



ATTACHMENT I – General Qualifications
**ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP015-00004729**

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

(If a firm has branch offices, complete for each specific branch office seeking work.)

1. **Annual Request for Qualifications**

a. FIRM (OR BRANCH OFFICE) NAME:	Hydro Geo Chem, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	51 W Wetmore Road, Suite 101
c. FIRM (OR BRANCH OFFICE) CITY:	Tucson
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85705
f. YEAR ESTABLISHED:	1978
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Federally self-certified economically disadvantaged Woman-Owned Small Business (WOSB)
h. POINT OF CONTACT NAME AND TITLE:	Abra J. Bentley, President
i. POINT OF CONTACT TELEPHONE NUMBER:	(520) 293-1500 x115
j. POINT OF CONTACT E-MAIL ADDRESS:	abrab@hgcinc.com
k. NAME OF FIRM (If block 1a is a branch office):	



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1. **Annual Request for Qualifications**

g. FIRM (OR BRANCH OFFICE) NAME:	Hydro Geo Chem, Inc.
h. FIRM (OR BRANCH OFFICE) STREET:	6340 E Thomas Road, Suite 228
i. FIRM (OR BRANCH OFFICE) CITY:	Scottsdale
j. FIRM (OR BRANCH OFFICE) STATE:	Arizona
k. FIRM (OR BRANCH OFFICE) ZIP CODE:	85251

l. YEAR ESTABLISHED:	1978
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(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Federally self-certified economically disadvantaged Woman-Owned Small Business (WOSB)

h. POINT OF CONTACT NAME AND TITLE:	Frank J. Skocypec, Vice President
i. POINT OF CONTACT TELEPHONE NUMBER:	(480) 421-1501 x145
j. POINT OF CONTACT E-MAIL ADDRESS:	franks@hgcinc.com

k. NAME OF FIRM (If block 1a is a branch office):	Hydro Geo Chem, Inc.
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2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
CADD Technician	P	1	1
Civil Engineer	P	1	1
Construction Manager	P	1	
Environmental Engineer	S	1	1
Environmental Scientist	P	1	
Environmental Scientist	S	1	1
Geographic Information System Specialist	S	1	
Geological Engineer	S	1	1
Geologist	P	3	2
Geologist	S	1	
Hydrologist	P	4	
Project Manager	P	4	1
Technician/Analyst	P	1	
Technician/Analyst	S	1	
Total		23	8



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4. Resumes of Key Personnel Proposed for this Contract *(Complete one Section 4 for each key person.)*

a. NAME Abra Bentley, R.G.	b. ROLE IN THIS CONTRACT Project Manager/Contract Manager	c. YEARS EXPERIENCE	
		1. TOTAL 16	1. WITH CURRENT FIRM 13
d. LOCATION <i>(City and State)</i> Hydro Geo Chem, Inc. Tucson, Arizona			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. Environmental Engineering 1994 B.S Chemistry and Biology, 1991		f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Geologist State of Arizona, Certificate No. 54327	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> OSHA 40-hour HAZWOPER + refreshers, 1991 - present			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Hexcel CG MEK Release, Casa Grande, Arizona	(2) YEAR COMPLETED 2014
		Professional Services Construction (if applicable) 2014 2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: Site characterization; environmental sampling/analysis; pilot testing; SVE remedial system design; remedial system installation, operation and maintenance; environmental monitoring; Corrective Action Plan and Corrective Action Completion Report; LUST case closure. Contract to Date: \$594,000	<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> ADEQ 7th St. and AZ Ave. RI/FS WQARF Site, Tucson, Arizona	(2) YEAR COMPLETED
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: Site characterization activities, Remedial Investigation report, Feasibility Study report, QAPP, Land Use Study, PRAP; remedial design and monitoring well installation activities. Project is ongoing. Contract to Date: \$420,065 Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> SCAQMD Sunshine Canyon LF Odors Invest, Sylmar, California	(2) YEAR COMPLETED
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Scope: Installation of wells and collection and analysis of baro-pneumatic and shut-in test data at an active landfill in California to evaluate the performance of the existing landfill gas control system (LFGCS) in controlling odors. The effect on the LFGCS of the current practice of adding a relatively thick daily cover material was additionally evaluated. Project is ongoing. Contract to Date: \$107,316 Role: Project Manager	<input checked="" type="checkbox"/> Check if project performed with current firm



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4.	(1) TITLE AND LOCATION (<i>City and State</i>) UNSE Substation Spill Modeling, Mohave County, Arizona	(2) YEAR COMPLETED	
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Scope: Collection of field data; modeling of potential overland oil flow; production of site maps, data summary tables, and modeling results; and preparation of a brief site-specific report for each facility. Project is ongoing. Contract to Date: \$26,714	Professional Services	Construction (if applicable)
		<input checked="" type="checkbox"/> Check if project performed with current firm	



