

DEFINITIONS

Architect Services, Engineer Services, Land Surveying Services, Assayer Services, Geologist Services and Landscape Architect Services: Those professional services within the scope of the practice of those services as provided in ARS § 32-101.

Branch Office: A geographically distinct place of business or subsidiary office of a firm that has a key role on the team.

Discipline: Primary technical capabilities of key personnel, as evidenced by academic degree, professional registration, certification, and/or extensive experience.

Firm: Defined in ARS § 32-101(B.19.).

Key Personnel: Individuals who will have major contract responsibilities and/or provide unusual or unique expertise.

SPECIFIC INSTRUCTIONS:

1. Complete this form for each branch office seeking work under this RFQ.
 - a. – e. **Firm (or Branch Office) Name and Address.** Self-explanatory.
 - f. **Year Established.** Enter the year the firm (or branch office, if appropriate) was established under the current name.
 - g. **Ownership.**
 - (g1). *Type.* Enter the type of ownership or legal structure of the firm (sole proprietor, partnership, corporation, joint venture, etc.).
 - (g2). *Small Business Status.* A firm is a small business if the firm has less than 100 employees **or** has gross revenues of \$4 million or less.
 - h.-j. **Point of Contact.** Provide this information for a representative of the firm that the Customer can contact for additional information. The representative must be empowered to speak on contractual and policy matters.
 - k. **Name of Firm.** Enter the name of the firm.
2. **Employees by Discipline.**
 - a. Select disciplines from the List of Disciplines (Function Code) listed on Page 3 of 4 Instructions. For employees that do not qualify for any of the disciplines, select Other. *Note: The intended searchable database indicated in the RFQ will be populated from the Qualifications Form I Excel attachment only.*
 - b. Each person can be counted only twice; once for his/her primary function and once for his/her secondary function. Primary and secondary functions should be indicated by including a "P" or an "S" in column b after the Description Title is given.
 - c-d. If the form is completed for a firm (including all branch offices), enter the number of employees by disciplines in column c. If the form is completed for a branch office, enter the number of employees by discipline in column d and for the firm in column c.
3. **Profile of Firm's Experience and Annual Average Revenue for Last Year.**
 - a. Enter the approximate number of projects the firm (or branch) has done attributable by Profile Code listed on Page 3 of 4 Instructions over the last year.
 - b. Enter the appropriate Profile Codes from Instructions Pages 3 of 4 that represent the type of work the firm (or branch) has done over the last year.
 - c. Using the Revenue Index Number on Page 3 of 6 Form, indicate the approximate revenue the firm has

earned over the last year per Profile Code entered into the table.

4. **Resumes of Key Personnel Proposed for This Contract.** Complete this section for each key person who will participate in this contract.
 - a. Self-explanatory.
 - b. Self-explanatory
 - c. Total years of relevant experience (block c1), and years of relevant experience with current firm, but not necessarily the same branch office (block c2).
 - d. Name, City and State of the firm where the person currently works, which must correspond with one of the firms (or branch office or a firm, if appropriate) listed in Section 1.
 - e. Provide information on the highest relevant academic degree(s) received. Indicate the area(s) of specialization for each degree.
 - f. Provide information on current relevant professional registration(s) and in which State(s) they are current.
 - g. Provide information on any other professional qualifications relating to this contract, such as education, professional registration, publications, organizational memberships, certifications, training, awards, and foreign language capabilities.
 - h. Provide information on no more than five (5) projects in the last year which the person had a significant role that demonstrates the person's capability relevant to her/his proposed role in this contract. These projects do not necessarily have to be any of the projects presented in Section 5 for the project team if the person was not involved in any of those projects or the person worked on other projects that were more relevant than the team projects in Section 5. Use the check box provided to indicate if the project was performed with any office of the current firm. If any of the professional services or construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description and Specific Role.

5. **Example Projects Which Best Illustrate Firms Qualification for this contract.** Select project where multiple team members worked together, if possible, that demonstrate the team's capability to perform work similar to that required for this contract. Complete one Section 5 for each project. List no more than five (5) projects.
 - a. Title and Locations of project or contract. For an indefinite delivery contract, the location is the geographic scope of the contract.
 - b. Enter the year completed of the professional services (such as planning, engineering study, or design), and/or the year completed if construction. If any of the professional services or the construction projects are not complete, leave Year Completed blank and indicate the status in Brief Description of Project and Relevance to This Contract (block f).
 - c. Project Owner or user, such as a government agency or installation, an institution, a corporation or private individual.
 - d. Provide the original budget or not to exceed dollar amount for the project.
 - e. Provide the Total Cost of the Project. If any of the professional services or construction projects is not complete, indicate the percentage complete and whether this project will be on budget, over or under budget.
 - f. Brief Description: Indicate scope, size, and length of project, principle elements and special features of the project. Discuss the relevance of the example project to this contract.

6. **Additional Information.** Use this section to provide additional information you feel may be necessary to describe your firm's qualifications for this contract.

7. **Annual Average Professional Services Revenues of Firm for Last 3 Years.** Complete this block for the firm or branch office for which this form is completed. In column a, enter an approximate percentage of total work attributable to State, Federal or Municipal Work. In column b, enter an approximate percentage of total work attributable to Non-Government work. Percentages should take into consideration work completed over the last 3 years.

8. **Authorized Representative.** An authorized representative of the firm or branch office must sign and date the completed form. Signing attests that the information provided is current and factual. Provide the name and title of the authorized representative who signed the form.

**RFQ# ADSP014-00003465, Annual Request for Qualifications and Experience
REVISED - Attachment I – General Qualifications**

List of Disciplines (Function Codes) for Question 7

Aeronautical Engineer	Environmental Engineer	Mining Engineer
Agricultural Engineer	Environmental Scientist	Nuclear Engineer
Archeologist	Fire Protection Engineer	Petroleum Engineer
Architect	Geodetic Surveyor	Photogrammetrist
Architectural Engineering	Geographic Information System Specialist	Project Manager
Biologist	Geological Engineer	Sanitary Engineer
CADD Technician	Geologist	Soils Engineer
Chemical Engineer	Hydrographic Surveyor	Structural Engineer
Civil Engineer	Hydraulic Engineer	Technician/Analyst
Construction Manager	Hydrologist	Transportation Engineer
Construction Inspector	Industrial Engineer	Water Resources Engineer
Control Systems Engineer	Landscape Architect	
Cost Engineer/Estimator	Mechanical Engineer	
Ecologist	Metallurgical Engineer	
Electrical Engineer		

List of Experience Categories (Profile Codes for Question 8)

Acoustics, Noise Abatement	Dredging Studies and Design
Aerial Photography; Airborne Data and Imagery Collection and Analysis	Design & Planning Structured Parking Facilities
Activity Centers	Detention Security Systems
Air Pollution Control	Disability / Special Needs
Airports; Navaids; Airport Lighting; Aircraft Fueling	Ecological and Archeological Investigations
Airports; Terminals and Hangars; Freight Handling	Educational Facilities; Classrooms
Agricultural Development; Grain Storage; Farm Mechanization	Electrical Studies and Design
Animal Facilities	Electronics
Anti-Terrorism/Force Protection	Elevators; Escalators; People-Movers
Area Master Planning	Energy / Water Auditing Savings
Auditoriums and Theaters	Energy Conservation; New Energy Sources
Automation; Controls; Instrumentation	Environmental Impact Studies, Assessments or Statements
Barracks; Dormitories	Fallout Shelters; Blast-Resistant Design
Bridge Design: Bridges	Fire Protection
Cartography	Fisheries; Fish Ladders
Cemeteries (<i>Planning and Relocation</i>)	Forensic Engineering
Chemical Processing and Storage	Garages; Vehicles Maintenance Facilities; Parking
Child Care/Development Facilities	Gas Systems (<i>Propane; Natural, Etc.</i>)
Codes; Standards; Ordinances	Geodetic Surveying: Ground and Airborne
Cold Storage; Refrigeration and Fast Freeze	Heating; Ventilating; Air Conditioning
Commercial Building (<i>Low Rise</i>); Shopping Centers	Highways; Streets; Airfield Paving; Parking Lots
Community Facilities	Historical Preservation
Communications Systems; TV; Microwave	Hospital and Medical Facilities
Computer Facilities	Hotels; Motels
Conservation and Resource Management	<i>Housing (Residential, Multi-Family; Apartments; Condominiums)</i>
Construction Management	Hotels; Motels
Construction Surveying	Hydraulics and Pneumatics
Corrosion Control; Cathodic Protection Electrolysis	Hydrographic Surveying
Cost Estimating; Cost Engineering and Analysis; Parametric Costing; Forecasting	Industrial Buildings; Manufacturing Plants
Cryogenic Facilities	Industrial Processes; Quality Control
Construction Materials Testing	Industrial Waste Treatment
Dams (<i>Concrete; Arch</i>)	Intelligent Transportation Systems
Dams (<i>Earth; Rock</i>); Dikes; Levees	Infrastructure
Desalinization (<i>Process and Facilities</i>)	Irrigation; Drainage
Design-Build - Preparation of Requests for Proposals	Judicial and Courtroom Facilities
Digital Elevation and Terrain Model Development	Laboratories; Medical Research Facilities
Digital Orthophotography	Land Surveying
Dining Halls; Clubs; Restaurants	Landscape Architecture
	Libraries; Museums; Galleries

