October 10, 2006

Christine Baughman, Auditor
EPA Office of Inspector General
Washington, DC 20460
Tel: 202-566-2902
Email: Baughman.christine@epa.gov

Paul D. McKechnie, Director Public Liaison/Acting Ombudsman
EPA, Office of Inspector General
Office of Congressional and Public Liaison
Email: mckechnie.paul@epa.gov

Public Interest Comments on the Office of Inspector General Reports:

Appropriate Testing and Timely Reporting are Needed at the Hercules 009 Landfill Superfund Site, Brunswick, Georgia[1]
Report 2005-P-00022; September 26, 2005
Report 2005-P-00022 (Addendum); September 13, 2005
and
More Information is Needed on Toxaphene Degradation Products[2]
Report No. 2006-P-00007, December 16, 2005

We, the supporters of this letter, advocate on behalf of our millions of members for regulations that provide protection to communities, workers, and wildlife. We do not have any financial interest in the subject of this letter.

Jennifer Sass, Ph.D., Natural Resources Defense Council (NRDC)[1]
Kathy Burns, Ph.D., ScienceCorps
Denny Larson, Director, Global Community Monitor
Kristin Schafer, Pesticide Action Network North America
Michelle Roberts, Beyond Pesticides
Joseph DiGangi, Ph.D., Environmental Health Fund
Ted Schettler MD, MPH Science and Environmental Health Network
Pam Miller, Alaska Community Action on Toxics
Rick Hind, Greenpeace, USA
Nathalie Walker & Monique Harden, Advocates for Environmental Human Rights
Lin Kaatz Chary, PhD, MPH, Indiana Toxics Action Project
Gregg Small, Washington Toxics
Mark A. Mitchell M.D., MPH, Connecticut Coalition for Environmental Justice
Kathleen Curtis and Roberta Chase Wilding, Clean New York
Amanda Hawes, Toxics Chair, WORKSAFE
Stephen Lester, MS, Center for Health, Environment, and Justice
Daryl Ditz, PhD, Center for International Environmental Law
Mary Brune, MOMS – Making Our Milk Safe
Jeanne Rizzo, Breast Cancer Fund

Summary
The Office of the Inspector General, at the request the Glynn Environmental Coalition, has reviewed claims that a Glynn County, GA Superfund site contaminated with Toxaphene is receiving inadequate clean up. At the heart of the dispute is a testing method that fails to detect most of the toxic congeners and degradation products of toxaphene, thus underestimating the extent of contamination. Use of the biased testing method was approved by a closed partnership between EPA Region 4, the Georgia Environmental Protection Division (GaEPD) and Hercules, Inc. that failed to include community representatives. Both the OIG and a previous review by the Agency for Toxic Substances and Disease Registry (2002), have recommended that EPA should discard this flawed method in favor of established tests that identify toxaphene degradation products.

We generally support the OIG reports, and encourage the OIG to issue a strong response to EPA to work with the community, apply appropriate scientific methods, and force the stringent clean up that was promised to the community over two decades ago when this site, predominately populated by low-income African-American families, was listed as a National Priority Superfund site.

[1] To whom correspondence should be sent. Full contact information at end of these comments.

History of the site[3]**:** ***twenty years is too long***

Hercules Inc., a former pesticide plant, manufactured toxaphene as an insecticide at its plant in the city of Brunswick, Glynn County, Georgia, from 1948 to 1980. In these comments, we will use the term "polychlorinated camphene" (PCC) to describe toxaphene, a mixture of over 670 chemicals of concern, and its residues and conversion products.

The Hercules 009 Landfill Superfund Site in the city of Brunswick, in Glynn County, Georgia operated from 1975 until 1980, and was listed on the National Priorities List (NPL) in 1984, over 20 years ago[4]. The Brunswick area has a commercial fishing port and a thriving seafood industry, as well as recreational fishing and crabbing. [9]

The Hercules 009 Landfill is described as a 16.5 acre property that is bordered by Georgia State Highway 25 on the west; an automobile dealership on the north; a juvenile slash pine forest on the east; and several homes, a church, a school, and a strip shopping center to the south/southeast of the property.[5]

Until required by the Clean Water Act to treat waste water in 1972, Hercules reportedly released up to 200-300 pounds of PCC per day as waste water,[6] ranged from 2,332 parts per billion (ppb) in 1970 to 6.4 ppb in 1974.[7] PCC has been reported at levels exceeding 15,000 parts per million (ppm) at the Hercules 009 Landfill Site.[8] In 1976 PCC discharge was restricted to a daily maximum of 1 pound per day and a daily average of 0.5 pounds per day. Subsequent discharge was limited to 0.00081 ppm, though violations were recorded.[9]

In July 1988, Hercules and EPA entered into an Administrative Order on Consent for conducting a remedial investigation/feasibility study (RI/FS)[10] to assess the risk to human and environmental health and evaluate treatment approaches.[11]

In 2002, the Agency for Toxic Substances and Disease Registry (ATSDR), an agency of the U.S. Department of Health and Human Services, conducted a public health assessment of some of the Hercules waste areas in Brunswick.[12] In that report, ATSDR recommended limiting consumption of fish from the contaminated areas.