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4. Resumes of Key Personnel Proposed for this Contract *(Complete one Section 4 for each key person.)*

a. NAME Frank J. Skocypec, P.E., C.P.G.	b. ROLE IN THIS CONTRACT Professional Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 35	2. WITH CURRENT FIRM 2
d. LOCATION <i>(City and State)</i> Hydro Geo Chem, Inc. Scottsdale, Arizona			
e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. (Environmental Engineering) Stevens Institute of Technology, 1997, Magna Cum Laude A.S. (Hazardous Materials Management) Front Range Community College, 1990, Magna Cum Laude B.S. (Geophysical Engineering), Colorado School of Mines, 1978		f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Professional Engineer (AZ), No. 38133 Certified Professional Geologist (National), No. 09378 Registered Professional Engineer (PA), No. 054064-E Registered Professional Geologist (WY), No. 1176	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> American Institute of Professional Geologists			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION <i>(City and State)</i> Central & Camelback WQARF Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager (PM) responsible for the remedial investigation and OM&M of early response action (ERA) treatment systems to remove PCE and other chlorinated solvents from soil and groundwater. Remedial systems included groundwater pump and treat and soil vapor extraction systems. Directed maintenance and equipment repair/replacement and oversee sampling and testing efforts to provide analytical data for evaluation of system performance in compliance with SRP canal discharge and MCAQD permits. Contract Costs to date: \$2,700,000. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION <i>(City and State)</i> Cooper & Commerce WQARF Site Gilbert, Arizona	(2) YEAR COMPLETED October 2014	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE PM responsible for the remedial investigation and OM&M of ERA remediation systems to remove PCE from soil and groundwater. Remedial systems included groundwater pump and treat and soil vapor extraction/air sparge systems. Directed maintenance and equipment repair/replacement and oversee sampling and testing efforts to provide analytical data for evaluation of system performance in compliance with MCAQD, AZPDES, SRP Lateral discharge and Class B Remediation Discharge Permit with Town of Gilbert. Contract Costs to date: \$3,100,000	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION <i>(City and State)</i> Former B&D Mobil Service Station LUST Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE PM responsible for the remedial system OM&M consisting of the thermal/catalytic oxidizer soil vapor extraction unit coupled with air sparge system to remediate dissolved petroleum hydrocarbons in soil and groundwater. Expansion of existing system will incorporate a bioventing option to aerobic ally biodegrade residual soil contamination exceeding residential use soil remediation levels for naphthalene. Existing treatment system operational for ~ 1.6 years and free-phase product no longer exists and groundwater concentrations have been significantly reduced and currently exceed AWQS in one well location. Contract Costs to date: \$376,055. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4.	(1) TITLE AND LOCATION (<i>City and State</i>) We Buy Scrap LUST Site Tempe, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Manager (PM) responsible for the continued site characterization, monitoring, pilot test and implementation of an in-situ chemical oxidation (ISCO) remedy utilizing persulfate oxidant to treat petroleum hydrocarbons constituents dissolved in groundwater. Contract Costs to date: \$148,425. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract *(Complete one Section 4 for each key person.)*

<p>a. NAME James G. Peck, P.E.</p>	<p>b. ROLE IN THIS CONTRACT Senior Project Engineer</p>	<p>c. YEARS EXPERIENCE</p>	
		<p>1. TOTAL 18</p>	<p>2. WITH CURRENT FIRM 11</p>
<p>d. LOCATION <i>(City and State)</i> <i>Hydro Geo Chem, Inc. Scottsdale, Arizona</i></p>			
<p>e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> M.S. Engineering Geology, 1990 B.S. Geological Engineering, 1988 J.D., 1999</p>		<p>f. PROFESSIONAL TRAINING – REGISTRATIONS Professional Engineer (Geological), Arizona No. 28074 Professional Engineer (Civil), Arizona No. 37554 Attorney at Law, 1999 Active Civil Engineering licenses are also maintained in California, Florida, Georgia, New Mexico, Washington, and Utah</p>	
<p>g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Organizations, Awards, etc.)</i> Member of the Arizona Bar in good standing OSHA 40-Hr Safety Training for Hazardous Waste Site Activities</p>			

H. RELEVANT PROJECTS

1.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> South Yuma County Landfill, Yuma County, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager - Provide regulatory compliance services including permitting, environmental monitoring, and reporting for landfill facility subject to an air quality permit, aquifer protection permit, solid waste facility plan approval, and stormwater pollution prevention plan implementation. Renewed a Title V air quality permit in the past year. Contract cost to date: \$815,000. Project is ongoing.</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>
2.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> Maricopa County Waste Resources and Recycling, Maricopa County, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Professional Engineer - Provide compliance consulting for closed landfills and active transfer stations owned by Maricopa County. Includes landfill gas migration evaluation, gas migration control system design and construction, and regulatory permitting associated with air quality permits. Contract cost to date: \$386,480. Project is ongoing.</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>
3.	<p>(1) TITLE AND LOCATION <i>(City and State)</i> Wickenburg Waste Transfer Station, Wickenburg, Arizona</p>	<p>(2) YEAR COMPLETED</p>	
		<p>Professional Services 2014</p>	<p>Construction (if applicable)</p>
	<p>(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Project Manager - Developed stormwater pollution prevention plan for solid waste transfer station. Conducted initial inspection and reporting, training of facility personnel. Project cost to date: \$7,500.</p>	<p><input checked="" type="checkbox"/></p>	<p>Check if project performed with current firm</p>



