exposed to TB.” But this did not mean they would all get the illness called TB. I learnt that TB is a rod-like bacterium that is normally harmless. It becomes dangerous to mineworkers mostly after mine dust has done its damage, when “the bacteria can multiply in the wounds the dust creates, gain immunity to drugs, and is very difficult to kill.”⁷

This made me wonder what did most of the damage, the bacteria or the dust. I thus asked: “What is the clinical difference in patients between silicosis (in which no germ is involved) and TB?” He answered, “Very little. Except, there is more weight loss in TB.”

Freshly broken silica spilled out by drill bits is especially good at cutting into the lung cells. But sharp silica dust is not only in mines – it is in a wide range of industries and in many environments. However it is rarely as thick as in mine dust.

When I asked Professor Davies, “How common is TB in South Africa,” he replied, “Extremely” and explained emphatically how the other great epidemic, AIDS, “is masking” the true size of the TB “catastrophe.” His research revealed that silicosis/TB has been killing mineworkers from well before AIDS; that most mine drillers in Cornwall and the Transvaal were dying in 1902 of mine dust or TB before they reached their 37th birthday.⁸

The danger had not gone away. He angrily told me: “We have 1000% more TB cases than the USA. It has 4 cases of TB per 100,000. We have 500 cases per 100,000 – minimum – probably more like 750 new cases per 100,000 every year. Among our mineworkers it is far worse. They have from 4,000 to 5,000 cases per 100,000 every year.” When a group of migrant mine workers returning to Lesotho were tested, 60% had TB. “There are 330,000 new cases of TB a year [in South Africa] with some 7 million active cases.”

He explained why Sandy said TB was thought of as a disease of Blacks. This was because TB infection was more likely when our protective immune system is lowered by malnutrition, lack of sanitation and great poverty. He added angrily: "TB grows on a substrate of poor people."

I asked about the new resistant varieties of TB, but he said this is of minor importance so far in view of the total size of the TB epidemic. Up until now only about 75 fatalities in South Africa have been attributed to the resistant bacteria.

I check the latest South African governmental health statistics, those for 2001. These list TB as the biggest killer, followed by pneumonia and then AIDS. The AIDS figures are not broken down into the "opportunistic infections" but TB is also by far the biggest killer in AIDS cases. TB is characterized by weight loss, as is AIDS. Silicosis also destroys immune cells. The end result is the same.

De Beers claims the cases of TB among its workers are solely due to AIDS. It stated: "A total of 28 cases were diagnosed during 2001 – 33 per cent up on the previous year. This was expected and parallels the AIDS epidemic." Apparently it thought imprudent sex was solely to blame – and not the mine dust. This made me think rather cynically that, as companies are not generally sued for viral infections, it was no wonder that De Beers blamed viruses rather than mine dust for the ills of its workers.

As Professor Davies had worked extensively with mineworkers, I asked him what he knew of the dust in diamond mines. He hesitated before answering but then said: "Two hundred retired diamond mineworkers from the De Beers Premier mine were tested – and every single one of them had clinical asbestosis."

He added: "Some of might have had dual exposure by having also worked in asbestos mines, but some firmly maintained that they had only worked at Premier."

Professor Davies, a scientist who had specialized in diagnosing and fighting asbestosis, was confirming my worst suspicions. Asbestosis has a reputation of being even more deadly than silicosis.

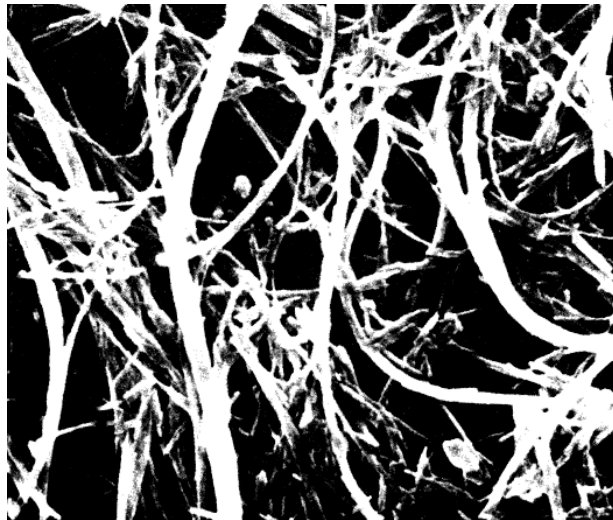
His words made me check on the constituents of kimberlite, the greenish diamond bearing rock named after Kimberley, the town where De Beers was founded. I found it contains much serpentine, a silicate, sometimes over 30%. Olivine is also a major constituent – and is nearly identical chemically. It can turn into serpentine when weathered. I also found this serpentine is present in the mines in a fibrous crystalline form better known as crinolite or white asbestos.

