COCHISE COUNTY PROCUREMENT DEPARTMENT

1415 Melody Lane, Building C, Bisbee, AZ 85603
Phone: (520) 432-8391 Fax: (520) 432-8397

Professional Services Agreement
Riverstone Ranch Recharge Investigation
PSA 14-18-HFP-04

THIS AGREEMENT is made and entered into this _____ day of_____, 2013 by and between COCHISE COUNTY, hereinafter referred to as the COUNTY, and JE FULLER/HYDROLOGY & GEMOMORPHOLOGY, INC. hereinafter referred to as the CONSULTANT.

I. SCOPE OF SERVICES

Subject to the terms and conditions set forth in this agreement, Consultant shall provide tasks (1-9) as described in **Exhibit "A" Scope of Services & Fee Schedule**.

II. COMPENSATION AND METHOD OF PAYMENT

In consideration of the performance of the services described in Exhibit "A" the County shall pay the Consultant in accordance with the not to exceed fee schedule provided for tasks one through nine (1-9) and attached herein as **Exhibit "A" Scope of Services & Fee Schedule**.

The County will pay the Consultant following the submission of itemized invoices(s) for the services rendered. No payment shall be issued prior to receipt of material or service and correct invoice. Each invoice must bear written certification by an authorized County representative confirming the services for which payment is requested have been performed. County agrees to pay all properly documented invoices, for accepted work within thirty (30) days of receipt.

All notices, invoices and payment shall be made in writing and may be given by personal delivery or by mail.

The designated recipients for such notices, invoices and payments are as follows:

Consultant: **JE Fuller/Hydrology & Geomorphology**
40 E. Helen Street
Tucson, AZ 85705
John Wallace, P.E., CFM
Phone 520-623-3112 ext. 307
john@jefuller.com

County: **County of Cochise**
Highway & Floodplain Department
1415 Melody Lane
Bisbee, AZ 85603
Karen Riggs
Phone: 520-432-9318
kriggs@cochise.az.gov

III. DURATION AND RENEWAL

The Consultant shall not commence any billable work or provide any material or services under this Agreement until Consultant receives a executed copy of the Professional Service Agreement and purchase order, or is otherwise directed to do so in writing by the County Procurement Director or his designee The Consultant shall complete all work to the satisfaction of the County on or about October 25, 2014 in accordance with the Scope of Services.

IV. TERMINATION

A. The County may cancel this Agreement without penalty or further obligation pursuant to A.R.S. §38-511 if any person significantly involved in initiating, negotiating, securing, drafting or creating the Agreement on behalf of the County is or becomes, at any time while the Agreement or any extension of the Agreement is in effect any employee of, or Consultant to any other party to this Agreement with respect to the subject matter of the Agreement. Such cancellation shall be effective when written notice from the County is received by the parties to this Agreement, unless the notice specifies a later time.

B. This Agreement may also be terminated at any time by mutual written consent, or by the County, with or without cause, upon giving the thirty (30) days written notice to the Consultant. The County at its convenience, by written notice, may terminate this Agreement, in whole or in part. If this Agreement is terminated, the County shall be liable only for payment under the payment provisions of this Agreement for services rendered and accepted material received by the County before the effective date of termination.

C. The County reserves the right to cancel the whole or any part of this Agreement due to failure of the Consultant to carry out any term, promise or condition of the Agreement. The County will issue a written ten (10) day notice of default to the Consultant for acting or failing to act any of the following, in the opinion of the County:

1. Consultant provides personnel who do not meet the requirements of the Agreement;

2. Consultant fails to adequately perform the stipulations, conditions, or services/specifications required in the Agreement;

3. Consultant attempts to impose on the County personnel, materials, products, or workmanship that is not of an acceptable quality;

4. Consultant fails to furnish the required service and/or product within the time stipulated in the Agreement;

5. Consultant fails to make progress in the performance of the requirements of the Agreement and/or gives the County a positive indication that consultant will not or cannot perform to the requirements of the Agreement.

V. ENFORCEMENT, LAWS AND ORDINANCES

This agreement shall be enforced under the laws of the State of Arizona. Consultant must comply with all applicable federal, state, and local laws, ordinances, and regulations. Consultant shall ensure payment of all taxes, licenses, permits, and other expenses of any nature associated with the provision of services herein. Consultant shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Consultant.

VI. INDEPENDENT CONSULTANT

It is clearly understood that each party shall act in its individual capacity and not as an agent, employee, partner, joint ventures, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other party for any purpose whatsoever.

The Consultant is advised that taxes or social security payments shall not be withheld from a County payment issued hereunder and that Consultant should make arrangements to directly pay such expenses, if any. The County will not provide any insurance coverage to the Consultant including Workmen's Compensation coverage.

VII. MODIFICATIONS

This Agreement may only be modified by a written amendment signed by persons duly authorized to enter into Agreements on behalf of the County and the Consultant.

VIII. WAIVER

The failure of either party of this Agreement to take affirmative action with respect to any conduct of the other which is in violation of the terms of this Agreement shall not be construed as a waiver thereof, or of any future breach or subsequent wrongful conduct.

IX. INDEMNIFICATION

To the fullest extent permitted by law, Consultant agrees to indemnify, defend, and hold harmless Cochise County, a body politic and corporate of the State of Arizona, its board members, officers, employees, agents and other officials from all claims, damages, losses, and expenses, including but not limited to attorney's fees, reasonable court costs, or other alternative dispute resolution costs arising out of, resulting from, or otherwise but for the performance or furnishing of work or services under this Agreement, provided that any such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease, death, or personal injury, or property damage, including the loss of use or diminution in value resulting there from; but only to the extent caused in whole or in part by the actual or alleged negligent acts, errors, or omissions of Consultant, or anyone for whose acts Consultant may be liable. Cochise County reserves the right, but not the obligation, to participate in defense without relieving Consultant of any obligation hereunder.

The amount and type of insurance required shall not in any way be construed as limiting the scope of the indemnification set forth above.

X. INSURANCE

Contractor and subcontractors shall procure and maintain until all of their obligations have been discharged, including any warranty periods under this Contract are satisfied, insurance against claims for injury to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

The insurance requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The County in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this contract by the Contractor, his agents, representatives, employees or subcontractors and Contractor is free to purchase additional insurance as may be determined necessary.

A. **MINIMUM SCOPE AND LIMITS OF INSURANCE**: Contractor shall provide coverage with limits of liability not less than those stated below. An excess liability policy or umbrella liability policy may be used to meet the minimum

liability requirements provided that the coverage is written on a “following form” basis.

1. **Commercial General Liability – Occurrence Form**
Policy shall include bodily injury, property damage and broad form contractual liability coverage.

• General Aggregate	$1,000,000
• Products – Completed Operations Aggregate	$ 500,000
• Personal and Advertising Injury	$ 500,000
• Blanket Contractual Liability – Written & Oral	$ 500,000
• Each Occurrence	$ 500,000

a. The policy shall be endorsed to include the following additional insured language: "The County of Cochise, its departments, agencies, boards, officers, officials, agents and employees shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor".

2. **Business Automobile Liability**
Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of this Contract.

Combined Single Limit (CSL)	$500,000

a. The policy shall be endorsed to include the following additional insured language: "The County of Cochise, its departments, agencies, boards, officers, officials, agents and employees shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, involving automobiles owned, leased, hired or borrowed by the Contractor".

3. **Worker's Compensation and Employers' Liability**

Workers' Compensation	Statutory
Employers' Liability	
Each Accident	$500,000
Disease – Each Employee	$500,000
Disease – Policy Limit	$500,000

a. This requirement shall not apply when a contractor or subcontractor is exempt under A.R.S. 23-901, **AND** when such contractor or subcontractor executes the appropriate sole proprietor waiver form.

4. **Professional Liability (Errors and Omissions Liability)**
The policy shall cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this contract.

Each Claim	$ 500,000
Annual Aggregate	$1,000,000

a. In the event that the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning at the time work under this contract is completed.

b. The policy shall cover professional misconduct of lack of ordinary skill for those positions defined in the Scope of Work of this contract.

B. **ADDITIONAL INSURANCE REQUIREMENTS:** The policies shall include, or be endorsed to include, the following provisions:

1. On insurance policies where the County of Cochise is named as an additional insured, the County of Cochise shall be an additional insured to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract.

2 The Contractor's insurance coverage shall be primary insurance and non-contributory with respect to all other available sources.

3. Coverage provided by the Contractor shall not be limited to the liability assumed under the indemnification provisions of this Contract.