Both the ATSDR and the Office of the Inspector General (OIG) specifically identified the method advocated by EPA Region 4 and Hercules as insensitive, inadequate, and likely to significantly underestimate contamination levels, and instead recommended the use of pre-validated and scientifically accepted measurement methods. [13] [14]

Current clean up issues: ***intentionally insensitive methods fail to detect contamination***

The Hercules Landfill Superfund Site and five other sites contaminated by PCC in Glynn County, Georgia are slated for a sub-standard clean up that will leave at risk the community and the environment. This is being pushed through because of a closed

partnership between EPA Region 4 and Hercules that excluded community participation. This pairing of between state regulators and the regulated industry was self-titled the Toxaphene Task Force. Among numerous biased and discredited pronouncements of this task force was use of a measurement method that failed to detect most of the over 600 congeners, residues, and degradation products of PCC contamination. The Region 4 assessment, relying on the flawed method, was strongly criticized by the ATSDR in a 2002 report as underestimating the exposure.[15] The OIG specifically noted that the methods used by Region 4 and Hercules are not designed to measure toxaphene degradation products, and instead recommended established testing methods that specifically test for toxaphene degradates.[16]

The stubborn insistence by Region 4 to continue to rely on a biased and unscientific method that has been rejected by the ATSDR and the OIG can cynically be viewed as a blind, ideological adherence to fiction in the face of facts. The result of these actions, whether ignorant or intentional, is a failure to provide the protection for human and environmental health that is promised in the mission[17] of the EPA.

Hazard information: ***Toxaphene is persistent, bioaccumulative, and banned***

Toxaphene is a toxic chlorinated-hydrocarbon persistent bioaccumulative banned pesticide. It is a mixture of over 670 chemicals of concern, and is approximately 40 to 75% chlorine by weight. In 1982 toxaphene was restricted in the US, and then fully banned in 1990. Although it has low solubility in water, it is readily adsorbed in soil and sediments, and bioconcentrates in aquatic organisms including fish. It is highly acutely toxic to fish, even at concentrations that are low parts per billion (ppb) or high parts per trillion (ppt).[18] [19] [20]

In its 2002 report of the Brunswick area, ATSDR described the relevant toxicity literature. Animal testing showed that pre-birth and post-natal exposure to toxaphene may interfere with normal development.[21] When pregnant rats were fed a diet contaminated with toxaphene, effects included poor righting ability and poor swimming ability, compared with healthy control animals.[22] The exposed rats eventually attained normal swimming ability. ATSDR also noted that, “when the rats took a maze test at the age of 70 days, those previously exposed to PCC components had difficulty remembering the path leading to the food”. ATSDR recommended that, “pregnant women and nursing mothers should avoid consuming large quantities of contaminated fish and, obviously, avoid ingesting contaminated soil” to protect the developing fetus and child. ATSDR warned that exposure to PCC through contaminated fish and surface soils, should also be minimized in infants and young children.[23] Air exposures should also be considered hazardous; PCC is up to 8% in soils at the Hercules Plant.

National interest: ***a bad job here may lead to failed clean-ups nationally***

NPL sites are the most serious sites across the country, slated for possible long-term

cleanup by EPA's Superfund program. Altogether, there are 1,246 final sites across the country, of which 18 sites across 9 states include toxaphene as a contaminant.[24] Therefore, the level of clean up that EPA will require at this site is likely to impact requirements across the country.

The document record is clear that it is the intention of Hercules to submit its toxaphene review to the EPA database, the Integrated Risk Information System (IRIS), which contains EPA's scientific positions on potential human health effects from environmental contaminants. While not an enforceable regulatory standard *per se*, information on IRIS is considered by regulators at the state and federal level and others worldwide to set pollution cleanup standards and various exposure standards for air, water, and soil.

