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## **International POPs Elimination Project**

*Fostering Active and Efficient Civil Society Participation in  
Preparation for Implementation of the Stockholm Convention*

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# **Health Assessment in a POPs-contaminated Community in the Philippines**

**People's Task Force for Bases Cleanup**

**Philippines  
May 2006**

## About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN <http://www.ipen.org>) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;
- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;
- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see <http://www.ipen.org>

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The views expressed in this report are those of the authors and not necessarily the views of the institutions providing management and/or financial support.

This report is available in the following languages: English

# Health Assessment in a POPs-contaminated Community in the Philippines

## History of the site

### Community 1 – Sitio\* Target, Sapang Bato\*\*, Angeles City, Pampanga

Sitio Target is presently the smallest, isolated tribal village of the Sapang Bato community. Located southwest of the former Clark Air Base, Sapang Bato was among the 12 communities covered in the “Health for All Study” conducted in 1996-1998 by Ms Rosalie Bertell of the International Institute of Concern for Public Health in cooperation with People’s Task Force for Bases Cleanup (PTFBC). Sapang Bato is adjacent to or sits at the western edge of the base where Civil Engineering (CE) Entomology and the Wagner Aviation Transformer Site are located.

Sitio Target used to be the practice shooting range of the soldiers during the US military presence in 1947-1991. Like a hidden valley about 1,000 feet below ground level of the main base land, the area is fully vegetated with wild trees; wildlife abound the area and a seven- kilometer rough road leads to a hot spring close to the foot of Mt. Pinatubo. In fact, according to the Indigenous Peoples who were simply lurking at the surrounding hills, because of its downhill terrain from the base, the US soldiers came on horseback whenever they trained or underwent shooting exercises in this site. The red lines on the cemented ground inside Target are still visible as well as bullet holes bored in the rocky hills around the valley.

After the base was abandoned in 1992, Target was a cordoned site. It was prohibited to occupy the area and during the time the Weston (environmental) and Bertell (health) studies were undertaken, Target was practically uninhabited. However, the Indigenous Peoples claimed it was part of their ancestral domain and that they were just temporarily pushed to the hinterlands. In 1995, they started to settle down in the valley with initially four families. In 2005, this village registered a total of 134 families living in 88 houses and is a 99% Indigenous tribe called Aetas.

A periodic monitoring of the residents of Target by PTFBC revealed that the Aetas’ source of drinking water was a shallow well installed in the middle of the village. However, the Tribal Chief declared that after three months, they noticed that the water was becoming unclear, reddish in color and had an unpleasant odor. They have lost count of the number of infants and children who died of diarrhea and suspected that unclean drinking water was the culprit. It was not potable. In 2003, a limited water sampling conducted by the Department of Science and Technology, Region 3 showed that it was contaminated with high levels of arsenic and lead considering that the office laboratory was only capable of testing for the aforesaid substances. Another well was installed about 20 meters away and is now their source of drinking water and is still under observation.

## Community 2 – San Isidro Resettlement Village, Magalang, Pampanga

Entirely opposite to Target, San Isidro Resettlement Village is a community located northeast of the former Clark Air Base and was not among the communities included in the previous health study conducted in 1996-1998. Formerly a vast 37-hectare agricultural land, rice fields that were heavily sprayed with pesticides and yielded abundant crops twice a year, it was converted into a housing area for the victims of Mt. Pinatubo eruption in 1993. The topography is relatively flat, vegetation is very minimal, no wildlife thrives in the area as roads are cemented, and well paved. Houses are uniform and concrete. Each home lot has an average of 71.5 sq. m. and each housing unit has 27 sq. mts. There are 2,600 home lots and the projected population is 13,000 individuals at an average of 5 persons per family. Residents in this village come from various places in Central Luzon affected by the Mt. Pintubo eruption.

About two (2) kilometers away from the village, is a huge paper mill engaged in the production of recycled paper. In 2000, at least 3 communities adjacent to the mill have complained of the impending environmental and health hazards brought about by the odorous emissions and heavy use of chlorine, the untreated wastewater flowing to the river crossing communities including San Isidro. However, citing economic contributions of the mill, the local government chose to downplay the people's complaints.