C. **NOTICE OF CANCELLATION:** With the exception of (10) day notice of cancellation for non-payment of premium, any changes material to compliance with this contract in the insurance policies above shall require (30) days written notice to the County of Cochise. Such notice shall be sent directly to the Cochise County Procurement Department, attention Terry Hudson, 1415 Melody Lane, Bldg C, Bisbee, Arizona 85603.

D. **ACCEPTABILITY OF INSURERS:** Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Arizona and with an "A.M. Best" rating of not less than A- VII. The County in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

E. **VERIFICATION OF COVERAGE:** Contractor shall furnish the County with certificates of insurance (ACORD form or equivalent approved by the County) as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

All certificates and any required endorsements are to be received and approved by the County before work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of work under this Contract and remain in effect for the duration of the project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of contract.

All certificates required by this Contract shall be sent directly to the Cochise County Procurement Department, attention Terry Hudson, 1415 Melody Lane Bldg C, Bisbee, Arizona 85603. The County project/contract number and project description shall be noted on the certificate of insurance. The County reserves the right to require complete, certified copies of all insurance policies required by this Contract at any time**. DO NOT SEND CERTIFICATES OF INSURANCE TO THE COUNTY'S RISK MANAGEMENT DIVISION.**

F. **SUBCONTRACTORS:** Contractors' certificate(s) shall include all subcontractors as additional insured's under its policies **or** Contractor shall furnish to the County separate certificates and endorsements for each subcontractor. All coverage's for subcontractors shall be subject to the minimum requirements identified above.

A. **APPROVAL:** Any modification or variation from the insurance requirements in this Agreement shall be made by the Contracting Agency in consultation with the Risk Management Department, whose decision shall be final. Such action will not

require a formal Agreement amendment, but may be made by administrative action.

XI. MISCELLANEOUS PROVISIONS

A. No assignment of this Agreement or sub-agreement shall be made by the Consultant with any other party for furnishing any of the services herein contracted for without the advance written approval of the Procurement Department. All sub-consultants shall comply with Federal and State laws and regulations which are applicable to the services covered by the sub-agreement and shall include all the terms and conditions set forth herein which shall apply with equal force to the sub-agreement, as if the sub-consultant were the Consultant referred to herein. The Consultant is responsible for Agreement performance whether or not sub-consultants are used.

B. The Consultant shall establish and maintain procedures and controls that are acceptable to the County for the purpose of assuring that no information contained in its records or obtained from the County or from others in carrying out its functions under the Agreement shall be used by or disclosed by it, its agents, officers, or employees, except as required to efficiently perform duties under the Agreement. Persons requesting such information must be referred to the County.

C. All services, information, computer program elements, reports, and other deliverables which may have a potential patent or copyright value and which are created under this Agreement shall be the property of the County and shall not be used by the Consultant or any other person except with the prior written permission of the County.

D. This Agreement is subject to the provisions of A.R.S. Sec. 38-511.

E. The Consultant shall comply with all applicable provisions of the Americans with Disabilities Act (Public Law 101-336, 42 U.S.C. 12101-12213) and applicable Federal regulations under the Act.

XII. LEGAL ARIZONA WORKERS ACT COMPLIANCE:

Consultant hereby warrants that it will at all times during the term of this Agreement comply with all federal immigration laws applicable to Consultant's employment of its employees, and with the requirements of A.R.S. § 23-214(A) (together the "State and Federal Immigration Laws"). The Consultant shall further ensure that each sub-consultant who performs any work for the Consultant under this Agreement likewise complies with the State and Federal Immigration Laws.

The County shall have the right at any time to inspect the books and records of the Consultant and any sub-consultant in order to verify such party's compliance with the State and Federal Immigration Laws.

Any breach of the Consultant's or any sub-consultant's warranty of compliance with the State and Federal Immigration Laws, or of any other provision of this section, shall be deemed to be a material breach of this Agreement subjection the Consultant to penalties up to and including suspension or termination of this Agreement. If the breach is by a sub-consultant, and the sub-agreement is suspended or terminated as a result, the Consultant shall be required to take such steps as may be necessary to either self-perform the services that would have been provided under the sub-agreement or retain a replacement sub-consultant, (subject to County approval if MWBE preferences apply) as soon as possible so as not to delay project completion.

The Consultant shall advise each sub-consultant of the County's rights, and the sub-consultant's obligations, under this Section by including a provision in each sub-agreement substantially in the following form:

"The sub-consultant hereby warrants that it will at all times during the term of this Agreement comply with all federal laws applicable to the sub-consultant's employees and with the requirements of A.R.S. §23-214(A). The sub-consultant further agrees that the County may inspect the sub-consultant's books and records to insure that the sub-consultant is in compliance with these requirements. Any breach of this paragraph by the sub-consultant will be deemed to be a material breach of this Agreement subjecting the sub-consultant to penalties up to and including suspension or termination of this Agreement."

Any additional costs attributable directly or indirectly to remedial action under this Section shall be responsibility of the Consultant. In the event that remedial action under this Section results in delay to one or more tasks on the critical path of the Consultant's approved construction or critical milestones schedule, such period of delay shall be deemed excusable delay for which the Consultant shall be entitled to an extension of time, but not costs.

XIII. FOREIGN INVESTMENT AND BUSINESS OPERATIONS:

By signing this agreement Consultant certifies that it does not have scrutinized business operations in Iran and Sudan as per A.R.S sec. 35-297.

This Agreement represents the entire agreement between the COUNTY and the CONSULTANT relating to this requirement and shall prevail over any and all previous verbal and written agreements.

CONSULTANT:

_____
Authorized Signature

_____
Printed Title and Name

APPROVED BY:
Cochise County Board of Supervisors

_____
Ann English, Chairman
Board of Supervisors

ATTEST:

_____
Clerk of the Board

APPROVED AS TO FORM:

_____
County Attorney

JE Fuller/ Hydrology & Geomorphology, Inc.

Jon Fuller, PE, RG, PH, CFM, DWRE	**Brian Iserman, PE, CFM**	**Brian Fry, PE, CFM**	**John Wallace, PE, CFM**
Ted Lehman, PE	**Jeff Despain, PE, CFM**	**Brian Schalk, PE, CFM**	**Robert Shand, PE**
W. Scott Ogden, PE, CFM	**Patricia Quinn, PE, RLS**	**Jon Ahern, PE, CFM**	**Ian Sharp, PE, CFM**
Robert Lyons, PE, CFM	**Tyler Azeltine, BA**	**Nate Vaughan, PE**	**Chris Rod, PE**
Mike Kellogg, RG, CFM	**Ethan Rode, CTC**	**Nathan Logan, PE, CFM**	**Cyrus Miller, PE, CFM**
Hari Raghavan, PhD, PE, CFM	**Annette Griffin, AAS**	**Peter Acton, MS**	**Cory Helton, EIT, MS**

October 24, 2013

Karen Riggs, PE
Cochise County Highway & Floodplain
1415 Melody Lane
Bisbee, AZ 85603

RE: Proposal – Riverstone Ranch Recharge Investigation

Dear Karen:

Per your request, JE Fuller/Hydrology & Geomorphology (JEF) is providing you with this proposal for the referenced services. This proposal is based on the scope of services dated September 9, 2013 which was included in the Cochise County Board of Supervisors package for the September 24, 2013 meeting of the board sitting as the Flood Control District Board. The following items are attached;

A. SOW dated September 9, 2013 which was included in the Cochise County Board of Supervisors package for the September 24, 2013 meeting of the board sitting as the Flood Control District Board. The proposal contained herein is based upon this SOW (hereafter referred to as the Riverstone SOW).
B. Summary Cost Sheet for the Riverstone SOW.
C. JE Fuller narrative discussion (refinement to supplement Attachment A) of the Riverstone SOW and JE Fuller cost estimate.
D. GSA narrative discussion of the Riverstone SOW and GSA cost estimate.
E. WestLand Resources proposal for Tasks 2 & 4 (narrative and cost estimate).

JEF appreciates the opportunity to provide you with this proposal. You may indicate your acceptance of this proposal by signing below and returning a copy to the JEF Tucson office. Please feel free to contact me at 623-3112 if you have any questions regarding this proposal.

Sincerely,
JE Fuller/Hydrology & Geomorphology, Inc.

