

	Offer and Acceptance		State of Arizona State Procurement Office 100 N. 15 th Ave. Suite 201 Phoenix, AZ 85007
	SOLICITATION NO.: ADSP016-00005912 Request for Qualifications: 2016 Annual Professional Services List	PAGE 1	
	Offeror: Vernadero Group Incorporated	OF 1	

OFFER

TO THE STATE OF ARIZONA:

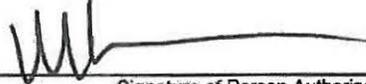
The Undersigned hereby offers and agrees to furnish the material, service or construction in compliance with all terms, conditions, specifications and amendments in the Solicitation and any written exceptions in the offer. Signature also certifies Small Business status.

Vernadero Group Incorporated
Company Name

4422 East Indian School Road, Suite 101
Address

Phoenix Arizona 85018
City State Zip

mgcollins@vernadero.com
Contact Email Address


Signature of Person Authorized to Sign Offer

Michael Collins, PhD
Printed Name

President and CEO
Title

Phone: (480) 315-1000

Fax: (480) 315-1001

By signature in the Offer section above, the Offeror certifies:

1. The submission of the Offer did not involve collusion or other anticompetitive practices.
2. The Offeror shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, State Executive Order 2009-9 or A.R.S. §§ 41-1461 through 1465.
3. The Offeror has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause shall result in rejection of the offer. Signing the offer with a false statement shall void the offer, any resulting contract and may be subject to legal remedies provided by law.
4. The Offeror certifies that the above referenced organization IS/ IS NOT a small business with less than 100 employees or has gross revenues of \$4 million or less.

ACCEPTANCE OF OFFER

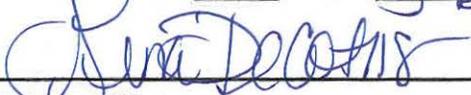
The Offer is hereby accepted.

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the solicitation, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by the State.

This Contract shall henceforth be referred to as Contract No. ADSP016-00005912

The effective date of the Contract is March 1, 2016

The Contractor is cautioned not to commence any billable work or to provide any material or service under this contract until Contractor receives purchase order, contract release document or written notice to proceed.

State of Arizona
 Awarded this 20th day of February 2016

 Procurement Officer



ATTACHMENT I – General Qualifications

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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.



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- 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 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.



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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.

List of Disciplines (Function Codes) for Question 2

- | | | |
|---------------------------|--|--------------------------|
| 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 3)

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



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Hotels; Motels
Hydraulics and Pneumatics
Hydrographic Surveying
Industrial Buildings; Manufacturing Plants
Industrial Processes; Quality Control
Industrial Waste Treatment
Intelligent Transportation Systems
Infrastructure
Irrigation; Drainage
Judicial and Courtroom Facilities
Laboratories; Medical Research Facilities
Land Surveying
Landscape Architecture
Libraries; Museums; Galleries
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



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

1. **Annual Request for Qualifications**

a. FIRM (OR BRANCH OFFICE) NAME:	Vernadero Group Incorporated
b. FIRM (OR BRANCH OFFICE) STREET:	4422 East Indian School Road, Suite 101
c. FIRM (OR BRANCH OFFICE) CITY:	Phoenix
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85018
f. YEAR ESTABLISHED:	1999
(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Small Business
h. POINT OF CONTACT NAME AND TITLE:	Michael Collins, PhD, President and CEO
i. POINT OF CONTACT TELEPHONE NUMBER:	(480) 315-1000
j. POINT OF CONTACT E-MAIL ADDRESS:	mgcollins@vernadero.com
k. NAME OF FIRM (If block 1a is a branch office):	



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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)
5	Air Pollution Control	2
2	Airports: Nav aids: Airport Lighting; Aircraft Fueling	1
1	Area Master Planning	4
9	Conservation and Resource Management	6
1	Construction Management	2
4	Ecological and Archeological Investigations	1
1	Energy Conservation; New Energy Sources	1
8	Environmental Impact Studies, Assessments, or Statements	3
1	Highways; Streets; Airfield Paving; Parking Lots	2
1	Historical Preservation	2
3	Irrigation; Drainage	3
2	Mold Investigation	1
1	Petroleum and Fuel (Storage and Distribution)	1
4	Phase I Environmental	1
1	Recreation Facilities (Parks, Marinas, Etc.)	1
1	Solid Wastes; Incineration; Landfill	1
2	Surveying; Platting; Mapping; Flood Plain Studies	1
1	Storm Water Handling and Facilities	1
2	Testing and Inspection Services	1
3	Water Resources; Hydrology; Ground Water	2
1	Water Well Rehabilitation; Water Well Work	1

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 Michael Collins, PhD	b. ROLE IN THIS CONTRACT Program Manager/Project Manager	c. YEARS EXPERIENCE	
		1. TOTAL 20	2. WITH CURRENT FIRM 16
d. FIRM NAME AND LOCATION (City and State) Vernadero Group Inc.			
e. EDUCATION (DEGREE AND SPECIALIZATION) PhD, Environmental Design and Planning; Master of Environmental Planning; BS, Planning and Urban Development		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Program Management Professional, in progress; Occupational Safety and Health Administration (OSHA) 30-hour Construction Safety and Health; OSHA 30-hour General Industry Safety and Health	

g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
Dr. Michael Collins is the **president and CEO** of Vernadero Group Inc. (Vernadero), a small, veteran-owned business headquartered in Phoenix, Arizona. As a Program Manager and Project Manager, he offers **20 years of experience in managing complex environmental, engineering, and scientific projects**. His experience includes **multidisciplinary technical staff management and coordination**, project budgets, deliverable schedules, agency coordination, contract management, project coordination and organization, quality assurance (QA) and quality control (QC). As Vernadero's president, **Michael manages and assigns the services of approximately 40 employees in a wide range of disciplines**, including biology/ecology, environmental engineering, geology, hydrology, design-build construction, civil engineering, mechanical engineering, land surveying, real property management planning, cost engineering/estimating, geographic information system (GIS) services, industrial hygiene, and safety.

