

Draft

Proposal to City of Brisbane, CA
to Provide Technical Assistance in
Review of the Investigation, Remediation, and Proposed Redevelopment of
the Brisbane Baylands Property

Submitted by
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Introduction

In the summer and fall of 2010 we were contracted by the Brisbane Baylands Community Advisory Group (BBCAG) to conduct an independent assessment of the adequacy of past studies of pollutants in soil, water, and gaseous releases, to define the presence and public health/environmental quality implications of potentially hazardous chemicals in each of the major areas of the UPC Brisbane Baylands area (Brisbane Landfill, OU-1 (former Schlage Lock facility and the Southern Pacific area), and OU-2 (railyard)), that may impact the development of the Baylands area and the Guadalupe (Brisbane) Lagoon. Also considered was the information available on the Kinder Morgan pollution as it may impact the Brisbane Landfill area.

The focus of our 2010 work was the adequacy of the past studies' definition of current pollutant occurrence, of potential releases of those pollutants from current locations, and of potential impacts of those pollutants on public health and the environment associated with future development of the Brisbane area by UPC. Our project report (Lee and Jones-Lee, 2010) included a discussion of issues that needed further and ongoing review in connection with the remediation of the various areas and their development.

In the fall/winter of 2016 Dr. Lee attended Planning Commission hearings, without financial sponsorship, in order to understand the current status of the evaluation and redevelopment of the Brisbane Baylands area. Our past and recent involvement, along with our extensive expertise and experience in assessment/management of impacts of hazardous chemical sites and municipal/industrial landfills summarized in Attachment A, gives us a fundamental understanding of the Brisbane Baylands area and aspects of it that impact its suitability for redevelopment.

Project Scope

We were recently contacted by representatives of the city of Brisbane (City) concerning our interest and availability to provide technical assistance in further evaluating part of the Baylands area for redevelopment. Two areas were identified by City representatives for technical review and evaluation: the historical landfill on the east side of the property, and the Remedial Action Plan (RAP) for the OU-1 area of the site. Those areas are shown in Figure 1.

