

Attachment B

City of Ione Comments on Draft CDO Witness List

1. Dave Plank, Mayor, City of Ione: Background on existing and proposed wastewater facility and City's efforts and goals re wastewater improvement project. (2 min.)
2. Kim Kerr, City Manager, City of Ione: Background on existing and proposed wastewater facility, status of City's efforts toward implementation of Wastewater Treatment Plan and Master Plan, and impacts of connection ban. (10 min.)
3. Steve Deverel/John Fio, HydroFocus: Isotope Study and evaluation of impact of wastewater ponds on groundwater and Sutter Creek. (10 min.)
4. John Kramer, Condor Earth Technologies: Groundwater modeling and data, and evaluation of impacts of wastewater facility on groundwater and Sutter Creek. (10 min.)
5. Mike Bryan/Art O'Brien, Robertson-Bryan, Inc.: Treatment and disposal capacity, groundwater and Sutter Creek impacts. (10 min.)
6. Kristen Castaños, City Attorney, Stoel Rives: Legal issues (7 min.)
7. Bob Godwin, Lee & Ro: Existing and proposed facility operations and capacity. (Available as needed)
8. John Wanger, City Engineer, Coastland Civil Engineering: Facility operations and collection system. (Available as needed)
9. Bob Nespeca, PERC Water, Plant Operator and Selected Contractor for Plant Improvements: Facility operations and status of proposed improvements. (Available as needed)



STEVEN JOHN DEVEREL

Steven Deverel has over 26 years of hydrologic problem-solving experience in the western United States. Dr. Deverel analyzes groundwater systems, quantifies chemical and physical processes in soils, and evaluates groundwater- and surface-water quality. He is a registered professional hydrologist certified by the American Institute of Hydrology, a California licensed professional geologist and a Texas licensed professional geoscientist.

PROFESSIONAL EXPERIENCE

February 1996 – present

Consulting Hydrologist in Private Practice and
Principal Hydrologist and cofounder, HydroFocus Inc. since January 1998 *Davis, CA*

- Assesses water quality and hydrologic processes on islands in the Sacramento-San Joaquin Delta.
- Evaluates subsidence and subsidence mitigation in the Sacramento-San Joaquin Delta.
- Conducts surface and groundwater quality assessments.
- Develops models to evaluate water movement and solute transport.
- Quantifies chemical and physical processes in the saturated and unsaturated subsurface.
- Applies statistical techniques to analyze land and water resources.
- Determines water sources using geochemical and age-dating techniques.

Recent experience includes:

- Evaluation of processes affecting water quality – Sacramento-San Joaquin Delta. Field data collection and modeling to estimate organic carbon, mercury and salt load for different wetland and agricultural water management practices.
- Measurement and modeling of subsidence in the Sacramento-San Joaquin Delta.
- Evaluation of subsidence mitigation strategies – Sacramento-San Joaquin Delta, California. Field data collection and modeling to evaluate water quality effects (including mercury) of different wetland management strategies for stopping and reversing the effects of subsidence.
- Geochemical analysis and groundwater and heat flow modeling of stream aquifer interactions in an agricultural watershed in Yolo County, California.
- Evaluation of drainage alternatives in the western San Joaquin Valley, California. Specific tasks included soil salinity modeling to predict effects of alternatives, groundwater flow and geochemical modeling for estimating future groundwater quality and hydraulic effects of alternatives.
- Quantitative evaluation of processes affecting groundwater and spring water chemistry and estimated playa evaporation using stable isotopes. Work was done to help evaluate effects of changing groundwater management in Southern Nevada.
- Evaluation of subsurface flow and canal leakage. Used water isotopes and modeling to determine effects, rates and nature of leakage.

- Evaluation of groundwater supply, flow and quality in relation to land and water management practices in various locations in California.

1994 to 1996

Senior Hydrologist, Hydrologic Consultants, Inc.

Davis, CA

Consulting assignments included the following:

- Evaluated sea water intrusion, nitrate contamination and flow of groundwater and nitrate movement in unsaturated zone – Salinas Valley, California.
- Analyzed water supply and quality issues– Santa Ynez Valley, California.
- Developed water resources element of city General Plan – City of Lompoc.
- Advised California Department of Water Resources on issues relating to subsidence in organic soils – Sacramento-San Joaquin Delta.
- Quantified geochemical processes and groundwater flow for gold mining operations – northern Nevada.

1991 to 1994

Supervisory Hydrologist, U.S. Geological Survey,

Sacramento, CA

Assistant District Chief: Guided hydrologic research, investigations and data collection programs throughout California:

- Supervised and planned research of land- and water-management effects on subsidence and carbon fluxes – Sacramento-San Joaquin Delta.
- Facilitated interactions among diverse projects and personnel.
- Developed and maintained projects investigating processes affecting land and water resources.
- Communicated research results to the resource management community and other audiences using published reports and oral presentations.
- Established long range research and data collection activities.
- Responsible for over 100 employees and an annual budget of over \$11 million.

1984 to 1991

Research Chemist, U.S. Geological Survey

Sacramento, CA

Project leader: Directed studies of processes affecting constituent mobility and transport. Evaluated transport processes in aqueous and gaseous phases. Conducted regional, subregional and local scale studies. Guided an interdisciplinary team that integrated multi-scaled data:

- Defined water and solute movement to agricultural drainage systems.
- Identified processes affecting trace element mobility in soil and water.
- Evaluated and implement statistical methods.

Directed hydrologic study of water quality, carbon fluxes and subsidence in organic soils – Sacramento-San Joaquin Delta:

- Identified processes affecting subsidence.
- Related carbon fluxes from organic soils to subsidence and global carbon balance.

- Developed water and land management strategies for reducing subsidence.
- Determined water management effects on drainage water quality.