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
	Professional Services	Construction (if applicable)
Environmental, Natural Resource, Cultural Resources, and Engineering Support Services Indefinite Delivery/Indefinite Quantity (IDIQ), Fort Huachuca, AZ	2013	2013
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm 1) Program Manager. Under Michael's management, 141 task orders were successfully completed on this five-year contract , which since 2008 continuously supported the Fort Huachuca Environmental and Natural Resource Division (ENRD) and the Engineering and Plans Support Division (EPSD). Michael has been involved on projects such as the design and construction of an Arab village Military Operation in Urban Terrain, for which he served a Lead Planner and General Contractor. Other projects have included a critical resource study examining and developing future planning strategies for airspace, electromagnetic spectrum, land, and infrastructure; alternative energy analysis and siting studies; an Integrated Natural Resource Management Plan update; various National Environmental Policy Act (NEPA) compliance documents; Stormwater and Erosion Control Plans; stormwater reuse studies, and environmental sampling. (\$13,601,166)		
Design-Build (DB) Commissary Parking Lot, Drainage, and Paving at Fort Huachuca, AZ	2012	2012
(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. Michael was responsible for overall project design (conceptual plans through construction documents) and construction (site preparation, horizontal and vertical improvements, QA/QC, site safety, coordination of site inspections), and delivery of the final project. This project involved low-impact development and green technology renovations to the 5-acre commissary parking lot. Under his guidance, Vernadero remedied hazardous flooding conditions by designing and building a complex system of underground storage chambers, rain gardens, and infiltration galleries that eliminated flooding hazards and provides water storage and recharge. Work also included replacing inefficient parking lot lighting with new high-efficiency LED lights and redesigning internal traffic flows. (\$620,425)		



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Michael Collins, PhD – Program Manager/Project Manager (Continued)

	(1) TITLE AND LOCATION <i>(City and State)</i> Indefinite Delivery Contract for Architect and Engineering Services, U.S. Army Corps of Engineers (USACE) Mobile District/63d Regional Support Command (RSC), AZ, NM, NV, CA, TX, OK, and AR	(2) Year Completed	
		Professional Services 2014	Construction <i>(if applicable)</i> N/A
3)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Program Manager. Michael's role on this contract was to organize project teams of environmental and engineering professionals to provide high-quality, cost-effective project deliverables. He also oversaw task order proposal preparation, project scheduling, resource assignment, and contract execution. This contract supported the USACE with natural and cultural resource management planning services. Projects have included multiple NEPA compliance projects, natural resources surveys, Invasive Species Management Plans, environmental compliance training, cultural resources surveys, and Stormwater Management Plans. This project was finished on schedule and within budget. (\$3,540,125)		
	(1) TITLE AND LOCATION <i>(City and State)</i> East Range Watershed Rehabilitation/Erosion Control Required by the 2007 Biological Opinion under the Endangered Species Act, Fort Huachuca, AZ	(2) Year Completed	
		Professional Services 2009	Construction <i>(if applicable)</i> 2010
4)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager. Michael managed the review and update of the East Range Watershed Improvement Plan, which formed the basis for Fort Huachuca's comprehensive and long-term management strategy for the East Range. Services included NEPA analysis, soil redistribution and native seeding activities, and construction of erosion control devices. The work also involved rebuilding approximately 3 miles of service roads and drainage channels, eradicating 16,000 mesquite trees, reseeding roughly 60 acres with a native grass seed mixture, and protecting two cultural sites. (\$490,644)		



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

a. NAME Colin Olness, PE, DBIA	b. ROLE IN THIS CONTRACT Project Manager/Civil Engineer	c. YEARS EXPERIENCE	
		1. TOTAL 20	2. WITH CURRENT FIRM 1
d. FIRM NAME AND LOCATION (City and State) Vernadero Group Inc.			
e. EDUCATION (DEGREE AND SPECIALIZATION) BSCE, Civil Engineering		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Engineer (PE), Civil, AZ (#36125) and AK	
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Colin is a Project Manager and Civil Engineer with 20 years of experience. He has a strong background in DB construction, construction manager at risk, traditional design-construct, and other project delivery methods. He is also skilled in planning, programming, civil/structural engineering, QA/QC, and subcontractor coordination. Colin is a certified member of the Design-Build Institute of America (DBIA). As Vernadero's Technical Services Director , Colin leads the company's environmental and design teams to ensure clients receive quality deliverables on time.			

H. RELEVANT PROJECTS

1) DB Military Operation in Urban Terrain Site, Fort Huachuca, AZ	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services 2010	Construction (if applicable) 2010
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Design Project Manager/Civil Engineer. Colin provided design and hydrologic studies for the DB of a "village" similar to those in the Middle East. He managed drainage and Federal Emergency Management Agency floodplain research, investigation of conditions, and hydrologic modeling to quantify the flow estimates for specific storm events. Site design provided erosion protection measures for stormwater within the Garden Canyon drainage, which was prone to erosion during monsoon rains. (\$699,191)			
2) Design-Construct 944 Civil Engineer Squadron Building, Luke Air Force Base (AFB), AZ, USACE Los Angeles District	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services 2006	Construction (if applicable) 2008
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Design Project Manager. Colin led a design team in providing planning, programming, and construction documentation for a new 20,244-square-foot multiuse facility to support the 944th Civil Engineer Squadron's mission. The design included site civil, architectural, mechanical, electrical, structural, and interior design. He also provided construction administrative services. (\$5,489,000)			
3) DB Advance Infantry Training Complex, Fort Huachuca, AZ, USACE Fort Worth District	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services 2009	Construction (if applicable) 2010
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Design Project Manager. Colin was in charge of DB services for a multistory 275,000-square-foot complex , consisting of administrative office space, multiuse space, kitchen, public use space, and outdoor recreation areas. The project included a company operations/headquarters building as well as a family assistance center. This project met LEED® Gold and High-Performance Sustainable Building requirements. (\$43,000,000)			
4) DB Warrior in Transition Complex, Fort Bliss, TX, USACE Fort Worth District	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services 2012	Construction (if applicable) 2013
(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Design Project Manager/Civil Engineer. Colin was responsible for design development, construction documents, and post-design construction administration. He served as the designer of record for the design-build Warriors in Transition complex. Work included civil, landscape architecture, and utility design for the 139,780-square-foot, three-story barracks. The site design included 23 acres of complicated grading and drainage using low-impact development concepts and sustainable elements meeting LEED® Gold certification. (\$32,692,000)			



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Colin Olness, PE, DBIA – Project Manager/Civil Engineer (Continued)

(1) TITLE AND LOCATION <i>(City and State)</i>	(2) Year Completed	
DB Unaccompanied Enlisted Personnel Housing, Fort Bliss, TX, USACE Fort Worth District	Professional Services 2011	Construction <i>(if applicable)</i> 2012
(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm 5) Design Project Manager/Civil Engineer. Colin provided design development, construction documents, and post-design construction administration. He used AutoCAD Civil 3D to virtually “construct” site utilities, eliminating conflicts and delays in the field. He served as the Designer of Record for the DB infantry brigade’s Combat Team 1 and 2 complex. The project involved design of 24 facilities (180 acres) and supporting utilities. (\$174,000,000)		



