COPY

ROCKARD J. DELGADILLO
City Attorney (SBN 125465)
CHRISTOPHER M. WESTHOFF
Assistant City Attorney (SBN 63176)
KEITH W. PRITSKER
Deputy City Attorney (SBN 87158)
CITY OF LOS ANGELES
1800 City Hall, 200 N. Main Street
Los Angeles, CA 90012-4110

BINGHAM MCCUTCHEN LLP
JAMES J. DRAGNA (SBN 91492)
THOMAS S. HIXSON (SBN 193033)
MARC R. BRUNER (SBN 212344)
355 South Grand Avenue, Suite 4400
Los Angeles, CA 90071-3106
Telephone: (213) 680-6400
Facsimile: (213) 680-6499
Email: jim.dragna@bingham.com
thomas.hixson@bingham.com
marc.bruner@bingham.com

BEVERIDGE & DIAMOND P.C.
JAMES B. SLAUGHTER
(D.C. Bar No. 417273)
GARY J. SMITH (SBN 141393)
1350 I Street, N.W., Suite 700
Washington, DC 20005-3311
Telephone: (202) 789-6000
Facsimile: (202) 789-6190
Email: jslaughter@bdlaw.com
gsmith@bdlaw.com

Attorneys for Plaintiffs City of Los Angeles, Responsible Biosolids Management, Inc., R&G Fanucchi, Inc. and Sierra Transport, Inc.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CITY OF LOS ANGELES; ORANGE COUNTY SANITATION DISTRICT; COUNTY SANITATION DISTRICT NO. 2 OF LOS ANGELES COUNTY; RESPONSIBLE BIOSOLIDS MANAGEMENT, INC.; R&G FANUCCHI, INC.; SHAEN MAGAN, both individually and d/b/a HONEY BUCKET FARMS and TULE RANCH/MAGAN FARMS; WESTERN EXPRESS, INC.; SIERRA TRANSPORT, INC.; CALIFORNIA ASSOCIATION OF SANITATION AGENCIES,

Plaintiffs,

v.

COUNTY OF KERN; KERN COUNTY BOARD OF SUPERVISORS,

Defendants.

No. CV 06-5094 GAF (VBKx)

DECLARATION OF PROFESSOR CHARLES P. GERBA, PH.D., IN SUPPORT OF PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

Date: October 16, 2006
Time: 9:30 a.m.
Place: 255 East Temple St., Los Angeles, CA 90012 Room 740
Judge: Hon. Gary A. Feess

DECLARATION OF PROFESSOR CHARLES P. GERBA, Ph.D.

I, Charles P. Gerba, hereby declare:

1. The following facts are true to my own personal knowledge and if called to witness I could so testify.

2. I have been retained by attorneys for the City of Los Angeles to provide an expert opinion regarding the environmental effects of allowing Green Acres Farm to remain open during the course of this case if the Court issues a preliminary injunction that stays the Kern County biosolids ban. As explained below, my conclusion, following an extensive data review and a visit to Green Acres Farm, is that allowing Green Acres Farm to remain open and to continue to recycle biosolids during the course of this litigation will not pose a risk to public health or the environment.

3. Since 1984, I have been a tenured Professor in the Department of Soil, Water and Environmental Science at the University of Arizona in Tucson, Arizona. I have worked and researched at the University of Arizona since 1981 and prior to that I was an Assistant Professor at the University of Texas School of Public Health and Baylor College of Medicine. I received my Ph.D in microbiology from the University of Miami in 1973 and a B.S. in microbiology in 1969 from Arizona State University in Tempe. I have authored major textbooks in the field of environmental science and microbiology, including *Environmental and Pollution Science* (2d ed. 2006); *Environmental Microbiology* (2000), and *Quantitative Microbial Risk Assessment* (1999), I have been an author or co-author on more than 500 scientific articles on the control, transport, fate and health risks of pathogens in the environment

4. I have volunteered significant time for the advancement of public health, environmental science, risk assessment, and microbiology. The United States

Environmental Protection Agency (EPA) and other government agencies have invited me to serve on many advisory panels on wastewater and microbiology issues, including two EPA Science Advisory Boards -- Drinking Water and Research Strategies. I have also been active in professional associations around the world to further microbiology research that can be applied to environmental protection and public health. I was selected as a Fellow of the American Academy of Microbiology in 1993. My full Curriculum Vitae is attached as Exhibit 1 to this Declaration.