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a. NAME Michael J. Barden	b. ROLE IN THIS CONTRACT Senior Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 23	2. WITH CURRENT FIRM 2
d. LOCATION (<i>City and State</i>) Hydro Geo Chem, Inc. Tucson, Arizona			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) M.S. Program, Geology, 1983-1985 B.S. Geology and Geophysics, 1982		f. PROFESSIONAL TRAINING - REGISTRATIONS	

g. OTHER PROFESSIONAL QUALIFICATIONS (*Organizations, Awards, etc.*)
ORGANIZATIONS

American Geophysical Union (AGU); National Ground Water Association (NGWA); International Association of Hydrogeologists (IAH); International Association of Hydrological Sciences (IAHS); Geochemical Society (GS); International Association of Geochemistry and Cosmochemistry (IAGC); Society of Environmental Toxicology and Chemistry (SETAC); Geological Society of America (GSA); American Society for Microbiology (ASM); American Chemical Society (ACS); Soil Science Society of America (SSSA); American Society for Testing & Materials (ASTM); Society for Sedimentary Geology (SEPM); International Association of Sedimentologists (IAS); Arizona Geological Society; New Mexico Geological Society
AWARDS: Geological Society of America John Mann Mentor in Applied Hydrogeology, 2012; Outstanding Volunteer Graduate Faculty Award, University of New Mexico, College of Pharmacy, 2003-2004; Nominated for WDNR's Brogan Award for outstanding contributions to environmental protection in Wisconsin, 1995; WDNR Division of Environmental Quality Outstanding Achievement Award, 1995; Dixie Oil Company Summer Research Scholarship, 1984; James W. Mitchell Award for best paper and scientific excellence, National Speleological Society, 1980;

PUBLICATIONS

Wiedemeier, T.H., and M.J. Barden. 2006. Factors affecting the sustainability of monitored natural attenuation. *Proceedings of the Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, May 22-25, 2006, Monterey, CA.*
Wiedemeier, T.H., and M.J. Barden. 2006. Lines of evidence for evaluating biological and abiotic degradation of chlorinated solvents. *Proceedings of the Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, May 22-25, 2006, Monterey, CA.*
Wiedemeier, T.H., M.J. Barden, P.E. Haas, and W.Z. Dickson. 2006. Designing monitoring programs to effectively evaluate the performance of natural attenuation, in *Practical Handbook of Ground-Water Monitoring (2nd edition)*, D.M. Nielsen (ed.), Lewis Publishers, Boca Raton, FL.
Wiedemeier, T.H., M.J. Barden, W.Z. Dickson, and D. Major. 2004. Multiple Lines of Evidence Supporting Natural Attenuation: Lines of Inquiry Supporting Monitored Natural Attenuation and Enhanced Attenuation of Chlorinated Solvents. U.S. Department of Energy, Office of Scientific and Technical Information, Oak Ridge, TN, WSRC TR 2003 00331.
National Research Council (contributing author). 2000. *Natural Attenuation for Groundwater Remediation*. National Academy Press, Washington, DC. 274 p.
Barden, M.J. 1997. *Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) -- Interim Guidance*. Wisconsin Department of Natural Resources, Bureau for Remediation and Redevelopment. PUBL RR-519 97, March 1997.
Yang, X., H. Glasser, R. Stoelting, M. Barden, G. Mickelson, J. Delwiche, and G. Alvarez. 1997. *Natural attenuation demonstration in Wisconsin, in Fourth International Symposium on In-Situ and On-Site Bioremediation, v. 4(1)*. Battelle Press, Columbus, OH.
Barden, M.J. 1993 (revised 1994). *Naturally Occurring Biodegradation as a Remedial Action Option -- Interim Guidance*. Wisconsin Dept. of Natural Resources.
Hetrick, D.M., S. Scott, and M.J. Barden. 1992 (1994 revised). *The New SESOIL User's Guide*. Wisconsin Dept. of Natural Resources, Bureau of Solid and Hazardous Waste Management, Emergency and Remedial Response Section, Publication PUBL SW-200 (revised 1994).