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

a. NAME Dean E. Alford, PG, CEM, PMP		b. ROLE IN THIS CONTRACT Project Manager/Geologist		c. YEARS EXPERIENCE	
				1. TOTAL 28	2. WITH CURRENT FIRM 4
d. FIRM NAME AND LOCATION (City and State) Vernadero Group Inc.					
e. EDUCATION (DEGREE AND SPECIALIZATION) MS, Geology and Geochemistry; BS, Geology			f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Registered Professional Geologist (PG), AZ (#50989) and other states; Certified Environmental Manager (CEM), NV; Project Management Professional (PMP); Certified Asbestos Inspector, AZ and NV; Certified Lead Inspector and Lead Risk Assessor; Stormwater Management Training; OSHA 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) standard training; Resource Conservation and Recovery Act (RCRA) Management Training		
g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Dean Alford specializes in environmental management, groundwater hydrology, water resource development, basin analysis, aquifer storage and recovery, wellhead protection, well drilling, and testing. His background includes Phase I and Phase II Environmental Site Assessments, Phase III remedial actions, due diligence reports, Environmental Condition of Property (ECP) reports, environmental planning documents, hazardous waste sampling and characterization, environmental management, and stormwater and groundwater compliance. He oversees staff with experience in civil engineering, hydrology, geology, and environmental compliance. Under his supervision, Vernadero has completed hundreds of environmental projects throughout Arizona, involving a broad range of environmental compliance and mitigation services . Memberships: Association of Engineering Geologists, Arizona Hydrologic Society, Arizona Association of Environmental Professionals, and American Public Works Association					
H. RELEVANT PROJECTS					
(1) TITLE AND LOCATION (City and State) Mold Removal and Restoration, Building 11669, Fort Huachuca, AZ		(2) Year Completed			
		Professional Services 2013	Construction (if applicable) N/A		
1)	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager. Dean managed the evaluation of the building for indoor air quality concerns and potential sick building syndrome. He evaluated lead-based paint, asbestos, and mold and oversaw demolition of contaminated interior materials and building restoration. He worked with the Directorate of Public Works (DPW) to evaluate, mitigate, and restore this converted unmanned aerial vehicle hanger. Under his guidance, Vernadero realized cost savings that allowed the client to replace evaporative coolers, the primary source of mold contamination, with new high-efficiency heat pumps while staying on time and within budget. (\$145,067)				
(1) TITLE AND LOCATION (City and State) 2011 Environmental Compliance Management Support, USACE Mobile District/USAR 63d RSC, Various Facilities, AZ, AR, CA, NV, and TX		(2) Year Completed			
		Professional Services 2013	Construction (if applicable) N/A		
2)	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager/Geologist. This project included Stormwater Pollution Prevention Plans; Stormwater Management Plans, sampling, reporting, and training; Spill Control and Countermeasure Plans; ECP reports; and evaluation of potentially contaminated sites. Dean managed the project, including the schedule, client coordination, and planning/scheduling for sampling at multiple facilities . (\$281,441)				



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Dean Alford, PG, CEM – Project Manager/Geologist (Continued)

	(1) TITLE AND LOCATION <i>(City and State)</i> Removal of Hazardous Materials, 86th Electronic Signal Battalion, DPW-EPD, Fort Huachuca, AZ	(2) Year Completed	
		Professional Services 2012	Construction <i>(if applicable)</i> N/A
3)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager.</i> Dean managed and conducted surveys and inventories of waste materials at the former 86th Electronic Signal Battalion maintenance shop. He conducted hazardous waste determinations and containerized and labeled waste streams to be turned in to the Installation's 90-day hazardous waste accumulation point. The project also included cleaning and restoring service bay floors, sumps, and storage rooms for petroleum, oil, and lubricants. He also prepared the inventory and disposal report. The project was successfully completed ahead of the original schedule. (\$48,085)		
	(1) TITLE AND LOCATION <i>(City and State)</i> Update/Rewrite of Hazardous Waste Management Plan (HWMP), Fort Huachuca, AZ	(2) Year Completed	
		Professional Services 2012	Construction <i>(if applicable)</i> N/A
4)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager/Geologist.</i> Dean guided the preparation of a comprehensive HWMP that complied with applicable state, federal, and Army regulations and guidance. Dean oversaw documentation of hazardous waste management processes, development of a HWMP from process mapping, and operation of satellite accumulation points through 90-day accumulation, disposal, and inspection. The project was completed six weeks ahead of the original schedule. (\$94,097)		
	(1) TITLE AND LOCATION <i>(City and State)</i> Storage Tank Management Plan, Fort Huachuca, AZ	(2) Year Completed	
		Professional Services 2013	Construction <i>(if applicable)</i> N/A
5)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager.</i> Dean guided the preparation of a comprehensive Storage Tank Management Plan. He field-verified locations of 16 underground storage tanks and 38 aboveground storage tanks from multiple data sets for a total of more than 170 storage tanks. He compiled global positioning system (GPS) data and georeferenced each field-verified location. He also developed easy-to-understand instructions for management of tanks and tank systems and summarized the cost-accounting guidelines.(\$47,955)		



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

a. NAME Sara Jackson, REM, REPA, CEA, PMP	b. ROLE IN THIS CONTRACT Project Manager/NEPA Specialist	c. YEARS EXPERIENCE	
		1. TOTAL 15	2. WITH CURRENT FIRM 6
d. FIRM NAME AND LOCATION (City and State) Vernadero Group Inc.			
e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Environmental Studies		f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Registered Environmental Manager (REM); Registered Environmental Property Assessor (REPA); Certified Environmental Auditor (CEA); OSHA 40-Hour HAZWOPER	

g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
Sara Jackson is a Project Manager and environmental expert with 15 years of experience. Her project management background includes preparing and managing NEPA documents, Findings of Suitability to Transfer, Memoranda of Agreement, disposal packages, deed covenants and environmental protection provisions, environmental baseline surveys, ECP reports, and natural and cultural resource surveys. Her experience also includes **managing multidisciplinary technical staff**, project budgeting, scheduling, contract management, and monthly reporting. As **Vernadero's Conservation Manager**, Ms. Jackson oversees a staff of biologists/ecologists and NEPA specialists. She is a Vice President of Vernadero and the Program Manager in charge of environmental planning and compliance.