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REVISED - Attachment I – General Qualifications**

Lighting (*Interior; Display; Theater, Etc.*)
Lighting (*Exteriors; Streets; Memorials; Athletic Fields, Etc.*)
Labs - General
Labs – Research – Dry
Labs – Research – Wet
LEED Accredited A/E
LEED Independent 3rd Party Building Commissioning
Mapping Location/Addressing Systems
Materials Handling Systems; Conveyors; Sorters
Metallurgy
Materials Testing
Measurement / Verification / Conservation Water Consumption Savings
Mining and Mineralogy
Medical Related
Modular Systems Design; Fabricated Structures or Components
Mold Investigation
Museums
Nuclear Facilities; Nuclear Shielding
Office Buildings; Industrial Parks
Outdoor Recreation
Petroleum and Fuel (*Storage and Distribution*)
Photogrammetry
Pipelines (*Cross-Country - Liquid and Gas*)
Phase I Environmental
Prisons & Correctional Facilities
Plumbing and Piping Design
Prisons and Correctional Facilities
Product, Machine Equipment Design Pneumatic Structures, Air-Support Buildings Power Generation, Transmission, Distribution Public Safety Facilities
Radar; Sonar; Radio and Radar Telescopes
Radio Frequency Systems and Shielding's
Railroad; Rapid Transit
Recreation Facilities (*Parks, Marinas, Etc.*)
Refrigeration Plants/Systems
Rehabilitation (*Buildings; Structures; Facilities*)
Research Facilities
Resources Recovery; Recycling
Roof Infrared Imaging to Identify Water Leaks

Roofing
Safety Engineering; Accident Studies; OSHA Studies
Security Systems; Intruder and Smoke Detection
Seismic Designs and Studies
Sewage Collection, Treatment and Disposal
Soils and Geologic Studies; Foundations
Solar Energy Utilization
Solid Wastes; Incineration; Landfill
Special Environments; Clean Rooms, Etc.
Structural Design; Special Structures
Surveying; Platting; Mapping; Flood Plain Studies
Sustainable Design
Swimming Pools
Storm Water Handling and Facilities
Specifications Writing
Toxicology
Testing and Inspection Services
Traffic and Transportation Engineering
Topographic Surveying and Mapping
Towers (*Self-Supporting and Guyed Systems*)
Tunnels and Subways
Traffic Studies
Transportation
Urban renewals; Community Development
Utilities (*Gas and Steam*)
Value Analysis; Life-Cycle Costing
Warehouse and Depots
Water Resources; Hydrology; Ground Water
Water Supply; Treatment and Distribution
Wind Tunnels; Research/Testing Facilities Design
Waste Water Treatment Facility
Water Well Rehabilitation; Water Well Work
Zoning; Land Use Studies

**RFQ# ADSPO14-00003465, Annual Request for Qualifications and Experience
REVISED - Attachment I – General Qualifications**

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

1. REVISED ADSPO13-00003465: Annual Request for Qualifications

a.	FIRM (OR BRANCH OFFICE) NAME:	Brown and Caldwell
b.	FIRM (OR BRANCH OFFICE) STREET:	201 East Washington Street, Suite 500
c.	FIRM (OR BRANCH OFFICE) CITY:	Phoenix
d.	FIRM (OR BRANCH OFFICE) STATE:	Arizona
e.	FIRM (OR BRANCH OFFICE) ZIP CODE:	85004
f.	YEAR ESTABLISHED:	1982
(g1).	OWNERSHIP - TYPE:	Corporation
(g2).	OWNERSHIP - SMALL BUSINESS STATUS:	Not Applicable
h.	POINT OF CONTACT NAME AND TITLE:	Jeff R. Littell, RG, Vice President
i.	POINT OF CONTACT TELEPHONE NUMBER:	602-567-3835
j.	POINT OF CONTACT E-MAIL ADDRESS:	jlittell@brwncald.com
k.	NAME OF FIRM <i>(If block 1a is a branch office):</i>	Brown and Caldwell

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REVISED - Attachment I – General Qualifications**

3. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST YEAR

a. Approximate No. of Projects	b. Experience	c. Revenue Index Number (see below)
10	Automation; Controls; Instrumentation	7
23	Construction Management	8
15	Cost Estimating; Cost Engineering & Analysis	4
2	Desalinization (Process and Facilities)	4
30	Electrical Studies and Design	5
178	Environmental Impact Studies, Assessments	8
1	Heating, Ventilating, Air Conditioning	3
37	Industrial Waste Treatment	6
109	Infrastructure	7
32	Mining and Mineralogy	6
87	Sewage Collection, Treatment and Disposal	6
72	Solid Waste; Incineration; Landfill	6
16	Structural Design; Special Structures	4
103	Storm Water Handling and Facilities	5
12	Toxicology	3
106	Water Resources; Hydrology; Groundwater	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

- | | |
|---|---|
| 1. Less than \$100,000 | 6. \$2 million to less than \$5 million |
| 2. \$100,000 to less than \$250,000 | 7. \$5 million to less than \$10 million |
| 3. \$250,000 to less than \$500,000 | 8. \$10 million to less than \$25 million |
| 4. \$500,000 to less than \$1 million | 9. \$25 million to less than \$50 million |
| 5. \$1 million to less than \$2 million | 10. \$50 million or greater |

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4. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT (Complete one Section 4 for each key person.)

a. NAME Jeff Littell, RG	b. ROLE IN THIS CONTRACT Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL 19	2. WITH CURRENT FIRM 8
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Geology, Kansas State University, 1994		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Registered Geologist, #49658	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc) 40-Hour OSHA HAZWOPER, 1994, 8-Hour OSHA HAZWOPER Refresher, 2010, 8-Hour OSHA HAZWOPER Manager/Supervisor, 2009			

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Bullard Water Campus, Goodyear, Arizona	2009	2009
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
<p>Project Director. The City of Goodyear, Arizona, is one of the fastest growing communities in the country with an average annual growth rate of 15 to 20 percent. With growth exceeding the existing infrastructure capabilities, the City has developed a program to quickly grow their potable water delivery capacity. The brackish groundwater from local perched aquifers requires treatment for potable use in most cases.</p> <p>BC led three design-build teams that delivered new potable water sources and treatment projects. The \$18 million effort included developing water sources, permitting, design, and construction. Initially, we researched and evaluated potential water sources including:</p> <ul style="list-style-type: none"> • Converting existing agricultural wells that are becoming dormant with land use changes. • Drilling and equipping new/replacement water wells. • Purchasing water from adjacent purveyors. <p>We surveyed existing water treatment systems and were responsible for:</p> <ul style="list-style-type: none"> • Developing reverse osmosis (RO) equipment standards. • Enhancing the performance of existing plants. • Expanding existing plants. • Developing new treatment systems through symbiotic business relationships with nearby irrigation districts. <p>The services provided are described below.</p> <p>Converting Agricultural Wells. Converting existing agricultural wells was a quick method of delivering a large quantity of water. To assist, our hydrogeologists and engineers investigated a dozen agricultural wells to determine the feasibility of their use. The BC team installed a sleeve in one well, called Well No. 20, and converted the agricultural well into a 1,500 gpm potable water well to help meet peak Summer 2006 demand. This well is high in total dissolved solids (TDS). Water from the well blends with treated water to achieve acceptable TDS levels without additional treatment costs.</p> <p>Replacement Water Wells. BC was charged with replacing an existing water supply well being displaced by a road widening project. Well No. 19 is a 1,200 gpm well that was constructed as an emergency project, including decommissioning the existing well upon completion of the replacement well. As part of this conversion, an existing City-owned surge tank was retrofitted and installed at the existing metering station facility. This project required constant coordination with other design-build teams with adjacent and connecting roadway improvements, potable water distribution lines, and raw water transmission lines.</p> <p>Locating, Permitting, Drilling and Equipping New Wells. BC installed a new 1,800 gpm well between Summer 2006 and Summer 2007. Well No. 22 was located on existing City property located in close proximity to the treatment facility and Well No. 19 to reduce cost and schedule. The well could only be permitted for a maximum 600 gpm average daily pumping rate, but we determined that sizing the pump for 1,800 gpm would allow the City to meet their peak summer demands. We established an operating procedure to limit use of the well during non-peak demand to stay below the permitted maximum. The well is located near a residential development; therefore, we took into consideration noise levels. A submersible pump was considered, but it was determined that a sound enclosure over a vertical turbine pump would reduce capital expenditures and operating costs.</p> <p>Consultant Fee: \$4.5M</p>		