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) 7 th Street and Arizona Avenue WQARF Site, Tucson, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Remedial Investigation/Feasibility Study (RI/FS) for chlorinated solvent plume. Wrote Quality Assurance Project Plan (QAPP) and Field Sampling Plan; produced Standard Operating Procedures(SOPs) for sampling; interpreted contaminant and geochemical data; evaluated contaminant transport and fate; conducted human health risk assessment; coauthored Remedial Investigation Report and Feasibility Study Report; participated in public meeting. Project Role: Senior Hydrogeologist. Contract to Date: \$420,065. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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2.	(1) TITLE AND LOCATION (<i>City and State</i>) Cooper and Commerce WQARF Site, Gilbert, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Remedial Investigation for chlorinated solvent plume. Compiled information and wrote Remedial Investigation Report; performed hydrogeological evaluation; interpreted contaminant and geochemical data; evaluated contaminant transport and fate; conducted screening level human health risk evaluation. Project Role: Senior Hydrogeologist . Contract Costs to date: \$3,100,000. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Winslow Whiting #23 State-Lead UST Site, Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project manager for investigation and remediation of extensive petroleum contamination in soil and groundwater associated with releases at a former fueling station. Planned and directed investigation and sampling activities; planned and oversaw in situ chemical oxidation pilot study; performed hydrogeological evaluation; evaluated aquifer tests and soil vapor extraction pilot tests; coordinated and directed field activities and filed staff; oversaw junior staff in data compilation and evaluation. Contract Costs to date: \$597,301. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Former Winslow Welding, Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project manager for investigation and remediation of petroleum contamination in soil and groundwater associated with releases at a former fueling station. Planned and directed investigation and sampling activities; planned and oversaw monitoring well installation; performed hydrogeological evaluation; coordinated and directed field activities and filed staff; oversaw junior staff in data compilation and evaluation. Contract Costs to date: \$314,153. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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a. NAME Stewart J. Smith	b. ROLE IN THIS CONTRACT Associate Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 34	2. WITH CURRENT FIRM 25

d. LOCATION *(City and State)* *Hydro Geo Chem, Inc. Tucson, Arizona*

e. EDUCATION *(DEGREE AND SPECIALIZATION)*
M.S. Hydrology, 1989
B.S. Geology, 1980

f. PROFESSIONAL TRAINING – REGISTRATIONS
Registered Geologist UT No. 5336166-2250

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*

Member: National Groundwater Association

Patent: Improved Method and System for Estimating Gas Production by a Landfill or Other Subsurface Source

PUBLICATIONS:

Smith, S.J., H.W. Bentley, and K. Reaves. 2006. Systematic Design of Methane Migration Control Systems. Proceedings, 29th Annual SWANA Landfill Gas Symposium, St. Petersburg FL, March 27-30. 18 pp. also in: <http://www.hgcinc.com>.

Bentley, H.W., S.J. Smith, and T. Schrauf. 2005. Baro-pneumatic Estimation of Landfill Gas Generation Rates at Four Operating Landfills. Proceedings, SWANA's 28th Annual Landfill Gas Symposium, March 7-10, 2005; <http://www.hgcinc.com>.

Bentley, H.W., S. Smith, J. Tang, and G.R. Walter. 2003. A Method for Estimating the Rate of Landfill Gas Generation by Measurement and Analysis of Barometric Pressure Waves. Proceedings of the 18th International Conference on Solid Waste Technology and Management, Philadelphia, Pennsylvania, March 23-26, 2003.

Bentley, H.W., G.R. Walter, S.J. Smith., J. Tang, and C.T. Williamson. 2002. (US) Patent No. US 6,611,760 B2 Method and system for estimating gas production by a landfill or other subsurface source, June 19, 2002.

Walter, G.R., S. Smith, H.W. Bentley, and J. Tang. 2002. Comparison of direct techniques for estimating LFG generation rates. Abstracts with Program. SWANA Regional Landfill Conference, Casa Grande.

Bentley, H.W. and S.J. Smith. 1998. Soil Vapor Extraction of Chlorinated VOCs in the Vicinity of a Landfill Equipped with a Landfill Gas Control System. Presentation at the 1998 Arizona Hydrological Society Eleventh Annual Symposium. September 23 to 26, 1998. Abstract with Proceedings.

Bentley, H.W., J. Tang, S.J. Smith, D. Samorano, R.G. Arnold. 1998. Analysis of Remedial Options for Chlorinated VOCs at Harrison Landfill. In: Bioremediation and Phytoremediation, Chlorinated and Recalcitrant Compounds. The First International Conference on Remediation of Chlorinated and Recalcitrant Compounds. Monterey, California, May 18 to 21, 1998. pp. 21-26.

Ward, J.J. and S.J. Smith. 1998. Arid Zone Landfills: What Do Investigation and Modeling of Containment Migration Reveal About Transport Mechanisms? Presentation at the 1998 Arizona Hydrological Society Eleventh Annual Symposium. September 23 to 26, 1998. Abstract with Proceedings.

Smith, S.J., J. Pepe, and G.R. Walter. 1995. The Effect of Variable Injection Rates on Air Sparging Patterns in Heterogeneous, Porous Media. Presented at the First International Symposium on In-Situ Air Sparging for Site Remediation. Las Vegas, Nevada.

Smith, S.J. and G. Walter. 1993. Numerical Modeling of "Raining" Soil Vapor Extraction Wells for a Hypothetical Alluvial Aquifer. Presented at Rocky Mountain Ground Water Conference - Ground Water Technology and Tasks in the 90's, Albuquerque, New Mexico, 1993.