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION (City and State)	(2) Year Completed	
		Professional Services	Construction (if applicable)
1)	Environmental, Natural Resource, Cultural Resources, and Engineering Support Services IDIQ, Fort Huachuca, AZ	2013	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager.</i> Sara managed task orders awarded under this contract, including cultural resource studies, air quality reporting projects, and NEPA assessments. She has managed a Programmatic Environmental Assessment (EA) of the potential impacts of installing and using renewable energy systems on Fort Huachuca, including solar, wind, geothermal, biomass, and methane systems. She led an interdisciplinary team to assess the potential impacts of these systems at several locations on the installation. (\$13,601,166)		
2)	NEPA Review and ECP for Construction of a 20-Megawatt Photovoltaic System, Fort Huachuca, AZ	2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager.</i> Sara led a multidisciplinary team in preparing an EA and analyzing potential environmental impacts associated with the construction and operation of a photovoltaic solar array within the cantonment area of Fort Huachuca, as well as an ECP report for the proposed site. She managed budgets, schedules, and coordination with the client and other stakeholders. As part of this project, she coordinated the public review of the EA, drafted the Finding of No Significant Impact, and prepared an administrative record containing all deliverables, references, and relevant correspondence used throughout the project. (\$63,466)		
3)	NEPA Review of Building 66050 Demolition, Fort Huachuca, AZ		N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm <i>Project Manager.</i> Sara's duties include oversight of personnel and tasks for the EA, Section 106 consultation, and an economic analysis. She has planned agency and public meetings to help Fort Huachuca involve stakeholders in the process of identifying viable alternatives for the future use/disposition of the installation's Building 66050. As the Section 106 process progresses, Sara and her team of resource specialists will continue preparing the EA. She manages budgets and schedules, coordinates with the client, and will make arrangements for the required 30-day public review. This contract is approximately 60 percent complete and will finish within budget. (\$109,473)		



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Sara Jackson, REM, REPA, CEA – Project Manager (Continued)

	(1) TITLE AND LOCATION <i>(City and State)</i> NEPA Documentation and Analysis for Base Closure and Disposal Activities in Tucson, AZ, and Amarillo, San Antonio, and Wichita Falls, TX	(2) Year Completed	
		Professional Services 2013	Construction <i>(if applicable)</i> N/A
4)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager. Sara managed a multidisciplinary team in preparing EAs for five USAR centers being closed under Base Realignment and Closure 2005. She developed technical and cost proposals, coordinated schedules, communicated with local and regulatory agencies, provided product peer and QC review, submitted deliverables, maintained budgets, and prepared monthly reports. Four of the five EAs are complete. The project finished within the original budget; however, the schedule was extended due to owner-initiated changes. (\$464,998)		
	(1) TITLE AND LOCATION <i>(City and State)</i> Programmatic EA of Possible Renewable Energy Sources/Systems, Fort Huachuca, AZ	(2) Year Completed	
		Professional Services 2010	Construction <i>(if applicable)</i> N/A
5)	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager. Sara managed a Programmatic EA that assessed the potential impacts of installing and using renewable energy systems on Fort Huachuca, including solar, wind, geothermal, biomass, and methane systems . Sara led an interdisciplinary team to assess the potential impacts of these systems at multiple locations throughout the installation. She prepared coordination letters sent to regulatory agencies and other stakeholders and managed the overall document production, including contributing to the report preparation, peer and QC review, and submittal of deliverables. (\$57,876)		



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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 <i>(City and State)</i>		b. YEAR COMPLETED	
Design-Build (DB) Commissary Parking Lot, Drainage, and Paving at Fort Huachuca, AZ		PROFESSIONAL SERVICES 2012	CONSTRUCTION <i>(If applicable)</i> 2012
23. PROJECT OWNER'S INFORMATION			
c. OWNER Fort Huachuca, AZ	d. DOLLAR AMOUNT OF PROJECT \$620,424.34	e. TOTAL COST OF PROJECT \$620,424.34	

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

Funded by Fort Huachuca's Sustainment Revitalization and Modernization Fund, the new commissary parking lot replaces a poorly drained lot that flooded during monsoon season, sometimes forcing commissary patrons to wade through as much as 2 feet of water to reach the store. Our staff worked with the Directorate of Public Works - Environmental and Natural Resources Division (DPW-ENRD), the designer of the new lot, throughout the DB process to implement a **low-impact "green" design with minimal inconvenience** to commissary customers. **Construction took place in two phases**, with work being performed on half the lot at a time so shoppers could continue to park at the commissary.

Relationship to ADOA Contract

- ✓ Arizona project
- ✓ Phased DB construction
- ✓ Innovative drainage and aquifer recharge design
- ✓ Use of low-impact green technology
- ✓ Proposed key personnel:
Dr. Michael Collins – Project Manager



The new 5-acre lot features 236 parking spaces, an increase of 32 spaces over the old parking lot's capacity. The new spaces are 6 inches wider to better accommodate large vehicles and are striped diagonally for ease of parking. One-way parking lanes and 8-foot pedestrian walkways have been incorporated to improve safety. The lot's original mercury-vapor lamps have been replaced by **energy-saving, environmentally friendly LED lights**. Trees were also planted in the median to provide shade. Landscaping, including decorative native plants and xeriscaping, was partially funded by the Defense Commissary Agency.

We improved drainage by lowering the grade of the parking lot and sloping it to capture stormwater runoff in a complex system of underground storage chambers, rain gardens, and infiltration galleries **designed and built by Vernadero**. The redesigned drainage captures and stores approximately 0.5 acre-feet of water per storm and can **recharge the aquifer** by an estimated 6 to 8 acre-feet annually.



Results: Vernadero completed this firm-fixed-fee task order **on time and within budget** while providing **design innovations**.



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

a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
Mold Removal and Restoration, Building 11669, Fort Huachuca, AZ		PROFESSIONAL SERVICES 2013	CONSTRUCTION (If applicable) 2013
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER Fort Huachuca, AZ	d. DOLLAR AMOUNT OF PROJECT \$145,067.46	e. TOTAL COST OF PROJECT \$145,067.46	

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

Vernadero worked with Fort Huachuca EPSD staff to evaluate the indoor environment at Building 11669, mitigate unhealthful conditions, and restore the building to safe use. Our team provided a comprehensive investigation of all potential sources of sick building syndrome. We evaluated the structure for asbestos-containing materials and used X-ray fluorescence (XRF) to locate lead-based paint. We also conducted visual observations of water-damaged areas; obtained air samples, including samples to evaluate airborne volatile organic compounds; and collected swab and bulk samples. Our examination included evaluation of Indoor air quality (IAQ) for mold spores and mycotoxins.

Our activities complied with U.S. Environmental Protection Agency (EPA) regulations for lead-based paint inspections, Asbestos Hazard Emergency Response Act protocols for bulk asbestos collection, and American Conference of Governmental Industrial Hygienists consensus guidelines for measurement and mitigation of mold contaminants.

Relationship to ADOA Contract

- ✓ Arizona project
- ✓ Experience with State of Arizona, EPA, and industry regulations, protocols, and standards for mitigating IAQ contaminants
- ✓ Use of value engineering to add features
- ✓ Completed ahead of schedule
- ✓ Proposed key personnel:
Dr. Michael Collins – Program Manager; Dean Alford, PG, CEM, PMP – Project Manager

Results for lead paint and asbestos were negative, but IAQ laboratory results indicated that the ceiling insulation was contaminated with mold spores. During remediation and restoration, we determined that the evaporative coolers were in disrepair and were the main source of mold and moisture, causing spores to grow throughout the building and allowing mycotoxins to enter the heating, ventilating, and air conditioning (HVAC) system.