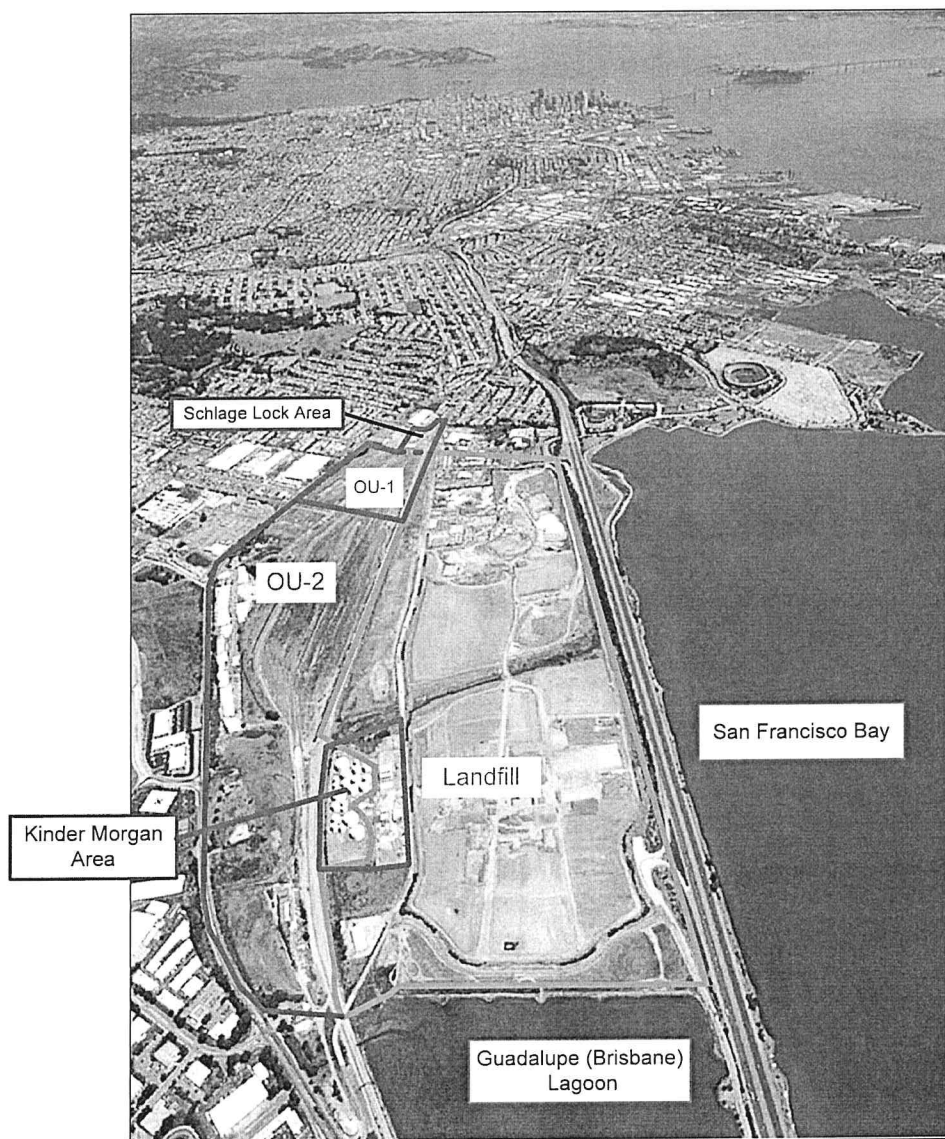


Figure 1. Annotated Aerial Photograph of Brisbane Baylands Area (after Pal, 2009; presented in Lee and Jones-Lee (2010))

The City representatives described two tasks for technical review. With our 2010 work as a starting point we propose to undertake those tasks as outlined below.

Task 1

We will review the proposed closure of the historical landfill on the east side of the Baylands property. This will include review of the “Final Closure and Post-Closure Maintenance Plan for the Brisbane Landfill” developed by Burns & McDonnell Engineering Co. for Sunquest Properties, dated October 2002; the “Summer-Fall 2016 Semiannual Discharge Monitoring Report – Brisbane Landfill” prepared by Geosyntec Consultants for Owners of the Brisbane Landfill, dated October 30, 2016; additional documents that may be provided to us for review by the City. Our review will include assessment of the adequacy of the investigations, proposed plans for remediation of releases from the landfill, and other factors that should be considered in the redevelopment of this area to protect public health and environmental quality.

Task 2

As we reported in our 2010 report,

“The groundwater and soil of the former Schlage Lock facility area of the OU-1 site are polluted with volatile organic compounds (VOCs), primarily trichloroethylene (TCE) and perchloroethylene (PCE). Other contaminants present at the area include metals such as arsenic, chromium, cadmium, lead, and nickel.

There is VOC-contaminated groundwater underneath the Southern Pacific area of the OU-1 site that originates from the groundwater contamination beneath the former Schlage Lock area. The soil in the railyard area is contaminated with metals (including chromium, lead and arsenic) and petroleum by-products.”

We will provide an overview technical review of the RAP for the OU-1 area, the nature and results of ongoing monitoring of the OU-1 area, and the latest information available to the City and provided to us concerning results of California Department of Toxic Substance Control (DTSC) pilot studies to evaluate the potential for treatment of VOC-contamination in OU-1 site groundwater/soils. We will also review any other additional work that has been done or is proposed for the area as provided to us by the City. The focus of our review will be the adequacy of investigations and proposed plans for remediation in light of proposed redevelopment of the area, for the protection of public health and environmental quality.

All work on this project will be conducted by Drs. G. Fred Lee and Anne Jones-Lee; we would not be subcontracting any of the technical work to employees or others.

Proposed Budget

Due to the open-ended nature of the proposed work, it is not possible to establish a firm budget or timeline for the work that may be required of us in addressing these areas. We propose to establish a time-and-expenses contract with a not-to-exceed budget cap. We would bill for all time we spend on this project at our standard hourly rates, which are \$350/hr for G. Fred Lee and \$175/hr for Anne Jones-Lee, and for expenses incurred at their cost to us; we do not incorporate multipliers or other fees. In light of our discussion with City representatives, we propose an initial overall project budget cap of \$50,000; we would work closely with our City contacts to

ensure the efficient and effective use of the funding available. It is possible, because of the open-ended nature of the work and the availability of interim and final reports from DTSC, UPC, Regional Water Quality Control Board, and possibly others pertinent our evaluation, that the \$50,000 initial proposed cap on this work will need to be adjusted.

In accord with arrangements made with City staff, we will bill periodically for our work as it is conducted.

References:

Lee, G. F., and Jones-Lee, A., "Report on the Adequacy of the Investigation/Remediation of the Brisbane Baylands UPC Property Contamination Relative to Development of This Property," Report prepared for the Brisbane Baylands Community Advisory Group (BBCAG) by G. Fred Lee & Associates, El Macero, CA, November 1 (2010).

Pal, V., "Baylands OU-2 Status Presentation," Presentation of Project Manager, State Water Resources Control Board San Francisco Bay Region, to BBCAG, June 16 (2009).

Appendix A
Biographical Information for G. Fred Lee and Anne Jones-Lee

**Expertise and Experience in Hazardous Chemical Site and
Municipal/Industrial Landfill Impact Assessment/Management**

Dr. G. Fred Lee's work on hazardous chemical site and municipal/industrial landfill impact assessment began in the mid-1950s while he was an undergraduate student in environmental health sciences at San Jose State College in San Jose, California. His course and field work involved review of municipal and industrial solid waste landfill impacts on public health and the environment.