Hercules advocated a reduction in the cancer potency factor 10-fold on the IRIS database[25] from 1.1 per mg/kg/day to 0.11 per mg/kg/day, and stated that it has already gone so far as to submit its proposed factor to Office of Solid Waste and Emergency Response (USEPA/OSWER), based on "new information"[26] citing a 1998 report. This would likely severely impair clean-up action at contaminated sites all over the country.

In addition to weakening the cancer potency factor, Hercules also proposed to weaken the non-cancer "safe" level, known as a Reference Dose (RfD), posted on the IRIS database. In its comments to ATSDR, Hercules states that it has submitted an alternative RfD of 0.0007 mg/kg/day for the IRIS database.[27] This is approximately 3-fold more permissive than the old IRIS RfD of 0.00025 mg/kg/day (IRIS, 1993), which has now been removed from the IRIS database. Hercules specifically notes that use of its alternate RfD value would raise the screening level from 3 ppm to 7.5 ppm toxaphene in fish.[28]

It should be extremely concerning to taxpayers that a scientific article that proposes to disregard all but a handful of PCC congeners is co-authored by scientists from EPA Region 4 and the Georgia Environmental Protection Division (Simon and Manning, 2006). Though no source of funding is disclosed, it is published in a journal, *Regulatory Toxicology and Pharmacology*, well-known to be biased towards industry perspectives. In fact, in 2002 the journal was targeted in a letter by over forty scientists, including noted international experts and journal editors, citing concerns about, "apparent conflicts of interest, lack of transparency, and the absence of editorial independence".[29] Specifically, their letter cites, "the journal's apparent bias in favor of industries that are subject to governmental health and environmental regulations". The letter goes on to identify financial supporters of the journal sponsor, including, the American Chemistry Council, Dow AgroSciences, R.J. Reynolds Tobacco Co., and others. Moreover, the letter identified a "significant percentage" of the editorial board with financial ties to companies whose products are the subjects of studies published in the journal. Is it any wonder, then, that this article advocating a weakening of cancer potency of toxaphene found its way to this journal? But, the fact that the authors are public employees suggests a concerning level of partnership between Hercules and the regulatory agencies.

Environmental Justice: *EPA fails to act on Executive Order 12898*

The State and Federal agencies charged with the protection of human and environmental health are faced with a moral test of deciding whether to unfairly burden Glynn County families with health risks that they are not likely to bear themselves, and that are not shared equally across the nation.

Glynn County is comprised of 72% white population and 26.5% black population, more diverse than the National average of 80% white and 13% black (2004 Census data).[30] However, the Brunswick city has a total population of approximately 15,600 people, of which 36% are white and 60% are black (2000 Census data as reported by ATSDR).[31]

(data are rounded off)	Brunswick city (2000 data)[32]	Glynn County (2003/4 data)[33]	US (2003/4 data)[34]
White persons	36%	72%	80%
Black persons	60%	27%	13%
Median household income	$22,000 ($18,400 for black; $27,900 for white[35])	$38,000	$43,000
Persons living in poverty	30%	15%	12.5%

The county has approximately 27,000 households (2000 data), with a median household income of $38,600, less than the National median of $43,300 (2003 data). However, Brunswick City has a median household income of only $22,200 (2000 data), much lower than the county and national. This leaves 15% of Glynn County residents living below poverty (2003 data), more than the National average of 12.5%. However, 30% of Brunswick City residents live below poverty (2000 census data). In summary, Glynn County residents are more likely to be black and/or to be poor than the average American.

In addition to the Hercules 009 Superfund site, the Brunswick area is the site of two additional industrial facilities that have been classified as Superfund sites, and 17 other potentially hazardous waste sites.[36] Maybe the unfair distribution of toxic dump sites and other industrial facilities is a significant factor in the higher rate of cancer and other diseases among black residents compared with white residents of Glynn County. In the health service area that extends from Duval County (Jacksonville) FL to Glynn County GA, EPA reports that the overall cancer rate per 100,000 population is 177 for white males compared with 257.7 for black males.[37] The cancer rate for white females is 118.4, compared with 135.1 for black females. Childhood leukemia rates are almost 2-fold higher for black males (14.1 per 100,000), compared with white males (8.9 per 100,000);[38] data for females is similar for white (6.1) and black (4.9) populations.

The EPA provides a description of environmental justice on its website:

> Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons

> across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.[39]

Despite this laudable and critical recognition of the unfair distribution of risk and disease across this country, a study just released in September 2006 by the Office of the Inspector General is highly critical of EPA's failed record on taking action to correct these injustices.[40] The IG recommended that EPA review its programs appropriately and take action consisted with Executive Order 12898 to address the unfair impact of industrial waste on communities.[41]

Take action now to protect human health

We generally support the OIG reports, and encourage the OIG to issue a strong response to EPA to work with the community, apply appropriate scientific methods, and force the stringent clean up that was promised to the community over two decades ago when this site, predominately populated by low-income African-American families, was listed as a National Priority Superfund site.