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a. NAME Chuck Howe	b. ROLE IN THIS CONTRACT Project Geologist	c. YEARS EXPERIENCE	
		3. TOTAL 23	4. WITH CURRENT FIRM Less than 1 year
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS Forest Resource Management; Minor in Wildlife Biology 1990, University of Montana; AS Recreation and Wildlife Management 1987, Hocking College, Ohio		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc)			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION (City and State) Facility Master Plan – Program Development, ADOT Operations yards located in Safford, Flagstaff, Page, Globe, Tucson, Show Low, Springerville, Wickenburg, Camp Verde, Arizona	(2) Year Completed	
		Professional Services 2013	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Program Manager. Development of program to provide a comprehensive plan with: existing features, planned features and other constraints associated with routine operations while identifying high risk features, monitoring points and requirements. Additional listing of future improvements and anticipated regulatory requirements was generated for each site. Consultant Fee: \$300,000		
2)	(1) TITLE AND LOCATION (City and State) Environmental Compliance Program Development, Arizona Department of Transportation, Various Locations, Arizona	(2) Year Completed	
		Professional Services 2012	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Compliance Program Manager. Development of a 3-tiered program of environmental audits to evaluate the extent of compliance with all environmental commitments from Federal, State, Regional, Tribal and Local regulatory entities. Evaluation of site conditions, contractor and/or operations staff documentation. Evaluations performed using generated report formats, incorporated into an integrated feature and resource inventory system for review, measurement and tracking of required corrective actions. Consultant Fee: \$100,000		

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a. NAME Mason Bolitho, RG	b. ROLE IN THIS CONTRACT Project Geologist	c. YEARS EXPERIENCE	
		1. TOTAL 34	2. WITH CURRENT FIRM 1
a. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			

e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Geology, University of Nebraska-Lincoln, 1982; BS, Geology, University of Kansas, 1978	f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Registered Geologist, # 46784
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g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Denison Uranium Mine Permits, Flagstaff, Arizona	2012	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Senior Hydrologist. Aquifer Protection permits for EZ Mine, Pinenut Mine, and Canyon Mine breccia pipe uranium mines in Arizona Strip area north of Grand Canyon. Reviewed permit language, acted as technical spokesperson for ADEQ during public comment period, and appeared before community members to answer questions during public meetings in Flagstaff and Fredonia. Consultant Fee: \$50,000		
2)	Curis Copper, Pinal County, Arizona	2012	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Senior Hydrologist. Aquifer Protection Permit for proposed in-situ copper mine in Pinal County, Arizona. Oversaw staff hydrologist, performed reviews of groundwater flow model, coordinated and reviewed agency comments, and provided responses in responsiveness summary. Attended public meetings on behalf of ADEQ. Consultant Fee: \$100,000		

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a. NAME Angela Balliet, PE	b. ROLE IN THIS CONTRACT Project Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 15
b. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			

e. EDUCATION (DEGREE AND SPECIALIZATION)	f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
BS, Civil Engineering, University of Arizona, 1993; MS, Environmental Engineering, University of Arizona, 1995	Arizona, Professional Environmental Engineer, #37337; New Mexico, Professional Environmental Engineer, #17130

g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
40-Hour OSHA HAZWOPER, 1998; 8-Hour OSHA HAZWOPER Refresher, 2010; 8-Hour OSHA HAZWOPER Manager/Supervisor, 2003; 8-Hour MSHA, 2010

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Facility Pollution Prevention Plans (FPPPs), ADOT Environmental Services, Various Locations, Arizona	2012	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
<p>1) Project Manager. Developed templates for a combined SWPPP and SPCC Plan for ADOT maintenance yards and other sites; three templates were developed, to reflect the variety of ADOT sites around the state. The resulting FPPP is a more concise and usable plan, which makes it easier and more practical for ADOT employees to comply with both sets of regulations, and eliminates duplication of activities. Ms. Balliet directed preparation of FPPPs for approximately 90 maintenance yards and other sites throughout the state using the three templates; this included coordination and oversight of several teams in conducting the field work and preparing draft documents. Ms. Balliet provided final technical review and certified all 90 Plans.</p> <p>Consultant Fee: \$997,000</p>		
Environmental Research and Environmental Policy Drafting Assistance, ADOT Environmental Services, Various Locations, Arizona	2012	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
<p>2) Technical Resource. Assisted OES with researching information on environmental practices and policies in the other 49 states; compiled this information into a searchable database that was then uploaded into ADOT's system. BC then incorporated this information to assist OES in preparing draft environmental policies for 18 topics. For each topic, BC coordinated and conducted meetings with various stakeholders to obtain input and feedback on the draft polices, and then prepared several iterations of drafts for review and comment by OES, before providing final draft versions of the policies.</p> <p>Consultant Fee: \$336,000</p>		

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a. NAME Barbara Sylvester, PE	b. ROLE IN THIS CONTRACT Project Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 16	2. WITH CURRENT FIRM 18

d. FIRM NAME AND LOCATION (*City and State*)
Brown and Caldwell, Phoenix, Arizona

e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) BA, Physics, Reed College, 1989; MS, Civil (Environmental) Engineering, Texas A&M, 1994	f. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Arizona, Environmental Engineer, #40268
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g. OTHER PROFESSIONAL QUALIFICATIONS (*Publications, Organizations, Training, Awards, etc.*)
40-Hour OSHA HAZWOPER, 1995; 8-Hour OSHA HAZWOPER Refresher, 2010; 8-Hour OSHA HAZWOPER Manager/Supervisor, 1998; 8-Hour MSHA, 2010

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (<i>City and State</i>) Landfill Groundwater, Leachate, and Soil Monitoring, Waste Management, Various Location, Arizona	(2) Year Completed	
	Professional Services	Construction (<i>if applicable</i>)

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE Check if project performed with current firm
 1) **Project Manager.** Managed routine monitoring for eight landfills in Arizona including groundwater, leachate, soil vapor, and soil sampling. Responsible for reviewing results against standards, performing DUMPStat statistical analysis and drafting all notifications to ADEQ. Performed related additional work such as pump replacement, gas probe and well installations and abandonments. Extensive negotiations with regulators to standardize analytical and reporting requirement and maintain site to site consistency. This is a yearly project.
Consultant Fee: \$120,000-\$150,000 annually

(1) TITLE AND LOCATION (<i>City and State</i>) Aquifer Protection Permit (APP), Waste Management, Phoenix, Arizona	(2) Year Completed	
	Professional Services 2012	Construction (<i>if applicable</i>)

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE Check if project performed with current firm
 2) **Project Manager.** Permitted new evaporation ponds at two different sites. Negotiated permit language and requirements.
Consultant Fee: \$40,000

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a. NAME Jarrell Southall	b. ROLE IN THIS CONTRACT Technical Advisor	c. YEARS EXPERIENCE	
		1. TOTAL 41	2. WITH CURRENT FIRM 18
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Mathematics/Chemistry, Henderson State University, 1963		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) OSHA 40-Hour HAZWOPER, 1995; OSHA 8-Hour HAZWOPER Refresher, 2010; 8-Hour OSHA HAZWOPER Manager/Supervisor, 1998; 8-Hour MSHA, 2010			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Florence Copper Project , Florence, Arizona	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Technical Advisor. BC managed project to obtain APP and UIC Permit for installation and operation of approximately 2,500 injection and recovery wells and SX/EW facility. Subsequently served as technical advisor for the transfer of permits (under temporary cessation) to new owner and for preparation of new applications. Consultant Fee: \$2M+		
2)	BHP Copper - Northwest Study Area, Soil Remediation, Superior, Arizona	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Technical Advisor. BC Served as technical advisor for preparation of BHP Copper's VRP application and for preparation of plans for soil characterization of approximately 130 NSA properties, for area-wide and property-specific human health risk assessments for arsenic, and for the replacement of soils exceeding action levels. Consultant Fee: \$1M+		
3)	World Resources Company, RCRA Permit Application, Tolleson, Arizona	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Technical Advisor. BC Serve as technical advisor for updating WRC's RCRA permit application. Provide assistance relative to Waste Analysis Plan, Closure Plan, Equipment Decontamination and Removal Plan, Inspection and Monitoring and establishing air quality benchmarks for metals. Consultant Fee: \$200,000		

**RFQ# ADSP014-00003465, Annual Request for Qualifications and Experience
REVISED - Attachment I – General Qualifications**

a. NAME Brent Cain	b. ROLE IN THIS CONTRACT Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 14	2. WITH CURRENT FIRM 13

d. FIRM NAME AND LOCATION (City and State)
Brown and Caldwell, Sacramento, California

e. EDUCATION (DEGREE AND SPECIALIZATION) f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)

