

APPENDIX A
RESUME

DIMITRIOS VLASSOPOULOS, PhD

Senior Managing Scientist

EDUCATION

University of Virginia, PhD, Environmental Sciences, 2000

California Institute of Technology, MS, Geochemistry, 1993

McGill University, MS, Geological Sciences, 1989

Concordia University, BS, Geology (Honors), 1986

EXPERIENCE SUMMARY

Mr. Vlassopoulos has over 20 years experience in environmental geochemistry with focus on evaluating natural and anthropogenic effects on soil, sediment, and water quality, biogeochemical and reactive transport modeling, isotope hydrology, environmental forensics, and in-situ monitoring and treatment technologies.

REPRESENTATIVE PROJECT EXPERIENCE

Port of Seattle, Washington

Conducted geochemical evaluations of arsenic and mercury exceedances in groundwater, and demonstrated a natural background origin influenced by seasonal redox fluctuations in the vicinity of subsurface peat deposits.

Des Moines Creek Basin Commission, King County, Washington

Provided technical oversight and guidance to mitigate potential environmental impacts from arsenic-bearing soils at a stormwater detention facility construction site. Services included development of sampling and monitoring plans, evaluation of arsenic mobility data, development and treatability testing of in-situ process for soil amendment to mitigate arsenic mobility during construction and subsequent operation of the facility.

Barbee Mill, Renton, Washington

Provided technical guidance and remedial design assistance for arsenic-contaminated groundwater at a former industrial site undergoing restoration for residential redevelopment. Evaluation of site conditions and remedial alternatives including in situ redox manipulation and permeable reactive barriers to ensure restoration within the client's required timeframe.

Sherwin Williams, Emeryville, California

Retained to provide technical guidance and peer-review of remedial feasibility investigations at a former lead arsenate pesticide manufacturing facility.

Rhone-Poulenc Inc., California and New Jersey

Evaluated former industrial sites contaminated with arsenic. Activities included demonstration of natural attenuation of groundwater arsenic plume, in-situ arsenic fixation of soil by chemical treatment, and design and pilot testing of an in-situ groundwater treatment system using zero-valent iron.

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Seattle-Tacoma International Airport

Conducted a vadose zone fate and transport modeling analysis to evaluate potential water quality impacts from fill materials used for construction of the third runway embankment, in support of permit applications and PCHB hearings.

Port of Vancouver, Washington

Retained as expert witness in environmental remediation cost recovery litigation. Evaluated role of surface water on the groundwater flow system and groundwater contamination from multiple chlorinated solvent sources using compound-specific stable isotope signatures to allocate commingled groundwater plume. The case was settled to the satisfaction of the client.

Noveon, Kalama, Washington

Conducted an evaluation of natural and enhanced attenuation for diphenyl ether and other chemicals in groundwater at an operating chemical plant, and developed an in situ bioremediation scheme to shorten cleanup timeframe. A Cleanup Action Plan was submitted and approved. The project is currently in design phase.

Oregon Steel Mill, Portland, Oregon

Conducted a geochemical evaluation of impacts from slag fill on shallow groundwater quality and demonstrated to ODEQ that offsite migration of dissolved metals was being mitigated by natural attenuation.

Electric Power Research Institute

Developed a geochemical reaction database for modeling adsorption of oxyanion-forming elements (antimony, arsenic, boron, chromium, molybdenum, selenium, sulfate, vanadium) on iron hydroxides.

Mamm Creek Hydrogeologic Evaluation

Conducted a critical review of a Garfield County consultant report on groundwater quality impacts related to gas drilling and production activities on behalf of the COGCC. The review evaluated the report's conclusions by analyzing an updated groundwater quality database for the study area provided by COGCC to assess whether dissolved methane and chloride concentrations showed statistically significant time trends. Findings were presented before the Commission.

Columbia Basin Ground Water Management Area, Washington

Evaluation of regional and locally enhanced groundwater recharge to basalt aquifers through multivariate statistical analysis of regional hydrochemistry data, collection, and interpretation of ambient geochemical and isotope tracer data, and groundwater age dating.

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Columbia Basin Ground Water Management Area, Washington

Evaluated seasonal, geologic and hydrologic controls on nitrate concentration trends in domestic wells completed in the suprabasalt sediment aquifers in the Pasco and Quincy Basins, demonstrating the importance of recharge from unlined canals in mitigating nitrate levels in some areas within the Columbia Basin Irrigation Project.