I knew white asbestos is said to be less dangerous than blue or brown, for it does not linger in our cells for decades after a single exposure. But, what if workers are constantly exposed to it as might happen in diamond mines? I thus asked Professor Davies: "Is white asbestos very dangerous?" He answered emphatically, "It is a serious health hazard. It is like glass fiber." It will easily penetrate lung cells. He reminded me that, although white asbestos was once commonly used to lag pipes and for buildings, today it is considered so dangerous that workers must remove it in full masks and protective suits.

Neerad Reddy, the film producer working with me, then asked Professor Davies: “Could Sandy Murray have been exposed to white asbestos?” He answered: “Possibly.” When I looked later at her X-rays, they seemed to my non-expert eye very similar to those I had seen of asbestos victims – but there can be no clear distinction in x-rays when both silica and asbestos are present.

Since my meeting with Professor Davies, I have located other research that confirms the presence of asbestos dust in diamond mines. The South African Centre for Scientific and Industrial Research (CSIR) produced in 2000 a paper entitled: *The positive identification of asbestos and other fibers in the mining of kimberlite deposits*. When they sought to evaluate how dangerous this was, they found the dust was so thick in the diamond mine they visited that they could not accurately count the numbers of fibers present!⁹

I have also found that, while other forms of asbestos are more likely to cause cancer, white asbestos does more damage to the immune system. “Chrysotile expressed a greater degree of cytotoxicity towards populations of macrophages.”¹⁰



White Asbestos (chrysotile) crystals

It was as the De Beers mineworkers at Finsch had reported; diamonds were sometimes found sitting in asbestos. De Beers had long been aware of this. They set up a laboratory to study the danger from asbestos fibers in their mines some twenty years ago in 1996.

But nevertheless De Beers maintains the dust in its mines is not doing any damage – and that any cases of asbestosis among its mineworkers are more likely to be caused by exposure elsewhere. “During 2001, four cases of nonmalignant asbestos pleural plaque were identified. Background environmental and previous employment exposures to asbestos outside De Beers operations are the most commonly associated factors in the development of these lesions.”

But most extraordinarily, De Beers also maintains that its dust is so safe, that normal dust control methods are unnecessary in diamond mining. It thus instructs its

mineworkers to break up the diamond-bearing kimberlite rock by “Dry Drilling,” without spraying water to suppress dust – as is legally mandatory in other mines.

But then I discovered scientific research that stunned me and totally undermined this claim by De Beers.

It was a report dated 2000 from the South African government’s Safety in Mines Research Advisory Committee. This is, to the best of my knowledge, the only major study ever completed into the safety implications of dry drilling in underground diamond mines.¹¹ It examined three major “pipe” and two fissure diamond mines. It did not say who owned these mines, but it was not too hard to guess. All the great South African pipe mines are owned by De Beers.

Its report is however limited in its scope. It states that they were not able to look into the presence of [asbestos] fibers in the mines – but they did look for the presence of dangerous levels of silica dust and for the use of dust removal techniques that would safeguard the health of the mineworkers.

It began with the bald statement, “Dry Mining is not permissible under South African mining legislation.” Dust-suppressant water jets are normally mandatory. It then explained that De Beers and smaller diamond mining companies had secured legal exemptions from this safety ban by claiming that the dust in diamond mines is harmless and because “water has been found to have undesirable effects on ‘blue ground’ (unweathered kimberlite) causing swelling or disintegration.”

The investigators were skeptical regarding the latter claim, as their observations seemed to suggest otherwise. “Although dry mining is practiced because it is claimed that water has adverse effects on the blue ground ... natural underground water sources did not appear to have had any deleterious effects on the kimberlite vein or on the production levels [in one of 5 mines inspected that naturally had water in it].”

They discovered that “sludge” was created by drilling kimberlite in 1960 reports and deduced that wet mining was previously practiced. They also noted water damage seemed very slow. According to a paper they cited, water could affect drill holes if these “are left standing for more than a month.” They concluded the exemption from wet drilling “warrants further investigation.”

The softness De Beers refers to in kimberlite is purely relative. It is a hard greenish crystalline rock that can be thoroughly soaked in water for days without having the slightest sign of deterioration. I found it remains a rock that I would hate to have thrown at me. Apparently months of exposure to the weather are needed to make some parts of kimberlite deteriorate. But the relative “softness” of kimberlite is no joking matter. It is the only justification De Beers gives for its decision to use the dangerous dry mining practices banned in other mines.

Despite De Beers’ claims, the investigators found levels of silica were far above the official safety limit of 0.1 grams of silica per cubic meter of air in all the visited diamond mines. They concluded: “The results clearly indicate that ventilation on its own is not very effective in controlling the exposure of personnel to high dust concentrations.”

Four of the five diamond mines it investigated had consistently more than 5% silica in their dust and were judged unsafe. As for the one that generally had “less than 5% silica,” this had in places dust containing silica “up to 53 grams per cubic meter of air.” Such peak levels are notoriously liable to cause silicosis.