Thank you for your consideration of these comments.
Respectfully,

Jennifer Sass, Ph.D.
Senior scientist, Health and Environment
Natural Resources Defense Council
1200 New York Avenue, NW, Suite 400,
Washington, DC, 20005
tel: 202-289-2362, fax: 202-289-1060,
email: jsass@nrdc.org
www.nrdc.org

---

[1] summary at http://www.epa.gov/oig/reports/2005/20050926-2005-P-00022-Gcopy.pdf
full report at http://www.epa.gov/oig/reports/2005/20050926-2005-P-00022.pdf
addendum at http://www.epa.gov/oig/reports/2005/20050926-2005-P-00022A.pdf

[2] summary at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007-Gcopy.pdf
full report at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007.pdf

[3] EPA. Georgia NPL/NPL Caliber Cleanup Site Summaries.
http://www.epa.gov/region4/waste/npl/nplga/herculga.htm

[4] CERCLIS ID GAD980556906

[5] EPA. Georgia NPL/NPL Caliber Cleanup Site Summaries.
http://www.epa.gov/region4/waste/npl/nplga/herculga.htm

[6] ATSDR. Public health assessment: Terry Creek dredge spoil areas/ Hercules outfall site, Brunswick, Glynn County, Georgia. 2002. http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_toc.html

[7] http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p1.html#backa

[8] EPA. Georgia NPL/NPL Caliber Cleanup Site Summaries.
http://www.epa.gov/region4/waste/npl/nplga/herculga.htm

[9] http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p1.html#backa

[10] Definition of RI/FS http://www.epa.gov/superfund/whatissf/sfproces/rifs.htm

[11] EPA. Georgia NPL/NPL Caliber Cleanup Site Summaries.
http://www.epa.gov/region4/waste/npl/nplga/herculga.htm

[12] http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p1.html#backa

[13] summary at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007-Gcopy.pdf
full report at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007.pdf

[14] ATSDR report (2002) Appendix F: Response to comments. ATSDR states, "On April 14, 2000, ATSDR formally received an analytical protocol from USEPA, Region IV describing the "Procedures for the Determination of Toxaphene," a three-page protocol dated August 14, 1997. This protocol, which was intended to be used by USEPA-Region IV and Hercules, employed "the last four to seven peaks in the 'back half' of the toxaphene chromatogram for calibration and quantification of toxaphene." The "four peak in the back half" methods dates to the packed column days, when there were only several usable peaks shown on the back half of toxaphene chromatogram (USEPA 1986 Method 8080). This "four-peaks-in-back- half" method was precise at that time... This method, however, has lost its precision now because the powerful capillary column in modern gas chromatography instruments generates dozens of peaks in the back half of the chromatogram of toxaphene standard... Although the Method 8081A of January 1995 kept this "four-peaks-in-back- half" method, the method was purged from the official December 1996 version of Method 8081 A, as well as the new Method 8081 B of January 1998. Recently, GA EPD repeated the analysis of 56 samples from the old April 1997 samples with the specific methodology of both GC-ECD and GC-MS at Skidaway Institute of Oceanography. On June 19, 2000, quantitative data for the 56 samples became available and the PCC concentrations up to 26 ppm was found in fin fish. This work was published in peer reviewed, open literature in September 2001."
http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p3.html#appf

[15] http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_toc.html

[16] summary at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007-Gcopy.pdf
full report at http://www.epa.gov/oig/reports/2006/20051216-2006-P-00007.pdf

[17] "The mission of the Environmental Protection Agency is to protect human health and the environment."
http://www.epa.gov/epahome/aboutepa.htm#mission

[18] Maruya KA and Lee RF. Arochlor 1268 and toxaphene in fish from a southern U.S. estuary. Environ Sci Technol 1998;32:1069-75.

[19] ATSDR report. 2002. http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p1.html#sum

[20] The ATSDR report Appendix F reported that, "The acute LC50 values for other kinds of fish ranged from 2 ppb for basses to 18 ppb for bluegills. PCC in chronic exposure systems were one to three orders of magnitude more toxic to fish than were acute exposure systems. The chronically toxic effects of PCC were observed at 39 ppt in brook trout, and at 36.7 ppt in fathead minnow."
http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p3.html#appf

[21] Agency for Toxic Substances and Disease Registry. Toxicological profile for toxaphene. Atlanta: US Department of Health and Human Services; August 1996.

