# EXHIBIT C

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8	AUDEDION COUNT OF THE	OTATE OF CALLEONIA
9	SUPERIOR COURT OF THE STATE OF CALIFORNIA  FOR THE COUNTY OF LOS ANGELES	
11	TOK THE COOK! I OF LOS ANGELLS	
12	ANTELOPE VALLEY GROUNDWATER CASES	RELATED CASE TO JUDICIAL COUNCIL COORDINATION
13	m to me the material to the death of the state of	PROCEEDING NO. 4408
1.4	This Pleading Relates to Included Action: REBECCA LEE WILLIS, on behalf of herself	The Honorable Jack Komar Coordination Trial Judge
1.5	and all others similarly situated,  Plaintiff,	DECLARATION OF THOMAS HARTER IN SUPPORT OF MOTION FOR EXPERT
16	VS.	WITNESS FEES
17	LOS ANGELES COUNTY WATERWORKS	Date: TBD Time: TBD
18	DISTRICT NO. 40; CITY OF LANCASTER; CITY OF LOS ANGELES; CITY OF	) Dept: LASC-1 )
19	PALMDALE; PALMDALE WATER DISTRICT; LITTLEROCK CREEK	) )
20	IRRIGATION DISTRICT; PALM RANCH IRRIGATION DISTRICT; QUARTZ HILL	)
21	WATER DISTRICT; ANTELOPE VALLEY WATER CO.; ROSAMOND COMMUNITY	) }
22 23	SERVICE DISTRICT; MOJAVE PUBLIC UTILITY DISTRICT; and DOES 1 through	/ }
24	I,000; Defendants.	) ) )
25	Detentiants.	•
26	111	
27	///	
28	///	
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I. Thomas Harter, declare: 1 2 3 1. I am a hydrologist at UC Davis. Attached to my declaration is a true and correct copy of my curriculum vitae. I make this declaration in support of a motion to be 4 appointed as an expert witness in this case. I have personal knowledge of the facts 5 6 contained in this declaration and am willing to testify to the facts herein. 7 2. I have agreed to provide the law firm of Krause, Kalfayan, Benink & Slavens 8 9 (KKBS) with expert hydrology/geology work in connection with the Antelope Valley groundwater adjudication. The work shall primarily include review, 10 analysis, and opinion regarding the work of other experts retained by various 11 12 parties in this litigation. Generally, I shall opine regarding the Safe Yield. 13 14 3. The gross budget for the work, fees, and costs, is estimated to be approximately \$85,000. I shall bill for professional services plus actual expenses only after the 15 court approves the scope of work and the budget. The 2009 billing rates for staff 16 17 are as follow: 18 19 Thomas Harter Testimony......\$600/hour 20 21 Research Associates \$60/hour to \$150/hour 22 23 I declare under penalty of perjury under the laws of California and the United States that 24 the foregoing is true and correct. Executed on 28 day of February, 2009, in 25 26 California. 27 28 - 2 -

# Thomas Harter, Ph.D.

## Robert M. Hagan Endowed Chair in Water Management and Policy

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### **Education and Other Qualifications**

PhD, Hydrology, University of Arizona, 1994 MS(Diplom), Phys. Geography/Hydrology, Universität Freiburg & Universität Stuttgart, Germany, 1989 BS (Vordiplom), Physical Geography/Hydrology, Universität Freiburg, 1985

#### Honors, Fellowships, Awards

2007-current, Robert M. Hagan Endowed Chair, Water Management and Policy 2008, Western Extension Directors' Award of Excellence 2007, Kevin J. Neese Award, Groundwater Resources Association of California 1991/92, Harshbarger Fellow, University of Arizona 1985/86, Fulbright Scholar, University of Arizona 1983/89, Fellow of the Studienstiftung des Deutschen Volkes, Bonn, Germany

## **Society Memberships**

American Geophysical Union European Geosciences Union National Ground Water Association Interantional Association of Hydrologic Sciences

## **Editorial and Professional Responsibilities**

Associate Editor, Water Resources Research Associate Editor, Vadose Zone Journal Board of Directors, Groundwater Resources Association

#### Representative Project Experience

Deep Vadose Zone Characterization and Flow/Contaminant Transport Modeling, Principal investigator on several studies to investigate deep groundwater recharge and nitrate/pesticide transport in thick, heterogeneous, alluvial vadose zones; including field characterization, laboratory measurements, and advanced computer modeling.