There is however some doubt over what level of constant silica exposure is safe. Another study showed: “Workers developed silicosis while exposed to a quartz concentration [of 0.053 mg/m³] below the recommended occupational exposure limit (OEL) of 0.1 mg/m³.” It concluded: “This accords with a mounting body of evidence that an OEL of 0.1 mg/m³ is not protective against silicosis.”¹²

Silica dust accumulates in the lungs until it reaches dangerous levels – and it may not take long for the one gram to accumulate that carries a definite danger of deadly illness. One paper said: “Clinical symptoms may develop within 6 months of first exposure.”¹³

As for the two “fissure” diamond mines the investigators examined, they reported, “As a result of the largely uncontrolled dust generation in fissure kimberlite mining operations, dust concentrations in excess of 100 mg/m³ were measured in some instances. This in turn led to very high pollutant indices and, coupled with a sometimes high quartz content in the dust, yielded very high total toxin indices.”

The investigators also noted transporting dry ore underground produced unacceptably high levels of dust. They further observed that the dust hoods on mining drills frequently let dust blow into the faces of operators. Even when these hoods worked, they frequently proved useless, with their filters getting blocked by dust, and consequently being emptied out or blown clean locally within the mine, making the tunnels and drill faces extremely dusty.



Ventilation openings into the De Beers' Koffiefontein mine's underground workings – in the pit among heaps of dusty and dangerous weathered kimberlite.

The investigators continued: “The situation is greatly exacerbated where workings are series-ventilated. In such instances highly polluted air exiting from one working place can become the intake air to the next workplace in the ventilation sequence. This then leads to the superimposition of one dense dust cloud on another and to increasingly unacceptable workplace conditions.”

The report also noted there are alternative ways to remove dust, but the diamond mining companies had put little effort into investigating these. Foam can be used and has proved 95% effective in removing dust. Fine mist sprays will remove up to 70% of asbestos fibers present. But they found none of these methods used – and asked why.

It also seems these working conditions are violations of the Mining Code, despite De Beers’ exemptions. Richard Spoor, a South African lawyer specializing in mining law, told me, “Ever since the Mines and Works Act No 27 was promulgated in 1956, the law has required that ‘every part of a mine where persons are required to travel and work shall be properly ventilated to maintain safe and healthy environmental conditions for the workmen and that the ventilating air shall be such that it will dilute and render harmless any inflammable or noxious gases and dust in the ambient air.’”

De Beers’ repeated assurances that the dust is safe in its mines have also had the unfortunate effect of putting their miners’ lives into greater jeopardy by convincing them that the dust danger is minimal. They thus sometimes remove the simple cloth masks provided – for these are black with dust in twenty minutes, hot, uncomfortable and ill fitting around broad African noses – and why bother when De Beers says the dust rarely causes harm?

Elias Knolomba, an underground drill operator, worked at the same mine as Sandy Murray. He remembers her well and said she was very popular among the mineworkers. He was shocked when I told him of her illness, exclaiming: “She only went underground a day or two a week.” He went underground five days a week – and now has dust- damaged lungs. In his home in Koffiefontein he showed me the large scar his lung operation left on his back and side. He half-jokingly wondered: “Perhaps De Beers deliberately allows the dust to be thick to stop us from seeing the diamonds and being tempted to steal them?”

He worked for years drilling in copper mines before he came to Koffiefontein. He now deeply regretted his move. “My lungs were good when I came here. If I had known how bad the dust was in De Beers diamond mines, I would have stayed in the copper mines. ... At times the dust is so thick that we could not see our hands – let alone the diamonds.” Often his mask did not fit or came off. “It was not shaped to fit African noses.” In 1999 he had his lung operation and now, at the age of 56, he could not walk into town without needing to use an oxygen pump.

What he had to tell me about De Beers’ practices shocked me even more. He described what happened when the official dust inspector came to the mine for his regular scheduled checks. “De Beers always knew when he was coming. The day before he appears, it shut down the mine and ordered all surfaces washed with water to remove the dust. The same thing happened when Nicky Oppenheimer, the head of

De Beers, came to visit.” It seems De Beers did not always regard water as “dangerous” in its mines.



The main entrance and De Beers slogan at the Koffiefontein diamond mine where Sandy Murray and Elias Knolomba’s lungs were critically damaged. Sandy’s office was by the diamond ore heaped in the background.

Gem diamonds are a luxury. Their extraction can never justify the death of one mineworker. But, even if they have to be mined, the dangers to which these diamond mineworkers are subjected is inexcusable. The dust that wrecks their lungs can be safely and economically removed – and is in most Western mines

The mineworkers at Koffiefontein told me: “De Beers treats us as tools to be thrown away when worn out.” Richard Spoor said employers have “paid no regard to this fundamental obligation to [look after] their workers and as a result thousands of their employees have been killed and maimed after contracting preventable occupational lung diseases. The wives and children of these mineworkers have themselves been plunged into poverty and unrelenting hardship by the loss of the support of their husbands and fathers.”