M.S. and Ph.D. Coursework and Research, Dept. of Hydrology and Water Resources, University of Arizona 1994-2000; B.S., Geology, Furman University, South Carolina, 1994

g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Sub-Watershed Recharge Modeling, Sierra Vista, Arizona		
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Project Manager/Senior Modeler. Brent updated and recalibrated the USGS' Upper San Pedro MODFLOW model to produce the Sierra Vista Sub-watershed groundwater flow model. The model was used to assess the current and future impacts of recharge from the City's WRF upon the riparian conditions along the San Pedro River. This project required intensive reviews and refinement of the USGS and State's regional numerical groundwater flow models. It also involved full GIS integration of model data sets and interactive, 3-D visualization of complex hydrogeologic conditions and water supply management. Brent presented project status and results to City council, the Upper San Pedro Partnership, USBR, Arizona DWR and the public. Updates are still being completed. Consultant Fee: \$250,000		
Lower Hassayampa Sub-Basin Hydrologic Study and Computer Model, Buckeye, Arizona		
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 2) Project Modeler. Brent developed a conceptual and numerical groundwater flow model to address water supply issues associated with future development and assured water supply certification in a region anticipated to exceed the Phoenix metro area in size and population. Project stakeholders included landowners and developers, the Town of Buckeye and DWR. The two-year study was unprecedented in its goal of uniting the stakeholders to develop a new model as a long-term water planning tool. Results from the study have been adopted and are being used by DWR, the Town and other local water providers for numerous hydrologic assessments, including the optimization of future reclaimed water recharge projects and a groundwater master plan. DWR and BC have merged the Hassayampa model with a newly updated model of the Salt River Valley Basin. Updates are still being completed. Consultant Fee: \$700,000		

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a. NAME Lauren Handley, RG	b. ROLE IN THIS CONTRACT Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 5	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Geological Sciences, Arizona State University, 2007		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Registered Geologist, #54329	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Groundwater Investigation, Cyprus Tohono Corporation, Tohono Nation, Arizona	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Project Hydrogeologist. Project was a long-term groundwater monitoring program at an inactive copper mine in southern Arizona. Responsibilities include coordination of field sampling equipment and oversight of field sampling teams during quarterly monitoring of over 75 wells, mine shafts, exploration boreholes, and the pit lake; coordination with the analytical laboratories; data review and validation; groundwater monitoring report preparation; assisting with the development and ensuring strict adherence to the health and safety plan, investigation-derived waste management plan, field sampling plan, and quality assurance project plan. Consultant Fee: \$300,000		
3)	Groundwater Monitoring, IMSAMET of Arizona, Goodyear, Arizona	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Hydrogeologist. Aquifer protection permit monitoring at a metal recycling plant in Goodyear, Arizona. Primary responsibilities include managing quarterly sampling activities, manage and analyze groundwater data, and preparation of quarterly reports. Consultant Fee: \$13,000		

**RFQ# ADSP014-00003465, Annual Request for Qualifications and Experience
REVISED - Attachment I – General Qualifications**

a. NAME	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
Tricia LaRue	Scientist	1. TOTAL 11	2. WITH CURRENT FIRM 3
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Boise, Idaho			
e. EDUCATION (DEGREE AND SPECIALIZATION) MAG, Land/Area Development and Management, Texas State University, 2004; BS, Biology, Angelo State University, 1998		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) "How to Manage the NEPA Process and Write Effective NEPA Documents"; TxDOT Title VI Compliance Training; 8-hour MSHA Safety Training/Surface Mine Operations			

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Grand Parkway Segment C EIS Fort Bend and Brazoria Counties, Texas	2013	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Project Manager and Task Manager. Evaluated current and future land use, environmental justice, indirect and cumulative impact analyses. Conducted interview with agencies, commissioners, engineers and others. The proposed Grand Parkway was a planned 185-mile circumferential highway facility on new location around the greater Houston metropolitan area. Ms. LaRue served as project manager as well as task manager and was responsible for evaluating current and future land use, environmental justice disproportions effects evaluation and compliance, community impacts, and indirect and cumulative impact analysis for the proposed facility. Ms. LaRue conducted interviews with commissioners, engineers, school districts, U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Texas Parks and Wildlife Department (TPWD), and local planners in Fort Bend and Brazoria. Ms. LaRue was also involved in the preparation and presentation of the administrative record to Federal Highway Administration (FHWA) officials. Very detailed alternatives analysis, relocations, redesign, biological opinion, Section 4(f). The DEIS received approval from TxDOT on 7/21/11; FEIS signed by FHWA 8/8/12; Record of Decision (ROD) is anticipated to be issued. Consultant Fee: \$10M+		
South Rasmussen Valley Exploration License Environmental Assessment, Vegetation and Wildlife Evaluations, Soda Springs, Idaho	2013	
2) (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Permitting Specialist & Biologist. Performed biological baseline review for wetlands, vegetation, wildlife habitat and migratory birds. Authored biological portions of the EA. Evaluated project impacts and developed environmental mitigation measures. Considered potential impacts to threatened and endangered species. Consultant Fee: \$6M+		

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a. NAME Chris Legg, RG	b. ROLE IN THIS CONTRACT Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 19	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION (<i>City and State</i>) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) MS, Geology, Baylor University, 1995; BS, Geology, Northern Arizona University, 1990		f. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Arizona Registered Geologist, #33751	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, etc.</i>)			
H. RELEVANT PROJECTS			
(1) TITLE AND LOCATION (<i>City and State</i>) 7th and Bethany Home Road WQARF Site ERA, ADEQ, Phoenix, AZ		(2) Year Completed	
		Professional Services	Construction (<i>if applicable</i>)
(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Project Manager. Project is a State of Arizona Superfund site. This was an Early Response Action (ERA) for a former drycleaner site impacted with tetrachloroethylene (PCE) in soil and groundwater. Mr. Legg supervised remedial investigation to characterize source area around former septic system and assess impacts to groundwater. RI activities included soil, soil vapor and groundwater sampling. All media, soil, soil vapor and groundwater were VOCs conducted using a mobile laboratory. An SVE system with five soil vapor extraction wells were installed to remediate PCE in the vadose zone. Groundwater monitor wells were also installed. BC is currently working at this site with additional projects. Consultant Fee: \$500,000 + current work			

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a. NAME Thayne Loendorf	b. ROLE IN THIS CONTRACT Construction Manager	c. YEARS EXPERIENCE	
		1. TOTAL 30	2. WITH CURRENT FIRM 23
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) AS, Water/ Wastewater Technology, Clackamas Community College; AS, Turf; Management/Soils, University of Maryland		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION (City and State) 2013 Sewer Rehabilitation Phase II, Reno, Nevada	(2) Year Completed	
		Professional Services 2013	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager. Responsible for the analysis, design, and construction management for 44,000 lf of 8- to 72-inch sewer pipeline rehabilitation. Rehabilitation methods were determined as the assessment was completed and bid documents were prepared for seventeen separate project areas. Design effort included coordination with several other contractors with projects in the same locations and property owners for pipeline across easements on private property. Consultant Fee: \$1.5M		<input checked="" type="checkbox"/> Check if project performed with current firm
2)	(1) TITLE AND LOCATION (City and State) 2012 Sewer Rehabilitation, Reno, Nevada	(2) Year Completed	
		Professional Services 2012	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager. Responsible for the analysis, design, and construction management for 31,000 lf of 8- to 36-inch sewer pipeline rehabilitation. Rehabilitation methods were determined as the assessment was completed and bid documents were prepared for twenty separate project areas. Design effort included coordination with airport personnel for rehabilitation of pipeline located beneath one of the airport runways. Consultant Fee: \$841,000		<input checked="" type="checkbox"/> Check if project performed with current firm

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a. NAME Bryan Mason	b. ROLE IN THIS CONTRACT Cultural Resource Management	c. YEARS EXPERIENCE	
		1. TOTAL 13	2. WITH CURRENT FIRM 7

d. FIRM NAME AND LOCATION (*City and State*)
Brown and Caldwell, Houston, Texas

e. EDUCATION (*DEGREE AND SPECIALIZATION*)
MA, Anthropology, Texas A&M University, 2003; BA, Anthropology, Texas A&M University, 1996

f. CURRENT PROFESSIONAL REGISTRATION (*STATE AND DISCIPLINE*)

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

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) Year Completed	
Downtown Wastewater Treatment Plant EID, City of Kingman, Arizona	Professional Services 2012	Construction (<i>if applicable</i>) 2013

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE Check if project performed with current firm

1) **NEPA Compliance and Biology.** AZPDES permitting. Prepared Environmental Information Documents (EIDs) for the Water Infrastructure Finance Authority of Arizona (WIFA) for this wastewater treatment plant replacement project by the City of Kingman. The EID established NEPA compliance and included evaluations for biology, cultural resources, water quality, and socioeconomics. Coordinated early with Region 2 of the USFWS and obtained biological and cultural resource clearances in a timely fashion. Obtained USACE approvals and coordinated floodplain map revisions for the modification and armoring of a stream channel. Obtained modified then new AZPEDES discharge permits for both plants. BC also completed the design portion of the project and was used during construction activities.