### **Results of the previous study**

The "Health for All Study, 1996-1998" reported that of the seven areas studied, the villages adjacent to the Civil Engineering Entomology and Wagner Aviation had the "highest rate of health problems, i.e.:

“. . . urinary tract problems, blood problems, muscle and bone problems, eye problems, digestive problems, cardiovascular problems and respiratory problems". (Bertell, Health for All p. v).

Likewise, the Weston International Soil and Water Baseline Study 1997 reported:

" PCB sites. . . The Wagner Aviation area contained two transformers with visible soil staining and odors. Field screening for PCBs at two locations at the Wagner Aviation Transformer site detected levels of PCB contamination ranging from 14 to greater than 23 ppm. Surface soil sample WAG-3008, collected at 0.2 meters bgs, displayed staining and odors. . . . Laboratory analysis detected PCB contamination (Aroclor-1260) at a concentration of 7,800 mg/kg clearly exceeding the industrial RBC criteria," (Weston International Final Report, p. 3-55)

"Civil Engineering Entomology (CEE). A total of six test pits are excavated at the CEE site, total petroleum hydrocarbons (TPH) were found in all three soil samples at the CEE site. Laboratory analysis at test pit 9023 showed over 5,000 mg/kg TPH contamination at 0.1 meter bgs, had a total TPH concentration exceeding 200 mg/kg. Test pit 9023 produced a strong pesticide

odor during digging; test pit 9023 is adjacent to what is believed to be the former CEE chemical storage area. Numerous pesticides were found in both test pits. These pesticides include 4,4-DDD, 4,4-DDT, dieldrin, heptachlor, and heptachlor oxide. Based on the industrial RBC criteria the dieldrin concentration exceeded the standard by over 5 times,” (Weston International Final Report p. 3-43)

### **Why this study was undertaken**

Though earlier studies revealed the presence of contaminants including POPs in the former Clark Air Base, no tangible effort has been launched to manage or cleanup the identified contaminated sites. And although the Philippines signed and ratified the Stockholm Convention to eliminate POPs which should have been already enforced, efforts towards cleanup and destruction of POPs from these identified sites seem turtle-paced.

Instead, Sitio Target, which is an authentic Indigenous Peoples’ village, has been encouraged to be developed into another tourist destination being close to a hot spring. In the community, there seems a growing impression that the contaminants have all dried up or have been washed away by natural means including the rain with the passing of time or ten years after. Likewise, the Indigenous Peoples who continuously claim that the areas of concern are their ancestral domain, are left misinformed of the present condition of the place. In 2002, the PTFBC in cooperation with Arc Ecology, U.S.A., spearheaded a petition to the US Department of Defense for a Preliminary Assessment and Site Inspection (PASI) of both Clark and Subic areas, but was instantly denied.

On the other hand, Community 2, San Isidro Resettlement Village, though located on the other side of the polluted fence of the Base, had a high incidence of ailments similar to those exposed to the contaminants inside the Base. Hence, this study was undertaken for the following reasons:

1. To provide a data base on health of 128 Aeta families in Sitio Target, the site being down gradient to PCB-contaminated sites in Clark;
2. To provide health professionals and other concerned authorities an estimate of health problems of the two communities;
3. To document the health condition of people living close to a paper mill;
4. To push for more comprehensive health and environmental studies in communities surrounding POPs sources and
5. To develop an effective tool for campaign and advocacy work to support the objectives of the POPs treaty as well as for cleanup of contaminated sites in the country.

### **Study design**

Initially, the design called for a 3% random sampling of respondents. In Sitio Target, however, tribal culture was respected and upon the request of the Tribal Chief, sampling was waived and all the 128 families were visited, 84 responded to the questionnaire. As to San Isidro Resettlement Village, 3% of the households were sampled for the study. Overall, the survey response rate was 65%, fairly sufficient for the analysis of the study. Likewise, it is safe to conclude that the respondents understood fully and

consented to their participation in this study as preliminary meetings in the communities were conducted prior to the survey.