Groundwater Modeling Research Projects, Principal investigator on projects involving the development of basin groundwater- and surface water models, e.g., for the development of a conjunctive use management strategy in a 1,500 sq. mile watershed, eastern Tulare Lake Basin, California, and for protecting base-flow conditions in the Scott River, Klamath Basin, California; development of a regional stochastic groundwater model for the assessment of deep groundwater contamination from shallow saline water in a 550 square mile watershed in the Western San Joaquin Valley, California. Modeling projects involve model conceptualization, data compilation, data processing, integration of geostatistical, GIS, database, and groundwater modeling software (GSLIB, ArcGIS, MS Access, MODIFLOW, MT3D, RWHET), programming (Fortran, Matlab, Comsol), model calibration, application, and research.

Contaminant Emission and Subsurface Transport in (Animal) Agriculture, Principal Investigator and Co-Investigator on a suite of research and extension projects dealing with groundwater contamination from dairies and other confined animal facilities, and from other agricultural landuses; long-term pollution; field reconnaissance, monitoring, groundwater modeling (flow, transport, quality); development of monitoring networks and best management practices; environmental fate and transport of salts, nitrate, pathogens (Cryptosporidium, E. Coli H7 O157, Salmonella, Campylobacter), antibiotics and other pharmaceuticals, steroid hormones, groundwater forensics related to animal farming; mathematical/computational methods for fate and transport modeling, upscaling across bench-, plot-, field-, farm-, to regional scale.

Scientific and Technical Advising, Public Service, Extensive technical reviews of various groundwater development projects and participation on technical panels, review committees, and technical advisory committees (Kaweah River Rock Gravel Mine, Tulare County; Calaveras Mining project, Fresno County; Canada del Oro Recharge Study, Pima County; Calfed Water Use Efficiency-Water Measurement Panel; USDA-NRCS P-Index Technical Committee; USDA-NRCS Comprehensive Nutrient Management Planning Technical Committee; US EPA Bank Filtration Technical Advisory Committee; Monterey County Nitrate Technical Advisory Committee; Scott Valley Water Committee; Tulare County Water Commission; California Dairy Quality Assurance Program, and others)

### Short Courses and Workshops Developed and Taught

"Principles of Groundwater Flow and Transport Modeling." 3-day short course.

"Introduction to Vadose Zone Modeling." 3-day short course.

"Groundwater, Wells, and Pumps: A Workshop for Growers." 1-day workshop.

"The Groundwater Workshop." 1-day workshop.

"Applied Groundwater Hydrology: Principles, Measurements, and Interpretation." 2-day short course.

"Drinking Water Source Assessment in Groundwater and Surface Water." 2-day short course.

"Introduction to Groundwater and Watershed Hydrology: Monitoring, Assessment and Protection." 2-day short course.

"Practice of Groundwater Flow & Transport Modeling." Upper level course, UC Davis

#### **Publications** (\* indicates peer-reviewed):

- \* Watanabe, N., T. Harter, and B. A. Bergamaschi, 2008. Environmental occurrence and shallow groundwater detection of the antibiotic Monensin from dairy farms. J. Environ. Qual. 37:S-78–S-85. doi:10.2134/jeq2007.0371.
- \* Harter, T. and L. Rollins (eds.), 2008. Watersheds, Groundwater, and Drinking Water A Practical Guide. University of California Agriculture and Natural Resources Publication 3497. 274pp.
- \* Rains, M.C., R. A. Dahlgren, G. E. Fogg, T. Harter, and R. J. Williamson, 2008. Geological control of physical and chemical hydrology in California vernal pools. Wetlands 28(2):347-362. (pdf file for personal use only)
- \* Chomycia, J.C., P.J. Hernes, T. Harter, and B.A. Bergamaschi, 2008. Land management impacts on dairy-derived dissolved organic carbon in ground water. J. Env. Qual. 37(2), 333-343. doi:10.2134/jeq2007.0183.