He earned a Master of Science in Public Health degree from the University of North Carolina, Chapel Hill, in 1957. The focus of his Master's degree work was water quality evaluation and management with respect to public health and environmental protection from chemical constituents and pathogenic organisms.

Dr. Lee earned a PhD degree specializing in environmental engineering from Harvard University in 1960. As part of this degree work he obtained further formal education in the fate, effects and significance, and the development of control programs for chemical constituents in surface and groundwater systems. An area of specialization during his PhD work was aquatic chemistry, which focused on the transport, fate and transformations of chemical constituents in aquatic (surface and groundwater) and terrestrial systems as well as in waste management facilities.

For a 30-year period, Dr. Lee held university graduate-level teaching and research positions in departments of civil and environmental engineering at several major United States universities, including the University of Wisconsin-Madison, University of Texas at Dallas, and Colorado State University. During that period he taught graduate-level environmental engineering courses in water and wastewater analysis, water and wastewater treatment plant design, surface and groundwater quality evaluation and management, and solid and hazardous waste management. He has published more than 1,100 professional papers and reports on his research results and professional experience; many of those publications are listed on, and can be downloaded from, his website: www.gfredlee.com. His research included, beginning in the 1970s, the first work done on impacts of organics on clay liners for landfills and waste piles/lagoons.

His work on impacts of hazardous chemical site and municipal/industrial solid waste landfills began in the 1960s when, while directing the Water Chemistry Program in the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison, he became involved in the review of impacts of municipal solid waste landfills on groundwater quality.

In the 1970s, while he was Director of the Center for Environmental Studies at the University of Texas at Dallas, he was involved in the review of a number of municipal solid and industrial (hazardous) waste landfill situations, focusing on impacts of releases from the landfills on public health and the environment.

In the early 1980s, while holding a professorship in Civil and Environmental Engineering at Colorado State University, he served as an advisor to the town of Brush, Colorado, on potential impacts of a proposed hazardous waste landfill on the groundwater resources of interest to the community. Based on that work, he published a paper in the Journal of the American Water Works Association discussing the ultimate failure of the liner systems proposed for that landfill in preventing groundwater pollution by landfill leachate. In 1984 that paper was judged by the Water Resources Division of the American Water Works Association as the “best paper” published in the journal for that year.

He also conducted a comprehensive review of the properties of HDPE liners of the type being used today for lining municipal solid waste and hazardous waste landfills with respect to their compatibility with landfill leachate and their expected performance in containing waste-derived constituents for as long as the waste will be a threat.

Also in the 1980s, while he held the positions of Director of the Site Assessment and Remediation Division of a multi-university consortium hazardous waste research center and Distinguished Professor of Civil and Environmental Engineering at the New Jersey Institute of Technology, he was involved in numerous projects concerning impacts of landfilling of municipal solid waste on public health and the environment. He served as an advisor to the states of California, Michigan, New Jersey and Texas on solid waste regulations and management. He was involved in evaluating potential threats of uranium waste solids from radium watch dial painting to groundwater quality when disposed of by burial in a gravel pit. The public in the area of that state-of-New Jersey-proposed disposal site objected to the state’s proposed approach. Dr. Lee provided testimony in litigation, which caused the judge reviewing this matter to prohibit the state from proceeding with the disposal of uranium/radium waste at the proposed location.

Dr. Lee’s expertise includes surface and groundwater quality evaluation and management. This expertise is based on academic course work, research conducted by Dr. Lee and his associates, and consulting activities. He has served as an advisor to numerous governmental agencies in the US and other countries on water quality issues. Further, he has served on several editorial boards for professional journals, including *Ground Water*, *Environmental Science and Technology*, *Environmental Toxicology and Chemistry*, *Journal Stormwater*, *Journal Remediation*, and others. Throughout his over-50-year professional career, he has been a member of several professional organization committees, including chairing the American Water Works Association national Quality Control in Reservoirs Committee and the US Public Health Service PCBs in Drinking Water Committee.

Beginning in the 1960s while a full-time university professor Dr. Lee served as a part-time private consultant to governmental agencies, industry, and environmental groups on water quality and solid and hazardous waste and mining waste management issues. His work included evaluating impacts of a number of municipal and industrial solid waste landfills. Much of that work was done on behalf of water utilities, governmental agencies and public interest groups who were concerned about the impacts of a proposed landfill on their groundwater resources, public health and the environment.