Of the total of 163 respondents, 76 were mothers, 9 fathers and 78 were aunts, uncles or eldest daughters. The details of randomly choosing the respondents as well as the questionnaires used in the survey will be attached in the final report.

A total of 652 questionnaires of four sets were completed by the two communities, i.e.:

- a) profile information of respondent
- b) general health of respondent
- c) children’s health
- d) occupational health background of respondent

In analyzing the general health condition of respondent, the design called for respondents with ages 20-40, hence, only 95 respondents qualified for this part of the study.

### **Preliminary summary and description of results**

In both communities, it was revealed that the means of livelihood is working inside the base; the Aetas work as farmers in the former landfills inside Clark while those in San Isidro work as construction and factory workers. With this information on hand, it is just logical to show some basic data in the following table. The analysis, comments and recommendations shall be included in the final report.

#### **Preliminary description / summary of results:**

##### **A. General information**

	<b>Target 84 respondents</b>	<b>San Isidro 79 respondents</b>	<b>Remarks</b>
Level of education of respondents			
Elementary	15%	25%	
Secondary	12%	25%	
College		3%	
Occupation			
Inside the Base	90%	82%	
farmers & vegetable growers/vendors	82%		
construction workers	8%	13%	
garment factory workers		29%	
Others: beautician, vendors, office, drivers		40%	
Outside the Base	10%	18%	
Source of water			
Deep well	71%	84%	
Shallow well	18%	1%	
NWASA	7%	15%	
Spring	4%		

Description of drinking water			
Good taste	60%	88%	
Unusual taste	32%	12%	
Bad smell	8%		
Mode of garbage disposal			
Burning papers, plastics & other trash	69%	6%	
Burning papers & other trash NO plastics			
Burying in the ground	31%		
Pick up by garbage truck		94%	
Air quality around the house/community			
clean & fresh, no odor	92%	88%	
clear with odor, smells most of the time	8%	12%	from poultry rais
Insecticides used to control insects inside the house			
Mosquito killer	8%	40%	
Baygon spray & other sprayers	2%	23%	
Frequency of use			
Daily	7%	23%	
Weekly		6%	
Monthly	1%	3%	
Recorded causes of deaths during their stay in the village	89 deaths	55 deaths	
Diarrhea	27%	1%	
Heart attack	7%	11%	
Measles	12%	1%	
Asthma	6%	4%	
Pneumonia	5%	5%	
Lung infection	6%	6%	
Malaria	7%	7%	
Cancer	7%	7%	
Ulcer	1%	1%	
Post delivery stress	2%	2%	
Leukemia	1%	1%	
Accident	1%	1%	
Still birth / newborn disease	12%	12%	
Old age	2%	2%	
Unknown	6%	6%	

<b>B. General health (ages 20 - 40 years old)</b>	<b>44 respondents</b>	<b>51 respondents</b>
Overall rating of own health		
Excellent, seldom. If ever sick	38%	43%
Good, occasionally sick	32%	29%
Fair, sometimes sick & limited activities	16%	12%
Poor, often sick, illness limits many activities	13%	14%
Very poor or bad, always sick	1%	2%
Respondent, member diagnosed with major health problem	50%	40%
Asthma	23%	22%
Cataract, eye problems	2%	2%
Diabetes		2%
Cancer		2%
Kidney problem	4%	2%
Lung disease including tuberculosis	6%	2%
Goiter	2%	4%
Heart ailment	4%	4%
Tumor/s	4%	
Ulcer	2%	
Liver ailment	2%	
Recorded no. of pregnancies	402	257
No. of pregnancies lost, or miscarriages or abortions		17
No. of pregnancies ending in baby's death		3
No. of children born with birth defects, describe		
Autistic		2
cerebral palsy		2
Deaf-mute	1	
Clubfoot	2	
Premature		1
For males only:		
No. of males with difficulty in getting a woman pregnant	2	1
No. of males declared as sterile or with low sperm count	2	1

\* Sitio is a Filipino word meaning small village, usually with less than 500 families.

\*\* Sapang Bato is another Filipino clause meaning: Sapa – creek, and Bato – rock/stone. Sapang Bato means Rocky Creek. Sapang Bato is a village along Sacobia River, along the west side of Clark