

PROFESSIONAL ACCOMPLISHMENTS AND CONTRIBUTIONS

OF

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Environmental Scientist

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WATER POLICY INTERIM COMM.

MARCH 12, 2008

EXHIBIT 2

## QUALIFICATIONS

Dr. R. Gene Gilbert retired in January 1993 after serving the U.S. Department of Agriculture for 32 years; 28 years with the Agriculture Research Service and 4 years with the Soil Conservation Service. He continued his professional career with a transition from public service into a private consulting business, Agro-Enviro Consultants, Inc. Research accomplishments for over 30 years have documented his proven technical abilities in:

Environmental Ecology	Soil & Aquatic Wetland Ecosystems
Agricultural/Urban Waste Management	Surface and Ground Water Quality
Watershed Management	Environmental Risk Assessment

## ACCOMPLISHMENTS AND CONTRIBUTIONS

Dr. Gilbert's scientific expertise and versatility have been demonstrated by research accomplishments in several scientific disciplines including plant pathology, soil microbial and environmental ecology, soil chemistry and biochemistry, soil and aquatic microbiology, and water conservation and irrigation technology. His pioneering work on responses of soil microorganisms and soil-borne plant pathogens to volatile substances in the soil environment continues to attract considerable interest from foreign and domestic scientists. In 1970, he redirected his program to biological research on wastewater renovation by groundwater recharge and on water conservation in irrigated agriculture. His soil microbial and biochemical work have provided new insight into the enhancement of the biological processes in soil that are responsible for nitrogen removal from wastewater. Also, his trickle irrigation work has provided new insight into the solution of trickle emitter clogging problems. Upon transferring in 1982, he again redirected his research program to Soil Microbiology and Root-disease Pathology, especially *Verticillium* wilt of alfalfa. He quickly initiated a creative research program on alfalfa diseases that was recognized by the Washington State Alfalfa Seed Commission. The alfalfa seed and forage producers in Washington and other alfalfa producing areas are adopting and utilizing methods, practices and resources introduced by Dr. Gilbert. His Research accomplishments have received national and international recognition and numerous foreign and domestic scientists have consulted with him on specific and related aspects of his research work.

In 1989, Dr. Gilbert accepted a position with USDA-SCS in Washington, DC as their National Agrichemical Specialist. He provided national leadership that directly impacted agency-wide policy operations and recommendations for nutrient and pest/pesticide management programs. Led the technical coordination and development of environmental ecology and resource conservation standards and practices to assure proper management and utilization of organic wastes, agricultural and urban; and management and use of agrichemicals, fertilizers and pesticides for the protection of the Nation's surface and ground water resources. He developed and implemented national agrichemical workshops that created guidance documents and materials for training and certifying SCS employees in agrichemical management, hazardous chemical health and safety programs, and environmental risk assessment tools for pesticide impact on water quality.

After retiring from USDA in January 1993, Dr. Gilbert accepted a 2-year position with the American Association of Retired People, as a contract employee to EPA Region 8, Denver, CO. As a Wetland Specialist, he provided technical assistance for the implementation of the Interagency Agriculture Wetlands Memorandum of Agreement with the Natural Resource Conservation Service. Also, as an Environmental Specialist, he provided technical assistance for management and writing regulations concerning programs for pesticide training, worker protection standards, and protection of water resources from pesticides.

Currently Dr. Gilbert directs his own consulting business, Agro-Enviro Consultants, Inc. His environmental science consulting services provide technical development and transfer of innovative remediation and conservation practices for the protection of natural resources. Areas of expertise include: design of natural microbial biological systems for treatment and resource recovery of agricultural, industrial, and urban wastewater; design of bioremediation process involving high strength organic waste streams; and application of environmental models and risk assessment processes used at field and watershed levels to determine the fate and transport of hazardous substances, e.g., organic wastes, fertilizers, pesticides, heavy metals, etc.

## EMPLOYMENT HISTORY

Agro-Enviro Consultants, Inc.	Principal	1992 - Present
American Assoc. of Retired Persons / EPA, Denver, CO	Senior Envir. Scientist	1993 - 1995
USDA Soil Conservation Service, Washington, D.C.	National Agrichemical Spec.	1989 - 1992
USDA Agriculture Research Service, Prosser, WA	Research Plant Pathologist	1982 - 1989
USDA Agriculture Research Service, Phoenix, AZ	Research Soil Microbiologist	1970 - 1982
USDA Agriculture Research Service, Beltsville, MD	Research Soil Microbiologist	1965 - 1970

## EDUCATION

Ph.D.: Major - Plant Pathology		
Major - Soil Microbiology	Colorado State University	1961 - 1964
M.S.: Major - Botany and Plant Pathology		
Major - Soil Microbiology	Colorado State University	1961 - 1963
B.S.: Major - Physical/Sciences		
Major - Education (Teacher Certified)	Colorado State University	1959 - 1961
Major - Physical/Biological Sciences	Pueblo Junior College	1957 - 1959