5. I have studied the occurrence and fate of pathogens (microorganisms that can cause diseases in humans, including certain bacteria and viruses) in biosolids for more than 30 years. In the past 20 years I have researched the fate of pathogens in Class B and Class A biosolids in Arizona and numerous other locations in the United States (including California), the Middle East and South America. During this time I have visited many farm sites where biosolids are land applied and wastewater treatment plants where biosolids are generated, and have been involved in research studies at numerous other sites. I have been involved in a program at the University of Arizona for the past 20 years designed to address emerging issues with pathogens in biosolids and to ensure the adequacy of the United States Environmental Protection Agency's Part 503 regulations that govern the generation and land application of biosolids.

6. Much of my research and scholarship has focused on land application of biosolids in the arid regions of the Southwest and other arid regions of the world, climates and environments that are similar to the area of Kern County where Green Acres is located. Like the City of Los Angeles, in recent years many communities have chosen to generate Class A biosolids that have no detectable pathogens. Accordingly, over the last five years I have been conducting more studies on the potential environmental impacts of Class A biosolids. My colleagues and I have applied the latest and best technology (including

molecular methods (polymerase chain reaction), advanced cell culture methods, and immunochemical methods) to the detection of well known and recently recognized potential pathogens in soil, air, and groundwater were Class A and B biosolids are applied. Examples of our recent published studies at land application sites are listed in Attachment 1.

7. These studies, combined with scientifically rigorous studies on land application performed by numerous other scientists, have shown the adequacy of the current EPA Part 503 regulations to protect the public and the environment from exposure to pathogens that may exist at biosolids land application sites. Decades of research and data collection in both laboratory and field studies have established certain principles that explain why the application of biosolids poses negligible risks, especially when the benefits of this recycling activity are taken into consideration. Pathogens are enteric organisms that prefer and need the conditions inside the human body to thrive and retain the potential to be infectious. Wastewater treatment processes alone, prior to specific biosolids treatments, destroy most pathogens and the conditions at wastewater plants lead to further die off of the organisms. As established by Part 503, treatment of biosolids to Class B or Class A (and particularly Class A) standards eliminates 99% or more of the pathogens that may exist in biosolids. Perhaps most importantly, the farm field and the outdoor environment generally lead to rapid die-off of any surviving pathogens. Die-off of enteric (residing in the human body) pathogens proceeds rapidly because the enteric bacteria cannot compete with the native soil microorganisms for food. They may serve as food for the native soil microflora. In addition, the pathogens are killed or made non-infectious by desiccation, the ultraviolet light in sunlight, and heating of the soil. Simply put, a land application site is not a human gut. Finally, before there can be a health risk, any surviving

pathogens would have to somehow be transported to a human receptor in an amount sufficient to trigger infection.

8. Our past and ongoing biosolids studies continue to demonstrate that the warm arid and semi-arid climates of Southern California and Arizona are ideal for the land application of biosolids, including Class B biosolids that contain measurable quantities of indicator organisms, because of, among other factors, the rapid dilution and die-off of pathogens under these conditions. Our studies have confirmed the following principles that strengthen the safety of land application, all of which my observations and data review confirm are applicable to Green Acres Farm:

(a) Warm air and soil temperatures in these regions result in the rapid inactivation of pathogens;

(b) The low moisture soil and air also contributes to the rapid inactivation of pathogens;

(c) Pathogens are tightly bound to biosolids and little or no significant leaching of pathogens occurs from biosolids. We have been monitoring the groundwater beneath sites where biosolids have been applied for 15 years and never found a pathogen in groundwater. At Green Acres, the depth to groundwater is particularly deep and I can not envision a plausible hypothesis for possible contamination of the groundwater by pathogens; and

(d) Class A biosolids meeting EPA's Part 503 requirements show undetectable levels of pathogens. Our studies have involved the production of Class A biosolids by heat, lime treatment and composting and have confirmed the absence of pathogens after these treatments.