1980 to 1984

Research Associate, University of California

Davis, CA

- Developed computer code to simulate solute transport and chemical reactions in soils and shallow groundwater.
- Designed and implemented water movement and chemical experiments for the laboratory and field – Sacramento-San Joaquin Delta.
- Completed Ph.D. dissertation on geochemical and hydraulic processes affecting soil and groundwater salinity – Sacramento-San Joaquin Delta.
- Co-authored book chapter on simulating reclamation of salt affected soils.

ACADEMIC BACKGROUND

Ph.D., June, 1983, Soil and Water Science, Department of Land, Air and Water Resources, University of California at Davis

BS, December 1979, Agricultural Science and Management, University of California at Davis

BA, June, 1974, Zoology, University of California at Berkeley

Instructor, "Ground-water Solute Transport Concepts", USGS Denver Training Center, 1988 –1993

Lecturer, Department of Land, Air and Water Resources and Associate in the Experiment Station, University of California at Davis, 1988-1992, Taught undergraduate course "Water Chemistry"

PhD dissertation and oral-exam committee member for University of California, Davis Hydrologic Sciences graduate students, 2001 – present

PROFESSIONAL AFFILIATIONS

American Geophysical Union

American Institute of Hydrology – registered professional hydrologist

California Groundwater Resources Association

International Association of Hydrogeologists

AWARDS AND HONORS

U.S. Geological Survey Special Achievement Awards: 1985, 1987, 1990, and 1991

Letter of appreciation from Assistant Secretary of the Interior, 1985

PEER-REVIEWED PUBLICATIONS

Vadose-Zone Hydrology, Biogeochemistry and Subsidence

Deverel, S.J. and Leighton, D.A., 2009, Historic, recent and future subsidence, Sacramento-San Joaquin Delta, California, USA, San Francisco Estuary and Watershed Science, 8(2) <http://www.escholarship.org/uc/item/7xd4x0xw>

Deverel, S.J., Thomas, J., Decker, D., Earman, S. and Mihevc, T, 2005, Groundwater evaporation estimates using stable isotope and chloride data, Yelland Playa, Spring Valley, Nevada, Desert Research Institute Division of Hydrologic Sciences, DHS publication 41219

Deverel, S.J., Wang, Bronwen and Rojstaczer, S.A., 1998, Subsidence in the Sacramento-San Joaquin Delta, in (Borchers, J.W., ed.) Proceedings of the Joseph Poland Subsidence Symposium, Association of Engineering Geologists, Special Publication No. 8, Star Publishing, Belmont, California, pp. 489-502.

Deverel, S.J., Rojstaczer, S.A. 1996, Subsidence of agricultural lands in the Sacramento-San Joaquin Delta, California: Role of aqueous and gaseous carbon fluxes, Water Resources Research, 32, 2359-2367.

Deverel, S.J., L.D. Whittig and K.K. Tanji, 1986, Sulfate reduction and calcium carbonate equilibria in a Central California histosol, Soil Science Society of America Journal, 50, 1189-1193.

Rojstaczer, S.A. and **Deverel, S.J.**, 1995, Land subsidence in drained histosols and highly organic mineral soils of California, Soil Science Society of America Journal, 59:1162-1167.

Rojstaczer, S.A. and **Deverel, S.J.**, 1993, Time dependence in atmospheric carbon inputs from drainage of organic soils, Geophysical Research Letters, 20, 1383-1386.

Fio, J.L., Fujii, R. and **Deverel, S.J.**, 1991, Evaluation of selenium mobility in soil using sorption experiments and a numerical model, western San Joaquin Valley, California, Soil Science Society of America Journal, 55, 1313-1320.

Rojstaczer, S.A., Hamon, R.E., **Deverel, S.J.** and Massey, C.A., 1991, Evaluation of selected data to assess the causes of subsidence in the Sacramento-San Joaquin Delta, California, U.S. Geological Survey Open File Report 91 -193.

Fujii, Roger, **Deverel, S.J.** and D.B. Hatfield, 1988, Distribution of selenium in soils of agricultural fields, Western San Joaquin Valley, California, Soil Science Society America Journal, 52, 1274-1283.

Tanji, K.K., and **Deverel, S.J.**, 1984, Simulation modeling for reclamation of sodic soils, in Soil salinity under irrigation-processes and management, Shainberg, I., and Shalhevet, J., eds., Springer-Verlag, Berlin

Groundwater Geochemistry and Quality

Deverel, S.J., Leighton, David A. and Finlay, Mark R., 2007. Processes Affecting Agricultural Drainwater Quality and Organic Carbon Loads in California's Sacramento-San Joaquin Delta. San Francisco Estuary and Watershed Science. Vol. 5, Issue 2 (May), Article 2.
<http://repositories.cdlib.org/jmie/sfews/vol5/iss2/art2>

Deverel, S.J. and R. Fujii, 1990, Chemistry of trace elements in soils and groundwater In Tanji et al (eds) Agricultural Salinity Assessment and Management Manual, American Society of Civil Engineers.

Deverel, S.J., Fio, J.L., Dubrovsky, N.M., 1994, Distribution and mobility of selenium in groundwater in the western San Joaquin Valley of California in Selenium in the Environment, Benson, S. and Frankenburger, W. (eds). Marcel Decker, New York.

Deverel, S.J. and Fio, J.L., 1991, Groundwater flow and solute movement to drain laterals, western San Joaquin Valley, California. I. Geochemical assessment, Water Resources Research, 27, 2233 - 2246.

Deverel, S.J. and S.P. Millard, 1988, Distribution and mobility of selenium and other trace elements in shallow ground water of the western San Joaquin Valley, California, Environmental Science and Technology, 22, 697-702.