Walter, G.R., R.D. Philip, and S.J. Smith. 1993. Chicken/Egg Arguments in the Establishment of Soil Cleanup Standards. Presented at Hazmacon '93, San Jose, California.

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION <i>(City and State)</i> White Mesa Uranium Mill, Blanding, Utah	(2) YEAR COMPLETED	
	Professional Services	Construction (if applicable)
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE 1. Project Manager - Management of investigations to evaluate and remediate shallow groundwater chloroform and nitrate plumes and to support the award of and periodic updates to a groundwater discharge permit (GWDP) for the facility. Work includes: site characterization; development of remedial objectives; design and evaluation of remedial systems (including evaluation of natural attenuation of contaminants) and groundwater monitoring well networks using numerical models; litigation support; preparation of interpretive reports (including comprehensive site hydrogeologic reports), Contaminant Investigation Reports and Corrective Action Plans; and presentation of results to and negotiation with controlling regulatory agencies. Project costs to date: \$945,000. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm	



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2.	(1) TITLE AND LOCATION (<i>City and State</i>) Tucson International Airport Area Superfund Site, Technical Support, Tucson, Arizona	(2) YEAR COMPLETED 2014
		Professional Services 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Review of and preparation of comments on reports documenting site characterization and remedial system performance at the TIAA Superfund Site in Tucson, AZ, which incorporates at least three separate groundwater plumes. The primary purpose is to ensure that ongoing work conducted at the various Operable Units at the site is consistent with ADEQ and USEPA standards and goals, in particular, the goal of site remediation. Project Role: Associate Hydrogeologist. Contract costs to date: \$122,735	<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) SCAQMD Sunshine Canyon LF Odors Invest, Sylmar, California	(2) YEAR COMPLETED
		Professional Services
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Evaluation of the SCL to determine the causes of odor complaints and preparation of recommendations to improve odor control. Work involved field testing (using HGC's baropneumatic method) to evaluate the pneumatic characteristics of the landfill, evaluation of the landfill gas control system (LFGCS), and preparation of an interpretive report with recommendations. Contract costs to date: \$100,930. Project role: Associate Hydrogeologist. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION (<i>City and State</i>) Central Truckee Meadows Remediation District, Washoe County, Nevada	(2) YEAR COMPLETED 2014
		Professional Services 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Manager – interpretation of large scale aquifer tests in the Central Truckee Meadows Basin to improve understanding of groundwater flow dynamics and the lateral and vertical transport of chlorinated solvents (primarily PCE) within the water supply aquifer. Work involved interpretation of 6 large-scale aquifer tests having up to 30 observation wells each and preparation of interpretive reports. Contract Costs to date: \$58,265.	<input checked="" type="checkbox"/> Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section 4 for each key person.*)

a. NAME Steven P. Sutherland, R.G.	b. ROLE IN THIS CONTRACT Project Geologist/Asbestos Manager	c. YEARS EXPERIENCE	
		1. TOTAL 20	2. WITH CURRENT FIRM 2
d. LOCATION (<i>City and State</i>) Hydro Geo Chem, Inc. Scottsdale, Arizona			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S.—Geology (environmental emphasis), University of Texas-San Antonio B.A.—Geography (environmental emphasis), University of Texas-San Antonio M.S.—Environmental Management & Sustainability, Arizona State University, Summa Cum Laude		f. PROFESSIONAL TRAINING - REGISTRATIONS Registered Geologist, Arizona Registration Number 33269 EPA AHERA Asbestos Building Inspector, Registration Number G2442 EPA AHERA Asbestos Management Planner, Registration Number G2462	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Organizations, Awards, etc.</i>) OSHA 40-Hour Training in Hazardous Waste Operations (HAZWOPER); OSHA 8-Hour HAZWOPER Site Supervisor; Certified Project Manager; First Aid and CPR Training (Blood Pathogens); RCRA Hazardous Waste & Non-Hazardous Waste Management Training Certificate (49CFR 172.700-704); FEMA Certifications: ICS, NIMS, Advanced Incident Management/Unified Command			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (<i>City and State</i>) Central & Camelback WQARF Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Geologist - responsible for the oversight of completion of remedial investigation (RI) and characterization activities at an ADEQ WQARF Site regarding releases of PCE and other chlorinated solvents into the soil and groundwater, using passive and active soil gas surveys, installation and sampling of soil borings, installation and sampling of monitoring wells, and other related techniques. After completion of remedial investigation activities, was also responsible for completion of Remedial Investigation (RI) report. Remedial investigation activities were completed in December 2014. Contract Costs to date: \$2,700,000. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm
2.	(1) TITLE AND LOCATION (<i>City and State</i>) 7th Street & Missouri WQARF Site Phoenix, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Geologist - responsible for the oversight of preliminary investigation (PI) and characterization activities for a Site that is a candidate to be including on the ADEQ WQARF registry. Contaminants include releases of PCE and other chlorinated solvents into the soil and groundwater. Other duties included identification of Potentially Responsible Parties (PRPs) by locating release sources, and completion of a PI report that summarizes the activities conducted to date. Investigation activities were conducted using passive soil gas surveys, installation and sampling of soil borings, installation and sampling of monitoring wells, and other related techniques. Contract costs to date: \$394,500. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm
3.	(1) TITLE AND LOCATION (<i>City and State</i>) Winslow Whiting #23, ADEQ State-Lead UST Site Winslow, Arizona	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Geologist - for investigation and remediation of extensive petroleum contamination in soil and groundwater associated with releases at a former fueling station. Duties included oversight and execution of investigation and sampling activities, execution of in situ chemical oxidation pilot study; and completion of figures and review of analytical data. Contract Costs to date: \$597,301. Project is ongoing.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4.	(1) TITLE AND LOCATION (<i>City and State</i>) UST Closure Investigations, ADEQ State-Lead 12 locations across Arizona	(2) YEAR COMPLETED – September 2014	
		Professional Services 2014	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE Project Geologist - responsible for oversight and coordination of UST removal activities at 12 sites across Arizona. Oversight and coordination activities included contact with various subcontractors, permitting, regulatory interaction, conduct and oversight of UST closure investigations, and completion of ADEQ UST Closure Reports. Where warranted, additional limited investigation was conducted at selected sites during the UST closure investigation activities. Contract Costs to date: \$271,624.	<input checked="" type="checkbox"/>	Check if project performed with current firm