Consultant Fee: \$496,800

(1) TITLE AND LOCATION (<i>City and State</i>)	(2) Year Completed	
Hilltop EID, Kingman, Arizona	Professional Services 2012	Construction (<i>if applicable</i>) 2013

(3) BRIEF DESCRIPTION (*Brief scope, size, cost, etc.*) AND SPECIFIC ROLE Check if project performed with current firm

2) **Principal Investigator.** Directed the field work for a Class III Archaeological Survey, encompassing approximately 200 acres northeast of Kingman, Arizona. Mr. Mason wrote the archaeological report along with a section of the EID which was submitted to the USACE and the Arizona SHPO. BC also completed the design portion of the project and was used during construction activities.

Consultant Fee: \$200,000

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a. NAME Brandon McLean, RG	b. ROLE IN THIS CONTRACT Geologist	c. YEARS EXPERIENCE	
		1. TOTAL 6	2. WITH CURRENT FIRM 2
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Geological Sciences, Arizona State University, 2007; BS, Geological Sciences, SUNY Binghamton, 2004		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Registered Geologist: Arizona, No. 53079	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION (City and State) 16 th Street and Camelback Road WQARF Site, ADEQ, Phoenix, Arizona	(2) Year Completed	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Hydrogeologist II. This project consists of monitoring two groundwater contaminant plumes, the north plume of PCE from a former dry cleaner and the south plume of 1, 2-DCA from former service stations. Mr. McLean acts as the project hydrogeologist and assists with groundwater monitoring of water levels and sampling using passive diffusion bags. Mr. McLean documents the field work and interprets results in technical reports to the State agency. Project is on-going. Consultant Fee: \$91,000		
2)	(1) TITLE AND LOCATION (City and State) Former Fedmart, ADEQ, Phoenix, Arizona	(2) Year Completed	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Hydrogeologist II. This project consists of the site characterization and remediation of petroleum contaminated soil and groundwater at a former service station. Mr. McLean supported the project manager in the field by assisting with the initial groundwater sampling event and performed drilling oversight and lithologic logging during the installation of 10 nested soil vapor extraction (SVE)/air sparge (AS) wells. He also performed oversight during the installation of the remediation system which integrated each of the nested wells. Project is on-going. Consultant Fee: \$102,108		
3)	(1) TITLE AND LOCATION (City and State) Andrews' Property, ADEQ, San Simon, Arizona	(2) Year Completed	
		Professional Services	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Hydrogeologist II. This project consists of the site characterization and remediation of soil and groundwater contamination at a former gasoline station where four USTs were removed in 1999. Mr. McLean supported the project manager in the field by performing oversight and lithologic logging during the drilling and installation of eight nested soil vapor extraction (SVE)/air sparge (AS) wells. Mr. McLean also assisted on the project after two additional USTs were removed by performing oversight and lithologic logging during the drilling and installation of three monitor wells with soil sampling for chemical analysis at one monitor well and at three shallow soil borings related to the tank investigation. Project is on-going. Consultant Fee: \$354,302		

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a. NAME Tim Miller, CRS	b. ROLE IN THIS CONTRACT Scientist	c. YEARS EXPERIENCE	
		1. TOTAL 20	2. WITH CURRENT FIRM less than 1 year
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Forest Land Management, Northern Arizona University, 1993		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Certified Remediation Specialist, #47780	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION (City and State) La Estancia de Tucson, Tucson, Arizona	(2) Year Completed	
		Professional Services 2012	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm		
	<p>Project Manager. The Site consists of 500 acres of desert land located in southeast Tucson, Arizona. Limited historical residential development existed on the site; although, the environmental concerns were associated with an adjoining industrial facility. The Site received discharges from the adjoining industrial facility, which was a hazardous waste treatment and storage facility, for approximately 30 years. The result of these discharges was heavy metal contamination in the site surface soils.</p> <p>Consultant Fee: \$200,000</p>		
3)	(1) TITLE AND LOCATION (City and State) Orchid Tree Apartment, Scottsdale, Arizona	(2) Year Completed	
		Professional Services 2013	Construction (if applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm		
	<p>Project Manager. The site consisted of an abandoned apartment complex situated on 20 acres and developed with 27 structures and over 300 dwelling units. The scope of work was a comprehensive Asbestos and Lead-based Paint Inspection. Tim Miller was the Project Manager on of the Site and was responsible for coordinating inspection and reporting efforts. The site was anticipated for full demolition and redevelopment as a multi-use commercial and residential development known as Sonoran Village.</p> <p>Consultant Fee: \$70,000</p>		

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a. NAME Tracy Moraca, PE, PMP		b. ROLE IN THIS CONTRACT Project Engineer		c. YEARS EXPERIENCE	
				1. TOTAL 18	2. WITH CURRENT FIRM 15
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona					
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Environmental Engineering, Northern Arizona University, 1996			f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Professional Environmental Engineer, #35199; Arizona Professional Civil Engineer, #48993; Project Management Professional, #1444623		
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)					

H. RELEVANT PROJECTS

		(2) Year Completed	
(1) TITLE AND LOCATION (City and State)		Professional Services	Construction (if applicable)
Kingman Downtown Wastewater Treatment Plant Management Plan, Kingman, Arizona		2012	2013
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Project Manager. Studied alternatives to managing the wastewater currently being treated at the City of Kingman Downtown Wastewater Treatment Plant (WWTP). The WWTP process consists of two aerated lagoons, is not meeting effluent quality limits established in the current discharge permit, and lies within a 100-year floodplain. The project determined how and if there was a course of action to bring the WWTP into compliance. If not, an alternate solution will be found to make modifications to the collection system to route the wastewater currently being discharged into the WWTP to another treatment location. The decisions made were documented in a Management Plan for the downtown wastewater service area. Consultant Fee: \$496,800			
(1) TITLE AND LOCATION (City and State)		Professional Services	Construction (if applicable)
Phoenix International Raceway (PIR) Lift Station, Avondale, Arizona		2012	2013
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 2) Project Manager. Phoenix International Raceway (PIR) had an existing septic system that serviced the property, and twice a year holds large racing events that produce high sewer flows exceeding the capacity of the septic system, requiring alternative disposal methods. The City constructed a new lift station to be used during these race events in lieu of the septic system and other disposal methods. BC was contracted for the evaluation of alternatives, preliminary design, and detailed design for the new lift station. BC completed a Technical Memorandum that described the expected peak flows to be handled by the new lift station, use of the existing PIR septic system for other flows, the forcemain size and capacity, and conceptual level wetwell sizing and pump selection for this new lift station. A single forcemain was installed with a contingency plan developed in case of an emergency. BC then completed a Basis of Design Report (Report) for the new raw sewage lift station. This Report defined and presented the design criteria that was used to prepare the construction documents, including general design features recommended and equipment to be included in the design. Upon completion of the Report, BC completed the construction plans and specifications to be used for bid procurement. Consultant Fee: \$89,820			

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a. NAME Steve Puterbaugh, PE	b. ROLE IN THIS CONTRACT Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 10	2. WITH CURRENT FIRM 9
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Civil/Environmental Engineering, Bucknell University, 2003; BS, Chemical Engineering Pennsylvania State University, 1998		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Professional Engineer, #49133	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Grade Three Wastewater Treatment Operator, State of Arizona, OP032328; Grade Two Water Treatment Operator, State of Arizona, OP032328; OSHA 29 CFR 1910.120: 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training; Site Safety Officer Certification			

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Bullard Water Campus, Goodyear, Arizona	2009	2009
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm		
<p>Project Engineer. The City of Goodyear, Arizona, is one of the fastest growing communities in the country with an average annual growth rate of 15 to 20 percent. With growth exceeding the existing infrastructure capabilities, the City has developed a program to quickly grow their potable water delivery capacity. The brackish groundwater from local perched aquifers requires treatment for potable use in most cases.</p> <p>BC led three design-build teams that delivered new potable water sources and treatment projects. The \$18 million effort included developing water sources, permitting, design and construction. Initially, we researched and evaluated potential water sources including:</p> <ul style="list-style-type: none"> • Converting existing agricultural wells that are becoming dormant with land use changes. • Drilling and equipping new/replacement water wells. • Purchasing water from adjacent purveyors. • We surveyed existing water treatment systems and were responsible for: <ul style="list-style-type: none"> • Developing reverse osmosis (RO) equipment standards. • Enhancing the performance of existing plants. • Expanding existing plants. • Developing new treatment systems through symbiotic business relationships with nearby irrigation districts. <p>The services provided are described below.</p> <p>Converting Agricultural Wells. Converting existing agricultural wells was a quick method of delivering a large quantity of water. To assist, our hydrogeologists and engineers investigated a dozen agricultural wells to determine the feasibility of their use. The BC team installed a sleeve in one well, called Well No. 20, and converted the agricultural well into a 1,500 gpm potable water well to help meet peak Summer 2006 demand. This well is high in total dissolved solids (TDS). Water from the well blends with treated water to achieve acceptable TDS levels without additional treatment costs.</p> <p>Replacement Water Wells. BC was charged with replacing an existing water supply well being displaced by a road widening project. Well No. 19 is a 1,200 gpm well that was constructed as an emergency project, including decommissioning the existing well upon completion of the replacement well. As part of this conversion, an existing City-owned surge tank was retrofitted and installed at the existing metering station facility. This project required constant coordination with other design-build teams with adjacent and connecting roadway improvements, potable water distribution lines, and raw water transmission lines.</p> <p>Locating, Permitting, Drilling and Equipping New Wells. BC installed a new 1,800 gpm well between Summer 2006 and Summer 2007. Well No. 22 was located on existing City property located in close proximity to the treatment facility and Well No. 19 to reduce cost and schedule. The well could only be permitted for a maximum 600 gpm average daily pumping rate, but we determined that sizing the pump for 1,800 gpm would allow the City to meet their peak summer demands. We established an operating procedure to limit use of the well during non-peak demand to stay below the permitted maximum. The well is located near a residential development; therefore, we took into consideration noise levels. A submersible pump was considered, but it was determined that a sound enclosure over a vertical turbine pump would reduce capital expenditures and operating costs.</p> <p>Consultant Fee: \$4.5M</p>		