In 1989, Dr. Lee retired after 30 years of graduate-level university teaching and research and expanded his part-time consulting into a full-time endeavor. A principal area of his work since then has been assisting water utilities, municipalities, industry, community and environmental groups, agricultural interests and others in evaluating potential public health and environmental impacts of proposed or existing hazardous, as well as municipal solid waste, landfills. He has been involved in the review of approximately 90 different landfills and waste piles (tailings) in various parts of the United States and in other countries, including 12 hazardous waste landfills, eight Superfund site landfills, and five construction and demolition waste landfills. He has also served as an advisor to a hazardous waste landfill developer and to IBM corporate headquarters and other companies on managing hazardous wastes.

Dr. Anne Jones-Lee and he have published extensively on issues that should be considered in developing new, expanded, or closed municipal solid waste and hazardous waste landfills in order to protect the health, groundwater resources, environment and interests of those within the sphere of influence of the landfill. Their more than 150 professional papers and reports on landfilling issues provide guidance not only on problems of today's minimum US EPA Subtitle D landfills, but also on how landfilling of non-recyclable wastes can and should take place to protect public health, groundwater resources, the environment, and the interests of those within the sphere of influence of a landfill/waste management unit.

Their work on landfill issues has particular relevance to "Superfund" and hazardous waste site remediation, since regulatory agencies often propose to perform site remediation by developing an onsite landfill or capping waste materials that are present at the Superfund site. The proposed approach frequently falls short of providing true long-term public health and environmental protection from the landfilled/capped waste.

In the early 1990s, Dr. Lee was appointed to a California Environmental Protection Agency's Comparative Risk Project Human Health Subcommittee that reviewed public health hazards of chemicals in California's air and water. In connection with that activity, Dr. Jones-Lee and he developed a report, "Impact of Municipal and Industrial Non-Hazardous Waste Landfills on Public Health and the Environment: An Overview," (www.gfredlee.com/Landfills/cal_risk.pdf) that served as a basis for the human health advisory committee to assess public health impacts of municipal landfills.

In 2004 Dr. Lee was selected as one of two independent peer reviewers by the Pottstown (PA) Landfill Closure Committee to review the adequacy of the proposed closure of the Pottstown Landfill to protect public health, groundwater resources and the environment for as long as the wastes in the closed landfill will be a threat.

In addition to teaching and serving as a consultant in environmental engineering for more than 50 years, Dr. Lee is a registered professional engineer in the state of Texas and an American Academy of Environmental Engineers and Scientists (AAEES) board-certified Environmental Engineer. The latter recognizes his leadership roles in the environmental engineering field. He served as the chief examiner for the AAEES in New Jersey in the 1980s and in north-central California in 1990-2010; he was responsible for administering examinations for professional

engineers with extensive experience and expertise in various aspects of environmental engineering, including solid and hazardous waste management.

For several years recently, Dr. Lee has served as a US EPA-supported Technical Assistance Grant (TAG) Advisor to Arvin, CA on the adequacy of investigation and remediation of a “closed” industrial landfill where pesticide residues had been deposited.

His work on landfill impacts has included developing and presenting several two-day short-courses devoted to landfills and groundwater quality protection issues. Those courses have been presented through the American Society of Civil Engineers, the American Water Resources Association, and the National Ground Water Association in several United States cities, including New York, Atlanta, Seattle and Chicago, and the University of California Extension Programs at several of the UC campuses, as well as through other groups. He has also participated in conducting a mine waste management short-course organized by the University of Wisconsin-Madison and the University of Nevada. He has been an American Chemical Society tour speaker, for which he was invited to lecture on landfills and groundwater quality protection issues, as well as domestic water supply water quality issues throughout the United States.

As noted above, throughout Dr. Lee’s 30-year university graduate-level teaching and research career and his subsequent nearly 30-year full-time private consulting career, he has been active in developing professional papers and reports that are designed to help regulatory agencies and the public gain technical information on environmental quality management issues. Drs. Lee and Jones-Lee have written a number of reviews of issues pertinent to appropriate landfilling of solid wastes with emphasis on protecting public health and the environment from waste components for as long as they will be a threat. Their most comprehensive review of municipal solid waste landfilling issues is their report, “Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste,” which they originally developed in 1992 and have updated periodically to keep its information current. It contains considerable information on conventional approaches for “closing” municipal and industrial waste landfills, which are not adequate for long-term protection of public health and environmental quality. It also provides a comprehensive, integrated discussion of problems that can occur with minimum-design Subtitle D landfills and landfills developed in accord with state regulations that conform to minimum Subtitle D requirements. The “Flawed Technology” review contains a listing of various reviews that Drs. Lee and Jones-Lee have developed, as well as peer-reviewed literature. Over 40 peer-reviewed papers are cited in “Flawed Technology” supporting issues discussed in this review; it is available on Dr. Lee’s website at <http://www.gfredlee.com/Landfills/SubtitleDFlawedTechnPap.pdf>.

Further information on these issues is available on Drs. Lee and Jones-Lee’s website, www.gfredlee.com.