He continued: “The apartheid system made it possible for the gold mining industry, quite literally, to use, consume and discard black workers as if they were just another commodity.” What he said of gold mining in South Africa can be equally said of diamond mining today.

Thus, despite De Beers’ denials, silica is often present in high concentrations in diamond mines – and asbestos fibers are also present. Both are highly dangerous. The damage they do to lungs slowly suffocates their victims, killing them with silicosis and asbestosis, or with deadly cancers and TB.

The truth is that diamond mining, as practiced by De Beers, is not harmless but uniquely dangerous. In their mines the dangers of silica are compounded by the dangers of asbestos fibers. There is no effective dust control, with no use of water to suppress dust as in other mines.

White asbestos fibers are long, curved and far thinner than a human hair. They drift invisibly in the air and can penetrate deep into the lungs. Because of their tiny size, our lungs cannot expel them.¹⁴ When millions are present, our lungs cannot cope. Our immune system produces an acid to try to dissolve them when they cut into our lung cells – but this acid can also deeply scar the lungs. This damage, “asbestosis,” may eventually become so severe that the lungs can no longer function.

Asbestosis can also cause an aggressive and very deadly lung cancer, mesothelioma, which kills when you might be feeling safe, some 35 years after asbestos exposure. After this cancer is diagnosed, there is normally only a “median survival rate” of 11 months. Pulmonary TB is linked more to silicosis than to asbestosis, and mesotheliomas are mostly linked to asbestosis – but why is not yet understood.

The initial “prime” symptom of asbestosis is said to be “slow insidious shortness of breath on exertion” and not the coughing common in silicosis and TB cases. I could not help noting that this was like Sandy’s symptoms. Two-thirds of asbestosis cases also have “rales,” a crackling noise in the lower lung heard towards the end of an indrawn breathe. Some medical authorities say asbestosis is easily distinguished from silicosis by x-ray because it forms long scars in the lower lungs while silicosis forms small lumps in the upper lung – but what happens when both are present? Both are reported to cause “miners’ lung,” otherwise known as pneumoconiosis, and both cause great damage to the immune system cells that protect our lungs.¹⁵

As for TB, it seems it has many contributing causes. It is the leading cause of death in many developing countries, currently killing more adults each year than all other tropical diseases combined. It also orphans more children than any other infectious disease.¹⁶ But it is rarely so deadly as it is among South African mineworkers.

The AIDS and TB epidemics are also inextricably conflated, it seems, because TB bacteria may falsely test as if HIV in the HIV test – as has been established by Dr. Myron Essex and his colleagues from Harvard University. Dr. Essex later won the top US medical research award, the Albert Lasker, with Dr. Robert Gallo, for his work on AIDS.

Essex wrote in the *Journal of Infectious Diseases* that the HIV test and the Western Blot “should be interpreted with caution when screening individuals infected with M. tuberculosis or other mycobacterial species. ...This data suggests that mycobacterial cell wall antigens may well share common epitopes with HIV.”¹⁷

As the TB mycobacteria are present in some two billion humans worldwide, according to the estimate of the World Health Organization, and mycobacteria are present in most water supplies, this makes it more difficult to estimate the true size of the AIDS epidemic.

In 2004 one third of all South African mineworkers had active TB at the time of their death. But the link between dust and TB was masked by these false positive tests, as if HIV had caused the dust driving through the De Beers mines, as if it had caused the cuts and scars in miners’ lungs. For them the first measure needed was dust prevention. Only this could stop the epidemic.¹⁸

In addition, the careful reading of TB research papers reveals, as one scientist noted, that the blaming of TB exclusively on bacteria found in diseased lungs, as done by many since the time of the 19th century discoverer of this bacteria, Dr. Robert Koch, “may have contributed to the delay in the recognition of mining dusts as the causes of occupational lung disease.” It is now known that, “The development of the disease mainly depends on cumulative dust exposure – although clinical symptoms may develop within six months of first exposure ... death from respiratory causes normally occurs within months of diagnosis.”¹⁹

The conclusion must be that much of this terrible widespread lung disease epidemic among mineworkers, if correctly diagnosed, could have been prevented, albeit at some financial cost to the mining companies. It could be stopped by the effective removal of the dust at the point where it is created. Dr. Rafael de la Hoz concluded a paper on TB and Silicosis by saying: “The fundamental importance of measures to control dust and to adequately protect all workers cannot be over-emphasized.”

De Beers’ immoral failure to control the toxic dust in its mines has exposed its mineworkers to great dangers.

Yes, there really are blood diamonds. But only a very few them are traded to support wars. They are rather the millions of gems splattered by the blood coughed up by TB victims, by the blood shed in lungs, by the blood of greed. It is now the production of these deeply tainted diamonds in South Africa that urgently needs to be cleansed.