Deverel, S.J. and Roger Fujii, 1988, Processes affecting the distribution of selenium in shallow groundwater of agricultural areas, Western San Joaquin Valley, California, Water Resources Research, 24, 516-524.

Deverel, S.J., Gilliom, R.J., Fujii, Roger, Izbicki, J.A., and Fields, J.C., 1984, Distribution of selenium and other inorganic constituents in shallow ground water of the San Luis Drain Service Area, San Joaquin Valley, California: A preliminary study, U.S. Geological Survey Water Resources Investigation Report 84-4319.

Deverel, S.J., 1985, Selenium in the San Joaquin Valley of California In 1984 National Water Summary, U.S.G.S. Water Supply Paper 2275.

Fujii, Roger and **S.J. Deverel**, 1988, Mobility and distribution of selenium and salinity In groundwater and soil of drained agricultural fields, western San Joaquin Valley, California: In Jacobs, L.W. and others (ed.), Selenium in Agriculture and the Environment: American Society of Agronomy, Madison, Wisconsin, Special Publication no. 23, pp. 195-212.

Fujii, Roger and **S.J. Deverel**, 1986, Mobility and distribution of selenium in artificially drained agricultural fields, Agronomy Abstracts, 78:30, Invited paper in special symposium "Selenium in Agriculture" at annual American Society of Agronomy Meetings in New Orleans.

Dubrovsky, N.M., **Deverel, S.J.** and Gilliom, R.J., 1993, Multiscale approach to regional groundwater quality assessment: selenium in the San Joaquin Valley, California in Regional Ground-water Quality (Alley, W.M, editor), Van Nostrand Reinhold, New York.

McNeal, J.M., Feder, G.L., Wilbur, W.G. and **Deverel, S.J.**, 1990, Environmental concerns related to selenium in the Western United States in Proceedings of a U.S. Geological Survey Workshop on Environmental Geochemistry (Doe, B.R., ed.) U.S. Geological Survey Circular 1033.

Statistics

Deverel, S.J., 1989, Geostatistical and principal-component analysis of ground-water chemistry and soil-salinity data, San Joaquin Valley, California, In Ragone, S. (ed.) Regional characterization of water quality, International Association of Hydrologic Sciences Publication no. 182 pp. 11-18.

Millard, S.P. and **S.J. Deverel**, 1988, Non-parametric statistical methods for comparing two sites based on data with multiple non-detect limits, Water Resources Research, 24, 2087-2098.

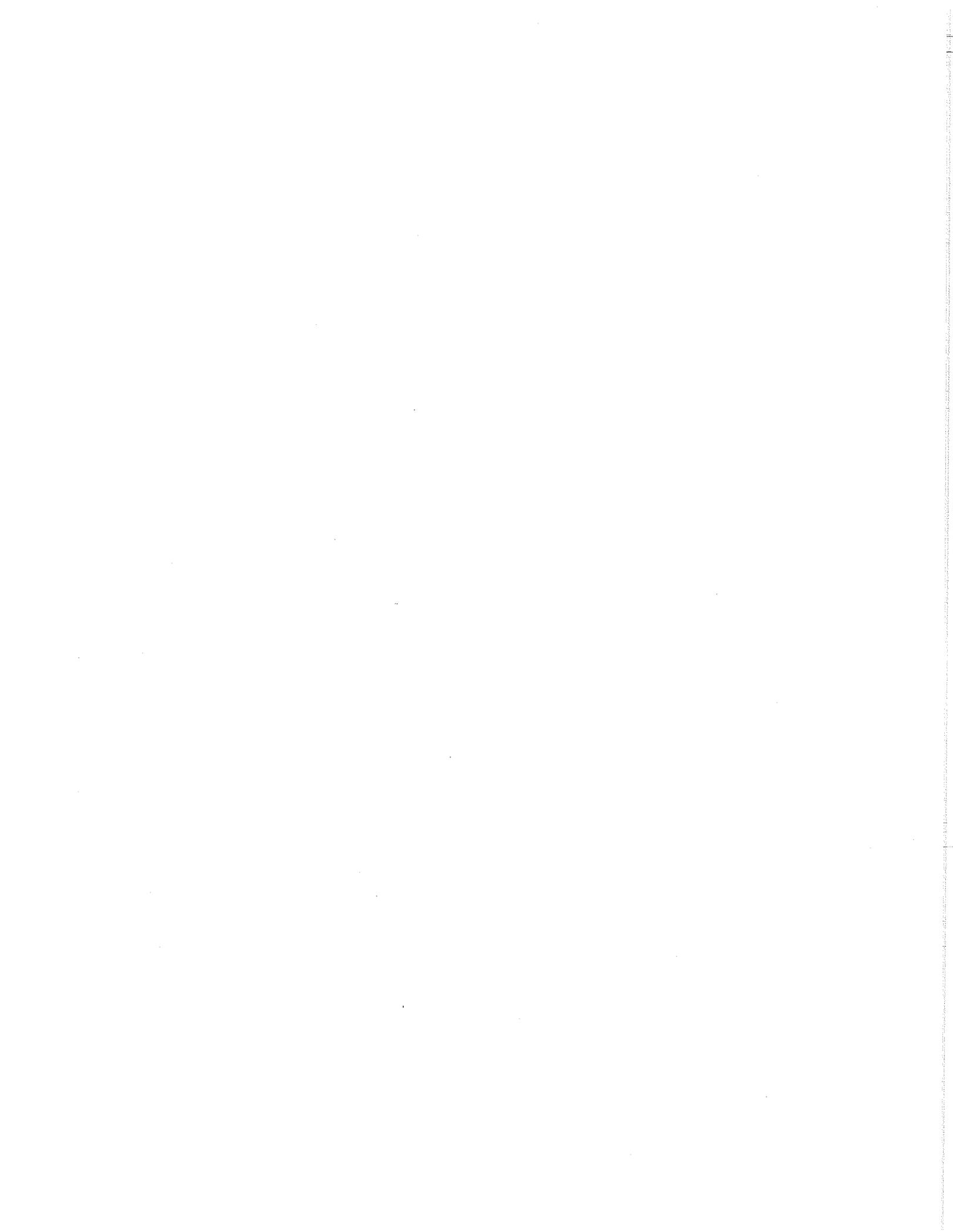
Ground Water Hydrology

Deverel, S.J. and Gallanthine, S.K., 1989, Distribution of salinity and selenium in relation to hydrologic and geochemical processes, San Joaquin Valley, California, Journal of Hydrology 109, 125-149.