9. On August 25, 2006 I visited Green Acres farm where Class A biosolids are being land applied to agricultural land by the City of Los Angeles. I witnessed the

procedures and methods for land application of the Class A biosolids and incorporation into the soil matrix. This included watching tractor trailers loaded with biosolids arriving from Los Angeles, unloading the biosolids, the biosolids being spread by front-end loaders, and switch-blade plows being used to incorporate the biosolids into the soil. I also examined the soil, irrigation methods, crops under production, physical land features, and various farming operations. I interviewed personnel at Green Acres involved in all of these activities, including farm workers and contractors responsible for compliance with Part 503, the California State Water Resources Control Board General Order governing land application, and Kern County regulations.

10. I have also examined and relied upon the following documents concerning the production of biosolids by the City of Los Angeles and the operations at Green Acres and monitoring reports of the microbial/chemical/physical quality of the biosolids land applied at Green Acres.

(a) *Achieving Exceptional Quality Biosolids*. City of Los Angeles, Department of Public Works, Bureau of Engineering and Bureau of Sanitation (July 2003).

(b) *1990-2003 Monitoring for the Protection of Groundwater Quality at I-5 and HWY 119 Beneficial Reuse Site for Bakersfield WWTP#3 Effluent and Class "A" Exceptional Quality Biosolids.* Various authors (November 2003).

(c) *Appraisal Report of City of Los Angeles Green Acres Farm.* AGT Appraisal Company (August 19, 2004).

(d) *Biosolids Program Management Monthly Progress Reports*. City of Los Angeles (including numerous compliance reports and data).

(e) *Biosolids Program Summary of Sampling and Testing Requirements* (Part 503 EPA regulations and California and Kern County requirements) City of Los Angeles.

The monitoring data demonstrates that the City of Los Angeles consistently produces Class A EQ biosolids that meet EPA standards for low amounts of trace metals and elimination of pathogens. The thermophilic digestion process used by Los Angeles has been recently constructed and is well recognized for its success and dependability in achieving Class A biosolids. Green Acres Farm is one of the best monitored and professionally operated land application sites that I have studied. It is well suited for the application of Class B or A biosolids. The ambient temperatures and low humidity result in rapid inactivation of pathogens, if present. The very low permeability of the soil limits the infiltration of water during irrigation. In addition, Green Acres Farm is also in an excellent site location in that there are no adjacent residences and the Farm is surrounded for the most part by dairy farms, which are also customers for the forage grown at Green Acres.

11. From my experience on the risks of transmission of enteric pathogens in the environment and knowledge of the literature, I believe the risks of infection from pathogens at the Green Acres from the land application of Class A biosolids are essentially non-existent. This is because the pathogen level has been reduced to below detection and local climate and soil conditions are an additional safety factor. In conclusion, the continued application of Class A biosolids from the City of Los Angeles presents no immediate or long term threat from enteric pathogens.

12. My conclusion regarding the safety of Green Acres Farm is consistent with and supported by the comprehensive scientific reviews of the safety of land application conducted by EPA (1993 promulgation of Part 503 and the underlying risk assessment and EPA's 2003 Action Plan on biosolids research), the National Academy of Sciences (1996

and 2002 reports); and the California State Water Resources Control Board (2004 Final Statewide Environmental Impact Report for Biosolids Land Application). In particular, the California EIR looked at many different potential public health and environmental impacts of land application and concluded that land application of both class A and B biosolids could continue in the State, and that land application offered numerous benefits for soil quality, agriculture, and recycling.

I declare under penalty of perjury that the foregoing facts are true and correct

Executed on this 6th day of September, 2006, in Tucson, Arizona.

Charles P. Gerba

CHARLES P. GERBA, Ph.D.

EXHIBIT 1

CURRICULUM VITAE
of
CHARLES PETER GERBA

EDUCATION AND DEGREES

Arizona State University, Tempe, Arizona
B. S., Microbiology — June 1969
University of Miami, Coral Gables, Florida
Ph.D., Microbiology — January 1973

POSITIONS

Postdoctoral Fellow, Department of Virology and Epidemiology, Baylor College of Medicine, Houston, Texas 77030 — 1973

Assistant Professor of Environmental Virology, Department of Virology and Epidemiology, Baylor College of Medicine, Houston, Texas 77030

Adjunct Assistant Professor of Environmental Health, University of Texas School of Public Health, Houston, Texas 77030 — 1976-1983

Associate Professor and Professor, Department of Nutrition and Food Science and University Department of Microbiology and Immunology, University of Arizona, Tucson, Arizona 85721 — 1981-1990