The really sad thing about all this is that it is all so utterly unnecessary. Diamonds are luxuries and cannot be worth such misery. As the governmental “dry mining” safety report stated, there are many ways to control dust that De Beers could have used instead of water and did not. We will never know how many lives this negligence has cost – and I too now suspect that De Beers benefits by having its diamonds hidden in dust.

It is also very regrettable that this is not the only way that the recent actions of De Beers have suggested stark greed and miserliness.

In 2006 De Beers began closing the legendary great diamond mines in Kimberley on which its fortune was based, auctioning their equipment, throwing thousands out of work. Foreign companies had been brought in to clean up whatever loose diamonds remained in the tips by the mines, as if no locals could be trusted. De Beers is also abandoning its mining activities in Koffiefontein.

It is not that these mines had suddenly run out of diamonds. In 2004 the Kimberley mines had produced two million carats – a near record. It was perhaps more the fulfillment of a threat. Just months earlier, when the South African government put forward a law forcing mining companies to give more back to the community, De Beers had publicly threatened – if you pass this law, we will close mines.

Up until now the ANC government has dealt remarkably gently with the mining magnates. Thus eleven years after apartheid ended, the Oppenheimer family still effectively controls much of the South African economy, including De Beers, the mining giant Anglo American and about 600 other companies. Some black politicians

are now benefiting from the Black Empowerment legislation – but the vast majority of citizens have still benefited little from the diamond wealth of their country.

Ironically, De Beers, the company that helped found apartheid, has been reaping rich rewards from the ending of apartheid. Its representatives can threaten to desert diamond mines in South Africa because they now travel with President Mbeki, the leader of South Africa, securing resources from which they would have been banned as representatives of an apartheid company. They thus now hold a large diamond deposit in the Central African Republic, secured behind a high fence, and are negotiating in the Congo for further diamond deposits.



Housing for the poor at Koffiefontein - water is from the shared tap.

When I went to Koffiefontein I found the reports that the mine was being closed as uneconomical to be highly misleading. What is happening is that De Beers is attempting to escape its social responsibilities by subcontracting the mine to a smaller mining company, Petra Diamonds, which will presumably selling its product in ways De Beers likes. In turn Petra Diamonds is “subcontracting” migrant black workers, and former black employees of De Beers, to work in the mine at one third to one half of the wages previously paid by De Beers. This is starvation money – but those that have accepted this deal asked me “what else can we do?” Many workers are nevertheless refusing to work for Petra.

Under an agreement negotiated by the Mineworkers’ Union with De Beers, a mineworker who drives a front end loader would be paid around 5,000 to 6,000 Rand (US\$700 to \$800) a month, but after deductions for health care and pensions, house loans and unemployment, his take-home-pay might well be only a half or third of this. But under Petra – it seems health care has become an utterly unaffordable extra.

The citizens of Koffiefontein, a town with practically no other employment than the mine, are seemingly being punished by De Beers for government legislation it does not like by having their wages slashed to around \$200 a month. This is despite food costing much the same as in the West.



De Beers' apartheid era housing for Koffiefontein mining families still in use – extremely hot in summer.

The mineworkers who are trying to fight this have asked their government to help them gain a share in the mine, possibly 28%, and a partnership with a different mining company than Petra, but the government has told them they would first have to raise \$10 million, a figure well below the value of the diamonds estimated to be still in the mine, but one they are finding nearly impossible to reach.

Currently, Petra, under a contract from De Beers, is keeping the mine in production, still mining kimberlite, while the separation out of diamonds is put on hold until the claim of the mineworkers is settled.



Vast amounts of already mined diamond-rich ore – and source of dust storms – on town's edge at Koffiefontein. Dust from here blows over the local schools.

I was taken to see the mine by its former shop steward, Joseph Botalilo, whom I had first met in 1996. He showed me the dirt road alongside the main mine, next to a sheer 500-foot-high cliff down to the mine bottom. On the other side of the road was a 100-foot-high, half a mile long tip. He told me this contained millions of tonnes of diamond-rich rock stored for future diamond separation. The road then reached a deep fissure in the mine wall and turned left along it, to where a second pit was being excavated.



De Beers mines diamonds deep below the floor of this pit. Diamonds are in the blue kimberlite rock. The fissure leading to the newly opened pit is the brown streak just left of center. Stored Kimberlite is beyond – the private game park is the flat land going off to the right.

“See that fissure? That is a diamond rich dyke, joining the two pits together. Now look past this second pit, and out to the horizon.” I could see a wide area of grass dotted with trees, and a small cloud of smoke far away.

“That is a De Beers private game park. We think it is only there to hide diamonds, to keep deposits out of sight. It is lined with a fence that is constantly patrolled by security people. See that smoke? That is where a deposit of diamond rock has been mined – it could be a continuation of the same dyke. We believe other dykes go out in other directions. A black child picked up a diamond right over there.” He indicates an area beyond the fences.