Deverel, S.J., 1988, Geohydrologic aspects of water-quality problems of the San Joaquin Valley, California, Proceedings on Planning Now for Irrigation and Drainage, Irrigation and Drainage Division, American Society of Civil Engineers, Lincoln, Nebraska, July, 1988 pp. 694-699 (invited paper).

Fio, J.L. and **Deverel, S.J.**, 1991, Groundwater flow and solute movement to drain laterals, western San Joaquin Valley, California, II. Quantitative hydrologic assessment, Water Resources Research, 27, 2247 - 2257.

Fio, J.L. and **Deverel, S.J.**, 1990, Interaction of shallow ground water and subsurface drains: Implications for selenium transport and distribution in the western San Joaquin Valley, Groundwater, 28,788-789.



John H. Kramer, PhD

Sonora Division Manager/Senior Hydrogeologist – Senior Scientist

Statement of Position

Principal Hydrogeologist: provides technical expertise on groundwater and vadose zone processes, fate and transport of subsurface contaminants, remediation, liner leakage evaluation and alternative evaporative cap design evaluation, waste discharge permit negotiations and permit compliance.

Areas of Expertise

Groundwater quality evaluation and remediation: plan; design and install groundwater monitoring wells, write and perform groundwater sampling and analysis plans; oversee data collection and groundwater quality sampling; computer modeling of groundwater flow; evaluate laboratory QA/QC reports; design and evaluate compacted soil liners and geomembrane barriers; supervise geotechnical soils investigations and reports for construction, manage materials testing programs for soils (design specifications, compaction, etc.), oversee preparation of CEQA documentation.

Education

PhD - Interdisciplinary - Geology, Geography and Environmental Engineering

MS – Geochemistry

BA - Geology

Registration/Certification

- Certified Engineering Geologist – State of California No. 2535
- Certified Hydrogeologist -State of California No. 182
- Professional Geologist-State of California No. 4882

Special Training

- Hazwoper Training – 40-hour and annual 8-hour refreshers OSHA – 29 CFR 1910-120
- 8-hour annual mine safety training MSHA, U.S. Department of Labor
- Nuclear safety

Representative Experience

Dr. Kramer has 30 years of experience in geological science and mapping. His project experience includes:

- Reports of Waste Discharge and permit negotiations for industrial and municipal discharges to land at numerous facilities: State prisons (4), mines (3), poultry processing plant, hatcheries (2), manure storage facility, municipalities and special districts.
- Hydrogeologic evaluations of groundwater availability in fractured rock terrain.
- Vadose zone hydrology for monitoring soil moisture at waste management units, and evaluating environmental risks from soil contamination;
- Permit compliance services for discharges of liquid and solid wastes to lands in California, stormwater pollution prevention, and mine waste reclassifications;
- Environmental Site Assessments (Phase I and Phase II), Risk Assessments
- Initial Studies, Mitigated Negative Declaration and Environmental Impact Reports;
- Systems integration for digital field mapping and data collection;
- Presentations to the public, professional organizations, clients, and regulatory agencies. (Dr. Kramer has taught numerous short courses for professional peers, and chaired technical sessions on advanced earth technologies at national professional meetings. A list of published abstracts, peer-reviewed articles, book chapters and presentations is available upon request);
- Public service, a former trustee of the Vallecito Union School District and a former city planning commissioner.

Dr. Kramer came to Condor from the Vadose Zone Research Laboratory at the University of California Santa Barbara where he invented a vadose zone monitoring system having wick layer enhancement (U.S. Patent No. 5,272,910). He served as peer-reviewer for the Nuclear Regulatory Commission and consulted to DOE at Hanford and Rocky Flats. Dr. Kramer is co-author of the U.S.G.S. Gothic Geologic Quadrangle Map (GQ-1689). Since joining Condor he has focused his professional geologic work on the Sierra Nevada and adjoining terrain. In addition to management and technical project duties, Dr. Kramer integrates Condor client services with the latest applicable science and advanced technology.

John H. Kramer, PhD

Sonora Division Manager/Senior Hydrogeologist – Senior Scientist

Professional Organizations

Am. Geophys. Union
Am. Soc. Test. Mat.
Groundwater Res. Assoc.
Geol. Soc. Am.
Nat. Ground Water Assoc.
Calif. Onsite Wastewater Assoc.