Replacement of the evaporative coolers was necessary to prevent mold contamination from recurring in Building 11669, but the Unmanned Aerial Vehicle Squadron Program lacked the budget to take this step. **Through cost-saving efficiencies elsewhere on the project, Vernadero was able to remove the evaporative coolers and replace them with new high-efficiency heat pumps and add ductwork.** This provided energy savings for the Fort and has improved space conditioning as well as eliminating a source of IAQ concerns.

Following approval of the Mitigation and Restoration Work Plan by DPW, we proceeded with the mitigation by removing contaminated carpet, acoustic ceiling tiles, insulation, evaporative coolers, a gas-fired heating unit, and ductwork. After mitigation and disinfection, we encapsulated the building interior with an antimicrobial compound. Our team then installed the two new HVAC units and new ductwork; sealed the perimeter plenum, roof, and exterior building penetrations; applied an elastomeric roof coating; installed acoustic ceiling tiles and fiberglass insulation; repaired, textured, and painted drywall; and installed vinyl floor tile and coving.

Results: Vernadero completed this firm-fixed-fee task order **within budget and a month ahead of schedule** while providing the Fort with a new HVAC system through **value engineering**.



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

a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
National Environmental Policy Act (NEPA) Review and Environmental Condition of Property (ECP) for Construction of a 20-Megawatt Photovoltaic System, Fort Huachuca, AZ		PROFESSIONAL SERVICES	CONSTRUCTION (If applicable)
		2014	N/A
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER	d. DOLLAR AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT	
Fort Huachuca, AZ	\$63,465.96	\$63,465.96	

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

Vernadero completed an Environmental Assessment (EA) to analyze the potential environmental impacts associated with the construction and operation of an up to 25-megawatt photovoltaic solar array on Fort Huachuca, Arizona, in support of the Army's Energy Initiatives Task Force. **This solar array is currently the largest within the Department of Defense.** Construction of the solar array will assist the Army in meeting its renewable energy goal of generating 1 gigawatt of renewable energy by 2025 and support Fort Huachuca's goal of achieving energy security on the post.

Relationship to ADOA Contract

- ✓ Arizona project
- ✓ Environmental assessment
- ✓ Solar energy utilization
- ✓ Proposed key personnel:
Dr. Michael Collins – Program Manager; Sara Jackson, REM, REPA, CEA, PMP – Project Manager

Vernadero assisted Fort Huachuca in identifying the most suitable location for the solar array within an approximately 323-acre site in the installation's cantonment area. We assessed the site for impacts on natural resources, including wildlife habitats, ephemeral streams, archaeological sites in the southern portion of the project area. The final footprint was determined based upon the evaluation of these site features and potential environmental impacts. A **Finding of No Significant Impact** was issued for the project at the conclusion of a 30-day public and agency comment period.



We also prepared an **ECP** that outlined the site's past uses and potential to encounter unforeseen site conditions during construction as well as contamination left by previous development and activity. The ECP identified abandoned utilities from World War II-era development. Together with the Fort's museum, DPW, Range Control, and U.S. Army Corps of Engineers (USACE), we performed research that concluded a "throwing pit" shown on historic maps had been a practice area where only inert grenades were used and therefore did not pose a threat to health and safety from unexploded ordnance.

Vernadero remained in constant contact with Fort Huachuca, the Energy Initiatives Task Force, and the Army Environmental Command to stay abreast of project changes, which included revised site boundaries, external delays in determining jurisdictional waterway status, and delays in government review. Our team adjusted internal timelines to achieve **an expedited schedule** that supported construction award and groundbreaking.

Results: Vernadero completed this firm-fixed-fee task order **within budget and on schedule** despite external delays.



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a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
Light Detection and Ranging (LiDAR) Digital Elevation Models (DEM) and Digital Orthophoto Upgrade, Fort Huachuca, AZ		PROFESSIONAL SERVICES 2010	CONSTRUCTION (If applicable) N/A
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER Fort Huachuca, AZ	d. DOLLAR AMOUNT OF PROJECT \$196,636.52	e. TOTAL COST OF PROJECT \$196,636.52	

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

Vernadero led a team to collect the first LiDAR imagery ever recorded at Fort Huachuca. The resulting LiDAR data and LiDAR-derived products were used by the Fort's Integrated Training Area Management (ITAM) Program to conduct training land condition analyses and map landscape characteristics. The LiDAR data also aided the ENRD with stormwater runoff analyses and hydrological modeling.

LiDAR and DEM Deliverables

The Vernadero team provided LiDAR three-dimensional point cloud data that conformed to the American Society for Photogrammetry and Remote Sensing's standards for LiDAR point cloud classes. To accurately indicate the differences in terrain at Fort Huachuca, our team employed various accuracy standards.

Our team created a top and ground-surface DEM from a triangulated irregular network (TIN) with hydroenforced break lines that included rivers, streams, lakes, and levees. We also developed an impervious surface layer using digital image classification methods of orthophotography with supporting LiDAR data. To model the Fort's variable terrain, our team developed 0.5-meter LiDAR contours for flat to rolling terrain and 6-meter contours for mountainous terrain. Impervious surfaces were further classified as buildings or paved surfaces.

Quality Assurance and Accuracy

Vernadero completed a quality assurance (QA) review to verify that the horizontal and vertical accuracy of the LiDAR data met client requirements. Our staff assessed the horizontal accuracy of the DEM by comparing the spatial correspondence of buildings in the DEM image with an independently produced building layer. Differences between ground level and rooftop elevations made buildings easily distinguishable. The building outlines of the independent datasets aligned correctly, so the horizontal accuracy was deemed to be acceptable.

We also checked vertical accuracy by comparing known elevation data collected at Army Security Agency (ASA) sites with elevation values extracted from the DEM. The average elevation within a 3-meter buffer of the ASA buffer was extracted from the DEM and compared to the surveyed elevation value recorded at the respective ASA site. The vertical root mean square error between the ASA sites and extracted DEM values was confirmed to meet client standards for accuracy.