Part of the heavy waste De Beers dumped on a children's playing area after a black child found a diamond on this spot – to ensure, according to locals, that no one else did likewise

Before I go further, let me emphasize how suspicious I found to be the De Beers published statistics for the diamond content of its great South African mines. It says they all have between 0.5 and 7 carats per 100 tonnes. The Kimberley mines had officially in 2004 just 1.8 carats per hundred tones while Koffiefontein had only 0.6 carats per hundred tonnes. As a carat is a fifth of a gram, this is a tiny diamond content. On such figures they justify the high prices they charge for the diamonds extracted.

Yet in Canada the large Diavik mine says it has an average of 3.9 carats per tonne, not per hundred tonnes – making it over 400 times richer. Australia has twice as many per tonne as Diavik, while Russia has, at the Grib deposit near Archangel, an incredible 69 carats per tonne according to the latest reports, apparently 6,900 times more than South Africa. But none of these mines plan to challenge the high prices De Beers sets based on the rarity of the diamonds in its own mines. They all value the great profits these prices bring.

So, why are De Beers' mines so incredibly much poorer than others? Or, has De Beers grossly under-declared its dust-enshrouded production for a hundred years? It is thus, in the circumstances, extremely important that the South African government geologically "audits" De Beers' mines. If it does not, it will never be able to verify whatever De Beers tells it.



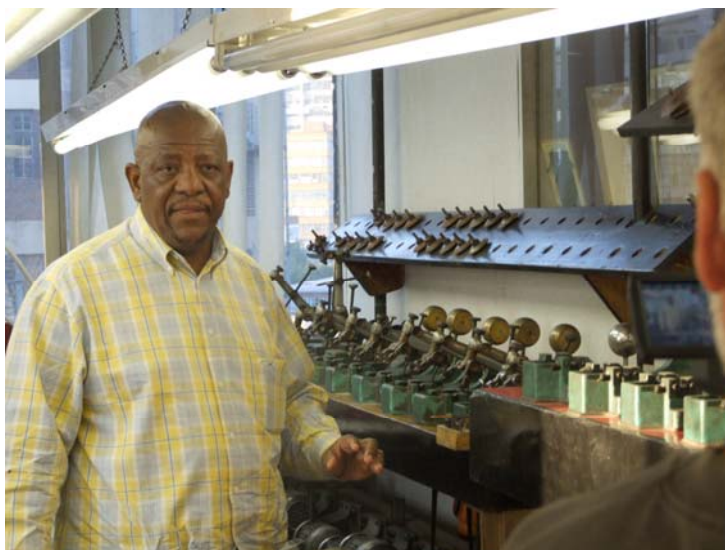
Slogan on De Beers' vehicle in the Koffiefontein mine.

Even in Johannesburg persuasive evidence of De Beers' meanness was ever present. I interviewed two black diamond cutters. Both had invested in setting up a diamond factory. But in both cases the machines were idle. One factory had been idle for two years. Both were now facing ruin.

Ernest Malakoane owns one of these factories. He is the Chairperson of the United Diamond Association of South Africa (UDASA), representing some 200 black diamond cutters and dealers, all finding it difficult to purchase diamonds from De Beers. "Every time we approach Diamdel (the wholly-owned De Beers rough diamond trading subsidiary), supposedly set up to supply us with diamonds, we are told there are no diamonds available. We get the chaff and crumbs – if we are lucky."

He explained: "Diamonds can be exported free of export duty if they cannot be sold in South Africa. So we are offered parcels of diamonds with very high reserve prices. When we cannot meet these prices they set, they can export the diamonds duty-free. Thus nearly all South African gems are sold uncut and duty-free to foreigners." This is despite diamonds being produced in the mines at relatively low costs.

But why were there few diamonds available to cut in South Africa? It was not that they were being out-competed by India. Some 85% of the world's gem diamonds were cut there, as I mentioned above, for about 40c each in 2006, but these are mostly the poorer and smaller diamonds. Under apartheid the government had made sure the best diamonds were kept in South Africa to be cut by whites. Joseph Kalomere, another African with an idle diamond cutting factory, told me: "We could compete against the world if we could cut the same stones as were given to whites. We produce 14 million carats a year, and many are fine diamonds. Why should Africans be poor when our continent is so rich?"



Malakoane in his diamond-deprived cutting factory.

Malakoane continued: "The government says it will set up a state trader who has 10% of the production to sell to us... but when? This will not happen. We are dead. We have waited already ten years. Life is now tougher for us than it was immediately after apartheid ended. The police use entrapment methods to make sure we don't acquire diamonds from unlicensed diggers. Our government is irresponsible when it comes to this industry. They rely for information on De Beers."

I asked about De Beers' plans to move their international center to Botswana. "It is easier for them there. The citizens of Botswana find it even harder to get licenses. They cannot touch diamonds. The San Bushmen are being driven from their lands. All power is with De Beers."