John M. Wallace

John M. Wallace, P.E.
President

8400 S. Kyrene Rd., Ste 201	**1 West Deer Valley Rd., Ste 101**	**523 N. Beaver St., 2nd Floor**	**40 E. Helen Street**
Tempe, Arizona 85284	**Phoenix, AZ 85027**	**Flagstaff, AZ 86001**	**Tucson, Arizona 85705**
480-752-2124 (voice)	**623-889-0166 (voice)**	**928-214-0887 (voice)**	**520-623-3112 (voice)**
480-839-2193 (fax)	**480-839-2193 (fax)**	**928-214-0887 (fax)**	**520-623-3130 (fax)**

www.jefuller.com

ATTACHMENT A

COCHISE COUNTY and THE NATURE CONSERVANCY
SITE INVESTIGATION SCOPE OF WORK OUTLINE
RIVERSTONE RANCH PROPERTY
Dated September 9th, 2013

Attachment A

COCHISE COUNTY and THE NATURE CONSERVANCY
SITE INVESTIGATION SCOPE OF WORK OUTLINE
RIVERSTONE RANCH PROPERTY
Dated September 9th, 2013

Introduction

Through hydrological, geological, hydrogeological, and geotechnical investigation, Cochise County ("the County") and The Nature Conservancy ("TNC") will assess the feasibility of a recharge facility or facilities on the 1,811-acre Riverstone Ranch property (Riverstone) to increase base flow in the San Pedro River to the maximum extent possible.

The property is located approximately six miles southeast of the City of Sierra Vista, within 2 miles of the San Pedro River, and shares its eastern boundary with the BLM San Pedro Riparian National Conservation Area (SPRNCA). Recent hydrogeological modeling scenarios indicate that recharge on Riverstone may result in increased San Pedro River base flow.

The goal is to identify potential locations for recharge facilities where urban enhanced run-off (UER), pre-development stormwater run-off (stormwater), and treated effluent could be recharged to enhance the alluvial and/or the shallow regional aquifer of the San Pedro River. UER and stormwater may be recharged in a single facility, while treated effluent recharge would require a separate facility. Since recharge facilities may be developed as a phased project as the various water sources are acquired for the site, recommendations for the appropriate facility type for each water source will also be included in the deliverable. These recommendations may include surface basins, vadose zone and/or saturated zone injection wells, discharge to existing drainages, or other new or emerging recharge technologies. Proposed facilities may incorporate existing on-site infrastructure, including earthen berms and the erosion-control drop structure.

Project deliverables will include identified locations and recommendations for appropriate recharge technologies suitable for each water source, together referred to as "recharge facilities" and any required conveyance systems. At a minimum, the deliverables for this scope of work will include letter-size conceptual designs of potential future facility for the recharge of UER, stormwater, and effluent. If recharge proves to be feasible on Riverstone, budgeting for later phases will include 100% design and bid package deliverables.

The first design focus will be on recharge of UER. Careful attention will be paid to allowing natural flows to continue across the site, while slowing the flow and capturing and infiltrating UER. Effectiveness of existing infrastructure on the property will be evaluated as part of any recharge facility design, including the earthen berms bisecting

the three main drainages and the cement drop-structure located near the confluence of Ramsey and Carr Canyon washes.

The second design focus will be on recharge of treated effluent. Groundwater modeling scenarios show effluent sources to have the greatest potential recharge benefit to the river, given the potential for relatively large volumes. Several options exist for effluent water sources, but negotiations with local municipalities and water companies have not yet commenced. To the extent that the conveyance system access from wastewater treatment plants (WWTPs) to the recharge site needs to be considered for facility design, the locations of existing and planned WWTPs are available. The design for this facility will need to include all requirements associated with obtaining and implementing an Aquifer Protection Permit (APP) as required by the Arizona Department of Environmental Quality (ADEQ) under the Clean Water Act. The actual APP application preparation, submittal, and interactions with ADEQ will be included as an option as described below for the 100% Design and bid package.

The third design focus will be on recharging stormwater captured in the upstream portion of the watersheds that would otherwise infiltrate or evaporate before arriving naturally at Riverstone. Stormwater would be collected and conveyed through a yet-to-be-determined conveyance system to Riverstone for recharge closer to the river. The recharge facility may utilize the same recharge facility as the UER. Depending on the availability of funding, the deliverable or an option will also include using the newly-developed Cochise County GIS tool, Pipeline Feasibility Analysis, and other existing data to identify stormwater collection points, amount of stormwater generated, rights of way from collection to recharge facility, and concept level pipeline or other conveyance system costs.

The project team includes TNC and the County (collectively referred to as the project team) who will jointly fund the site investigation contract. The project team will meet monthly to provide guidance to the Contractors. Project management will be conducted by the County. The Upper San Pedro Partnership (USPP) has also contributed funding for the site investigation. Monthly conference calls will be held to update all team members on all recharge projects. The approach for this investigation will be phased and iterative and will involve other interested parties at key decision points. Lacher Hydrologic Consulting will provide hydrologic analysis of recharge effects to the project team as a Contractor to TNC, to model the anticipated volume and timing of enhanced baseflow to the San Pedro River. Subsequent tasks will be designed based on resulting data, and decisions made with the project team at key, pre-defined decision points.

Summary of Approach

The approach to field investigations will include decision points following each primary field task that may affect the type and/or extent of subsequent investigations due to the different recharge options being evaluated and their dependence on site-specific conditions. The goal is to maintain flexibility in the approach to ensure a cost-effective program for obtaining sufficient and critical data to evaluate feasibility of potential

recharge methods to meet the project's recharge goals, acknowledging that significant departure from scope could have substantial effects on cost and schedule.

Scope of Work Outline

The tasks listed below are the identified elements to this scope of work. The Contractor, in his proposal, may suggest modifications to this scope of work and the tasks with justification for those suggested modifications to the Project Team. The scope will be revised to include any accepted modifications prior to contract award.

Task 1. Project Management

The Contractor shall:

- Identify a project manager who will be responsible for managing the budget, schedule, and deliverables throughout the project, including the management of budget, schedule, and deliverables of any subcontractors, as well as report directly to the County's project manager;
- Identify all subcontractors who will be involved in the project;
- Participate in and/or lead as appropriate all monthly conference calls/meetings;
- Suggest modification of project scope details, including phasing, critical path items and decision points, as the project progresses;
- Suggest modifications to clarify and prioritize recharge goals/approaches, as the project progresses;
- Suggest additional milestones leading to ensure achievement of project goals, as the project progresses;
- Assign roles and communication system for Contractor and subContractor project team members;
- Share site investigation results obtained during the site-specific field investigation phases; and
- Identify key stakeholders groups, contacts for each group, and timing for project participation with assistance from the Project Team.

Deliverable 1: Monthly Reports and Invoices and Monthly Conference Calls/Meetings

NOTE: The Contract as Awarded will serve as the Scope of Work Report that is required for TNC grant payment, due on or before October 15th, 2013.

Task 2. Draft and Final Regulatory Review Report

The Contractor shall prepare a draft regulatory review report that summarizes all of the regulatory requirements from federal and state laws and permit requirements, including but not necessarily limited to:

- the Clean Water Act,
- the Clean Air Act,
- AZPDES permits,

- State Aquifer Protection Permit,
- State Reuse Permit,
- Arizona Water Rights, and
- Corps of Engineers 404 permits

The purpose of this report is to have these requirements summarized in one place so people who are involved in the project understand what is required, as well as for use for all future recharge projects, whether using stormwater or wastewater.

The Project Team members will have an opportunity to comment on the draft report. The Contractor will respond to those comments, and incorporate the responses into the Final Regulatory Report as appropriate.

Deliverable 2. Draft Regulatory Review Report as described above.
Deliverable 3. Final Regulatory Report with Response to Comments on Draft Report attached.

Task 3. Data Collection and Evaluation

The Contractor shall perform data collection and evaluation of existing documentation appropriate to the project, including, but not necessarily limited to:

- JE Fuller GIS tool and Pipeline feasibility study, 2012;
- Cochise County Flood Control/Urban Runoff Recharge Plan, Stantec, 2006;
- Rapid estimation of recharge potential in ephemeral-stream channels using electromagnetic methods, and measurements of channel and vegetation characteristics, Callegary, et al., 2007;
- Upper San Pedro Partnership documents;
- Lacher Hydrological Consulting reports;
- Determine accessibility of existing wells;
- Climate change effects on runoff to the extent possible (this may be qualitative rather than quantitative);
- Survey of recharge networks elsewhere/recharge benefits to stream flow; and
- Water sources potentially available for use in this project.

The Nature Conservancy has an extensive bibliography that may be useful as a starting point for this effort that will be supplied to the Contractor.

Deliverable 4: Bibliography and electronic copy of all references collected during Task 3. This deliverable may be placed on the Contractor's ftp site for download by the project team.