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4. Resumes of Key Personnel Proposed for this Contract (Complete one Section 4 for each key person.)

a. NAME Warren A. Thompson	b. ROLE IN THIS CONTRACT Senior Geologist/Construction Manager	c. YEARS EXPERIENCE	
		1. TOTAL 30	2. WITH CURRENT FIRM 25
d. LOCATION (City and State) Hydro Geo Chem, Inc. Tucson, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) B.S. Geology/Math, 1983		f. PROFESSIONAL TRAINING – REGISTRATIONS Registered Geologist State of Arizona, Certificate No. 50536, Dec. 2009 ROC AE State of Arizona, No 114979 (2010) ROC A- State of Arizona, No 21821 (2010)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Awards, etc.) Certified HDPE Fusion Welder, February 2005; MSHA New Miner Training, 2003; OSHA 40-Hr Health and Safety Training for Hazardous Waste Operations, 1990; OSHA Construction Safety & Health, 2009; Damage Prevention Ambassador Award of Excellence (2013)			

H. RELEVANT PROJECTS

1.	(1) TITLE AND LOCATION (City and State) Metropolitan Water District, Hub 1A Site Improvements Tucson, Arizona	(2) YEAR COMPLETED 2014
		Professional Services Construction (if applicable) 2014 2014
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager - Install system control and data acquisition system to remotely control a domestic water supply well substation; installation of all sensors to monitor system and shut down system if an alarm condition is triggered; installation of radio communications system to send system data and performance conditions to a remote control consol; installation of a high end security system with video monitoring. Project costs to date: \$57,904.	<input checked="" type="checkbox"/> Check if project performed with current firm
2.	(1) TITLE AND LOCATION (City and State) Former B&D Mobil Service Station LUST Site Phoenix, Arizona	(2) YEAR COMPLETED
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Manager - Installation of a thermal catalytic oxidizer for and soil vapor extraction (SVE) system and air sparge (AS) system to remediate contaminated soils and groundwater. Installed interlink between the SVE and AS system to shut down the entire system should the SVE/Oxidizer malfunction and call out an alarm condition to a responder. Contract Costs to date: \$376,055. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm
3.	(1) TITLE AND LOCATION (City and State) 7 th Street and Arizona Ave. WQARF site Tucson, Arizona	(2) YEAR COMPLETED
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Geologist – for oversight and lithologic logging for the installation of ground water monitoring wells. Wells were installed to define the extent of a PCE contaminated perched aquifer. Project also involved the installation of two regional aquifer monitoring wells. Installation was complex due to contaminated perched aquifer above the regional aquifer separated by a clay aquatard. Contract to Date: \$420,065. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm
4.	(1) TITLE AND LOCATION (City and State) Winslow Welding, Winslow, Arizona	(2) YEAR COMPLETED
		Professional Services Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Field Manager – for ongoing gasoline and diesel LUST remediation project. Conducted field pilot study for use of persulfate as an in-situ contaminant oxidation (ISCO) as an effective remediation method. Test involved injecting ISCO solution in conjunction with conservative chemical tracers into shallow silts and sands. Followed tests with field evaluation of tracer movement through formation which yielded data indicating the effectiveness of the oxidant injections to reach the contaminant and interact with the contaminants as intended. Contract Costs to date: \$314,153. Project is ongoing.	<input checked="" type="checkbox"/> Check if project performed with current firm