Confederated Tribes of the Colville Reservation, Washington

As part of a groundwater resource areas study, conducted a geochemical evaluation of sources and controls on arsenic concentrations in groundwater on the Colville Indian Reservation. Developed site selection guidelines to minimize potential risk of arsenic exceedances in future supply wells.

Gilliam and Morrow Counties, Oregon

For a confidential client, evaluated source and origin of dissolved hydrocarbon gases in the Columbia River Basalt aquifers based on gas geochemistry, stable isotope signatures, and age dating methods.

Western Snake River Plain Malheur County, Oregon

For a confidential client, evaluated source and origin of dissolved hydrocarbon gases and their relationship to the groundwater system using stable isotopes, noble gases, and age dating methods.

Colorado Oil and Gas Conservation Commission, Garfield County, Colorado

Conducted geochemical evaluations of groundwater and recharge sources in the Piceance Basin as part of a baseline water quality study prior to start of coalbed methane production in a 30-square-mile study area.

Higgins Farm Superfund Site, New Jersey

Retained to support remedial systems takeover and scope of work negotiations with USEPA on behalf of an industrial client. The project involved compilation and scrubbing of a multiyear groundwater quality database including data collected by multiple entities, and development and application of an automated process for evaluating and reporting robust trend statistics for constituent concentrations in many wells over time. The results of this analysis provided the basis for optimizing long-term monitoring efforts at the site.

Mexicali Valley Aquifer

Evaluated geochemical relationships between ground water and surface water in a regional aquifer. The effect of surface water recharge on regional groundwater quality was investigated by examining geospatial distributions of groundwater chemistry, using multivariate statistical methods to identify sources of water and solutes, and geochemical modeling to understand chemical evolution in the regional flow system.

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City of Portland Bureau of Water Works, Portland, Oregon

Evaluated occurrence, origin, and treatment options for manganese in the city's well field.

Soda Lake, Casper, Wyoming

Developed a biogeochemical fate and transport model for selenium in an artificially maintained playa lake to predict future ecological impacts for use in decision analysis of management options.

Agrico, Pensacola, Florida

Provided technical support for litigation involving groundwater contamination from a former fertilizer production plant. Reconstructed historical fluoride concentrations in wastewater through geochemical modeling and used radioisotope data to evaluate sources of radium in groundwater.

Union Pacific Railroad, Eugene, Oregon

Evaluated potential for CVOC exposure through soil vapor intrusion pathway in homes adjacent to a rail yard and successfully demonstrated to ODEQ that CVOCs in ambient air, and not groundwater, were responsible for the majority of the contamination detected in crawl space air samples.

Orion Safety Products

Conducted a state-wide evaluation of potential for stormwater quality impacts from perchlorate present in safety flares used on California highways.

Wah Chang Superfund Site, Albany, Oregon

Evaluated effectiveness of natural attenuation in meeting ROD-required cleanup time frame for chlorinated solvents in groundwater. The analysis was accepted by EPA Region 10.

General Electric, Rome, Georgia

Developed and applied a laboratory soil-water partitioning procedure for PCB contaminated soils to determine site-specific risk-based soil cleanup levels for groundwater protection.

Interstate Technology Regulatory Council

Developed and co-authored the regulatory guidance document *A Systematic Approach to In Situ Bioremediation, Including Nitrate, Carbon Tetrachloride and Perchlorate*. Served as instructor for training class based on this document.

City of Tigard, Oregon

Conducted water quality/compatibility evaluation for operating aquifer storage recovery (ASR) system.

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Sunrise Water Authority, Oregon

Conducted water quality compatibility evaluation for ASR pilot study.

City of Salem, Oregon

Evaluated disinfection byproduct formation potential during storage phase in an operating ASR system.

Baker City, Oregon

Evaluated water quality compatibility for ASR project, using geochemical modeling to predict potential effects of subsurface mixing of source water with native groundwater

U.S. Environmental Protection Agency

Developed framework for characterizing and assessing risks of exposure and environmental effects risk associated with geologic carbon sequestration, in support of regulatory guidance development.

Nestlé Waters America

Conducted water quality evaluations related to development and production quality control of spring water bottling operations.

Town of Poolesville, Maryland

Investigated causes of elevated gross alpha radioactivity in several of the community's water supply wells, and developed a monitoring and treatment plan to ensure compliance with federal drinking water regulations.

Palermo Wellfield Superfund Site, Tumwater, Washington

Evaluated source of groundwater contamination by chlorinated solvents using compound-specific stable isotope analysis for cost recovery case. Testified in Federal Court.