- \* Harter, T., E. R. Atwill, L. L. Hou, B. M. Karle, and K. W. Tate, 2008. Developing risk models of Cryptosporidium transport in soils from vegetated, tilted soilbox experiments. J. Environ. Qual. 37: 245-258.
- \* Vereecken, H., T. Kamai, T. Harter, R. Kasteel, J. Hopmans, and J. Vanderborght, 2007. Explaining soil moisture variability as a function of mean soil moisture: A stochastic unsaturated flow perspective, Geophys. Res. Lett., 34, L22402, doi:10.1029/2007GL031813.
- \* Singleton, M. J., B. K. Esser, J. E. Moran, G. B. Hudson, W. W. McNab, and T. Harter, 2007. Saturated zone denitrification: Potential for natural attenuation of nitrate contamination in shallow groundwater under dairy operations. Env. Sci. & Technol. 41 (3), 759-765.
- \* Cortis, A., T. Harter, L. L. Hou, E. R. Atwill, A. I. Packman, P. G. Green, 2007. Transport of Cryptosporidium parvum in porous media: Long-term elution experiments and continuous time random walk filtration modeling. Water Resour. Res. 42(12), W12S13, doi:10.1029/2006WR004897.
- \* Vereecken, H., R. Kasteel, J. Vanderborght, and T. Harter. 2007. Upscaling hydraulic propertes and soil water flow processes in heterogeneous soils: a review. Vadose Zone Journal 6(1), 1-28.
- \* Zhang, H., T. Harter, and B. Sivakumar, 2006. Nonpoint source solute transport normal to aquifer bedding in heterogeneous, Markov chain random fields, Water Resour. Res., Vol. 42, No. 6, W06403, 10.1029/2004WR003808.
- \* Marques, G. F., J. R. Lund, M. R. Leu, M. Jenkins, R. Howitt, T. Harter, S. Hatchett, N. Ruud, and S. Burke, 2006. Economically driven simulation of regional water systems: Friant-Kern, California. J. of Water Resour. Mgmt. and Planning 132 (6): 468-479.
- \* Cable-Rains, M., G. E. Fogg, T. Harter, R. A. Dahlgren, and R. J. Williamson, 2006. The role of perched aquifers in hydrological connectivity and biogeochemical processes in vernal pool landscapes, Central Valley, California. Hydrol. Process. 20, 1157–1175.
- \* Searcy, K.E., A. I. Packman, E. R. Atwill, and T. Harter, 2006. Deposition of Cryptosporidium oocysts in streambeds. Applied and Environmental Microbiology, 72(3):1810-1816.
- \* Chang, A., T. Harter, J. Letey, D. Meyer, R. D. Meyer, M. Campbell-Mathews, F. Mitloehner, S. Pettygrove, P. Robinson, R. Zhang, 2006. Managing Dairy Manure in the Central Valley of California; University of California Committee of Experts on Dairy Manure Management. University of California Agriculture and Natural Resources Publication 9004, <a href="http://anrcatalog.ucdavis.edu">http://anrcatalog.ucdavis.edu</a>; 178 pp.
- \* Harter, T., 2005, Finite-size scaling analysis of percolation in three-dimensional correlated binary Markov chain random fields, Physical Review E 72(2), 26120 (8 pages), DOI: 10.1103/PhysRevE.72.026120.
- \* Harter, T., Y. S. Onsoy, K. Heeren, M. Denton, G. Weissmann, J. W. Hopmans, W. R. Horwath, 2005. Deep vadose zone hydrology demonstrates fate of nitrate in eastern San Joaquin Valley, *California Agriculture* 59(2):124-132.
- \* Searcy, K. E., A. Packman, E. R. Atwill, and T. Harter, 2005. Association of Cryptosporidium parvum with Suspended Particles: Impact on Oocyst Sedimentation, *Applied and Environmental Microbiology* 71(2):1072-1078.
- \* Sivakumar, B., T. Harter, and H. Zhang, 2005. Solute transport in a heterogeneous aquifer: A search for nonlinar deterministic dynamics, Nonlinear Processes in Geophysics 12(2):211-218.
- \* Sivakumar, B., T. Harter, H. Zhang, 2005. A fractal investigation of solute travel time in a

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Thomas Harter

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