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a. NAME Chris Reichard	b. ROLE IN THIS CONTRACT Environmental Planner	c. YEARS EXPERIENCE	
		1. TOTAL 14	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION (<i>City and State</i>) Brown and Caldwell, Denver, Colorado			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) B.S., Natural Resources, Concentration Environmental Science, University of Maine-Orono, 1998		f. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>)	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, etc.</i>) Certificate of Training in the 1987 Army Corps of Engineers Wetlands Delineation Manual; USFWS-accepted surveyor for the Ute Ladies'- tresses orchid (<i>Spiranthes diluvialis</i>); USFWS-permitted surveyor for the Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION (<i>City and State</i>) Downtown Wastewater Treatment Plant EID, City of Kingman, Arizona	(2) Year Completed	
		Professional Services 2010	Construction (<i>if applicable</i>) 2013
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm NEPA Compliance and Biology for AZPDES Permitting. Prepared Environmental Information Documents (EIDs) for the Water Infrastructure Finance Authority of Arizona (WIFA) for this wastewater treatment plant replacement project by the City of Kingman. The EID established NEPA compliance and included evaluations for biology, cultural resources, water quality, and socioeconomics. Coordinated early with Region 2 of the USFWS and obtained biological and cultural resource clearances in a timely fashion. Obtained USACE approvals and coordinated floodplain map revisions for the modification and armoring of a stream channel. Obtained modified then new AZPEDES discharge permits for both plants. BC also completed the design portion of the project and was used during construction activities.		
2)	(1) TITLE AND LOCATION (<i>City and State</i>) South Rasmussen Valley Exploration License Environmental Assessment, Vegetation and Wildlife Evaluations, Soda Springs, Idaho	(2) Year Completed	
		Professional Services 2013	Construction (<i>if applicable</i>)
	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Permitting Specialist & Biologist. Performed biological baseline review for wetlands, vegetation, wildlife habitat and migratory birds. Authored biological portions of the EA. Evaluated project impacts and developed environmental mitigation measures. Considered potential impacts to threatened and endangered species. Consultant Fee: \$6M+		

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a. NAME Neil Waterman, PE	b. ROLE IN THIS CONTRACT Technical Reviewer	c. YEARS EXPERIENCE	
		1. TOTAL 34	2. WITH CURRENT FIRM 34
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Environmental Science and Engineering, Virginia Polytechnic Institute and State University, 1978; BS, Civil Engineering, University of Arizona, 1980; BS, Forestry, Virginia Polytechnic Institute and State University, 1975		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona, Professional Civil Engineer, #15297; California, Professional Civil Engineer, #68047; Louisiana, Professional Engineer, #32910	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Zone 1, 1A, 2 Infrastructure Improvements Project, Phoenix, Arizona	2013	2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Technical Advisor. Served as technical advisor on this program management project involving multiple water transmission main segments, pressure reducing valve stations, and booster pumping stations. Was actively engaged in developing the preliminary design for Booster Pumping Station 2A-B12, and served as a reviewer for the Preliminary Design Report prepared as part of program management responsibilities. Consultant Fee: \$2.5M		
1)	Kingman Downtown Wastewater Treatment Plant Management Plan, Kingman, Arizona	2012	2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager. Studied alternatives to managing the wastewater currently being treated at the City of Kingman Downtown Wastewater Treatment Plant (WWTP). The WWTP process consists of two aerated lagoons, is not meeting effluent quality limits established in the current discharge permit, and lies within a 100-year floodplain. The project determined how and if there was a course of action to bring the WWTP into compliance. If not, an alternate solution will be found to make modifications to the collection system to route the wastewater currently being discharged into the WWTP to another treatment location. The decisions made were documented in a Management Plan for the downtown wastewater service area. Consultant Fee: \$496,800		

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REVISED - Attachment I – General Qualifications**

a. NAME Jeff Weaver	b. ROLE IN THIS CONTRACT Hydrogeologist	c. YEARS EXPERIENCE	
		1. TOTAL 27	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Denver, Colorado			
e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Hydrology, University of Arizona, 1989; BS, Environmental Geography, Western Michigan University, 1985		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)			

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Hydrogeologic and Groundwater Modeling: Upper Santa Clara River Chloride TMDL Collaborative Process, Santa Clarita, California	2012	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm		
<p>1) Technical Project Leader. Provided hydrogeologic and groundwater modeling expertise as part of a multi-stakeholder Technical Working Group to assess TMDL related surface and groundwater interactions of chloride within the Upper Santa Clara River watershed. Work includes development of watershed-scale water and chloride load balances, conceptual model development related to surface water and groundwater interactions, and development of a basin scale integrated surface and groundwater model using the MODHMS code. Lead modeler in application of MODHMS model to simulate a variety of water and chloride management options to achieve TMDL limits</p> <p>Consultant Fee: \$1.5M+</p>		
(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
Groundwater Flow and Transport Modeling, West Van Buren Study Area, Phoenix, Arizona	2013	
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm		
<p>3) Modeling Leader. Provide senior review and oversight on updating an existing groundwater flow model for the WVBSA WQARF site in Phoenix, Arizona. Model is used to assess potential movement of a large PCE and TCE plume under the City of Phoenix Served as client representative to a multiple PRP stakeholders working group. Lead the technical working group for application of the groundwater flow model to assess remedial options.</p> <p>Consultant Fee: \$250,000</p>		

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a. NAME Randy Mills	b. ROLE IN THIS CONTRACT EI&C Services	c. YEARS EXPERIENCE	
		1. TOTAL 29	2. WITH CURRENT FIRM 7

d. FIRM NAME AND LOCATION (City and State)
Brown and Caldwell, Phoenix, Arizona

e. EDUCATION (DEGREE AND SPECIALIZATION) f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE)
BS, Business Management, University of Phoenix, 2013

g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
EPRI Certified Level II Instrumentation Technician; SKM Systems Power Studies Software Trained; Lyncole Grounding Systems Design Applications and Testing Certified; Journeyman Wireman, I.B.E.W. Local 640 Apprenticeship Training Program Phoenix, Arizona;

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Cave Creek WRF Treatment Plant, Phoenix, Arizona		
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Project Manager. BC has continuously worked at the Union Hills WTP since 2004 completing various tasks for the EI&C systems testing and inspections services. Under the recently completed contract BC provided design and construction support for major electrical rehabilitation upgrades, the design and installation of DBP Mitigation project work, upgrades to other major components of the electrical distribution system, and the chlorine scrubber replacement project for the design phase. BC is maintaining the arc flash hazard analysis study for the plant, and relabeling the equipment as required. Project is on-going. Consultant Fee: various cost, used on as-needed basis		
Arc-Flash Hazard Analysis and Engineering Services, Phoenix, Arizona		
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 3) Senior Design Engineer. BC worked as the Program Manager with the City of Phoenix to support Arc Flash through EI&C inspection services, design reviews for Arc Flash mitigation, coordination studies, and Arc Flash Hazard analysis for over one hundred Water Service Department sites and six WTP and WWTPs. Since development and implementation of Arc Flash projects, BC has been written into the City's 16215 specifications for all new construction projects requiring an updated Arc Flash analysis. We are currently written into the 16061 specification to perform ground grid testing for all construction projects. We have provided Arc Flash analysis and additional engineering services for the Val Vista WTP, Union Hills WTP, Cave Creek WRF, 24th Street WTP, Deer Valley WTP, Verde WTP, 23rd Avenue WWTP, 91st Avenue WWTP, and Distributions and Collections sites. BC monitored and controlled the overall Arc Flash project at each facility to maintain continuity of project work keeping teams communicating and focused. Project is on-going. Consultant Fee: various cost, used on as-needed basis		