Results: Vernadero completed this firm-fixed-fee task order **within budget and on schedule.**

Relationship to ADOA Contract

- ✓ Arizona project
- ✓ Digital elevation and terrain model development
- ✓ Digital orthophotography
- ✓ Topographic surveying and mapping
- ✓ Proposed key personnel:
Dr. Michael Collins – Program Manager



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a. TITLE AND LOCATION (City and State)		b. YEAR COMPLETED	
East Range Watershed Rehabilitation/Erosion Control Required by the 2007 Biological Opinion under the Endangered Species Act, Fort Huachuca, AZ		PROFESSIONAL SERVICES 2010	CONSTRUCTION (If applicable) 2010
23. PROJECT OWNER'S INFORMATION			
c. PROJECT OWNER Fort Huachuca, AZ	d. DOLLAR AMOUNT OF PROJECT \$490,644.18	e. TOTAL COST OF PROJECT \$490,644.18	

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

Vernadero provided watershed rehabilitation, invasive species management, and erosion control services in support of Fort Huachuca's commitment to improve watershed conditions, protect cultural resources, and increase accessibility of range lands for training use. The project also conformed with the Army's Sustainable Range Program. By providing greater stormwater/rainwater infiltration into the aquifer, the project also increased recharge rates in the San Pedro Riparian National Conservation Area.

Relationship to ADOA Contract

- ✓ Arizona project
- ✓ Conservation and resource management
- ✓ Environmental impact studies
- ✓ Drainage and erosion control
- ✓ Proposed key personnel:
Dr. Michael Collins – Project Manager



Until the 1950s the grassland in the Fort's East Range was used for livestock grazing, which created an environment conducive to incursion by invasive species and weeds. Mesquite and other woody brush came to dominate the area, outcompeting the native grass species. Without the anchoring grasses, runoff eroded the East Range's topsoil, cutting deep channels in the shoulders of roads, dumping increased sediment into streams, and damaging cultural resources

ranging from ruins dating to 10,000 BC to pioneer settlements. Vernadero was tasked with remedying this situation by:

- Performing NEPA analysis
- Reviewing and updating the East Range Watershed Improvement Plan, the basis of the Fort's long-term management strategy for the East Range
- Removing and masticating mesquite and other brush using mechanical equipment
- Reseeding cleared areas with native grass species
- Constructing erosion and drainage control features

Altogether, our work involved rebuilding 3 miles of service roads and drainage channels, eradicating more than 16,000 mesquite trees, reseeding roughly 60 acres with a native grass seed mixture, and protecting two cultural sites. Erosion control features included water bars, rolling dips, flat land drains, dikes, diversions, gabions or riprap, and turnouts.



Results: Vernadero completed this firm-fixed-fee task order **within budget and on schedule.**



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6. ADDITIONAL INFORMATION

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

Our Arizona-Based Small Business Offers Wide-Ranging Services

Vernadero Group Inc. (Vernadero) is an **Arizona-based small, veteran-owned business** founded in 1999 specifically to serve the environmental, engineering, and design-build (DB) construction needs of governmental clients. Vernadero is headquartered in **Phoenix** with branch offices in eight additional locations across the United States. In total we offer **more than 40 personnel** in disciplines such as program and project management; biology and ecology; environmental engineering and compliance; civil engineering; geology and hydrology; construction; and geographic information system (GIS)/database services. Combined, our resources and organizational structure enable Vernadero to provide staff, equipment, and services to projects in **northern, central, and southern Arizona** quickly and cost effectively.



Vernadero's Headquarters on Indian School Road in Phoenix

Vernadero provides our clients with a diverse array of services, completing **more than 300 projects** over the past 16 years, nearly half of them in Arizona. To complete such projects our staff maintains **up-to-date experience with state and local regulations, standards, and regulatory and governmental organizations** and maintains a broad knowledge of Arizona's unique environment, ecology, geology, and hydrology. We have built strong relationships with local businesses, contractors, and vendors that share our values and our passion for outstanding performance, which assures our clients of fast and cost-efficient service at all times.



Vernadero Staff on Site in Southern Arizona

Over the years, Vernadero has successfully undertaken programs and projects with fees **from under \$10,000 to over \$2 million**. These efforts have ranged from reseeding Arizona grasslands with native species to overseeing multisite programs involving environmental compliance, natural and cultural resources, DB construction, real property master planning, and other services. In the **last five years alone**, we have conducted an estimated **\$8.6 million of business in Arizona**, all for governmental clients. For these projects, our ability to reliably provide high-quality services and deliverables has gained Vernadero an excellent reputation with our clients and frequently brings us repeat business. The State of Arizona can be assured that Vernadero has the technical expertise, qualified staff, workload capacity, and financial strength to deliver top-notch projects statewide. We look forward to continuing to contribute to the vitality of Arizona's economy and environment and the well-being of its communities through any contracts awarded through this submittal.

Details about our bonding capacity, representative projects, proposed staff, quality assurance/quality control (QA/QC), and health and safety processes are provided below.

Vernadero Offers the State of Arizona...

- ✓ An Arizona-based small business
- ✓ A business that **exclusively** serves government clients—and understands government needs
- ✓ Proven ability to deliver both large and small projects on time and within budget
- ✓ A diverse roster of services
- ✓ Experience with local, state, tribal, and federal regulations
- ✓ **Commitment to client satisfaction and added value**



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Our “Lean,” Client-Centered Approach Provides Added Value

As a small business, Vernadero understands the importance of the bottom line. Our “lean” approach to staffing and budgeting allows us to consistently deliver high-quality, cost-effective projects to our clients on time and **often with value-added options**. As a matter of company practice, our Project Managers and assigned team work closely with clients to find ways to exceed expectations and objectives. Through teamwork and open, frequent communication, we expedite tasks, rapidly resolve unforeseen issues, streamline schedules, and achieve cost savings. We actively search for strategies that will enable our client to incorporate value-added features within the original budget and schedule.

We Successfully Deliver Projects of Varied Types and Sizes

During our 16 years in business, Vernadero has proven our ability to execute projects in a wide range of disciplines, whether the project is large or small, simple or complex. We can assist the State of Arizona with assignments ranging from statewide multidisciplinary programs to small, individual projects of under \$10,000. We have experience with a wide variety of projects, as shown in **Exhibit 1**.

Our Recent Arizona Experience Showcases Our Project Diversity

Vernadero’s recent work in Arizona includes projects ranging from cultural and natural resources studies to Environmental Assessments (EAs) and Stormwater Pollution Prevention Plans. **Exhibit 2** lists representative projects Vernadero has recently performed in Arizona.

**Value Added:
Building 11669**



When tasked to identify the cause of potential sick building syndrome at Building 11669 on Fort Huachuca in southern Arizona, our staff realized that the facility’s **evaporative coolers needed to be replaced to eliminate the main source of mold spores**. The client’s budget, however, lacked the funds for replacement. By working closely with the client, we found **cost savings** that allowed us to replace the coolers with new, high-efficiency heat pumps while staying **within the original budget**.