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Society of Agronomy  
Soil Science Society of America  
American Phytopathological Society  
Soil and Water Conservation Society

## HONORS AND AWARDS

Recipient, Undergraduate Academic Scholarship of B.S., 1959-1961  
Recipient, NDEA Fellowship, 1961-1964  
Member, Phi Kappa Phi, 1964  
Member, Sigma Xi, 1964  
Member, Phi Theta Kappa, 1958  
Recipient, USDA Unit Superior Service Award, as member of Waste Water Renovation Group, 1973  
Recipient, USDA-SCS, Certificate of Merit, Leadership and Development of Agency Agrichemical Management Program, 1992.  
Recipient, Colorado Chapter - Soil and Water Conservation Society, Chapter President's Citation Award, 1998  
Recipient, Soil and Water Conservation Society, Commendation Award, 1997

## PUBLICATIONS AND REFERENCES:

Authored and co-authored over 100 publications. A list of publications will be provided upon request.  
Professional and/or personal references also will be provided upon request.

## CIVIC AND COMMUNITY ACTIVITIES:

Conifer Colorado Kiwanis Club  
Grandview, Washington Kiwanis Club (President)  
Yakima Valley Music and Comedy Club, Sunnyside, WA  
USTA/Pacific NW District Umpires Committee  
USTA: Certified Umpire  
USTA: Professional Umpires Association

## STATEMENT OF CAPABILITIES

### ENVIRONMENTAL ECOLOGY

Demonstrated ability in total resource management, involving an excellent knowledge of the biological relationships and process resulting from the interaction between the Earth's biota, terrestrial and aquatic environments, and atmospheric and climatic environments.

Excellent working knowledge of technical methods and procedures for assessing:

- Biodiversity and factors contributing to reduction in biodiversity and environmental quality.
- Monitoring surface and ground water quality, as well as, estuary habitats.
- Microbiological and biochemical processes in terrestrial and aquatic environments.

Excellent knowledge and technical experience in establishing cause and effect relationships, resulting from impact of man's management activities on the Earth's surface, and the resulting potential influence on human health and safety.

### SOIL AND AQUATIC WETLAND ECOSYSTEMS

Excellent technical and working knowledge of soil and aquatic wetland ecosystems and the interrelationships that causes reduction in biodiversity, increase in eutrophication, and degradation of soil and water resources.

Excellent working knowledge of microbial and biochemical processes in soil and aquatic wetland ecosystems that would serve in bioremediation and protection of soil and water resources.

### AGRICULTURAL/URBAN WASTE MANAGEMENT

Excellent knowledge of wetland treatment systems used for reclamation of wastewater and/or, disposal of wastewater or solid organic waste materials.

Excellent technical knowledge of the microbiological and biochemical processes responsible for removal and bioremediation of soil and water resources contaminated with hazardous waste materials.

Excellent technical and working knowledge of "composting" principles and the beneficial potential of the process in remediation of soil and water resources contaminated with hydrocarbons and other organic waste materials.

Excellent technical and working knowledge of aquatic toxicology and wetland bioremediation processes, especially for wastewaters and materials with excessive amounts of hydrocarbons, nitrogen, and phosphorus chemicals.

## SURFACE AND GROUND WATER QUALITY

Excellent technical knowledge of water quality standards for drinking, recreation, agriculture, and industrial water supplies.

Excellent technical knowledge of methods and techniques for determining hazardous substances in soil and water resources and their impact on water quality.

Excellent technical knowledge of standard methods and procedures of sampling and testing the quality of surface and ground water resources.

Excellent technical and working knowledge of water quality models and decision making tools for comparative assessments of "Best Management Practices" and their impact on the quality of surface and ground water resources.

## WATERSHED MANAGEMENT

Outstanding knowledge of the Earth's hydrologic cycle, specifically surface and ground water hydrology; and, the principles of water movement in soils, as leachate to ground water or as soil surface run-off to surface water resources.

Outstanding knowledge of soil-water-plant relationships and the principles of surface evaporation and evapo-transpiration and the influences of these processes on water movement into surface and ground water resources.

Excellent knowledge of the CORE hydrology in watershed and field scale environmental models.

## ENVIRONMENTAL RISK ASSESSMENT

Excellent knowledge and technical experience in assessing the risk and impact on ecosystems and human health and safety by the introduction of hazardous substances into the environment.

Excellent knowledge of bioremediation practices and processes ranging from protecting resources from poor management practices and subsequent contamination and degradation to remediation of resources that are highly contaminated with hazardous substances.

Excellent knowledge of environmental models and risk assessment tools to include GIS applications used at watershed and field scale levels for determining the fate and transport of hazardous substances in terrestrial and aquatic environments; and, for development of targeted management for those sites that are assessed as the most sensitive and vulnerable to contamination by hazardous substances.

Knowledge of the operation of models as single event and continuous simulation models, that provide potential qualitative and quantitative risk assessments and strongly compliment the planning, implementation, and progress of successful environmental monitoring and remediation programs.