Crompton, Elmira, Ontario

Retained as expert witness in liability allocation of a commingled groundwater ammonia. Allocated ammonia between two sources based on stable nitrogen isotope signatures. The case was settled to the satisfaction of the client.

U.S. Department of Justice

Served as expert for environmental torts claims related to groundwater contamination by chlorinated solvents at military installations and other government facilities.

Photographic Imaging Manufacturers Association

Conducted an independent review of the USEPA's human exposure risk assessment for silver-bearing wastes.

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Senior Managing Scientist

Pier 64, San Francisco, California

Evaluated the biodegradation of petroleum hydrocarbons and origin of methane in groundwater along the shore of San Francisco Bay. Study involved dissolved gas sampling and use of compound-specific isotope signatures to identify sources and degradation pathways and rates.

Berkeley Pit, Butte, Montana

Provided technical support in litigation over allocation of liability for cleanup costs between PRPs. Evaluated the impact of historical and ongoing operations on pit-lake water quality and cleanup costs based on field, laboratory, and geochemical modeling studies.

Atlantic Richfield Company, Clark Fork River, Montana

Provided technical support for natural resource damage litigation at historical mining and smelting operations. Evaluations included field sampling, characterization and modeling studies of metals attenuation in groundwater, estimation of background (pre-mining) groundwater quality in the Butte mining district, and identification and separation of mining-waste-related sulfate from natural geothermal sulfate loading to the Clark Fork River using stable isotope signatures.

U.S. National Park Service, Kentucky

Designed and implemented an extensive field investigation at a historic coal mining district to identify and characterize multiple mine drainage sources discharging to a designated Wild and Scenic River. The project included evaluation of pollutant loadings through long-term and storm-event monitoring, and prioritizing point sources for remediation. Isotope tracers were used to estimate seepage rates from coal spoil piles.

Numerous Sites and Clients

Evaluated nature, sources and reconstructed release histories at several sites affected by petroleum hydrocarbons using hydrocarbon fingerprinting techniques, stable isotopes, and simulation modeling.

Transco, Eastern United States

Provided technical support for development of remedial investigation plan for a large number of natural gas transport facilities across the eastern United States. Project involved the definition of risk-based action levels, based on a detailed compositional fate and transport model for petroleum hydrocarbon fractions.

ChemDyne Superfund Site

Evaluated contaminant mass removal by a pump-and-treat system operating for 15 years and estimated subsurface contaminant distribution for use in transport modeling. Prepared a report that was submitted and approved by USEPA.

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Panhandle Eastern Pipeline Company

Developed a protocol for evaluating subsurface natural attenuation of PCBs and petroleum hydrocarbons at multiple sites along a major pipeline system. Developed a specialized field filtration technique for sampling PCBs in groundwater.

PUBLICATIONS

Book

O'Day, P., D. Vlassopoulos, X. Meng, and L.G. Benning, editors. 2005. *Advances in Arsenic Research: Integration of Experimental and Observational Studies and Implications for Mitigation*. ACS Symposium Series Vol. 915. Washington, DC: American Chemical Society/Oxford University Press. 450 p.

Articles

Vlassopoulos, D., B. Bessinger, and P. O'Day. 2010. Aqueous solubility of As_2S_3 and thermodynamic stability of thioarsenites. In *Water-Rock Interaction*. Birkle, P., and I.S. Torres-Alvarado, editors. Boca Raton: CRC Press. 823-826.

Root, R.A., D. Vlassopoulos, N.A. Rivera, M.T. Rafferty, C. Andrews, and P.A. O'Day. 2009. Speciation and Natural Attenuation of Arsenic and Iron in a Tidally Influenced Shallow Aquifer. *Geochimica et Cosmochimica Acta*. 73: 5528-5553.

Serrano, S., P.A. O'Day, D. Vlassopoulos, M.T. Garcia-Gonzalez, and F. Garrido. 2009. A Surface Complexation and Ion Exchange Model of Pb and Cd Competitive Sorption on Natural Soils: *Geochimica et Cosmochimica Acta*. 73: 543-558.

Adams, D.J., B. Faris, and D. Vlassopoulos. 2006. Evaluating In Situ Bioremediation for Groundwater Cleanup: *Chemical Engineering Progress*. 102, no. 2: 20-28.

Vlassopoulos, D., N. Rivera, P.A. O'Day, M.T. Rafferty, and C.B. Andrews. 2005. Arsenic Removal by Zerovalent Iron: A Field Study of Rates, Mechanisms, and Long-Term Performance. In *Advances in Arsenic Research: Integration of Experimental and Observational Studies and Implications for Mitigation*. O'Day, P.A., D. Vlassopoulos, X. Meng, and L.G. Benning, editors. ACS Symposium Series Vol. 915. Washington, DC: American Chemical Society. 344-360.