Exhibit 1. We Have Experience in the Following State of Arizona Categories...and More

- ✓ Air Pollution Control
- ✓ Airports: Navajids: Airport Lighting; Aircraft Fueling
- ✓ Animal Facilities
- ✓ Antiterrorism/Force Protection
- ✓ Area Master Planning
- ✓ Child Care/Development Facilities
- ✓ Commercial Building (Low Rise); Shopping Centers
- ✓ Community Facilities
- ✓ Conservation and Resource Management
- ✓ Construction Management
- ✓ Design-Build
- ✓ Dining Halls; Clubs; Restaurants
- ✓ Ecological and Archeological Investigations
- ✓ Energy Conservation; New Energy Sources
- ✓ Energy/Water Auditing Savings
- ✓ Environmental Impact Studies, Assessments or Statements
- ✓ Highways; Streets; Airfield Paving; Parking Lots
- ✓ Historical Preservation
- ✓ Irrigation; Drainage
- ✓ Mold Investigation
- ✓ Outdoor Recreation
- ✓ Petroleum and Fuel
- ✓ Phase I Environmental
- ✓ Recreation Facilities
- ✓ Rehabilitation
- ✓ Solid Wastes; Incineration; Landfill
- ✓ Surveying; Platting; Mapping; Flood Plain Studies
- ✓ Stormwater Handling and Facilities
- ✓ Testing and Inspection Services
- ✓ Water Resources; Hydrology; Ground Water
- ✓ Water Well Rehabilitation; Water Well Work



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Exhibit 2. Our Arizona Projects Demonstrate Variety and Versatility

Representative Vernadero Projects in Arizona

Cultural and Natural Resources

- Archaeological Sites and Threatened and Endangered Species GIS Data Development (\$58,800)
- Critical Resources Study (\$847,852)
- Documentation and National Register Evaluation for 29 Buildings (\$28,663)
- 2011 Lesser Long Nosed Bat Survey (\$42,411)
- East Range Native Grass Seeding after Mastication (\$49,745)
- Huachuca Water Umbel Habitat Management and Recovery Work (\$114,853)
- Invasive Plant Survey and Removal within Huachuca Water Umbel Critical Habitat on Fort Huachuca (\$15,279)
- Mexican Spotted Owl Monitoring (\$69,902)
- Native Grass Seeding (\$60,751)
- Unmanned Aerial Systems Noise Effects on Lesser Long-Nosed Bats (\$25,976)
- Update Integrated Natural Resources Management Plan (\$124,697)
- Xeriscape the Robert Scheetz Obstacle and Confidence Courses (\$195,311)

Design and Design/Build Construction

- Design of Pioneer Runway (\$119,882)
- Design/Build Commissary Parking Lot, Drainage, and Paving (\$620,425)
- Design-Build Noncommissioned Officers Academy Physical Training Field (\$651,000)

Environmental Compliance and Hazardous Waste

- Clean Air Act (CAA) Greenhouse Gas Mandatory Reporting and Title V Permitting (\$143,720)
- CAA Permit Annual Emissions Inventory (\$88,490)
- Environmental Cleanup of Aerostat Crash (\$39,918)
- Environmental Compliance System for Hazardous Waste (\$92,781)
- Environmental Compliance System for Potable Water (\$98,778)
- Environmental Compliance System for Wastewater (\$83,565)
- Pollution Prevention Plan Update (\$84,854)
- Potable Water Analysis Required by Safe Drinking Water Act (\$33,774)
- Preparation of Site-Specific Spill Contingency, Control and Countermeasures Plans (\$56,836)
- Storage Tank Management Plan (\$47,956)
- Mold Removal and Restoration of Building 11669 (\$145,067)
- Update/Rewrite of Hazardous Waste Management Plan (\$94,097)
- 2013 Wastewater Analysis (\$92,817)

GIS, GPS, and Miscellaneous IT Services

- Data Development and Storage Management Support (\$99,802)
- Emergency Planning and Community Right-to-Know Act Database Solutions (\$92,603)
- Light Detection and Ranging (LIDAR) Digital Elevation Model and Digital Orthophoto Upgrade (\$196,637)
- Update of Environmental Management System Intranet Website (\$19,521)

Hydrology/Drainage/Water Resources

- 2013 Potable Water Analysis (\$48,532)
- East Range Watershed Rehabilitation/Erosion Control (\$490,644)
- Operations and Maintenance Manual for Sanitary Sewer System (\$94,000)
- Stormwater/Rainwater Harvesting and Reuse Study (\$49,934)

National Environmental Policy Act (NEPA) Documentation

- Programmatic EA of Possible Renewable Energy Sources/Systems (\$57,876)
- Programmatic EA of the U.S. Army Electronic Proving Ground Testing and Use of Lasers (\$65,896)
- Real Property Master Plan Update and Associated EA Preparation (\$345,247)
- NEPA Review and Environmental Condition of Property (ECP) for Construction of a 20-Megawatt Photovoltaic System (\$63,466)



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Vernadero Provides Accountability and Quality

Vernadero maintains a rigorous QA/QC program that requires our staff and consultants to adhere to our corporate quality manual and to project-specific QA/QC guidelines and objectives. All deliverables are subject to this QA/QC process, which involves peer technical review and editorial review for accuracy, completeness, clarity, consistency, and readability. GIS data undergo QC review by a qualified GIS professional before being submitted.

Vernadero also uses real-time project management and accounting software that allows our staff to accurately track, estimate, and report project progress and both indirect and direct costs.

Vernadero Group is probably the most ethical firm we have ever had the pleasure of doing business with.

– Wayne Alves, Former Chief Environmental Division, USAR, 63d RSC December 2009

We Are Serious about Health and Safety

At Vernadero, we take health and safety seriously. Our process includes safety procedures and documentation, safety audit protocols, corrective actions, and lessons learned. We ensure all staff and subconsultants have proper safety training, conduct daily on-site safety meetings, and document team actions. We also develop an activity hazard analysis for all field efforts.

Vernadero has **never** had an Occupational Safety and Health Administration recordable or lost-time incident in the 15 years we have been in business.

We Offer Highly Qualified Staff with Arizona Experience

Vernadero offers the State of Arizona highly qualified staff with recent and ongoing **experience with Arizona projects**. Our personnel are familiar with state and local agencies, regulations, codes, and statutes as well as regional issues. Our key personnel can draw upon support staff in numerous disciplines to fulfill project requirements. Altogether, we employ more than 40 personnel nationwide who can provide assistance as needed.

Our Program Manager is Vernadero’s company president and CEO, Michael Collins, PhD, who will be the **primary liaison** between Vernadero and the State of Arizona for all service-related matters. Michael is **authorized to bind contracts and dedicate staff and resources to projects**. He works closely with our project managers to ensure staffing and resources are available as needed.