Task 4. Perform Natural Resources Survey

The Contractor shall perform a natural resource survey to include surveys of archeological, biological, and paleontological resources to identify sites that would impact the locations of field investigation and/or construction sites.

Deliverables 5 and 6. Deliverables will include draft and final summary reports for the resources identified, that include but are not necessarily limited to site descriptions, geographic coordinates in UTM, photographs, and survey notes.

Task 5. Preliminary Hydrologic Analysis

The Contractor will perform a preliminary hydrologic analysis including, but not necessarily limited to:

- Determining existing and future condition runoff volumes for tributaries drainages to Riverstone, including watershed delineation and application of rainfall runoff modeling for 2-, 5-, 10-, and 100-year events;
- Developing detailed estimates of potential available capture volumes of UER and stormwater using an appropriate and widely-accepted methodology;
- Using the Cochise County GIS tool, Pipeline Feasibility Analysis, and other existing data to identify UER and stormwater collection points, rights of way from collection to recharge facility, and estimated costs; and
- Developing estimates for potential treated effluent sources and conveyance cost estimates.

Deliverable 7: Preliminary Hydrologic Analysis Report to summarize the results of the analysis.

Task 6. Preliminary Site Investigation for Recharge Feasibility

The Contractor shall perform a comprehensive preliminary site investigation (geologic, hydrogeologic, and geotechnical) regarding the feasibility of recharge on this property, including, but not necessarily limited to:

- Performing a site recharge screening level evaluation of potential alternative or complimentary sites using available information collected in Task 3 above;
- Evaluating hydrogeologic, soil, and surface geology data to determine suitability for:
  - UER recharge,
  - Stormwater recharge, and
  - Treated effluent recharge;
- Identifying and incorporating site constraints (including, but not necessarily limited to, physical, biological, archaeological, legal, water delivery infrastructure access, etc.) to eliminate clearly unsuitable areas; and
- Finalizing screening/ranking criteria for each of the water sources to focus shallow-subsurface site characterization.

Deliverable 8: Preliminary Site Investigation Report of Recharge Feasibility summarizing the results of preliminary site investigation.

Task 7. Coordination Meeting to Refine Plan for Field Investigations

The Contractor shall:

- Prepare a visual presentation summarizing the results to date and proposed recharge locations based on those results and recommendations for the Initial Recharge Feasibility Study (in task 8 below);
- Conduct a meeting with the Project Team (and any necessary contractor and subcontractor personnel) at their office or other appropriate location; and
- Prepare meeting notes of all discussions and decisions arrived at during the meeting.

Deliverable 9: Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 8.

Task 8. Conduct Initial Recharge Feasibility Study

The Contractor will perform a recharge feasibility study with subtasks that may include, but are not necessarily limited to:

- Conduct shallow subsurface geologic, hydrogeologic, and geotechnical site characterization to determine recharge feasibility and to help develop options to maximize recharge effectiveness, including, but not necessarily limited to:
  - Conducting backhoe test pit/trenching investigations for lithologic characterization of sediments,
  - Collecting geotechnical soil samples for determination of geotechnical parameters as identified in Task 6 above, and
  - Performing infiltration testing for evaluation of infiltration rates pertaining to possible recharge methods, including but not necessarily limited to recharge basins, in-channel recharge, injection wells (vadose zone and/or saturated zone), and other emerging technologies;
- Develop estimates of “achievable” recharge volume (that the aquifer can accept) for possible recharge methods;
- Perform surface geophysical survey using appropriate methods identified in Task 6 above) at transects selected from drilling results to develop cross-sections of subsurface materials.

Deliverable 10. Initial Recharge Feasibility Study Report that summarizes and analyzes the results and proposes any additional detailed recharge feasibility studies required and order of magnitude costs (broken down by the remaining task options described below). The report shall include, but is not necessarily limited to:

- the following attachments:
  - Engineering soil descriptions,

  - Graphic logs,
  - Cross sections, and
  - Contoured geophysical survey results.
- the proposed additional requirements including, but not necessarily limited to:
  - number and select locations for exploration deeper subsurface site characterization (to be performed in task 10 below),
  - Appropriate drilling method at selected locations for characterization of upper 50 to 100 feet of subsurface sediments, and
  - Appropriate testing methods (if necessary) such as down-borehole permeability tests to evaluate subsurface hydraulic properties.

Task 9. Coordination Meeting to Present Initial Feasibility Study Results and Recommendations for Detailed Recharge Feasibility Study for Field Investigations

The Contractor shall:

- Prepare a visual presentation summarizing the results of the Initial Feasibility Study and recommendations for the Detailed Recharge Feasibility Study (in tasks 10 and 11 below);
- Conduct a meeting with the Project Team (and any necessary contractor and subcontractor personnel) at their office or other appropriate location; and
- Prepare meeting notes of all discussions and decisions arrived at during the meeting.

Deliverable 11. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Tasks 10 and 11.

Task 10 (Option #1 of Phase II). Conduct Detailed Recharge Feasibility Study

The Contractor shall conduct a deeper subsurface geologic, hydrogeologic, and geotechnical site characterization.

Deliver 12. Deliverables will include, but are not necessarily limited to:
- Engineering soil descriptions,
- Graphic logs,
- Cross sections, and
- Contoured geophysical survey results.

Task 11 (Option #2 of Phase II). Install Shallow Monitor Wells

The Contractor shall:

- Install a minimum of three to a maximum of 5 shallow monitoring wells in a method and at locations proposed by the Contractor to the Project Team in Task 9 above.

Monitoring three wells are the minimum number capable of determining groundwater flow direction and gradient, and
- Conduct aquifer tests for determining transmissivity of the alluvial or shallow regional aquifer (depending on aquifer that is present below the site).

Deliverable 13. Deliverables will include, but is not necessarily limited to:
- Soil boring logs from borings in which wells are installed;
- Well construction diagrams;
- Well development logs; and
- Water level survey results.

Task 12. (Option #3 of Phase II). Detailed Recharge Facility Report

The Contractor shall prepare a Detailed Recharge Facility Report summarizing and analyzing the results of task 10 and 11 and recommendations for tasks 14 and 15 below.

Deliverable 14. Detailed Recharge Facility Report including the deliverables from tasks 10 and 11 as attachments.

Task 13. (Option #4 of Phase II). Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations If Required

The Contractor shall:

- Prepare a visual presentation summarizing the results of the Detailed Feasibility Study and recommendations for the additional field investigations (in task 14 below);
- Conduct a meeting with the Project Team (and any necessary contractor and subcontractor personnel) at their office or other appropriate location; and
- Prepare meeting notes of all discussions and decisions arrived at during the meeting.

Deliverable 15. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 14.

Task 14. (Option #4 of Phase II). Perform additional tasks. Cost to be negotiated if required.

The Contractor shall perform additional tasks as proposed in Task 13 to refine recharge methods and locations.

Deliverable 16. Additional Tasks Report.

Task 15. (Option #5 of Phase II). Preparation of Draft and Final Technical Memorandum

The Contractor shall prepare draft and final Technical Memoranda that summarize and analyzes all results from tasks 3 through 14 and includes the results of the hydrologic modeling of the LHC Phase 2 Riverstone Refinement & Simulation effort. This report shall recommend the recharge method(s), locations, and quantities for UER, stormwater, and treated effluent.

Deliverable 17. Draft Technical Memorandum as described above.
Deliverable 18. Response to Comments on Draft Technical Memorandum.
Deliverable 19. Final Technical Memorandum as described above.

Schedule

It is anticipated that the contract will be awarded on or before October 15th, 2013. The Contractor shall work closely with the County's project manager to develop a schedule for review and approval by the Project Team within 10 days of contract award.

Funding

This scope of work identifies basic tasks plus optional tasks that are within scope but may not be able to be accomplished with available funding. This scope may be modified to award options if funding is sufficient for award or turn basic tasks into options if funding is insufficient for basic tasks. This will be accomplished during negotiations following receipt of the initial proposal from the Contractor.