Industries Served

- Public Works (Schools and Special Districts)
- Mining
- Agriculture

Software Knowledge

Microsoft Office Applications
PenMap/GeoMapper®

Selected Projects

- Gardella Effluent Reservoir (350 af) and sprayfields: construction, permitting and compliance.
 - The Ranch Sewer Maintenance District (Sacramento County): Waste Discharge negotiations, groundwater plan, and compliance monitoring (12 wells)
 - City of Stockton: Groundwater well installation, Hydrogeological Analysis of Regional Sewage Treatment Plant for BPTC, and compliance monitoring (18 wells)
 - City Wastewater Treatment Plant Hydrogeologic Evaluation and compliance monitoring (City of Hughson, Lone, Angels Camp)
 - Industrial Wastewater Treatment Plant and Reclamation Fields (3.5 MGD), groundwater monitoring plan and compliance (20 wells), client confidential
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- CCC: Hydrogeologic Analysis of Susanville CCC and High Desert Prison Spray Discharge Fields (18 wells), deep monitoring well design and installation, groundwater sampling and analysis plan
 - CDCR: Mule Creek State Prison Groundwater Monitoring Plan, well design and installation, sampling and analysis plan (10 wells)
 - CDCR: Chuckawalla Valley State Prison, Agronomic Effluent Management Program, groundwater monitoring plan, well installation. (3 wells)
 - Foster Farms: Numerous sites including Livingston Reclamation Fields, Cedar Hatchery, Manure Storage Facility, and UST sites; Reports of Waste Discharge, groundwater degradation analyses, liner leakage evaluations, alternative liner designs.

Professional History

1994 – Present Condor Earth Technologies, Inc.

Principal Hydrogeologist – Previously Division Manager and Project Manager for subsurface investigations and regulatory compliance.

1992-1994 Arcadis/Geraghty and Miller

Principal Scientist - Project management and technical review for vadose zone study at a nuclear weapons facility, Environmental Site Assessment (ESA), PCE contamination, underground storage tanks, neutron probe monitoring at landfills.

1988-1992 Vadose Zone Research Lab, UCSB

Staff Researcher – Conducted EPA-sponsored research, conducted laboratory and field experiments, lectured.

Publications and Presentations

2001 Rutledge, David, John Kramer and Jack Gnipp. Advances in Real Time GPS Monitoring of Landslides, Volcanoes and Structures. 10th FIG International Symposium on Deformation Measurements. March 19-22, Orange, California,

2000 John H. Kramer and George Ball. Calibrating Computerized Landscapes with Digital Mapping, GPS, and Digital Photography for Internet Distribution. Poster. Geological Society of America Annual Meeting, Reno NV.

2000 John H. Kramer and David Rutledge. Advances in Real-Time Deformation Monitoring for Landslides, Volcanoes and Structures (abstract). Program with Abstracts V43 (4): 97. Association of Engineering Geologists 43rd Annual Meeting, San Jose California. Also submitted to Environmental and Engineering Geoscience.

2000 John H. Kramer. Digital Mapping Systems for Field Data Collection. In Proceedings: Digital Mapping Techniques '00 A Workshop Sponsored by the American Association of State Geologists and the USGS, May 17-20 - Lexington, KY, <http://pubs.usgs.gov/openfile/of00-325/kramer.html>.

2000, John H. Kramer and Robert Hoagland. Dewatering Strategies to Reduce Environmental Risk at Clay-lined Tailings Ponds. Proceedings: Tailings Dams 2000, a Joint Specialty Conference of the Association of State Dam Safety Officials and the U.S. Committee on Large Dams, March 28 - Las Vegas, NV.

2000, John H. Kramer, Erin Mutch and George Ball. Geographic Information Systems (GIS). In Standard Handbook Of Environmental Science, Health and Technology, McGraw-Hill, New York, pp.8.99-9.105.

2000, John H. Kramer. Neutron Probes.). In Standard Handbook Of Environmental Science, Health and Technology, McGraw-Hill, New York, pp.11.113-11.123.

1999, John H. Kramer. Computerized Field Mapping for the New Millennium. Abstracts with Programs Geological Society of America, Annual Meeting Denver, Colorado, V.31, October 1999

1998, John H. Kramer. Advances in Digital Field Mapping. Abstracts with Programs, V.30 (7), October 1998. Abstracts with Programs Geological Society of America, Annual Meeting Toronto, Ontario, Canada. October 26-29, 1998.

1998, Brimhall, George, Nunnelley, G., Hillman, B., Kramer, J. Direct Digital Field Mapping using pen-based PC computers supported by differential global positioning systems and laser range finders. Abstracts with Programs Geological Society of America, Annual Meeting Toronto, Ontario, Canada. October 26-29, 1998.

1997, John H. Kramer. Future: Geologic Mapping as a Digital Art. Abstr. Geological Society of America, Annual Meeting Salt Lake City, UT. October 18-24, 1997

1997, John H. Kramer and John Pradenas, Explore Remote Possibilities- Dedicated and Programmable Data Loggers are Popular Monitoring Tools. *International Groundwater Technology*. 3(2): 16-19.

1997, John H. Kramer, Pete Dohms, Review of ASTM Standards on Ground Water and Vadose Zone Investigations: Drilling, Sampling, Well Installation and Abandonment Procedures, *EOS*, 78(3): 23. American Geophysical Union, Washington, D.C.

1997, John H. Kramer, Tom Lockhart, Mark Ankeny and Jeffrey Forbes, Managing Nitrate in Groundwater Impacted by Human and Animal Wastes, in: Proceedings of the California Plant and Soil Conference, California Chapter of the American Society of Agronomy and the California Fertilizer Association.

1996, John H. Kramer, Vadose Zone Monitoring Methods. *Waste Business Magazine*, 7(1): 24-27.

1996, John H. Kramer. Landfill Vadose Zone Monitoring Strategies. *International Groundwater Technology*. 2(1): 14-24.

