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### **HUMAN RIGHTS SITUATIONS THAT REQUIRE THE COUNCIL'S ATTENTION**

**Written statement\* submitted by Sign of Hope E.V. -Hoffnungszeichen,  
a non-governmental organization in special consultative status**

The Secretary-General has received the following written statement which is circulated in accordance with Economic and Social Council resolution 1996/31.

[17 February 2009]

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\* This written statement is issued, unedited, in the language(s) received from the submitting non-governmental organization(s).

## **Human Rights Situation in Sudan - Oil and Human Rights**

Sign of Hope wishes to draw the attention of the United Nations Human Rights Council to human rights abuses in Sudan related to the oil exploration and exploitation in Unity State.

A Sign of Hope team visited several small villages in the oil fields of Thar Jath, southern Sudan, in February and November 2008 to learn more about the contamination of drinking water there. During its stay in the oilfields of Thar Jath (Unity State) of southern Sudan in November 2008, the Sign of Hope team took 18 samples of ground and surface water to investigate possible contamination of water in the vicinity of the refinery of Thar Jath.

### **Main findings**

Five surface water samples were taken around the refinery of Thar Jath with a distance ranging from 1 to 9 km to the refinery. Twelve groundwater samples were taken from water wells in the area of the Thar Jath oilfields in order to learn more about the impact of oil exploration in the area. At several of the inspected water wells, locals were complaining about the salty and bitter taste of the water. They do not drink this water any more and prefer to drink surface water from the swamps. The scientific analysis of the samples showed the following results:

The analysis of the water samples taken at two wells in Rier, a small village in the oilfields, produced a total salinity (total dissolved solids - TDS) of 6420 (Rier northwest) and 6170 milligrams per 1 litre of water (mg/l) in Rier southeast. The US Environmental Protection Agency (EPA) recommends a total salinity (TDS) ranging up to 500 mg/l. The samples at hand exceed this recommendation 12-fold. A salinity of this scale causes diarrhoea and dehydration of the human body. The water samples also contained strontium to the amount of 8 mg/l (Rier northwest) and 6.4 mg/l (Rier southeast), nitrates amounting to 71 mg/l for Rier northwest and 63 mg/l for Rier southeast. EPA's recommendation concerning nitrate is up to 10 mg/l. These very samples exceed the recommendation six and seven fold. A nitrate concentration of these amounts can have serious effects especially on young children. Infants below the age of six months who drink water containing nitrate in this dose, could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and the blue-baby syndrome.

Moreover the water in Rier southeast contained lead to the amount of 0.012 mg/l as well as cadmium (0.001 mg/l). The World Health Organisation's (WHO) guideline value for lead is 0.01 mg/l and 0.003 mg/l for cadmium. Lead and cadmium are known poisons, being neurotoxins and nephrotoxins respectively.

According to residents of the village of Rier, they were forced by representatives of the Khartoum government - who were said to be in control of the area up to early 2008 - to leave their original village in 2005 to create room for oil companies to build their facilities. The residents were evicted from their villages after short notice and were settled on nearby land. This new settlement is also called Rier, the same name as the old Rier, which has been occupied by an oil firm. Up to now, the population of Rier has not been compensated.

The water from a well in Bud is contaminated with salts (1720 mg/l), nitrate (110 mg/l) and chromium at 0.4 mg/l. The WHO guideline for chromium is 0.05 mg/l. The sample at hand exceeds this limit 8 fold. Chromium is a known carcinogen and will lodge in any tissue to form cancerous growth.

The water taken from a borehole near Mar is contaminated with salts (4430 mg/l), strontium (4.0 mg/l), nitrate (100 mg/l) and lead (0.01 mg/l).

The water from a well in Duar is contaminated with salts (4610 mg/l), strontium (5.5 mg/l), nitrate (48 mg/l) and polycyclic aromatic hydrocarbons (PAH) at 0.91 µg/l. The EPA's recommendation of 0.2 µg/l is exceeded four fold. PAHs occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning. As a pollutant, they are of concern because some compounds have been identified as carcinogenic, mutagenic, and teratogenic.

PAHs were also found in a considerable concentration (1.93 µg/l) in a dump where locals said the oil companies had dropped toxic waste. Cattle use to drink the water near this dump.

### **Interpretation of results**

The extremely high salinity, the fact that salinity increases the nearer one gets to the oilfields and the presence of strontium, heavy metals and PAHs in some of the water samples can only lead to the conclusion that the water of some the boreholes, the Sign of Hope team had a look at, is contaminated with produced water, which derives from the oil extraction. Sign of Hope assumes that the drinking water of Rier, Bud, Duar and Mar was contaminated with improper disposal of produced water. This is a perilous threat not only to the local population of the entire area. Sign of Hope is fearing a looming ecological catastrophe for the largest swamplands of the world.

Usually when oil is extracted, large amounts of saline water are being injected into the subsurface to maintain the pressure of oil reservoirs, which enhances oil recovery. When oil is extracted, large amounts of brine are typically brought back to the surface. The brine or produced water is being segregated from the oil. Often saltier than seawater, produced water can also contain toxic metals and radioactive substances. It can be very damaging to public health and the environment if it is discharged to surface water or injected into underground sources of drinking water.

For several years crude oil is being extracted in this area by the White Nile Petroleum Operating Corporation (WNPOC). 39 percent of WNPOC are being held by Petronas. In the oilfield of Thar Jath the Chinese drilling companies Great Wall Drilling Company (GWDC) and Zhongyuan Petroleum Exploration Bureau (ZPEB) are also operative. A newly erected refinery, only 6.5 kilometers away from Rier, became operative just a couple of months ago. The Sudd are the largest swamplands of the world.

The Commissioner of Koch, Peter Bol Ruot, confirmed on February 13, 2008 that in the year 2006 a total number of 27 adults and three children died as a result of the consumption of contaminated water. Ruot told Sign of Hope in February that at this time up to 1,000 people have fallen sick for the same reason.

## **Recommendations**

The Council should call upon the Khartoum government to ensure that the oil companies operating in Sudan fully and unconditionally protect the environment – notably surface and ground water from contamination by toxic chemicals. The oil companies must conduct petroleum operations in accordance with international good oil field practice in terms of health, safety and environmental standards. Drilling water must not be discharged into rivers, swamps and on the ground.

The Council should emphasize that the Sudanese Government in Khartoum has brought the oil companies into the country. To secure public health the Government must now improve the quality of drinking water dramatically and at the same time prevent an ecological catastrophe.

In addition the Council should urge the Government of Sudan to compensate those who have been displaced from their village to clear the way for oil exploitation.

Moreover the Council should ask the Sudanese Government to involve the oil companies of Thar Jath into water rehabilitation projects.

Finally the Council should ask the Sudanese Government to fully implement the provisions of the Sudanese Drinking-water Standard issued by the Sudanese Standards and Metrology Organization in 2002.

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