O'Day, P.A., D. Vlassopoulos, R. Root, and N. Rivera. 2004. The Influence of Sulfur and Iron on Dissolved Arsenic Concentrations in the Shallow Subsurface Under Changing Redox Conditions: *Proceedings of the National Academy of Sciences of the United States of America*. 101: 13703-13708.

Faris, B., and D. Vlassopoulos. 2003. A Systematic Approach to In Situ Bioremediation in Groundwater: *Remediation*. 13: 27-52.

Raffensperger, J.P., and D. Vlassopoulos. 1999. The Potential for Free and Mixed Convection in Sedimentary Basins: *Hydrogeology Journal*. 7: 505-520.

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- Wood, S.A., C.D. Tait, D. Vlassopoulos, and D.R. Janecky. 1994. Solubility and Spectroscopic Studies of the Interaction of Palladium with Simple Carboxylic Acids and Fulvic Acid at Low Temperature: *Geochimica et Cosmochimica Acta*. 58: 625-637.
- Vlassopoulos, D., G.R. Rossman, and S.E. Haggerty. 1993. Coupled Substitution of H and Minor Elements in Rutile and Implications of High OH Contents in Nb- and Cr-Rich Rutile from the Upper Mantle: *American Mineralogist*. 78: 1181-1191.
- St-Seymour, K., and D. Vlassopoulos. 1992. The Importance of Magma Mixing at Nisyros Volcano, Greece, as Inferred from Incompatible Trace Element Systematics: *Journal of Volcanology and Geothermal Research*. 50: 273-299.
- St-Seymour, K., D. Vlassopoulos, T.H. Pearce, and C. Rice. 1990. The Record of Magma Chamber Processes in Plagioclase Phenocrysts at Thera Volcano, Aegean Volcanic Arc, Greece: *Contributions to Mineralogy and Petrology*. 104: 73-84.
- Vlassopoulos, D., and S.A. Wood. 1990. Gold Speciation in Natural Waters I. Solubility and Hydrolysis Reactions of Gold in Aqueous Solution: *Geochimica et Cosmochimica Acta*. 54: 3-12.
- Vlassopoulos, D., S.A. Wood, and A. Mucci. 1990. Gold Speciation in Natural Waters II. The Importance of Organic Complexing - Experiments with Some Simple Model Ligands: *Geochimica et Cosmochimica Acta*. 54: 1575-1586.
- Wood, S.A., and D. Vlassopoulos. 1990. The Dispersion of Pt, Pd, and Au in Surficial Media about Two PGE-Cu-Ni Prospects in Quebec: *Canadian Mineralogist*. 28: 649-663.
- Wood, S.A., D. Vlassopoulos, and A. Mucci. 1990. Effects of Concentrated Matrices on the Determination of Trace Levels of Palladium and Gold in Aqueous Samples Using Solvent Extraction-Zeeman Effect Graphite Furnace Atomic Absorption Spectrometry and Inductively Coupled Plasma-Mass Spectrometry: *Analytica Chimica Acta*. 229: 227-318.
- St-Seymour, K., and D. Vlassopoulos. 1989. The Potential for Future Explosive Volcanism Associated with Dome Growth at Nisyros, Aegean Volcanic Arc, Greece: *Journal of Volcanology and Geothermal Research*. 37: 351-364.
- Wood, S.A., and D. Vlassopoulos. 1989. Experimental Determination of the Hydrothermal Solubility and Speciation of Tungsten at 500° C and 1 kbar: *Geochimica et Cosmochimica Acta*. 53: 303-312.
- St-Seymour, K., S. Kumarapeli, and D. Vlassopoulos. 1988. Petrotectonics of Achaean Yasinski Metabasalts, Superior Province, Canada: Implications for Genesis of Achaean Greenstone Belts: *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*. 177: 165-183.

Theses

- Vlassopoulos, D. 2000. The Origins of Molecular Nitrogen in the Subsurface: Thermodynamic, Kinetic and Isotopic Constraints. PhD dissertation. University of Virginia.
- Vlassopoulos, D. 1989. Some Experimental Studies Bearing on the Solubility and Speciation of Gold in Natural Waters. MS thesis. McGill University.