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5.1. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Cooper & Commerce WQARF Site, Gilbert, Arizona	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Scott Goodwin, Project Manager Arizona Department of Environmental Quality	\$3,100,000	\$3,100,000

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

In 2004, Hydro Geo Chem was retained to conduct a soil and groundwater investigation at a former metals-processing facility located in Gilbert, Arizona. As part of an Early Response Action, HGC drilled multiple soil borings and installed groundwater, soil vapor monitoring, and extraction wells. The primary contaminants of concern were chlorinated solvents including PCE and TCE. Based on the results of the investigation, HGC designed and installed a soil-vapor extraction (SVE) system and a groundwater pump and treat (GWPT) system. This included the permitting and installation oversight of discharge lines to both the Salt River Project canal and the Town of Gilbert sewer system. New GW monitoring and SVE wells were designed into the system in 2011 and 2012. Responsibilities included operation and maintenance of the SVE and GWPT remedial systems, data collection and periodic groundwater sampling. HGC has completed a draft Remedial Investigation report which will be finalized in early 2015.



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5.2. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
7th Street and Arizona Avenue WQARF Site, Tucson, Arizona		

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
William Ellett Arizona Department of Environmental Quality	\$1,358,481	\$1,358,481

g. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

HGC has conducted soil and groundwater investigations, soil gas investigations, remedial design, remediation, and operation and maintenance at this state Superfund site contaminated with PCE. The source area is a former dry cleaner at which releases of PCE have impacted shallow groundwater resulting in a solute plume that is over 4,500 feet long. The site is further complicated by the presence of diesel free product on the aquifer. Site investigations have included passive and active soil gas sampling and installation of groundwater monitoring wells, vapor monitoring wells, soil borings, a vapor extraction well, and an air sparge well. Existing and newly installed groundwater monitoring wells have been sampled semi-annually. Offsite wells installed by HGC required access agreements and right-of-way permits from the City of Tucson. A soil vapor extraction (SVE) system was designed, installed, and operated by HGC as an Early Response Action to remove source PCE vapors to prevent further degradation to the aquifer. Operation of the SVE system for approximately 1½ years resulted in a tenfold decrease in soil vapor concentrations on the site. Air sparging was also evaluated in conjunction with SVE to remove PCE from groundwater and from diesel free product beneath the site. HGC has completed a Remedial Investigation report, human health risk assessment, feasibility study and Proposed Remedial Action Plan for the site. Project is ongoing.



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5.3. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Maricopa County Waste Resources and Recycling, On Call Services	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Brian Kehoe, Manager Maricopa County Waste Resources	\$750,000	\$386,480

h. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

HGC currently provides general engineering services to the Maricopa County Solid Waste Department. Work has included regulatory compliance audits for ten landfills and six transfer stations evaluating compliance with environmental regulations that apply to solid waste facilities in Arizona. One such project is the Queen Creek Landfill where HGC processed applications for a Title V air quality permit. A landfill gas migration evaluation was also performed for the Queen Creek Landfill and is being performed for the Gilbert Landfill along with recommendations for remediating off-site gas migration, including a design for an intermittent vapor extraction system. Additionally, air emission reports have been prepared for the Queen Creek Landfill and the Morristown Landfill under the terms of non-Title V air quality permits. HGC also processed an Aquifer Protection Permit for the Avondale Landfill and renovated the landfill gas migration monitoring system at the Hassayampa Landfill. Project is ongoing.



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5.4. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>
White Mesa Hydrogeologic Consulting, Blanding, Utah		

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Kathy Weinel, Manager Energy Fuels Resources, Inc.	\$945,000	\$945,000

i. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Since 1999 Hydro Geo Chem has been conducting hydrogeologic investigations at the Energy Fuels Uranium Mill Site in Blanding, Utah. This includes the initial application for and ongoing modifications to a groundwater discharge permit as well as investigation and remediation of groundwater VOC and nitrate plumes. Work includes: site characterization activities, well testing to evaluate aquifer characteristics, numerical modeling, selection of monitoring well locations and well field densities, development of remedial objectives and evaluation of the interim remedial action plan. Also relevant to this contract are HGC's preparation of the preliminary contaminant investigation report and corrective action plan, ongoing support in the preparation of quarterly monitoring reports, litigation support, and the presentation of results to, and negotiations with, the controlling regulatory agencies. Project is ongoing.



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5.5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
South Yuma County Landfill, Yuma, Arizona	PROFESSIONAL SERVICES	CONSTRUCTION <i>(If applicable)</i>

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
William Hunter, Landfill Manager South Yuma County Landfill	\$815,000	\$815,000

j. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Since 2007, Hydro Geo Chem has provided engineering and environmental permitting services for the South Yuma County Landfill, including Title V air quality permitting services, engineering design, construction quality assurance, and liquid waste permitting. Site drainage design was performed using the US Army Corps of Engineers HEC-HMS hydrology model. Air permitting services include evaluation of emissions using dispersion modeling; preparation of an emission inventory; estimates of NMOC emissions using the U.S. EPA's landfill gas emissions model (LandGem) for Tier 1 and Tier 2 protocols; preparation of permit application; and correspondence with ADEQ and EPA. HGC completed a methane generation evaluation of the facility to determine the applicability of the mandatory GHG reporting rule. HGC also developed plans and other documents for lateral expansion of the landfill and assisted with revisions to the liquid waste disposal permit. Project is ongoing.