John H. Kramer, PhD

Sonora Division Manager/Senior Hydrogeologist – Senior Scientist

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- 1996, John H. Kramer and Stephen J. Cullen. Soil Bioventilation and Modeling of Airflow in Soil. Manual of Environmental Microbiology. American Society of Microbiology, ASM Press, Washington D.C., pp 746-752.
- 1996, ASTM Draft Standard Test Method for Logging *in situ* Moisture Content and Density of Soil and Rock by the Nuclear Method in Horizontal, Slanted and Vertical Access Tubes. Co-author with Eric Dunlap, ASTM Philadelphia, PA.
- 1995, Lockhart, T.R., J.H. Kramer, R.C. Dixon. Real-Time Mapping Systems Enhance Data Gathering and Productivity in Precision Agriculture. In: Agronomy Abstracts, Proceedings 87th Annual Meeting American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, St. Louis, Missouri, October 29-November 3, 1995: 59.
- 1995, Kramer, John H. and Thomas Lockhart. *Real-Time Mapping Systems Enhance Data Gathering and Productivity in Precision Agriculture: A software Demonstration*. In: Agronomy Abstracts, Proceedings 87th Annual Meeting American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, St. Louis, Missouri, October 29-November 3, 1995: 67.
- 1995, Kramer John H., and Gail Holmes. Expedited Site Characterization: Real-time Computerized Mapping to Enhance Soil Gas Surveys. <http://www.esri.com/resources/userconf/proc95/to150/p143.html>
- 1995, Stephen J. Cullen, John H. Kramer, Jon R. Luellen. A Systematic Approach To Designing A Multiphase Unsaturated Zone Monitoring Network. *Ground Water Monitoring and Remediation*, 15 (3): 124-135.
- 1994, John H. Kramer. *Vadose Zone Monitoring Strategies Employing Horizontal Neutron Moisture Logging*, Ph.D. Dissertation, University of California Santa Barbara.
- 1994, John H. Kramer and Stephen J. Cullen. A Review Of Vadose Zone Flow and Transport Models, in *Handbook of Vadose Zone Characterization and Monitoring*, Editors, Lorne G. Wilson, Stephen J. Cullen, Lorne G. Everett, Lewis Publishers, Chelsea, MI.
- 1994, John H. Kramer and Barry Keller. Understanding the Geologic Framework of the Vadose Zone and Its Effect on Storage and Transmission of Fluids, in *Handbook of Vadose Zone Characterization and Monitoring*, Editors, Lorne G. Wilson, Stephen J. Cullen, Lorne G. Everett, Lewis Publishers, Chelsea, MI.
- 1994, John H. Kramer, Stephen J. Cullen, and Lorne G. Everett. Vadose zone Monitoring with the Neutron Moisture Probe, in *Handbook of Vadose Zone Characterization and Monitoring*, Editors, Lorne G. Wilson, Stephen J. Cullen, Lorne G. Everett, Lewis Publishers, Chelsea, MI
- 1994, Stephen J. Cullen, John H. Kramer, Lorne G. Everett and Lawrence Eccles. Is Ground Water Monitoring Illogical, in *Handbook of Vadose Zone Characterization and Monitoring*, Editors, Lorne G. Wilson, Stephen J. Cullen, Lorne G. Everett, Lewis Publishers, Chelsea, MI
- 1994, Cullen, S.J., John H. Kramer, and Jon R. Luellen. Risk-based approach to the design of a vadose zone monitoring system for a solid waste landfill. In: *Proceedings, 1994 Air and Waste Management Association Annual Meeting, Cincinnati, Ohio*, Air and Waste Management Association, Pittsburgh.
- 1994, Cullen, Stephen J., John H. Kramer, and Randy T. Ogg. A systematic approach to Designing a Multiphase Unsaturated Zone Monitoring Network. In: G. Gambolati (ed.), *Proceedings of the International Symposium on Advanced Methods for Groundwater Pollution Control, May 1994, Udine, Italy*. Published by the International Center for Mechanical Sciences, Udine, Italy.
- 1994, Phillip E. Gagnard, T.C Jim Yeh, Rajesh, Amado Guzman, and John H. Kramer. Simulation of the Wicking Effect in a Two-Layer Soil Liner System. *Waste Management Research*.
- 1993, Everett, Lorne G., John H. Kramer, Stephen J. Cullen, Vadose Zone Monitoring System Having Wick Layer Enhancement, U.S. Patent #5,272,910.

John H. Kramer, PhD

Sonora Division Manager/Senior Hydrogeologist – Senior Scientist

1993, John H. Kramer, P. E. Gagnard, S. J. Cullen. Wick Layer-Enhanced Vadose Zone Monitoring, (Abstract). AGU 1993 Fall Meeting Dec.6-10, 1993. Published as a supplement to *EOS, Transactions*, American Geophysical Union, Washington D.C.

1993, John H. Kramer, Reply to "Discussion of 'Vadose Zone Monitoring with the Neutron Moisture Probe' by Michael Williams." *Ground Water Monitoring Review*, 13(1), 161.

1992, John H. Kramer, Stephen J. Cullen, Lorne G. Everett. Vadose Zone Monitoring with the Neutron Moisture Probe, *Ground Water Monitoring Review*, 12 (3), 177-187 (Invited Paper).

1992, Lorne G. Everett, Stephen J. Cullen, and John H. Kramer, Direct and indirect pore liquid monitoring in the vadose zone, Technologies for Environmental Cleanup: Soil and Groundwater, Secretariat EUROCOURSES, Joint Research Centre 1-21020 ISPRA (Varese) Italy.

1992, John H. Kramer, Application of Neutron Probes to Environmental Monitoring (Abstract). In: *Proceedings of the Pacific Division American Association for the Advancement of Science Annual Meeting*, University of California Santa Barbara.

1992, Stephen J. Cullen, John H. Kramer, Lorne G. Everett and Lawrence Eccles. Is Ground Water Monitoring Illogical? *Ground Water Monitoring Review*, 12 (3), 177-187 (Invited Paper).