ATTACHMENT B

Summary Cost Sheet for the Riverstone SOW

ATTACHMENT B - Summary Cost Sheet for the Riverstone SOW

Task	Title	Deliverable (see SOW for task details)	Costs			
			JE Fuller	GSA	WestLand	TOTAL
1	Project Management	Deliverable 1; Monthly Reports and Invoices and Monthly Conference Calls/Meetings	$19,848	$12,966		$32,814
2	Draft and Final Regulatory Review Report	Deliverable 2: Draft Regulatory Review Report, and Deliverable 3; Final Regulatory Report with Response to Comments on Draft Report attached.	$420		$8,400	$8,820
3	Data Collection & Evaluation	Deliverable 4: Bibliography and electronic copy of all references collected during Task 3. This deliverable may be placed on the Contractor's ftp site for download by the project team.	$8,052	$6,037		$14,089
4	Perform Natural Resources Survey	Deliverables 5 and 6. Deliverables will include draft and final summary reports for the resources identified, that include but are not necessarily limited to site descriptions, geographic coordinates in UTM, photographs, and survey notes.	$680		$13,600	$14,280
5	Preliminary Hydrologic Analysis	Deliverable 7: Preliminary Hydrologic Analysis Report to summarize the results of the analysis.	$38,318	$11,169		$49,487
6	Preliminary Site Investigation for Recharge Feasibility	Deliverable 8: Preliminary Site Investigation Report of Recharge Feasibility summarizing the results of preliminary site investigation.	$1,043	$20,863		$21,907
7	Coordination Meeting to Refine Plan for Field Investigations	Deliverable 9: Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 8.	$3,907	$3,743		$7,650
8	Conduct Initial Recharge Feasibility Study	Deliverable 10. Initial Recharge Feasibility Study Report that summarizes and analyzes the results and proposes any additional detailed recharge feasibility studies required and order of magnitude costs (broken down by the remaining task options described below).	$2,770	$55,401		$58,171
9	Coordination Meeting to Present Initial Feasibility Study Results and Recommendations for Detailed Recharge Feasibility Study for Field Investigations	Deliverable 11. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Tasks 10 and 11.	$3,907	$3,743		$7,650
		PHASE I TOTALS	**$78,946**	**$113,922**	**$22,000**	**$214,869**
10	Conduct Detailed Recharge Feasibility Study	Deliverable 12. Deliverables will include, but are not necessarily limited to: - Engineering soil descriptions, - Graphic logs, - Cross sections, and - Contoured geophysical survey results.	$3,423	$68,458		$71,881
11	Install Shallow Monitoring Wells	Deliverable 13. Deliverables will include, but are not necessarily limited to: - Soil boring logs from borings in which wells are installed; - Well construction diagrams; - Well development logs; and - Water level survey results.	$4,202	$84,049		$88,251
12	Detailed Recharge Facility Report	Deliverable 14. Detailed Recharge Facility Report including the deliverables from tasks 10 and 11 as attachments.	$4,930	$10,609		$15,539
13	Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations If Required	Deliverable 15. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 14.	$3,909	$3,770		$7,679
14	Perform additional tasks. Cost to be negotiated if required.	Deliverable 16. Additional Tasks Report	$30,510	$54,209	$20,000	$104,719
15	Preparation of Draft and Final Technical Memorandum	Deliverable 17. Draft Technical Memorandum as described above. Deliverable 18. Response to Comments on Draft Technical Memorandum. Deliverable 19. Final Technical Memorandum as described above. Deliverable 20; Letter size concept designs (10% design level) of potential future facility for the recharge of UER, stormwater and effluent.	$39,803	$10,055		$49,858
		PHASE II TOTALS	**$86,778**	**$231,150**	**$20,000**	**$337,928**
		TOTAL BOTH PHASES	**$165,724**	**$345,072**	**$42,000**	**$552,796**
5.00%	Subconsultant markup included in JEF Cost					

All fee estimates are approximate. The total fee is a not-to-exceed (NTE) amount and individual task fees may vary within the total NTE.
Where needed tasks may be performed concurrently or out of the sequence indicated above.

ATTACHMENT C

JE Fuller Scope of Work & Fee Estimate

Task 1 – Project Management

JE Fuller will provide project management services in coordination with subconsultants Geosystems Analysis (GSA) and WestLand Resources (WestLand) as needed. Cyrus Miller, PE, CFM, will serve as the project manager for JE Fuller. John Wallace, PE, CFM will provide technical oversight and assistance as needed. JE Fuller will provide the monthly reports and invoices called for under this task.

Task 2 - Draft and Final Regulatory Review Report

WestLand Resources will perform the necessary regulatory investigation and prepare the draft and final reports under this task (see Attachment E). JE Fuller will coordinate with WestLand as needed to provide any needed guidance from Cochise County and administer their contract. The following assumptions were made in scoping Task 2;

- This effort is an overview of regulatory constraints associated with construction of recharge facilities which utilize either effluent or stormwater. The evaluation would NOT be specific to the Riverstone project site, but more generally applicable to recharge facilities in the area.
- The report should provide an overview of constraints that apply and the conditions that would trigger them.
- The inclusion of Clean Air Act requirements was meant to address construction dust suppression requirements.
- An assessment of water rights will be prepared by others and provided to us by the client.
- A Jurisdictional Delineation (JD) is not needed for the Riverstone site.

Deliverables 2 & 3 (Draft and Final reports) will be prepared by WestLand Resources.

Task 3 – Data Collection and Evaluation

JE Fuller will work in concert with GSA to perform data collection and evaluation of the data sources referenced in the Riverstone SOW. This will also include the Impervious Surface Tool (Sugg and Goodrich, 2013) and a review of stormwater recharge projects in the region which are similar in intended nature to the Riverstone project. JE Fuller, in coordination with GSA, will prepare Deliverable 4 for this task.

Task 4 - Perform Natural Resources Survey

WestLand Resources will perform the natural resource surveys called for under this task item. JE Fuller will coordinate with WestLand as needed to provide any needed guidance from Cochise County and administer their contract. The following assumptions were made in scoping Task 4;

- This is intended to be a "high altitude" level survey. No in-depth field work is anticipated.
- Identify areas to avoid and work times (seasons) to avoid.
- The Murray Springs mammoth site prompted inclusion of the "paleontological" component of this task.

Deliverables 5 & 6 (Draft and Final reports) will be prepared by WestLand Resources.

Task 5 – Preliminary Hydrologic Analysis

JE Fuller will perform the analysis envisioned under this task. GSA will assist by developing detailed estimates of potentially available capture volumes of urban-enhanced runoff (UER) and stormwater from the watersheds contributing to the Riverstone Property. JE Fuller, in coordination with GSA, will prepare Deliverable 7 (Preliminary Hydrologic Analysis Report) for this task.

Task 6 – Preliminary Site Investigation for Recharge Facility

GSA will perform the work called for under this task (see Attachment D). JE Fuller will coordinate with GSA as needed to facilitate performance of this task and administer their contract. GSA will prepare Deliverable 8 (Preliminary Site Investigation Report of Recharge Feasibility) for this task.

Task 7 – Coordination Meeting to Refine Plan for Field Investigations

JE Fuller, in coordination with GSA, will prepare a visual presentation summarizing the results to date and proposed recharge locations based on those results and recommendations for the Initial Recharge Feasibility Study in Task 8. The presentation will be provided at a meeting with the Project Team (and any necessary contractor and subcontractor personnel) at their office or other appropriate location. JE Fuller, in coordination with GSA, will prepare meeting notes (Deliverable 9) of the discussions and decisions arrived at during the meeting and any scope revisions required for Task 8.

Task 8 – Conduct Initial Recharge Feasibility Study

GSA will perform the work called for under this task (see Attachment D). JE Fuller will coordinate with GSA as needed to facilitate performance of this task and administer their contract. GSA will prepare Deliverable 10 (Initial Recharge Feasibility Study Report) for this task.

Task 9 – Coordination Meeting to Present Initial Feasibility Study Results and Recommendations for Detailed Recharge Feasibility Study for Field Investigations

JE Fuller, in coordination with GSA, will prepare a visual presentation summarizing the results of the Initial Feasibility Study and recommendations for the Detailed Recharge Feasibility Study. The presentation will be provided at a meeting with the Project Team at their office or other appropriate location. JE Fuller, in coordination with GSA, will prepare meeting notes (Deliverable 11) of the discussions and decisions arrived at during the meeting and any scope revisions required for Tasks 10 and 11.

Task 10 – (Option #1 of Phase II) – Conduct Detailed Recharge Feasibility Study

GSA will perform the work called for under this task (see Attachment D). JE Fuller will coordinate with GSA as needed to facilitate performance of this task and administer their contract. GSA will prepare Deliverable 12 (required field documentation) for this task.

Task 11 – (Option #2 of Phase II) – Install Shallow Monitor Wells

GSA will perform the work called for under this task (see Attachment D). JE Fuller will coordinate with GSA as needed to facilitate performance of this task and administer their contract. GSA will prepare Deliverable 13 (required field documentation) for this task.