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a. NAME Ken Chandler, PE	b. ROLE IN THIS CONTRACT Electrical and I&C Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 29	2. WITH CURRENT FIRM 15
d. FIRM NAME AND LOCATION (City and State) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Electronics Engineering Technology, Devry, 1980		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Arizona Professional Electrical Engineer, #36697 Arizona Professional Control Systems Engineer, #35940	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Certified Documents Technologist: Construction Specifications Institute, 2012			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Downtown WWTP Upgrade and Expansion, Kingman, Arizona	2013	2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Electrical and I&C Engineer. Processes includes headworks, coarse and fine screening, grit removal, membrane bioreactors, sludge and scum pumping, belt filter press sludge dewatering and polymer feed system, bio-filter odor control, and ultraviolet disinfection,. Ken designed I&C, fiber optic network, and SCADA and Allen-Bradley ControlLogix PLC systems. This is a Construction Manager at-Risk delivery project. Consultant Fee: \$496,800		
2)	Phoenix International Raceway (PIR) Lift Station, Avondale, Arizona	2012	2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Lead Electrical and I&C Engineer. Phoenix International Raceway (PIR) had an existing septic system that serviced the property, and twice a year holds large racing events that produce high sewer flows exceeding the capacity of the septic system, requiring alternative disposal methods. The City constructed a new lift station to be used during these race events in lieu of the septic system and other disposal methods. BC was contracted for the evaluation of alternatives, preliminary design, and detailed design for the new lift station. Project included variable speed pumping, line flush system, and carbon canister odor control. Ken designed electrical, I&C, and Allen-Bradley Control Logix PLC system. Consultant Fee: \$89,820		
3)	64 th Street 3B-B3 Booster Pump Station, Phoenix, Arizona		on-going
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Lead Electrical and I&C Engineer. Demolition and replacement of existing booster pump station on an existing reservoir facilities site. Process includes: Booster pumps, pressure relief valve, hydropneumatic surge tank, and natural gas fueled standby generator. Designed Electrical, I&C, and Modicon M340 PLC system. This is a Construction Manager at-Risk delivery project. Project is on-going. Consultant Fee: \$725,000		

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a. NAME	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
Rob McCandless, PE	Project Engineer	1. TOTAL 22	2. WITH CURRENT FIRM 3
d. FIRM NAME AND LOCATION (<i>City and State</i>) Brown and Caldwell, Phoenix, Arizona			
e. EDUCATION (<i>DEGREE AND SPECIALIZATION</i>) BS, Civil Engineering, Arizona State University, 1988; MS, Civil Engineering, Arizona State University, 1993		f. CURRENT PROFESSIONAL REGISTRATION (<i>STATE AND DISCIPLINE</i>) Arizona, Professional Engineer, # 27301; Colorado, Professional Engineer, #40971; Nevada, Registered Engineer, #16411	
g. OTHER PROFESSIONAL QUALIFICATIONS (<i>Publications, Organizations, Training, Awards, etc.</i>)			

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (<i>City and State</i>)	(2) Year Completed	
		Professional Services	Construction (<i>if applicable</i>)
	Advanced Water Treatment Plant Expansion Phase IV, Scottsdale, Arizona	2013	2013
1)	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Project Engineer. Provided design of reverse osmosis (RO) facility expansion. The project included a detailed investigation into the occurrence of emerging contaminants, treatment alternatives for emerging contaminants including ozonation, 28 mgd of new microfiltration systems, upgrade of the RO system to 20 mgd of permeate, advanced oxidation, improvements to the finished water stabilization and blending, and improvements to the recharge well system. The existing 14 mgd RO facility receives microfiltered, denitrified tertiary effluent. The 6 mgd expansion will be implemented with three new RO trains utilizing large diameter membranes. Responsible for the evaluation and preliminary design improvements of all support systems including sulfuric acid dosing, threshold inhibitor dosing, flush system, cleaning system, and product water stabilization. Consultant Fee: \$600,000		
	Enaville Well Filtration Plant Kellogg, Idaho	2012	2013
2)	(3) BRIEF DESCRIPTION (<i>Brief scope, size, cost, etc.</i>) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Project Manager. Managed design and procurement of 5.6 mgd GE Zenon membrane filtration systems and associated facilities. The water source is from two shallow, off-bank wells which were determined to be groundwater under direct influence (GWUDI) of surface water. Services included consultation and review of the pilot study results, procurement document development, procurement contract administration, preliminary design report and detailed design for membrane system installation, equalization facilities ahead of the membrane systems and backwash recovery basins. Consultant Fee: \$300,000		

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a. NAME Larry Williams, PE, RG	b. ROLE IN THIS CONTRACT Geologist/Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 20	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION <i>(City and State)</i> Brown and Caldwell, Phoenix, Arizona			
c. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> BS, Geological Engineering, University of Missouri, 1992		f. CURRENT PROFESSIONAL REGISTRATION <i>(STATE AND DISCIPLINE)</i> Arizona, Professional Environmental Engineer, #51374; Arizona, Registered Geologist, #54803	
g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Publications, Organizations, Training, Awards, etc.)</i>			

H. RELEVANT PROJECTS

1)	(1) TITLE AND LOCATION <i>(City and State)</i> Sub-slab Soil Vapor Sampling and Analysis, Former Dry Cleaner Facility, Phoenix, Arizona	(2) Year Completed	
		Professional Services 2012	Construction <i>(if applicable)</i>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Senior Engineer. Collected soil and soil vapor samples from beneath the floor of a former dry cleaner facility. Evaluated soil vapor contaminant data using the Johnson & Ettinger (J&E) Model and helium tracer data to establish sample integrity. Consultant Fee: \$20,000		
2)	(1) TITLE AND LOCATION <i>(City and State)</i> Brownfields Site Investigation, Arizona Department of Environmental Quality, Cottonwood, Arizona	(2) Year Completed	
		Professional Services 2012	Construction <i>(if applicable)</i>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Senior Engineer. Assisted in the preparation of a Sampling & Analysis Plan for investigating metals impacts (most notably Arsenic) at a Brownfields Site. Prepared a final report documenting investigation results including a statistical evaluation of the arsenic data set. Consultant Fee: \$20,000		
3)	(1) TITLE AND LOCATION <i>(City and State)</i> Brownfields Site Investigation, Arizona Department of Environmental Quality, Somerton, Arizona	(2) Year Completed	
		Professional Services 2012	Construction <i>(if applicable)</i>
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Senior Engineer. Assisted in the preparation of a Sampling & Analysis Plan for investigating VOC, PAH, and Metals impacts at a Brownfields Site. Prepared a final report summarizing investigation findings Consultant Fee: \$15,000		

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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 (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
EID Environmental Planning and Permitting for the Kingman Downtown Wastewater Treatment Plant, Kingman, Arizona	2010	2012
23. PROJECT OWNER'S INFORMATION		
c. PROJECT OWNER City of Kingman	d. DOLLAR AMOUNT OF PROJECT \$496,800	e. TOTAL COST OF PROJECT \$496,800

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

Brown and Caldwell (BC) provided services for the Planning and Design Phases of a replacement wastewater treatment plant (WWTP) for the Kingman Downtown area. The new plant will be a 0.67 million gallons per day (mgd) membrane bioreactor (MBR) plant, producing A+ effluent as defined by ADEQ standards. BC performed a preliminary evaluation of alternatives (pumping to another location, reconstructing on the existing site and piping to another site for treatment at a developer's planned WWTP).

The project included extensive permitting including Determination of Consistency with the Mohave County 208 Plan, and a hydrologic/hydraulic study in support of a Conditional Letter of Map Revision (CLOMR) from FEMA to determine the 100-year flood elevation in the adjacent wash after significant improvements. Additional permitting included a Waters of the U.S. Assessment to obtain a preliminary jurisdictional determination from the U.S. Corps of Engineers, a replacement permit for the existing Aquifer Protection Permit (APP), an AZPDES Permit Amendment and a Clean Closure Plan for the existing aerated lagoon facility. BC assisted the City of Kingman prepare Environmental Information Documents (EIDs) for the Water Infrastructure Finance Authority of Arizona (WIFA) in order to construct a crucial wastewater treatment plant replacement project. The EID established NEPA compliance and included evaluations for biology, cultural resources, water quality, and socioeconomics. BC coordinated early with Region 2 of the USFWS and obtained biological and cultural resource clearances in a timely fashion. BC obtained USACE approvals and coordinated floodplain map revisions for the modification and armoring of a stream channel.

Because of the permitting complexity and phasing needed to support an operating plant while constructing a new one on a small site, the project will be delivered using the CMAR procurement method. BC worked with the CMAR during the design phase to identify and implement value engineering ideas to reduce project cost while maintaining the Owner's quality goals. The project included significant site work elements such as soil cement erosion protection and multi-box culvert and roadway for all-weather site access. The process is a two-train plate-style membrane bioreactor, preceded by coarse and fine screening and grit removal, and followed by in-vessel ultraviolet disinfection. Solids from the process will be centrifuge dewatered and either land-applied or landfilled.