Professor, Department of Soil, Water and Environmental Science
The University of Arizona, Tucson, Arizona
Phone (602) 621-6906 — 1990-

Adjunct Professor, Department of Nutritional Sciences
The University of Arizona, Tucson, Arizona — 1990-

Adjunct Professor, Department of Microbiology and Immunology, The University of Arizona, Tucson, Arizona — 1993-2005

Adjunct Professor, Department of Epidemiology and Biostatistics, The University of Arizona, Tucson, Arizona — 2000-

HONORS

Beta Beta Beta (biology scholastic honorary)	
Epsilon Tau Lambda (adult scholastic honorary: University of Miami)	1969-1972
National Institutes of Health Postdoctoral Traineeship	1973
Member, American Academy of Microbiology	1993
Waksman Lectureship Fellow, American Society for Microbiology	2005-2006

Listed in Who's Who in Technology Today, 1984, 1986, 1989, eds.
Listed in International Who's Who in American Education, 1992-1993, 1995, 1996-1997 ,eds.
Listed in Who's Who in the West, 1987-present
Listed in Who's Who in Emerging Leaders in America, 1989-1990, 1991-1992, eds.
Listed in Who's Who in the World, 1989-1995-present
Listed in American Men & Women of Science, 18th edition, 1992-1993, 1996-1997-present
Listed in Who's Who in Science and Engineering, 1992-1993, 1996-1997, eds
Listed in Who's Who in America, 1994 - present
Listed in Who's Who in Medicine and Healthcare, 1997-1998-present

AWARDS

Outstanding Research Scientist Award, College of Agriculture, The University of Arizona	1984
Environmental Science and Engineering Fellowship, American Association for the Advancement of Science	1984
Tribute of Appreciation, Criteria and Standards Division, Office of Drinking Water, U.S. Environmental Protection Agency	1984
Service Award for Public Health, Pima County Health Department	1984
Outstanding Team Research Award, College of Agriculture, The University of Arizona	1992
Co-Recipient of Mckee Award (for outstanding contribution to groundwater protection), Water Environmental Federation	
Recipient of the A.P. Black Research Award for outstanding contributions to Water Science, American Water Works Association	1996
Honorary Lifetime Membership Award for dedicated service to the water treatment industry, Water Quality Association	1997
Award of Excellence in Environmental Health for outstanding and innovative research program, The National Association of Country and City Health Officials	1998
Selected as one of the 21 most influential people in the water industry in the 21st century by Water Technology Magazine	2000
Best Paper Published in the Journal of the American Water Works Association, Water Resources Division	2002
Best Paper Published in the Journal of the American Water Works Association. Water Science and Research Division	2005

PROFESSIONAL ORGANIZATIONS

American Society for Microbiology
American Association for the Advancement of Science
Sigma Xi
International Water Association
American Water Works Association
Society for Applied Microbiology
Society for Risk Analysis
International Association for Food Protection

ELECTED POSITIONS IN PROFESSIONAL ORGANIZATIONS

Chairman-elect and Chairman, Applied and Environmental Division of the American Society for Microbiology
President-elect and President, Arizona Branch of the American Society for Microbiology
Councilor, Arizona Branch of the American Society for Microbiology
Chairman-elect and Chairman, Applied and Environmental Division of the American Society for Microbiology 1986-1988

EDITORIAL BOARD MEMBERSHIPS

Applied and Environmental Microbiology	1979-1985
CRC Critical Reviews in Environmental Control	1984-
Journal of Food Protection	1984-1990
Journal of Industrial Microbiology	1986-1989
Journal of Applied Microbiology	2000-2005
Letters in Applied Microbiology	2000-2005
Regional Editor – Journal of Water and Health	2002-
Reviews in Environmental Toxicology and Contamination	2006-

PROFESSIONALLY RELATED PUBLIC SERVICE

Member - U. S. Environmental Protection Agency Workshop on "Protocol Development: Criteria and Standards for Potable Reuse and Feasible Alternatives", Committee on Groundwater Criteria 1980
Member - U.S. Environmental Protection Agency Workshop on "Monitoring for Viruses in the Environment" 1980
Member - U.S. Environmental Protection Agency Workshop on "Microbial Contaminants in Drinking Water" 1981
Member - U.S. Environmental Protection Agency Workshop on "Land Application of Municipal Wastewater and Sludge", Denver 1983