Task 12 – (Option #3 of Phase II – Detailed Recharge Feasibility Report

GSA will perform the work called for under this task (see Attachment D). JE Fuller will coordinate with GSA as needed to facilitate performance of this task and administer their contract. GSA will prepare Deliverable 14 (Detailed Recharge Facility Report) analyzing results of Tasks 10 and 11, with recommendations for Tasks 14 and 15.

Task 13 – (Option #4 of Phase II) – Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations if Required

JE Fuller, in coordination with GSA, will prepare a visual presentation summarizing the results of the Detailed Feasibility Study and recommendations for the Additional Field Investigations (Task 14). The presentation will be provided at a meeting with the Project Team at their office or other appropriate location. JE Fuller, in coordination with GSA, will prepare meeting notes (Deliverable 15) of the discussions and decisions arrived at during the meeting and any scope revisions required for Tasks 14.

Task 14 – (Option #4 of Phase II - Perform Additional Tasks

Additional tasks will be identified throughout the course of the project work and decided on during Task 13 (the final Coordination meeting). Costs will be identified and negotiated if additional work is needed. Costs reflected for this task are an estimate.

Task 15 – (Option #5 of Phase II) – Preparation of Draft and Final Technical Memorandum

JE Fuller, in coordination with GSA, will prepare the Draft and Final Technical Memorandum that summarize the results of Tasks 3 through 14 and includes the results of the hydrologic modeling of the LHC Phase 2 Riverstone Refinement & Simulation effort (to be provided to JE Fuller and GSA). This task will include preparation of Deliverables 17 (Draft Technical Memorandum), 18 (Response to Comments on Draft Technical Memorandum) and 19 (Final Technical Memorandum). This task will include preparation of letter-size concept designs of potential future facilities for the recharge of UER, stormwater and effluent. JE Fuller, in coordination with GSA, will prepare Deliverable 20 (Letter-Size Concept Designs).

The page which follows provides an estimate of the work effort by JE Fuller (only) to provide the foregoing services. A separate cost estimate for the entire project is provided separately in Attachment B.

Task	Title	Deliverable (see SOW for task details)	JEF Hours PM II $125.00	JEF Hours PE II $105.00	JEF Labor Cost	Direct Costs	Total Cost
1	Project Management	Deliverable 1; Monthly Reports and Invoices and Monthly Conference Calls/Meetings	80	80	$18,400	$800	$19,200
2	Draft and Final Regulatory Review Report	Deliverable 2: Draft Regulatory Review Report, and Deliverable 3; Final Regulatory Report with Response to Comments on Draft Report attached.			$0		$0
3	Data Collection & Evaluation	Deliverable 4: Bibliography and electronic copy of all references collected during Task 3. This deliverable may be placed on the Contractor's ftp site for download by the project team.	10	60	$7,550	$200	$7,750
4	Perform Natural Resources Survey	Deliverables 5 and 6. Deliverables will include draft and final summary reports for the resources identified, that include but are not necessarily limited to site descriptions, geographic coordinates in UTM, photographs, and survey notes.			$0		$0
5	Preliminary Hydrologic Analysis	Deliverable 7: Preliminary Hydrologic Analysis Report to summarize the results of the analysis.	32	320	$37,600	$160	$37,760
6	Preliminary Site Investigation for Recharge Feasibility	Deliverable 8: Preliminary Site Investigation Report of Recharge Feasibility summarizing the results of preliminary site investigation.			$0		$0
7	Coordination Meeting to Refine Plan for Field Investigations	Deliverable 9: Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 8.	8	24	$3,520	$200	$3,720
8	Conduct Initial Recharge Feasibility Study	Deliverable 10. Initial Recharge Feasibility Study Report that summarizes and analyzes the results and proposes any additional detailed recharge feasibility studies required and order of magnitude costs (broken down by the remaining task options described below).			$0		$0
9	Coordination Meeting to Present Initial Feasibility Study Results and Recommendations for Detailed Recharge Feasibility Study for Field Investigations	Deliverable 11. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Tasks 10 and 11.	8	24	$3,520	$200	$3,720
10	Conduct Detailed Recharge Feasibility Study	Deliverable 12. Deliverables will include, but are not necessarily limited to: - Engineering soil descriptions, - Graphic logs, - Cross sections, and - Contoured geophysical survey results.			$0		$0
11	Install Shallow Monitoring Wells	Deliverable 13. Deliverables will include, but are not necessarily limited to: - Soil boring logs from borings in which wells are installed; - Well construction diagrams; - Well development logs; and - Water level survey results.			$0		$0
12	Detailed Recharge Facility Report	Deliverable 14. Detailed Recharge Facility Report including the deliverables from tasks 10 and 11 as attachments.	10	30	$4,400		$4,400
13	Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations If Required	Deliverable 15. Meeting Notes summarizing discussions and decisions arrived at during the meeting and any revisions required for scope modification for Task 14.	8	24	$3,520	$200	$3,720
14	Perform additional tasks. Cost to be negotiated if required.	Deliverable 16. Additional Tasks Report	80	160	$26,800		$26,800
15	Preparation of Draft and Final Technical Memorandum	Deliverable 17. Draft Technical Memorandum as described above. Deliverable 18. Response to Comments on Draft Technical Memorandum. Deliverable 19. Final Technical Memorandum as described above. Deliverable 20; Letter size concept designs (10% design level) of potential future facility for the recharge of UER, stormwater and effluent.	44	320	$39,100	$200	$39,300
		TOTALS	**280**	**1042**	**$144,410**	**$1,960**	**$146,370**
All fee estimates are approximate. The total fee is a not-to-exceed (NTE) amount and individual task fees may vary within the total NTE.							

ATTACHMENT D

GSA Scope of Work & Fee Estimate

GeoSystems Analysis, Inc.
Innovations in Hydrology

October 21, 2013

John Wallace, P.E.
JE Fuller/Hydrology & Geomorphology, Inc.
40 East Helen Street
Tucson, Arizona 85705

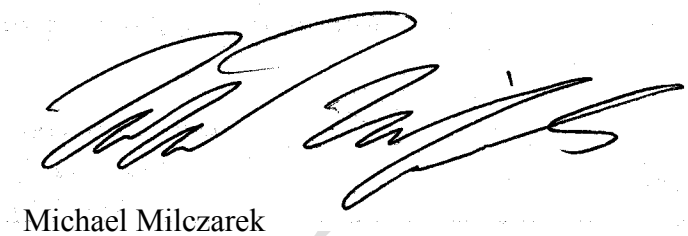
Re: Riverstone Ranch Property – Draft Scope of Work for Site Investigation

Dear John,

GeoSystems Analysis, Inc. (GSA) is pleased to present this scope of work for the Riverstone Ranch Property Site Investigation. A Scope of Work outline for the Project was provided by Cochise County (County) and The Nature Conservancy (TNC), in the document dated September 9th, 2013 (September 9th SOW). The Scope of Work to be performed by GSA, in collaboration with JE Fuller/Hydrology & Geomorphology, Inc. (JEF), is consistent with the September 9th SOW, except where otherwise noted. Also included in this document are estimated costs to complete the proposed Scope of Work, as well as our basic assumptions.

We look forward to your comments and to working with you on this project. If you have any questions, please feel free to contact me at 520-405-3828 or Stephanie Moore at 505-235-9561.

Sincerely,



Michael Milczarek
Program Director

cc: Karen Riggs, Cochise County Highway & Floodplain Department
Kim Mulhern, Consultant to Cochise County Highway & Floodplain Department

3393 North Dodge Boulevard
Tucson, Arizona 85716
phone: 520-628-9330
fax: 520-628-1122
WWW.GEOSYSTEMSANALYSIS.COM

PROPOSED SCOPE OF WORK FOR SITE INVESTIGATION OF THE RIVERSTONE RANCH PROPERTY

The Section headings in this Scope of Work are consistent with the task numbers provided by the County and TNC in the September 9th SOW. Only the tasks that include work by GSA are included in this document.

1.0 PROJECT MANAGEMENT

GSA will work closely with JEF and the Project Team to manage the budget, schedule, and deliverables; and to report to the County's project manager. Stephanie Moore, the GSA project manager will prepare and provide monthly reports and invoices to JEF, and participate in monthly conference calls and meetings. In addition, Mike Milczarek will provide technical oversight and be available to assist as needed.

3.0 DATA COLLECTION AND EVALUATION

GSA will work with JEF to collect data and evaluate existing documentation appropriate to the project, including but not necessarily limited to the documents listed in the September 9th SOW plus the Impervious Surface Tool (Sugg and Goodrich, 2013) and a review of stormwater capture and recharge projects similar in scope to the Riverstone project (worldwide) as well as effluent recharge projects in Arizona. GSA will work with JEF to prepare a complete bibliography and electronic copy of all references (Deliverable 4).