1991, John H. Kramer, Lorne G. Everett and Stephen J. Cullen, Innovative Vadose Zone Monitoring at a Landfill Using the Neutron Probe; *Proceedings of the 1991 Outdoor Action Conference, NWWA 5th Outdoor Action Conference*, Las Vegas, NV.

1991, D.L. Gaskill, F.E. Mutschler, John H. Kramer, John A. Thomas, and Stephen G. Zahony, Geologic Map of the Gothic Quadrangle, Gunnison Co., CO; Map GQ-1689, U.S. Geological Survey Geologic Quadrangle.

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JOHN L. FIO

QUALIFICATIONS

John L. Fio has over 23 years of problem-solving experience. Mr. Fio analyzes groundwater systems, quantifies chemical transport in the subsurface, and evaluates groundwater surface-water interactions. He is a recognized expert on hydrologic and water quality issues in the San Francisco Bay Area and the San Joaquin Valley, California.

PROFESSIONAL EXPERIENCE

1998 – present: Principal Hydrologist, HydroFocus, Inc., Davis, CA
1995-1997: Senior Project Hydrologist, Hydrologic Consultants, Inc
1985-1995: USGS Hydraulic Engineer, Engineer, and Hydrologist, USGS
1983-1984: Research Assistant, University of California, Davis, CA

Relevant project experience (with focus on BAWSCA member agencies):

- California Energy Commission (2008-present). Groundwater-flow and hydrogeological water supply assessments in the Mission Springs, Fremont, and Carrizo Plain groundwater basins.
- Beijing Hydraulic Research Institute, Beijing China (2008-present). Oversight to groundwater monitoring and modeling for recycled water aquifer replenishment project.
- Westside Groundwater Basin, San Francisco and San Mateo Counties (1999-present). Draft AB 3030 Groundwater Management Plan for the Westside Basin Partners (SFPUC, Daly City, South San Francisco, and San Bruno). California Department of Water Resources Public Assistance Grant funded project to improve groundwater-monitoring capabilities and evaluate saltwater intrusion potential. Groundwater-flow model development and applications to water supply and water resource planning efforts.
- City of Lathrop, Ironhouse Sanitary District, and Byron Sanitary District (2000-present). Groundwater flow, solute transport, water quality impact, and background groundwater quality assessments associated with land disposal of treated wastewater.
- California Water Service Company (2004-2008). As a subconsultant to Camp Dresser and McKee (CDM) HydroFocus conducted groundwater and water-supply reliability studies for several California Water Services Company districts located in South San Francisco, San Mateo, San Carlos, Redwood City, Atherton, and Menlo Park.
- City of Palo Alto (2004-2005). The City of Palo Alto owns abandoned wells located in the East Palo Alto marshes. We sampled sediments deposited in two accessible wells and assessed whether the sediments in-place provide reasonable protection from the downward migration of saline baywater.
- Raychem/Tyco, Menlo Park (2001-2007). Hydrogeologic analysis to assess changes in the rate, direction, and concentrations of dissolved constituents in groundwater and potential impacts to off-site marshlands. Developed groundwater-flow and solute transport models to account for complex hydrogeologic conditions associated with the site's proximity to salt ponds and the underlying hydraulic interactions between pumping wells located in Alameda County Water District and Menlo Park.

- East Bay Municipal Utility District Recycled Water Authority (1999-2000). We completed a focused review of DERWA's Salt migration study review and assessment. The study was designed to quantify the incremental change in hardness and total salt concentration in groundwater produced by Alameda County Water District well fields owing to recycled water use east of the Niles Cone aquifer system.
- Plymouth Street Site, Mountain View California (1999-2002). Geohydrologic, water quality, and groundwater-flow modeling assessments of site specific and regional groundwater extraction remediation system designed to control VOC plume in groundwater. Coordination with the California Regional Water Quality Control Board plume remediation.
- Town of Atherton (1993-1995). While at the USGS, supervised the assessment of groundwater supply and use for Atherton based on 1) well-driller logs; 2) reported surface water deliveries; 3) estimated pumping rates; 4) measured water levels; and 5) chemical analyses of well-water samples.
- Bay Area Water Users Association (1991-95). While at the USGS, conducted regional geohydrologic and water quality assessment for improved water resource management in the San Francisco Bay region. The study area included all BAWSCA member agencies. Results described in the USGS report "*Geohydrologic Framework, Historical Development of the Groundwater System, and General Hydrologic and Water-Quality Conditions in 1990, South San Francisco Bay and Peninsula Area, California*", Open-File Report 94-357, 1995. HydroFocus retains and still uses the large database developed for this project.

ACADEMIC BACKGROUND

Master of Science, 1987, Civil Engineering, University of California at Davis
 Bachelor of Science, 1984, Soil and Water Science, University of California at Davis

PUBLICATIONS

Authored or coauthored more than a dozen journal articles and USGS publications.



BOB GODWIN, PE

Project Manager

Mr. Godwin, has over 20 years of engineering experience in the areas of water and wastewater, infrastructure and municipal facilities planning, design, and construction. He has designed and supervised numerous public works projects and his project experience includes pump station design, computer modeling, water and wastewater treatment, collection systems, and forcemain design. Mr. Godwin has been involved with preparing feasibility studies, preliminary design reports, plans & specifications, and construction estimates for water and wastewater collection/treatment/reclamation projects. His experience includes cost estimating and conducting detailed utility searches. Mr. Godwin has been responsible for field investigations, detailed project documentation, utilities coordination, design layouts, plan preparation, quality control, and design discipline coordination.