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Selected Conference Presentations

- Vlassopoulos, D., J. Goin, M. Zeff, K. Lindsey, T. Tolan, and V. Johnson. 2009. Regional Groundwater Geochemistry of the Columbia River Basalt Aquifer System, South-Central Washington. GSA Annual Meeting, Portland, Oregon, October 18-21.
- Vlassopoulos, D., M. Karanovic, V. Johnson, C.A. Gazis, T. Tolan, and K. Lindsey. 2009. Groundwater Recharge and Residence Times in the Columbia River Basalt Aquifer System, Washington. GSA Annual Meeting, Portland, Oregon, October 18-21.
- Goin, J., D. Vlassopoulos, and M. Nielson. 2009. Factors Influencing Nitrate Distribution in Groundwater of the Columbia Basin Ground Water Management Area. GSA Annual Meeting, Portland, Oregon, October 18-21.
- Serrano, S., P.A. O'Day, B. Bessinger, and D. Vlassopoulos. 2009. Immobilization of Mercury(II) by Ettringite-Type Phases: Modeling and Experiments. GSA Annual Meeting, Portland, Oregon, October 18-21.
- Vlassopoulos, D., B. Bessinger, V. Illera and P. O'Day. 2009. Lithologic, Hydrologic, and Biogeochemical Influences on Spatio-Temporal Variability of As and Hg Concentrations in Groundwater. *Geochimica et Cosmochimica Acta*, vol 73, p. A1389. Goldschmidt 2009, Davos, Switzerland.
- O'Day, P.A., S. Serrano, B. Bessinger, V. Illera and D. Vlassopoulos. 2009. Sediment Remediation of Metal and Metalloid Contaminants with Reactive Amendments. *Geochimica et Cosmochimica Acta*, vol 73, p. A959. Goldschmidt 2009, Davos, Switzerland.
- Vlassopoulos, D., J. Goin, C. Gazis, and V. Johnson. 2009. Environmental Isotope and Age Tracer Studies in the Columbia Basin Ground Water Management Area. Presentation at the 7th Washington Hydrogeology Symposium, Tacoma, Washington, April 27-30.
- Bessinger, B., and D. Vlassopoulos. 2009. A Geochemical Reactive Transport Model of Arsenic and Trihalomethanes in Aquifer Storage & Recovery Systems. Presentation at the 7th Washington Hydrogeology Symposium, Tacoma, Washington, April 27-30.
- Goin, J.C., and D. Vlassopoulos. 2009. Distribution and Seasonal Trends of Nitrate in Unconfined Aquifers of the Pasco and Quincy Basins, Washington. Presentation at the 7th Annual Washington Hydrogeology Symposium, Tacoma, Washington, April 27-30.
- Vlassopoulos, D. 2009. The Age of Groundwater in Columbia River Basalt Aquifers, East-Central Washington. Invited Presentation at the Oregon Ground Water Association Spring Technical Meeting, Silverton, Oregon, March 7.
- Bessinger, B., D. Vlassopoulos, S. Serrano, and P. O'Day. 2009. Reactive Transport Modeling of Arsenic and Mercury in a Chemically Amended Sediment Cap. Presentation at the Fifth International Conference on Remediation of Contaminated Sediments. Jacksonville, Florida, February 2-5, 2009.
- Vlassopoulos, D., S. Serrano, D.G. Kinniburgh, and D.L. Parkhurst. 2008. A CD-MUSIC Surface Complexation Database for Modeling Oxyanion Sorption on Iron Oxyhydroxides. *Geochimica*