I spoke also in Johannesburg to rich white diamond merchants dealing in *goose-egg*-size stones. For them rough diamond supply seemed no problem. I told them of the Koffiefontein mineworkers who could become the first black owners of a major South African diamond mine – if they could raise \$10 million dollars. I asked why could they not go into partnership with the mineworkers and finance this deal?

The answer I got was that they had looked into this, but giving mineworkers a 28% interest in the mine was a "problem." "It complicated the deal." In any case, how could they invest when "De Beers said the mine was running out of diamonds?" But it turned out that they had not obtained an independent assessment of the mine's

diamond content. No one would buy a house with so few checks but they apparently were not willing or able to challenge De Beers' word. This seemed to be an impossible quandary. With no independent assessment, an historical deal – under which black South Africans could for the first time run their own mine and cut their own stones – was in very deep trouble.

I spoke also to Ernie Bum, the President of the World Diamond Council. When I described to him the health conditions in major diamond mines, he shifted uncomfortably, then said firmly that, if these were so bad, the diamond industry would have to put it right.

He was enthusiastic about diamonds, and wanted Johannesburg to become another Antwerp, a major international diamond-trading center. If extra supplies of diamonds made the international price of diamonds drop, so be it. "More people could afford them and the market will grow. Everyone should have the chance to enjoy diamonds. I love crafting fine gems, making a beautiful stone. People will always want to buy them."

He regretted that De Beers had recently chosen to set up its international center in Botswana. He asked why "De Beers has done for South Africa so much less than they did for themselves. They could have built a healthy industry here employing over a hundred thousand."

Louis Lipchin, one of the most experienced merchants in the Johannesburg Diamond Centre, echoed his words. "The Oppenheimer family has the power, the ingenuity and the talent to turn things around. They could earn much more respect by doing so than they have now."



Louis Lipchin at work.

But when I asked about the Kimberley Process that is supposed to have removed "blood diamonds" from the market, Lipchin was firm. "It has only benefited De Beers. I feel the Kimberley Process enables De Beers to restrict the access of others to diamonds, to make it much more difficult for others to get access to the better classes of diamonds. The NGOs pushing this have got it all wrong. All they are doing is helping De Beers maintain its control over the market." Every diamond merchant I spoke to said much the same.

A month earlier, in September 2006, the US General Accountability Office (GAO) had reported that the United States rarely inspects diamond imports – and inexplicably exports millions more diamonds than it officially imports, despite not mining any itself! This strongly suggests that diamonds are being imported illegally into the US, making a mockery of the Pure Diamond legislation. Finally, it was evident from its report that the Kimberley Process simply misses its target, by focusing mostly on “illicit diamonds” produced without proper paperwork, rather than the far fewer “conflict diamonds” linked to wars.

As I was finishing this research, to my surprise I learnt of major protests over diamond-caused silicosis happening not in the mines, but the great Asian diamond cutting centers, where the vast majority of rough gem diamonds are transformed into glittering jewels. Workers are fighting for dust protection, and telling hear-breaking stories of the many cutters now permanently disabled by the very gems they cut.

When a rough diamond is cut and polished, from half to two thirds of its weight is turned into dust. This is razor-sharp and the hardest dust of all. It can make mincemeat of soft lung tissues. I have seen and photographed many diamond-cutting workshops with children working in them and no dust protection. Their walls are sometimes black with diamond dust.

I have also visited diamond-cutting factories in Mumbai where dust suppression methods are installed – so it is not all bad. But in the workshops where the poorest work, or where the owners are most greedy – such as in one large plant I visited that had been opened by the Oppenheimer family – there is no dust suppression. The workers live in the dust. The problem has long been hidden by two facts. First, young workers are preferred as they have the sharpest eyes. Second, it can take up to 30 years for the silicosis to develop after the dust is inhaled and the damage done.

Again, as in the mines, this is simply a crime of greed. It shows a lack of respect and of care, for excellent dust control technology is available. The diamond merchant owners apparently don't want to diminish the profits they make by paying for it.

As for the Kimberley process, it does not police for such abuses. In any case, in South Africa I learnt how it is very easy to give any diamond the right paperwork, if you have the right connections. Diamonds of uncertain or undeclared provenance are imported unofficially into South Africa, mixed with locally produced diamonds, and then falsely and undetectably certified as “clean” under the Kimberley Process.

Yes, the Kimberley process has failed. Real blood diamonds are still traded by the tens of millions – but we have been looking for most of them in all the wrong places. Today they are mostly the blood-splashed diamonds produced without any care for the health of the African mineworkers and the Asian diamond cutters, without any respect for them.

The only good news is that it is easy to remove this particular bloodstain from diamonds. It only needs investment in good, efficient dust control measures, in proper compensation and medical help for all miners, even the retired. But to do this we need to change attitudes that have been present in the diamond industry for a hundred years.

Until now, the mine-owners and purchasers of diamonds have seemingly been so blinded by their sparkle that they have not noticed the corpses beneath. It is time to open their eyes.