Registrations, Certifications, and Licenses

Professional Engineer, California, C48045

Education/Training

B.S., Civil Engineering, California State Polytechnic University

REPRESENTATIVE PROJECT EXPERIENCE

On-Call Engineering Services for Wastewater Treatment, City of Ione. Bob is Project Manager for on-call wastewater engineering services to the City of Ione collection system, secondary and tertiary treatment plants. Services include preparing a revised water balance, technical engineering support for the preparation of an EIR for a treatment facility expansion, development of a Joint Powers Authority to manage wastewater effluent disposal, and preparation of an updated Wastewater Master Plan focusing on future water reclamation as well as treatment needs to meet current growth within the City service area.

Wastewater Treatment Plant Expansion, Phase II and Phase III, Patterson. Mr. Godwin was Project Manager for a 1.5 million gallons per day (mgd) expansion of the City's wastewater treatment facility (Phase II). The new activated sludge treatment system included an extended air oxidation ditch, 80-foot circular clarifier, three aerobic digesters, RAS pump station, plastic media sludge drying beds, polymer chemical feed systems, influent climber screen, influent grinder structure, effluent pump station, 4000-foot effluent pipeline, and 30 acres of percolation ponds. The system was designed to meet strict nitrogen removal requirements while simultaneously minimizing power consumption and sludge production through DO control. Mr. Godwin is also the Project Manager for the Phase III expansion which is similar to the Phase II expansion except for the addition of solids dewatering systems for the reduction and dewatering of biosolids generated from the entire treatment plant.

City of Patterson Wastewater Treatment Plant Rehabilitation, Patterson. Mr. Godwin was Project Manager for an upgrade and rehabilitation of the plant's existing activated sludge treatment system. The project included replacement of the oxidation ditch's two brush aerators, two new submersible banana blade mixers, replacement of the RAS pump station's three pumps, new effluent pump, and a 500-foot long horizontally drilled effluent pipeline.

Headworks and Grit System Improvement Project, Sacramento Regional County Sanitation District, Elk Grove. Bob was Project Engineer for the pilot plant and hydraulic model testing, preparation of a comprehensive predesign report, final design, and construction services for a rehabilitation and modification project for the aerated grit removal tanks, grit slurry piping, grit separation and washing, and grit transport system at the 200 mgd SRCSD Plant. The project included modification of influent hydraulic features through headworks and primary clarifiers.

Oxidation Ponds Sediment Removal Project, City of Sunnyvale. Bob was Project Manager for preparation of a Preliminary Design Report and served as Technical Advisor for this project where LEE & RO provided engineering services for design of capital improvements to permit seasonal dredging, removal, dewatering, hauling, and disposal of biosolids which accumulate in

the City's Water Pollution Control Plant oxidation ponds. Improvements included new electrical service for the dewatering equipment, paved access road, levee improvements, and site improvements to facilitate dewatering and hauling operations. LEE & RO previously prepared a study evaluating biosolids disposal options including facility siting, dewatering methods and final disposal selection. The recommended alternative had the lowest life cycle cost.

City of Angels, Wastewater Treatment Plant Expansion, City of Angels. Bob was Project Manager for an expansion of the City of Angels wastewater treatment plant. The expansion included the construction of a 3 million gallon lined equalization basin, one additional SBR basin, two aerobic digesters, chlorine contact basin, and plastic media sludge drying beds. The two existing SBRs, as well as the new SBR, were fitted with DO control to save power and provide nutrient removal. The chlorine contact tank was designed to the Title 22 requirements. Site constraints created the need for creativity in design, construction, and operation. The expansion increased the capacity of the facility to 0.6 mgd with a peak flow capacity of 1.9 mgd.

Copper Cove Wastewater Treatment Plant, Calaveras County Water District. Bob was the Project Manager for the Phase I expansion of the Copper Cove Wastewater Treatment Plant. This expansion included the design of a new treatment plant headworks including grinder pump station, bypass structure, and screening facility. Treatment systems included the replacement of existing pond surface aerators, new inlet structures, new outlet structures, new effluent piping and chlorination system. Additional improvements included new electrical systems. All facilities were designed for the ultimate plant capacity of 2.0 mgd average dry weather flow with the Phase I capacity rated at 0.5 mgd.

Hyperion Wastewater Treatment Plant, City of Los Angeles. As Design Engineer, Bob participated in the design of the \$350 million egg-shape digester project at the 420 mgd wastewater treatment plant. He was responsible for digester piping and pipe gallery system interconnecting six egg shaped primary and secondary digesters.

Wastewater Treatment Plan Expansion, Valley Sanitary District, Indio. Bob was the Project Engineer responsible for process analysis, process unit sizing, and final design for a \$25M expansion of the plant from 8 to 13.5 mgd project, which consisted of an activated sludge plant expansion, hypochlorite chlorination, and new sludge thickening and dewatering facilities.

New York Creek Lift Station Upgrade Project, El Dorado Irrigation District. Bob was Project Manager for the design and construction of this wastewater lift station. Project elements included three submersible pumps, new cast-in-place concrete wetwell, electrical building, and various site improvements. The new capacity of the station was 1400 gallons per minute (gpm). Additional project elements included an odor control system and emergency diesel generator. Phased construction to maintain operation of the existing station during construction was taken into consideration during design.

Roddy Ranch Pump Station Evaluation, City of Brentwood. As a subconsultant to Advanced Hydro Engineering, Bob provided evaluation services for this pump station. Primary considerations were reliability and ease of operation, as the vertical turbine pump station had experienced outages and continued operation was critical to the City's service needs.

FY 2009/2010 Treated Water Facility Improvements Project, Contra Costa Water District. Mr. Godwin is currently the Pumping System Expert for this project which involves preliminary and final design, as well as construction support services for upgrades to four of the District's pump stations. Improvements include drainage modifications, concrete repair, valve actuator replacements, piping modifications, generator installation, and electrical system replacements.