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Hydro Geo Chem, Inc. (HGC) is an Arizona corporation formed in 1978 with corporate headquarters in Tucson and a branch office in Scottsdale, Arizona. For more than 35 years and in more than 35 states and six foreign countries, HGC has provided high-quality, award-winning environmental services to both the public and private sector.

HGC is eminently qualified as an environmental consulting and engineering firm. Our main disciplines of the firm are Phase I and Phase II Site Assessment & Characterization; Remedial Investigation/Feasibility Studies; Engineering Services to Design Remedial Actions; Construction Management for Implementing Remedial Actions; Engineering Evaluation and Cost Analysis of Non Time Critical Removal Actions; Environmental Support including Oversight of RI/FS, Remedial Design, Remedial Action, and Negotiation Support; Technical Assistance; Development of community relations plans; Sampling and Analysis Support; Risk Assessment; Five-year Reviews; Long-term Response Actions; Pre-Design Investigations - contaminated soil and groundwater; Technical Management Services - Support of EPA's Oversight of Remedial Activities; CADD/Mapping/GIS Civil (Hydrology or Irrigation); Flood Control/Mitigation Grading and Drainage; Design Groundwater Investigations/Monitoring Instrumentation & Control; Landfill Gas Collection System Design; Landfill Gas Migration Control; Landfill Gas to Energy Design; Permitting; Remedial Feasibility Assessment; Remedial Investigation; Remedial System Design & Construction; Remedial System Operation & Monitoring; Risk Assessment; and Soil & Soil Gas Investigations. HGC has completed hundreds of projects related to soil, soil vapor, vapor intrusion and groundwater investigations and remediation of chlorinated volatile organics, heavy metals, and petroleum hydrocarbons. In addition, HGC has been involved with numerous landfill assessments to evaluate vertical and lateral gas migration, gas production rates, leachate management, and cover design.

HGC is a federally self-certified economically disadvantaged Woman-Owned Small Business (WOSB). Where practicable, HGC contracts with other companies who are woman-owned or who are Disadvantaged Business Enterprises (DBEs).

HGC's professional staff includes licensed professional engineers and registered geologists. Over half of the professional staff have advanced degrees. HGC has technical staff in field operations, database management, information technology, and computer-aided drafting and design software, as well as project support staff. HGC is a licensed engineering contractor in the State of Arizona possessing license number 218121, A-General Engineering.

HGC additionally has experience with a variety of solid waste issues at over 50 landfills nationwide and internationally. HGC specializes in serving environmental needs, with an emphasis on creative and technically-sound solutions to challenging engineering problems. Our background covers a broad range of services, including but not limited to

- Air Quality Permitting, Recordkeeping and Reporting
- Civil (Hydrology or Irrigation)
- Groundwater Investigations/Monitoring
- Instrumentation & Control
- Permitting
- Remedial Feasibility Assessment
- Remedial Investigation
- Remedial System Design & Construction
- Remedial System Operation & Monitoring
- Remediation Services
- Risk Assessment
- Site Assessment & Characterization
- Leachate and Landfill Gas Migration Monitoring
- Landfill Gas Generation Estimates
- Landfill Gas Collection System and Flare Design
- Design of Landfill Gas to Energy Systems
- Construction of Landfill Gas Systems and Construction Management
- Operation and Maintenance of Landfill Gas Systems
- Landfill Remediation
- Landfill Facility Permitting and Design



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- Landfill Gas Migration Control
- Landfill Gas to Energy Design
- Design of Innovative Landfill Caps and Liners

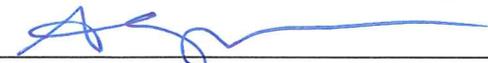
All services are provided under a rigorous system of internal checks and quality assurance to ensure a quality work product on every project.

HGC’s approach to engineering design, construction and operation & maintenance (O&M) is a key factor in our successful track record of managing solid waste projects. The heart of our management approach is developing the project work plan or O&M plan as appropriate, which defines the scope of the project, the schedule, the cost, and the responsible parties for each task. The project plan provides a well-defined task outline with preliminary drawings and specifications for the anticipated work. Emphasis is placed on deliverable work products. Scheduling is determined from the task outline in the form of a Gantt chart created in Microsoft Project that illustrates anticipated times for each project task with milestone dates called out. A critical path diagram is used to identify task items that are key to maintaining the project schedule. Costs are estimated for each element of each task and are monitored with a project expenditure curve over the progress of the project.

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	80%
b.	Percentage of Total Work Attributable to Non-Government Work:	20%

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature: 

Date: December 30, 2014

Name: Abra J. Bentley Title: President