5.0 PRELIMINARY HYDROLOGIC ANALYSIS

In support of Task 5, GSA will develop detailed estimates of potentially available capture volumes of urban-enhanced runoff (UER) and stormwater from the watersheds contributing to the Riverstone Property at selected locations within the property. Historical precipitation records from nearby gauges and estimated watershed areas and impervious surface percentages from previous work (i.e. Stantec, 2006, Sugg and Goodrich, 2013) will be used to conduct the analyses. GSA will assist JEF in preparation of the Preliminary Hydrologic Analysis Report (Deliverable 7).

6.0 PRELIMINARY SITE INVESTIGATION FOR RECHARGE FEASIBILITY

GSA will perform a comprehensive screening level study regarding the feasibility of recharge on the property, as outlined in the September 9th SOW. This screening level evaluation will be conducted for the full 1,811 acres of the Riverstone Ranch Property plus the portion of the San Pedro Riparian National Conservation Area (SPRNCA) that is adjacent to the Riverstone Property. Existing publically available data will be used to identify and

evaluate locations within the Riverstone and adjacent SPRNCA properties that may be favorable to spreading basin type recharge operations.

Also as part of Task 5, GSA will work with JEF to identify potential locations through which a pipeline can be routed into the Riverstone site from the existing or future City of Sierra Vista (COSV) wastewater treatment facility(s) to support site screening analyses performed in Task 5.

All potential locations will be ranked for consideration by the Project Team (Task 7). GSA will prepare and submit a Preliminary Site Investigation Report of Recharge Feasibility (Deliverable 8) summarizing the results of the preliminary investigation.

7.0 COORDINATION MEETING TO REFINE PLAN FOR FIELD INVESTIGATIONS

GSA will work with JEF to prepare a visual presentation summarizing the results of Tasks 5 and 6, and the recommendations regarding potential recharge locations based on the results. This presentation will include the rankings for all evaluated locations, as documented in Deliverable 8. Based on discussions with the Project Team, approximately three to four sites will be identified for further study. Initial recommendations for field investigations for the top ranked sites will be included in the presentation. GSA will work with JEF to prepare meeting notes from the Coordination Meeting (Deliverable 9).

8.0 CONDUCT INITIAL RECHARGE FEASIBILITY STUDY

GSA will perform a recharge feasibility study at up to four sites, as identified in Tasks 6 and 7. For purposes of the cost estimate, the following work will be completed:

- Conduct backhoe and test pit investigations at selected sites, including up to eight days of fieldwork. Soil samples will be collected and a maximum of 12 samples will be analyzed in the GSA laboratory for Particle Size Analysis (Wet Sieve) and Atterberg Limits.

- Cylinder infiltrometer tests will be conducted at selected sites, with a maximum of eight days of fieldwork.

Depending on the outcome of Tasks 6 and 7, geophysical surveys may be conducted as part of Optional Task 10 (Detailed Recharge Feasibility Study). For purposes of this proposal, costs for geophysical surveys are included in Optional Task A.

Based on results of the fieldwork and laboratory results and Task 5, GSA will develop estimates of "achievable" recharge volumes. GSA will prepare the Initial Recharge Feasibility Study Report (Deliverable 10), as described in the September 9th SOW.

9.0 COORDINATION MEETING TO PRESENT INITIAL FEASIBILITY STUDY RESULTS AND RECOMMENDATIONS FOR DETAILED RECHARGE FEASIBILITY STUDY

GSA will prepare a visual presentation summarizing the results of the Initial Feasibility Study and recommendations for the Detailed Recharge Feasibility Study (in Optional Tasks 10 and 11). GSA will work with JEF to conduct a meeting with the Project Team and prepare meeting notes of all discussions and decisions arrived at during the meeting (Deliverable 11).

10.0 CONDUCT DETAILED RECHARGE FEASIBILITY STUDY (OPTIONAL)

GSA will conduct an exploratory drilling program to characterize the upper 100 feet (ft) of subsurface sediments. For purposes of cost estimation, we assume drilling up to five boreholes at each of two different sites to a maximum depth of 100 ft bgs (average depth of 75 ft) using hollow stem auger methods and collection of continuous sleeve, or drive core samples every five feet to characterize the physical and hydraulic properties of the subsurface materials. A maximum of 30 drive-core samples will be submitted to the GSA Laboratory for analysis of particle size, Atterberg Limits, moisture content and bulk density with six selected samples tested for saturated hydraulic conductivity.

GSA will prepare and compile documents summarizing results of fieldwork completed as part of this task, including but not limited to engineering soil descriptions, graphic logs, and cross sections (Deliverable 12).

11.0 INSTALL SHALLOW MONITOR WELLS (OPTIONAL)

For purposes of cost estimation we assume that GSA will oversee drilling and installation of six, 2-inch diameter PVC monitor wells (three per site) to maximum depths of 100 ft (average depth of 75 ft bgs). Borehole sample collection and testing will occur as described in Optional Task 10. Or, depending on the results of Tasks 8, 9 and 10 (the Initial Recharge Feasibility Study, the following Coordination Meeting, and the Detailed Recharge Feasibility Study), the installation of monitor wells may be conducted in conjunction with the exploratory drilling program (Task 10), which will save money by reducing total drilling costs. Once the monitor wells are completed, GSA will conduct slug tests on each monitor well. Pressure transducer and dataloggers will be installed in each well to initiate collection of water levels.

GSA will prepare and compile documents summarizing results of fieldwork completed as part of this task, including but not limited to soil borings, well construction diagrams, well development logs, and water level survey results (Deliverable 13).

12.0 DETAILED RECHARGE FACILITY REPORT (OPTIONAL)

GSA will prepare a Detailed Recharge Facility Report (Deliverable 14) summarizing and analyzing results of Tasks 10 and 11, and with recommendations for Tasks 14 and 15.

13.0 COORDINATION MEETING TO PRESENT DETAILED FEASIBILITY STUDY RESULTS AND RECOMMENDATIONS FOR ADDITIONAL FIELD INVESTIGATIONS IF REQUIRED (OPTIONAL)

GSA will prepare a visual presentation summarizing the results of the Detailed Feasibility Study and recommendations for additional field investigations (in Optional Task 14). GSA will work with JEF to conduct a meeting with the Project Team and prepare meeting notes of all discussions and decisions arrived at during the meeting (Deliverable 15).

14.0 ADDITIONAL TASKS (OPTIONAL)

Additional tasks will be identified throughout the course of the project work and decided on during Task 13 (the final Coordination meeting). Costs will be identified and negotiated if additional work is needed.

15.0 PREPARATION OF DRAFT AND FINAL TECHNICAL MEMORANDUM

GSA will work with JEF to prepare draft and final Technical Memoranda (Deliverables 17 through 20) that summarize and analyze all results from Tasks 3 through 14 and include the results of the hydrologic modeling of the LHC Phase 2 Riverstone Refinement and Simulation effort.

16.0 OPTIONAL TASK CONTINGENCY

A $20,000 contingency is assumed for the Optional Tasks.

17.0 OPTIONAL TASK A - GEOPHYSICAL SURVEY

Geophysical surveys may be conducted to supplement the detailed recharge feasibility study, thereby providing additional subsurface information between exploration boreholes. Types of geophysical surveys to be considered would be resistivity or electromagnetic methods. For cost estimation purposes, we assume $25,000 in subcontracting costs; additional labor costs are assumed for planning/coordination and the integration of the geophysical data with geologic data collected in Optional Tasks 10 and 11.

18.0 ESTIMATED BUDGET

The estimated budget for Tasks 1 through 9 is summarized in Table 1; detailed estimated costs are provided in Table 2. Estimated costs for Optional Tasks 10 through 15 and Optional Task A and contingency are summarized in Table 3; detailed estimated costs for the Optional tasks are provided in Table 4.