Day-to-day operations will be managed by Vernadero’s Project Managers. They will have **decision-making authority for all project activities** and will interact with State of Arizona staff and consultants at the project level. The assigned Project Manager will directly oversee Vernadero’s services for the duration of any awarded project. Brief summaries of the qualifications of our project management team and key support staff are provided below.



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Project Management Qualifications

Michael Collins, PhD – Program Manager/Project Manager



As a Program Manager, Dr. Michael Collins offers 20 years of experience in managing complex environmental, engineering, and scientific projects, with a career emphasis on work in Arizona. His experience includes multidisciplinary technical staff management and coordination, project budgets, deliverable schedules, agency coordination, contract management, project coordination and organization, and QA/QC. He has served as Program Manager for all of Vernadero’s programs in Arizona and, as company president and CEO, has provided executive oversight of project tasks.

Michael has a PhD in Environmental Design and Planning, a Masters of Environmental Planning degree, and a BS in Urban Planning and Development.

**Key Qualifications
Michael Collins, PhD**

- ✓ 20 years of experience on Arizona projects
- ✓ Extensive program and project management experience
- ✓ Environmental planning and design experience

Colin Olness, PE, DBIA – Project Manager/Civil Engineer



Colin Olness has 20 years of experience as a Project Manager and civil/structural engineer. He has a strong background in DB, construction manager at risk, traditional design-construct, and other project delivery methods. He is also highly experienced with low-impact and sustainable design. His career has included work on projects as diverse as administration and residential buildings, utilities, drainage and erosion control, hydrology, roadways, bridges, underground storage tanks, and landscape architecture.

Colin has a BS in Civil Engineering and is a certified member of the Design-Build Institute of America (DBIA). He is registered as a Professional Engineer (PE) in Arizona and Alaska.

**Key Qualifications
Colin Olness, PE, DBIA**

- ✓ 20 years of experience, primarily in Arizona
- ✓ Registered civil engineer
- ✓ Experienced with traditional, DB, and other delivery methods

Dean Alford, PG, CEM, PMP – Project Manager



Dean Alford specializes in environmental management and compliance, groundwater hydrology, water resource development, basin analysis, aquifer storage and recovery, wellhead protection, well drilling, and testing. His background includes ECP reports, environmental planning documents, hazardous waste sampling and characterization, environmental management, and stormwater and groundwater compliance. He has conducted ASTM Phase I and Phase II Environmental Site Assessments, Phase III remedial actions, and due diligence reports. He has worked extensively on environmental compliance, hydrological, and related projects in Arizona.

Dean is registered as a professional geologist (PG) in Arizona, California, and Nevada, a Certified Environmental Manager (CEM) in Nevada, and a

**Key Qualifications
Dean Alford, PG, CEM**

- ✓ 28 years of experience, primarily in Arizona
- ✓ Experienced with Arizona groundwater hydrology
- ✓ Expert in environmental compliance



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certified Project Management Professional (PMP). He has a MS in Geology and Geochemistry and a BS in Geology.

Sara Jackson, REM, CEA, REPA, PMP – Project Manager



Sara Jackson is a Project Manager and environmental expert with 15 years of experience. Her project management experience includes preparing and managing NEPA documents, Findings of Suitability to Transfer, Memoranda of Agreement, disposal packages, deed covenants and environmental protection provisions, environmental baseline surveys, ECP reports, and natural and cultural resource surveys. She is also experienced in managing technical staff, project budgeting, scheduling, and contract management. Her experience includes serving as Project Manager for two EAs for Arizona projects.

Ms. Jackson is a Registered Environmental Manager (REM), Certified Environmental Auditor (CEA), Registered Environmental Property Assessor (REPA), and certified PMP. She has a BS in Environmental Studies.

Key Support Personnel Qualifications

Jack Novak, PE, CIH – Certified Industrial Hygienist



Jack Novak, PE, CIH, has more than 40 years of experience in industrial hygiene and environmental health. He has been Vernadero’s Certified Industrial Hygienist (CIH) since 2008. Jack is responsible for approving and annually certifying Vernadero’s Company Health and Safety Plan and project-specific Site Health and Safety Plans for work involving potentially hazardous working conditions. He has supervised and conducted indoor air quality investigations for office buildings, maintenance facilities, health care facilities, manufacturing plants, and schools. He has extensive experience preparing Site Safety Plans and conducting inspections of hazardous waste sites; responding to hazardous chemical release incidents; auditing process health and safety at facilities handling extremely hazardous chemicals; and coordinating Superfund Amendments and Reauthorization Act Title III activity.

Jack is registered as a CIH with the American Board of Industrial Hygiene and is registered as a PE in Arizona, California, and Michigan. He has an MS in Mathematics and a BS in Metallurgical Engineering.

Adam Narish, CNRM – Biologist/Ecologist



Adam Narish, CNRM, has 15 years of experience as a biologist/ecologist. He specializes in providing project management of and technical support to Environmental Impact Assessments, threatened and endangered species surveys and management, invasive species surveys and control,

**Key Qualifications
Sara Jackson, REM, CEA,
REPA**

- ✓ 15 years of experience, including work in Arizona
- ✓ Environmental/NEPA expert
- ✓ Experienced with EAs and Programmatic EAs for Arizona projects

**Key Qualifications
Jack Novak, PE, CIH**

- ✓ More than 40 years of experience with environmental health
- ✓ Experienced in hazardous waste inspections
- ✓ Experienced in developing and certifying Health and Safety Plans

**Key Qualifications
Adam Narish, CNRM**

- ✓ 15 years of experience, mainly in Arizona
- ✓ Experience with special status species in Arizona
- ✓ Experience with Arizona wetlands
- ✓ NEPA expertise



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Endangered Species Act Section 7 consultation, baseline biological surveys, and ecological risk assessments.

Adam is a Certified Natural Resource Manager (CNRM) and has a BS in Zoology and a BS in Biological Aspects of Conservation.

Gretchen Kent – QA/QC Supervisor



Gretchen Kent has 25 years of environmental and engineering experience, mainly in Arizona. Gretchen’s experience includes program and project oversight and NEPA compliance support as well as QC of technical documentation, contractor performance, and related field and construction processes. She has also provided services related to hydrology, geology, and erosion control.

<p>Key Qualifications Gretchen Kent</p> <ul style="list-style-type: none"> ✓ 25 years of experience ✓ QA/QC expert ✓ NEPA compliance specialist

Gretchen is certified as a Lean Six Sigma black belt—the highest level attainable for quality management. She has an MS in Geology/Geochemistry and a BA in Earth Science.

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

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	100
b.	Percentage of Total Work Attributable to Non-Government Work:	0

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

Signature:

Date: 21 December 2015

Name: Michael Collins, PhD

Title: President and CEO, Vernadero Group Inc.