[22] Olson KL, Matsumura F and Boush GM. Behavioral effects on juvenile rats from perinatal exposure to low levels of toxaphene, and its toxic components, toxicant A, and toxicant B. Arch Environ Contam Toxicol 1980; 9:247-57.

[23] http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p1.html#backa

[24] Query for toxaphene, September 26, 2006. http://oaspub.epa.gov/oerrpage/basicqry

[25] IRIS database. Toxaphene. http://cfpub.epa.gov/iris/quickview.cfm?substance_nmbr=0346

[26] ATSDR report, 2002. Appendix G. p. 113
http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p4.html#appg

[27] ATSDR report, 2002. Appendix G. p. 111
http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p4.html#appg

[28] ATSDR report, 2002. Appendix G. p. 111
http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_p4.html#appg

[29] Axelson O, Balbus JM, Castleman B, Cohen G, Davis D, Donnay A, Doolittle R, Duran BM, Egilman D, Epstein SS, Goldman L, Grandjean P, Hansen ES, Heltne P, Huff J, Infante P, Jacobson MF, Joshi TK, Ladou J, Landrigan PJ, Lee PR, Lockwood AH, MacGregor G, Melnick R, Messing K, Needleman H, Ozonoff D, Ravanesi B, Richter ED, Sass J, Schubert D, Sharpe VA, Socha A, Suzuki D, Teitelbaum D, Temple NJ, Terracini B, Thompson A, Tickner J, Tomatis L, Upton AC, Wyatt RM, Wigmore D, Wilson T, Wing SB. Letter to Academic Press and Elsevier Sciences, Inc. Re: Regulatory Toxicology and Pharmacology. November 19, 2002.

[30] http://quickfacts.census.gov/qfd/states/13/13127.html

[31] Census data. Profile of General Demographic Characteristics: 2000. Geographic area: Brunswick city, Georgia. http://censtats.census.gov/data/GA/1601311560.pdf

[32] Census data. Profile of General Demographic Characteristics: 2000. Geographic area: Brunswick city, Georgia. http://censtats.census.gov/data/GA/1601311560.pdf

[33] http://quickfacts.census.gov/qfd/states/13/13127.html

[34] http://quickfacts.census.gov/qfd/states/13/13127.html

[35] US Census Bureau. Fact Sheet. Brunswick city, Georgia.
http://factfinder.census.gov/servlet/SAFFIteratedFacts?_event=&geo_id=16000US1311560&_geoContext=01000US%7C04000US13%7C16000US1311560&_street=&_county=brunswick&_cityTown=brunswick&_state=04000US13&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_2&ds_name=DEC_2000_SAFF&_ci_nbr=004&qr_name=DEC_2000_SAFF_R1160&reg=DEC_2000_SAFF_R1160%3A004&_keyword=&_industry

[36] See ATSDR report and Fig 1 map at http://www.atsdr.cdc.gov/hac/PHA/terrycreek/tcd_f1.gif

[37] Data from the US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, Atlas of United States Mortality (1997). Visualized using EPA enviro-mapper. http://iaspub.epa.gov/envjust/env_just.get_geom?coords=-81.498624%2C31.157285&feattype=POINT&radius=1&tab=soc%2Ceco%2Chea%2Cenv%2Cmap&report_type=html&census_type=&p_caller=ej_web&p_title=ATLANTA+GAS+LIGHT+CO-BRUNSWICK+MGP&layername=&feat_id=

[38] National Cancer Institute Cancer Mortality Maps & Graphs. Numbers are per 100,000 population, from 1970-1994. http://iaspub.epa.gov/envjust/env_just.get_geom?coords=-81.498624%2C31.157285&feattype=POINT&radius=1&tab=soc%2Ceco%2Chea%2Cenv%2Cmap&report_type=html&census_type=&p_caller=ej_web&p_title=ATLANTA+GAS+LIGHT+CO-BRUNSWICK+MGP&layername=&feat_id=

[39] http://www.epa.gov/compliance/environmentaljustice/

[40] Office of the Inspector General. EPA needs to conduct environmental justice reviews of its programs, policies, and activities. Report No. 2006-P-00034. September 18, 2006.
http://www.house.gov/apps/list/speech/ca32_solis/ej-epa_report.pdf

[41] Office of the Inspector General. EPA needs to conduct environmental justice reviews of its programs, policies, and activities. Report No. 2006-P-00034. September 18, 2006.
http://www.house.gov/apps/list/speech/ca32_solis/ej-epa_report.pdf