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- et *Cosmochimica Acta*, vol 72, p. A986. Goldschmidt 2008, Vancouver, BC.
- Root, R. A., P.A. O'Day, J. Hering, K.M. Campbell, and D. Vlassopoulos. 2008. Predicting arsenic behavior in high iron subsurface environments. *Geochimica et Cosmochimica Acta*, vol 72, p. A805. Goldschmidt 2008, Vancouver, BC.
- Vlassopoulos, D. 2008. Application of Stable Isotopes to Site Characterization: CVOC Sources, Commingled Plumes, and Groundwater-Surface Water Interactions. Invited Presentation at the U.S. Environmental Protection Agency Ground water Forum, Portland Oregon, July 8-10.
- Vlassopoulos, D., M. Conrad, M.J. Riley, T. Belunes, and P. Boyden. 2007. Environmental and Compound-Specific Stable Isotopes: Geochemical Forensic Tools with Application to Site Characterization in a Complex Hydrogeologic Situation. Oral presentation at the 6th Washington Hydrogeology Symposium, May 1-3, Tacoma, Washington.
- Vlassopoulos, D., M.J. Riley, J. Strunk, and P. Agid. 2007. Biogeochemical Controls on Spatial and Temporal Variability of Arsenic Concentrations in Shallow Groundwater, Seattle-Tacoma International Airport. Oral presentation at the 6th Washington Hydrogeology Symposium, May 1-3, Tacoma, Washington.
- Vlassopoulos, D., M. Conrad, and M.J. Riley. 2007. Source Identification and Allocation of Chlorinated Solvent Contamination Among Multiple Sources: Use and Limitations of Compound-Specific Isotope Analysis. Abstract and Oral Presentation at the Groundwater Resources Association Symposium on Applications of Isotope Tools to Groundwater Studies, March 28-29, Concord, California. Concord, CA. March 23-29.
- Serrano, S., P.A. O'Day, D. Vlassopoulos, F. Garrido, and T. García-González. 2006. Surface Complexation Modeling of Competitive Adsorption of Pb and Cd on Soils. Abstract and Oral Presentation at the 232nd American Chemical Society National Meeting, September 10-14, San Francisco, California. San Francisco, California
- Illera, V., P.A. O'Day, S. Cho, N.A. Rivera, R. Root, M. Rafferty, and D. Vlassopoulos. 2006. Immobilization of Arsenic in a Contaminated Soil Using Ferrous Sulfate and Type V Portland Cement. Poster presentation at the 232nd American Chemical Society National Meeting, September 10-14, San Francisco, California. San Francisco, California.
- Vlassopoulos, D., D. Sorel, T. Luong, M. Karanovic, M. Tonkin, K. Chiang, M. Rafferty, and M. Riley. 2006. Assessment of Potential Perchlorate Impacts from Use of Safety Flares Along California Roadways. Presented at the Groundwater Resources Association (GRA) 16th Symposium in the Contaminants in Groundwater Series--Perchlorate 2006: Progress Toward Understanding and Cleanup, January 26, 2006, Santa Clara, California.
- Illera, V., P.A. O'Day, N. Rivera, R. Root, M.T. Rafferty, and D. Vlassopoulos. 2005. Soil Remediation of an Arsenic-Contaminated Site With Ferrous Sulfate and Type V Portland Cement: EOS Transactions American Geophysical Union. 86, no. 52, Fall Meeting Supplement: Abstract B31A-0954.
- O'Day, P.A., and D. Vlassopoulos. 2004. Biogeochemical Controls on Speciation, Fate, and Cycling of Arsenic in Subsurface Environments. Presented at the GRA Symposium on Arsenic in Groundwater: Impacts on a Critical Resource, October 18-19, 2004, Fresno, California.

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- Rivera, N., P.A. O'Day, R. Root, and D. Vlassopoulos. 2004. Arsenic Removal by Zero Valent Iron. Presented at the GRA Symposium on Arsenic in Groundwater: Impacts on a Critical Resource, October 18-19, 2004, Fresno, California.
- Root, R., P.A. O'Day, N. Rivera, V. Illera, and D. Vlassopoulos. 2004. Redox-Controlled Natural Attenuation of Arsenic in a Tidally Influenced Shallow Aquifer. Presented at the GRA Symposium on Arsenic in Groundwater: Impacts on a Critical Resource, October 18-19, 2004, Fresno, California.
- O'Day, P.A., and D. Vlassopoulos. 2003. A General Biogeochemical Model for Arsenic Cycling in Shallow Aquifers. Presented at the 226th American Chemical Society National Meeting, September 7-11, 2003, New York, New York.
- Rafferty, M.T., C.B. Andrews, D. Vlassopoulos, D. Sorel, and K.M. Binard. 2003. Remediation of an Arsenic Contaminated Site. Presented at the 226th American Chemical Society National Meeting, September 7-11, 2003, New York City, New York.
- Rivera Jr., N.A., P.A. O'Day, D. Vlassopoulos, and R. Root. 2003. Mechanisms of Arsenic Removal by Zero Valent Iron Reactive Barriers. Presented at the 226th American Chemical Society National Meeting, September 7-11, 2003, New York, New York.
- Root, R., P.A. O'Day, N.A. Rivera Jr., and D. Vlassopoulos. 2003. Natural Attenuation of Arsenic Under Fluctuating Redox Conditions in Contaminated Estuary Sediments. Presented at the 226th American Chemical Society National Meeting, September 7-11, 2003, New York, New York.
- Vlassopoulos, D., C.B. Andrews, M. Rafferty, P.A. O'Day, and N.A. Rivera Jr. 2003. In Situ Arsenic Removal by Zero Valent Iron: An Accelerated Pilot Test Simulating Long-Term Permeable Reactive Barrier Performance. Presented at the 226th American Chemical Society National Meeting, September 7-11, 2003, New York City, New York.
- O'Day, P.A., and D. Vlassopoulos. 2002. Applications of Synchrotron X-ray Absorption Spectroscopy to Biogeochemical Speciation, Fate, and Remediation of Metal and Metalloid Contaminants in Natural Settings. Presented at the American Geophysical Union Fall Meeting, San Francisco, California. (invited speaker). In *Eos*. 83.
- Vlassopoulos, D., J. Pochatila, A. Lundquist, C.B. Andrews, M.T. Rafferty, K. Chiang, D. Sorel, and N.P. Nikolaidis. 2002. An Elemental Iron Reactor for Arsenic Removal from Groundwater. In *Proceedings of the Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds*, May 20-23, 2002, Monterey, California. Gavaskar, A.R., and A.S.C. Chen, editors. Battelle Press.
- O'Day, P.A., D. Vlassopoulos, and R. Root. 2001. Direct Determination of Arsenic and Iron Speciation In Sediments and Groundwater Using X-Ray Absorption Spectroscopy: A Tidal Marsh Case Study. Presented at the Geological Society of America Annual Meeting, Boston, Massachusetts. In *Abstracts with Programs*, Geological Society of America. A117.
- Andrews, C.B., and D. Vlassopoulos. 2000. Modeling the Migration of Arsenic in Groundwater, Understanding the Processes. Geological Society of America, Annual Meeting, October, 2000, Reno, Nevada. In *Abstracts with Programs*, Geological Society of America. A406-7.