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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 (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Section 404 Compliance and Biological Surveys for the Plant Interconnect Project, Tucson, Arizona	2007	2010

23. PROJECT OWNER'S INFORMATION

c. PROJECT OWNER	d. DOLLAR AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Pima County Regional Wastewater Reclamation Department	\$2.3M	\$2.3M

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

Pima County Regional Wastewater Reclamation Department (PCRWRD) looked to Brown and Caldwell (BC) to conduct feasibility assessments and ultimately Construction Manager At-Risk (CMAR) of the 5.5-mile, 60- to 72-inch pipeline interconnect between Roger Road and Ina Road Water Reclamation facilities. This project allows PCRWRD to better provide flow and capacity management between the two facilities with the pipeline carrying 36 mgd average, 145 mgd peak wet weather flow.

BC coordinated the delineation of waters of the U.S. along the proposed sewer alignment and prepared a Jurisdictional Determination Report under U.S. Army Corps of Engineers Rapanos guidance documents. We coordinated with the project design team and developed an approach that would allow the project to proceed under a non-notification Nationwide Permit, which saved substantial amounts of permitting time on the project. We collaborated with a biological and cultural resource subcontractor to complete a cultural resource survey of the alignment and temporary construction easements as well as a Biological Evaluation for threatened and endangered species.

Due to BC's successful completion of the previous work, we were selected to design the Plant Interconnect pipeline. These design tasks included securing permitting, environmental and cultural studies, hydrologic and scour analyses, field surveying, geotechnical investigations, subsurface utility engineering, corrosion control and cost analyses.

To meet the schedule and budget, considerable effort was expended at the beginning stages of the project to gather input from PCRWRD, other County departments, the City of Tucson, the Town of Marana, ADOT, ADEQ, and the Corps of Engineers. BC established a series of meetings where stakeholders were presented with the proposed project and comments were received on potential impacts and issues. As each issue was subsequently addressed, follow-up meetings were held to review alternatives for resolution.

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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 (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Bullard Water Campus, Goodyear, Arizona	2009	2009
23. PROJECT OWNER'S INFORMATION		
c. PROJECT OWNER City of Goodyear	d. DOLLAR AMOUNT OF PROJECT \$4.5M	e. TOTAL COST OF PROJECT \$4.5M

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

The City of Goodyear, Arizona, is one of the fastest growing communities in the country with an average annual growth rate of 15 to 20 percent. With growth exceeding the existing infrastructure capabilities, the City has developed a program to quickly grow their potable water delivery capacity. The brackish groundwater from local perched aquifers requires treatment for potable use in most cases.

BC led three design-build teams that delivered new potable water sources and treatment projects. The \$18 million effort included developing water sources, permitting, design and construction. Initially, we researched and evaluated potential water sources including:

- Converting existing agricultural wells that are becoming dormant with land use changes.
- Drilling and equipping new/replacement water wells.
- Purchasing water from adjacent purveyors.

We surveyed existing water treatment systems and were responsible for:

- Developing reverse osmosis (RO) equipment standards.
- Enhancing the performance of existing plants.
- Expanding existing plants.
- Developing new treatment systems through symbiotic business relationships with nearby irrigation districts.

The services provided are described below.

Converting Agricultural Wells. Converting existing agricultural wells was a quick method of delivering a large quantity of water. To assist, our hydrogeologists and engineers investigated a dozen agricultural wells to determine the feasibility of their use. The BC team installed a sleeve in one well, called Well No. 20, and converted the agricultural well into a 1,500 gpm potable water well to help meet peak summer 2006 demand. This well is high in total dissolved solids (TDS). Water from the well blends with treated water to achieve acceptable TDS levels without additional treatment costs.

Replacement Water Wells. BC was charged with replacing an existing water supply well being displaced by a road widening project. Well No. 19 is a 1,200 gpm well that was constructed as an emergency project, including decommissioning the existing well upon completion of the replacement well. As part of this conversion, an existing City-owned surge tank was retrofitted and installed at the existing metering station facility. This project required constant coordination with other design-build teams with adjacent and connecting roadway improvements, potable water distribution lines, and raw water transmission lines.

Locating, Permitting, Drilling and Equipping New Wells. BC installed a new 1,800 gpm well between summer 2006 and summer 2007. Well No. 22 was located on existing City property located in close proximity to the treatment facility and Well No. 19 to reduce cost and schedule. The well could only be permitted for a maximum 600 gpm average daily pumping rate, but we determined that sizing the pump for 1,800 gpm would allow the City to meet their peak summer demands. We established an operating procedure to limit use of the well during non-peak demand to stay below the permitted maximum. The well is located near a residential development; therefore, we took into consideration noise levels. A submersible pump was considered, but it was determined that a sound enclosure over a vertical turbine pump would reduce capital expenditures and operating costs.

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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT		
<i>(Present no more than five (5) projects. Complete one Section 5 for each project.)</i>		
a. TITLE AND LOCATION <i>(City and State)</i>	b. YEAR COMPLETED	
Zone 1, 1A, and 2 Infrastructure Improvements, Phoenix, Arizona	PROFESSIONAL SERVICES 2013	CONSTRUCTION <i>(If applicable)</i> 2013
23. PROJECT OWNER'S INFORMATION		
c. PROJECT OWNER	d. DOLLAR AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix	\$2.5M	\$2.5M

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

Brown and Caldwell (BC) was the Program Manager for the design and construction of infrastructure improvements to mitigate low- and high-pressure issues in Zones 1 and 2 including 8.5 miles of 16- to 36-inch diameter transmission main, a new Booster Pump Station (BPS 2A–B12) at the 64th Street Reservoir facility, BPS 2A-B11 and six new Pressure Reducing Valve (PRV) Stations. The projects were completed as two separate programs using CMAR delivery. The first was a Public Private Partnership where Entellus (engineer for the Indian School pipeline project) was the design engineer and Achen Gardner was the contractor. BC provided 3rd party CA&I to oversee the construction activities on behalf of the City. During the construction BC led the efforts to review the installation and develop solutions to issues that arose during construction. This was accomplished by developing a collaborative approach with the developer, design engineer and contractor to ensure that the final product met the needs of the City.

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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 (City and State)	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
Unlined Concrete Sewer Condition Assessment Program Phase II and III, Phoenix, Arizona	1999	2010
23. PROJECT OWNER'S INFORMATION		
c. PROJECT OWNER	d. DOLLAR AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Phoenix	\$776K	\$776K

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

Brown and Caldwell (BC) performed an asset evaluation and life cycle cost analysis on the City of Phoenix collection system. The majority of the unlined concrete sewers in the City of Phoenix are large diameter pipelines installed in the mid-1960s. The flat slopes and warm sewage temperatures produce high concentrations of hydrogen sulfide gas resulting in severe pipeline corrosion. The City's Sewer Condition Assessment Program is an ongoing program and is designed to identify and respond to structural and operational problems impairing sewer function and potentially impacting public health/safety. BC conducted Phase II and Phase III to inspect, assess, and develop a Capital Improvement Plan (CIP) for required rehabilitation/replacement of 307,880 feet of large-diameter unlined concrete sewers.

The major components of the project included assessing the facilities, evaluating of data, developing recommendations and prioritizing the recommendations. All of the data was housed in a comprehensive GIS database to make tracking and updates easier in the future.

The findings of the inspections and condition assessment formulated the sewer rehabilitation recommendations. While individual pipe reaches could have been rehabilitated as single activities, the cost of contracting and mobilization generally made it costly. To limit the overall costs, segments were grouped into projects based on criticality, condition, and location. BC worked with the City of Phoenix staff to develop a 10 year CIP to plan and budget for the repair of the City's aging infrastructure. We identified 32,000 linear feet of pipeline needing immediate repair for a total cost of \$41 million completed in 2003 and an additional \$75 million completed in 2010.

6. ADDITIONAL INFORMATION

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

Brown and Caldwell (BC) is a nationally recognized consulting firm with a long history of delivering innovative, economical solutions to environmental and engineering challenges. Founded in 1947, the company remains steadfast in its client focus and commitment to delivering customized solutions that efficiently and effectively address every project's unique conditions and specific requirements. With more than 1,400 employees and a nationwide network of 45 offices, BC is one of the largest employee-owned consulting firms in the United States. In 2011, Engineering News-Record ranked us 39th among the top 200 "environmental" firms in the United States. Each office is supported by an experienced staff of environmental professionals, engineers, scientists, and construction specialists who provide the firm's full range of services, drawing as needed from our nationwide network of expertise and specialists.

Services we offer:

- Potable Water
- Wastewater
- Construction Management
- Water Resources
- Electrical and Process Automation Services
- Environmental Services

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

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a. Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	75
b. Percentage of Total Work Attributable to Non-Government Work:	25

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

Signature:  Date: 12/12/2013
Name: Jeff R. Littell Title: Vice President