A note to my American readers, it is easier for you to put pressure on De Beers now. For decades it operated through third parties in the US, fearing legal action for running a price-fixing cartel. But in 2004 the US Government ended its legal pursuit of De Beers after the latter pleaded guilty to criminal charges for price-fixing industrial diamonds, paying a fine of less than \$10 million. In 2005 De Beers paid a substantially greater civil penalty, \$250 million, in a private class action in a New York court, again for overcharging for diamonds.

One would think a company with a criminal record would have things tougher – but De Beers took its conviction as an opportunity for it to shamelessly enter the American market in its own name by opening glittering stores in New York and Beverly Hills. It plans some twenty other US stores as part of a worldwide chain. However this expansion did not start entirely smoothly. At the opening of the New York store Survival International was joined by Gloria Steinem and other celebrities in a protest on behalf of the dispossessed Bushmen of Botswana whose land contains diamonds now held by De Beers.

These luxury stores are currently featuring a new concept – “Journey.” De Beers’ idea is that couples “journey” by purchasing three-gem rings with bigger and bigger diamonds every few years – under the slogan that “with every step, love grows” – and so do De Beers’ profits. The company hopes to make these a lucrative “cultural imperative,” as it did previously with the diamond engagement ring.

But one place these will not sell is to De Beers’ own mineworkers. They laughed when I asked them if they could ever see themselves buying a diamond. They could not afford even a fragment. I very much hope my readers, and those who are thinking of buying a diamond, or trading one, will do all in their power to end the atrocious treatment of these workers. I ask also that the South African government act soon to stop these abuses. It is time for the diamonds of Africa to be used to enrich the African nations, not to impoverish and kill them.

Janine Roberts, November 2006

1 For details of silicosis danger in gem cutting see website <http://www.jewelrycampaign.net/eng/index.htm>

2 For details of plight of Bushmen see website <http://www.boycottdebeers.com>

3 See Mail and Guardian article on Botswana and Bushmen on website http://www.mg.co.za/articlePage.aspx?articleid=293251&area=/breaking_news/breaking_news_africa

4 De Beers’ *Statement on Social Sustainability*. Undated but on De Beers’ website in 2006.

5 J.C.A. Davies. *Silicosis and TB among miners in South Africa during the 20th Century*. Printed paper given to author by J.C.A. Davies.

6 Rafael de la Hoz; *V Clinical Aspects: TB and Silicosis*. pp 525-530.

7 Digby F. Warner and Valerie Mizrahi. *Tuberculosis Chemotherapy: the influence of bacillary stress and damage response pathways on drug efficacy*.

8 J.C.A. Davies. Op. Cit.

9 The regulatory authority OSHA proposes a safety limit of 100,000 long fibers per cubic meter of workplace air.

10 A. Wright, K. Donaldson, and J.M. Davis. Cytotoxic effect of asbestos on macrophages in different activation states. *Environ Health Perspect*. 1983 September; 51: 147–152.

11 Safety in Mines Research Advisory Committee: *Final Report: Investigation of dry drilling in the mining of kimberlite deposits and pollutant control during such drilling*. A.D. Unsted Research Agency: CSIR: Division of Mining Technology. Project number: OTH410, July 2000.

12 *Silicosis Prevalence and Exposure Response Relationships in South African Goldminers*. R. I. Ehrlich,^a G. J. Churchyard,^b J. M. teWaterNaude,^a L. Pemba,^b K. Dekker,^c M. Vermeis,^c N. W. White,^a J. E. Myers.^a

^aOccupational and Environmental Health Research Unit, University of Cape Town, South Africa; ^bAurum Health Research, Orkney, South Africa; ^cAnglogold, Orkney, South Africa.

13 Rafael de la Hoz. Op. Cit. pp 526-530.

14 Casarrett & Doull, *Toxicology* (2001), pp 520-522.

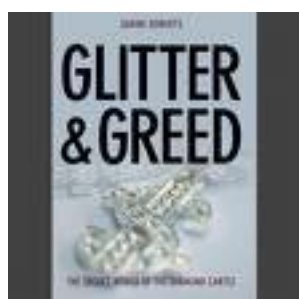
15 Wright et al. Op. Cit.

16 http://www.wi.mit.edu/news/archives/1997/ry_0610.html

17 Kashala et al. *Journal of Infectious Diseases* 1994. pp 169, 296-304.

18 Rafael de la Hoz. Op. Cit. p 525.

19 Rafael de la Hoz. Op. Cit. p 525.



The Literary Editor of The Independent, one of the UK's leading quality newspapers, reviewed *Glitter and Greed* as “for once meriting that tarnished epithet brilliant,” “enthraling” and as “the product of hair-raising research” - due to the author having to be smuggled into major diamond mines after De Beers tried to prevent her investigation. The whole review – and the chance of buying the book in a copy that is discounted and custom-signed by the author – can be [found on the web here](#).