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- Vlassopoulos, D., and C.B. Andrews. 2000. The Intertwined Fate of Iron and Arsenic in Contaminated Groundwater Entering a Tidal Marsh, San Francisco Bay. National Ground Water Association Theis 2000 Conference on Iron in Groundwater, September 15-18, 2000, Jackson Hole, Wyoming. (invited speaker).
- Vlassopoulos, D., C. Andrews, R. Hennes, and S. Macko. 1999. Natural Immobilization of Arsenic in the Shallow Groundwater of a Tidal Marsh, San Francisco Bay. Presented at the The American Geophysical Union 1999 Spring Meeting, May 31-June 4, Boston, Massachusetts.
- Vlassopoulos, D., S.A. Macko, M. Schoell, and Y. Tang. 1999. Origin of Molecular Nitrogen in the Subsurface: Thermodynamic and Kinetic Pathways and Associated Isotopic Fractionations. Presented at the American Association of Petroleum Geologists Hedberg Research Conference on Natural Gas Formation and Occurrence, Durango, Colorado.
- Vlassopoulos, D., S.A. Macko, M. Schoell, Y. Tang, and E. Zhang. 1998. Generation of Nitrogen Gas During Thermal Evolution of Sedimentary Basins: An Experimental Investigation of Isotopic Fractionation. Presented at the Geological Society of America Annual Meeting, San Diego, California. In GSA Abstracts w. Programs. A214.
- Lolcama, J.L., D. Vlassopoulos, and S. Bakaletz. 1997. Field Implementation of a Novel Hydrochemistry Approach for Abandoned Mine Land Characterization. HazWaste World/Superfund XVIII Conference and Exhibition, December 1-4, 1997, Washington, DC. In Proceedings of the HazWaste World/Superfund XVIII Conference. 237-246.
- Vlassopoulos, D. 1997. Subsurface Fluid Reservoirs on Mars: A Possible Explanation for the Fate of an Early Greenhouse Atmosphere. Presented at the Lunar and Planetary Institute Conference on Early Mars, Houston, Texas.
- Vlassopoulos, D., P. Lichtner, W. Guo, and R. Hennes. 1995. Long-Term Controls on Attenuation of Mine-Waste Related Contamination in Alluvial Aquifers: The Role of Aluminosilicate Clay Minerals. Proceedings of the American Geophysical Union, 1995 Spring Meeting, Baltimore, Maryland, May 30-June 2. In Eos Supplement. 76, no. 17. S150.
- Wood, S.A., C.D. Tait, D. Janecky, and D. Vlassopoulos. 1991. The Interaction of Pd with Fulvic Acid and Simple Organic Acids - Solubility and Spectroscopic Studies. Presented at the Geological Society of America, 1991 Annual Meeting, San Diego, California, United States, October 21-24, 1991. In Eos. 71. 626. Also presented at the Geological Society of America, 1991 Annual Meeting. Abstracts with Programs - Geological Society of America. 23, no. 5: 214.
- Vlassopoulos, D., G.R. Rossman, and S.E. Haggerty. 1990. Hydrogen in Natural and Synthetic Rutile (TiO₂): Distribution and Possible Controls on its Incorporation. Presented at the American Geophysical Union Spring Meeting, May 29-June 1, 1990, Baltimore, Maryland. In Eos. 71, no. 17. 626. April 24. Also presented at the American Chemical Society National Meeting, Dallas, Texas.
- Vlassopoulos, D., and S.A. Wood. 1989. The Speciation of Au in Natural Waters: The Importance of Hydrolysis Reactions and Dissolved Organic Ligands. Presented at the GAC-MAC Joint Annual Meeting, Montreal, Quebec. In GAC-MAC Program with Abstracts. 14. A94.

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- Vlassopoulos, D., S.A. Wood, and A. Mucci. 1989. Contents of Pt, Pd, and Au in Lake and Ground Waters Associated with Two Pt-Pd Showings in Mafic Rocks in Quebec. Presented at the Geological and Mineralogical Associations of Canada (GAC-MAC) Joint Annual Meeting, Montreal, Quebec. In GAC-MAC Program with Abstracts. 14. A71.
- Wood, S.A., D. Vlassopoulos, and P. Kranidiotis. 1989. The Volatility of High Technology (Li, Be, Ga, Ge, REE, Nb, Ta) and Related Metals in Magmatic Systems: Applications to Ore Formation. Presented at the Geological and Mineralogical Associations of Canada (GAC-MAC) Annual Meeting, Montreal, Quebec. In GAC-MAC Program with Abstracts. 14. A32.
- Vlassopoulos, D., and S.A. Wood. 1988. Comparison of Extraction Techniques for Au and Pt in Concentrated Aqueous Solutions and Applications to Graphite Furnace Atomic Absorption Spectrometry. Presented at the American Geophysical Union Spring Meeting, Baltimore, Maryland. In Eos. 69.
- Vlassopoulos, D., S.A. Wood, and A. Mucci. 1988. The Solubility and Speciation of Gold in Aqueous Solutions Containing Organic Ligands at 25°C. Presented at the Goldschmidt Conference, The Geochemical Society Meeting, Baltimore, Maryland, May 11-13.
- Wood, S.A., and D. Vlassopoulos. 1988. The Hydrothermal Solubility of Tungsten Oxides at 500° C and 1 kbar in HCl, NaCl, NaOH and Pure Water Solutions. Presented at the Goldschmidt Conference, The Geochemical Society Meeting, Baltimore, Maryland, May 11-13.

EXPERT WITNESS DEPOSITIONS AND TESTIMONY

Depositions

- Abarca, Raul Valencia, et al., v. Merck & Co., Inc., et al. U.S. District Court for the Eastern District of California, Fresno Division. Case No. 1 :07-CV-0388 OWW DLB.
- United States v. Washington State Department of Transportation, et al. U.S. District Court for the Western District of Washington at Tacoma. Case No. 05-5447RJB. June 29, 2006
- Port of Vancouver vs. Cadet Manufacturing Company. U.S. Bankruptcy Court for the Western District of Washington at Tacoma. Case No. 99-30304T. June 15, 2005
- Port of Vancouver vs. Cadet Manufacturing Company. U.S. Bankruptcy Court for the Western District of Washington at Tacoma. Case No. 99-30304T. December 7, 2004
- Domingo Aragon and Eva Aragon et al. v. Department of the Air Force, ex rel United States of America et al. U.S. District Court for the District of New Mexico. Case No. CIV 94-592 JP/LCS. July 25, 1995

Testimony

- United States v. Washington State Department of Transportation, et al. U.S. District Court for the Western District of Washington at Tacoma. Case No. 05-5447RJB. January 10, 2007

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Awards and Honors

Research Grant: Sequestration and Immobilization of Metal and Metalloid Contaminants in Sediments. NIH Grant R01 ES016201 (Superfund Research Program), 2007-2010 (co-PI)

Pegau Geology Award, University of Virginia, 1997

Dupont Fellowship, University of Virginia, 1996-1998

University of Virginia President's Fellowship, 1995-1998

Reinhardt Research Fellowship, McGill University, 1986-1987

Professional Societies

American Geophysical Union

Geochemical Society

Geological Society of America

International Association of Geochemistry

National Ground Water Association