TABLE 1

Riverstone Ranch Site Investigation
Table - Cost Summary by Task

	Total Costs
01 - Project Management	$12,966.00
03 - Data Collection and Evaluation	$6,037.00
05 - Preliminary Hydrologic Analysis	$11,169.00
06 – Preliminary Site Investigation for Recharge Feasibility	$20,863.40
07 - Coordination Meeting to Refine Plan for Field Investigations	$3,742.85
08 – Conduct Initial Recharge Feasibility Study	$55,401.20
09 - Coordination Meeting to Present Initial Feasibility Study Results and Phase II Recommendations	$3,742.85
Proposal Grand Total	**$113,922.30**

TABLE 2

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 01 - Project Management

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 01a - Coordination and Management					
Program Director	Milczarek	16	$145	NA	2320
Project Manager	Moore	40	$125	NA	5000
Clerical Staff	Torres	24	$65	NA	1560
			Subtask Total:		*$8,880*
Subtask: 01b - Monthly Reports (Deliverable 1) and Project Meetings (1 year)					
Program Director	Milczarek	6	$145	NA	870
Project Manager	Moore	24	$125	NA	3000
			Subtask Total:		*$3,870*
Other Direct Costs					
Subtask: 01a - Coordination and Management					
Miscellaneous		2	$50	NA	100
Communications		1	$50	NA	50
			Subtask Total:		*$162*
Subtask: 01b - Monthly Reports (Deliverable 1) and Project Meetings (1 year)					
Communications		1	$50	NA	50
			Subtask Total:		*$54*
	8.00% Overhead: $16.00		**Task Total**		**$12,966**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 03 - Data Collection and Evaluation

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 3a - Data Compilation					
Program Director	Milczarek	2	$145	NA	290
Project Manager	Moore	2	$125	NA	250
Staff Hydrologist	Buchanan	8	$85	NA	680
Clerical Staff	Torres	1	$65	NA	65
			Subtask Total:		*$1,285*
Subtask: 3b - Recharge Network Literature Review					
Program Director	Milczarek	2	$145	NA	290
Project Manager	Moore	8	$125	NA	1000
Staff Hydrologist	Buchanan	24	$85	NA	2040
Clerical Staff	Torres	1	$65	NA	65
			Subtask Total:		*$3,395*
Subtask: 3c - Submittal of Compiled Data (Deliverable 4)					
Project Manager	Moore	2	$125	NA	250
Staff Hydrologist	Buchanan	8	$85	NA	680
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$1,060*
Other Direct Costs					
Subtask: 3a - Data Compilation					
Communications		0.5	$50	NA	25
Reproduction		3	$50	NA	150
			Subtask Total:		*$189*
Subtask: 3c - Submittal of Compiled Data (Deliverable 4)					
Reproduction		2	$50	NA	100
			Subtask Total:		*$108*
	8.00% Overhead: $22.00		**Task Total**		**$6,037**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 05 - Preliminary Hydrologic Analysis

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 5a - Landscape and Impervious surface estimates					
Program Director	Milczarek	1	$145	NA	145
Project Manager	Moore	4	$125	NA	500
Staff Hydrologist	Buchanan	24	$85	NA	2040
AutoCAD/GIS	Osorio	8	$75	NA	600
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$3,415*
Subtask: 5b - Apply correlations coefficients for existing and future conditions					
Program Director	Milczarek	1	$145	NA	145
Project Manager	Moore	16	$125	NA	2000
AutoCAD/GIS	Osorio	4	$75	NA	300
			Subtask Total:		*$2,445*
Subtask: 5c - Preliminary Hydrologic Analysis Report (Deliverable 7)					
Program Director	Milczarek	4	$145	NA	580
Project Manager	Moore	24	$125	NA	3000
Staff Hydrologist	Buchanan	8	$85	NA	680
AutoCAD/GIS	Osorio	8	$75	NA	600
Clerical Staff	Torres	4	$65	NA	260
			Subtask Total:		*$5,120*
Other Direct Costs					
Subtask: 5c - Preliminary Hydrologic Analysis Report (Deliverable 7)					
Communications		1	$50	NA	50
Reproduction		2	$50	NA	100
Shipping		0.5	$50	NA	25
			Subtask Total:		*$189*
	8.00% Overhead: $14.00		**Task Total**		**$11,169**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 06 – Preliminary Site Investigation for Recharge Feasibility

	Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs				
Subtask: 6a - Review of soil, geologic, and hydrogeologic data				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	16	$125	NA	2000
Staff Hydrologist Buchanan	32	$85	NA	2720
AutoCAD/GIS Osorio	32	$75	NA	2400
Clerical Staff Torres	4	$65	NA	260
		Subtask Total:		*$7,670*
Subtask: 6b – Recharge screening level evaluation				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	18	$125	NA	2250
Staff Hydrologist Buchanan	24	$85	NA	2040
AutoCAD/GIS Osorio	12	$75	NA	900
Clerical Staff Torres	4	$65	NA	260
		Subtask Total:		*$5,740*
Subtask: 6c - Develop recharge investigation recommendations				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	8	$125	NA	1000
		Subtask Total:		*$1,290*
Subtask: 6e - Preliminary Site Investigation Report of Recharge Feasibility (Deliverable 7)				
Program Director Milczarek	8	$145	NA	1160
Project Manager Moore	16	$125	NA	2000
Staff Hydrologist Buchanan	16	$85	NA	1360
AutoCAD/GIS Osorio	8	$75	NA	600
Clerical Staff Torres	6	$65	NA	390
		Subtask Total:		*$5,510*
Other Direct Costs				
Subtask: 6a - Review of soil, geologic, and hydrogeologic data				
Reproduction	2	$50	NA	100
Communications	1	$50	NA	50
		Subtask Total:		*$162*
Subtask: 6b – Recharge screening level evaluation				
Miscellaneous	1	$50	NA	50
4WD Truck	200	$1	NA	130
		Subtask Total:		*$194*
Subtask: 6c - Develop recharge investigation recommendations				
Reproduction	1	$50	NA	50
		Subtask Total:		*$54*

Riverstone Ranch Site Investigation
Table - Detailed Costs

Subtask: 6e - Preliminary Site Investigation Report of Recharge Feasibility (Deliverable 7)

Miscellaneous Items	1	$50	NA	50
Shipping	0.5	$50	NA	25
Reproduction	3	$50	NA	150
			Subtask Total:	*$243*
	8.00% Overhead: $48.40		**Task Total**	**$20,863**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 07 - Coordination Meeting to Refine Plan for Field Investigations

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 7a - Prepare for and conduct meeting (Sierra Vista)					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	12	$125	NA	1500
Staff Hydrologist	Buchanan	6	$85	NA	510
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$3,300*
Subtask: 7b - Meeting notes (Deliverable 9)					
Program Director	Milczarek	0.25	$145	NA	36.25
Project Manager	Moore	2	$125	NA	250
			Subtask Total:		*$286*
Other Direct Costs					
Subtask: 7a - Prepare for and conduct meeting (Sierra Vista)					
2WD car rental		0.2	$350	NA	70
Reproduction		1	$50	NA	50
			Subtask Total:		*$130*
Subtask: 7b - Meeting notes (Deliverable 9)					
Reproduction		0.5	$50	NA	25
			Subtask Total:		*$27*
	8.00% Overhead: $11.60		**Task Total**		**$3,743**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 08 – Conduct Initial Recharge Feasibility Study

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 8a – Conduct backhoe test pit investigations at proposed (4) sites					
Program Director	Milczarek	2	$145	NA	290
Project Manager	Moore	2	$125	NA	250
Senior Hydrologist	Rice	100	$95	NA	9500
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$10,170*
Subtask: 8b – Conduct cylinder infiltrometer tests at proposed (4) sites					
Program Director	Milczarek	2	$145	NA	290
Project Manager	Moore	2	$125	NA	250
Senior Hydrologist	Rice	100	$95	NA	9500
Hydrologist 1	Calabrese	100	$75	NA	7500
Clerical Staff	Torres	4	$65	NA	260
			Subtask Total:		*$17,800*
Subtask: 8c – Initial Recharge Feasibility Study Report (Deliverable 10)					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	32	$125	NA	4000
Senior Hydrologist	Rice	24	$95	NA	2280
AutoCAD/GIS	Osorio	16	$75	NA	1200
Hydrologist 1	Calabrese	40	$75	NA	3000
Clerical Staff	Torres	8	$65	NA	520
			Subtask Total:		*$12,160*
Lab Costs					
Subtask: 8a – Conduct backhoe test pit investigations at proposed (4) sites					
GSA - Particle Size Analysis - Wet Sieve		12	$65	NA	780
GSA - Atterberg Limits		12	$55	NA	660
			Subtask Total:		*$1,555*
Rental Costs					
Subtask: 8a – Conduct backhoe test pit investigations at proposed (4) sites					
Backhoe		80	$85	NA	6800
			Subtask Total:		*$7,344*
Subtask: 8b – Conduct cylinder infiltrometer tests at proposed (4) sites					
Infiltration cylinders		1	$125	NA	125
Water trailer		4	$75	NA	300
			Subtask Total:		*$459*
Other Direct Costs					
Subtask: 8a – Conduct backhoe test pit investigations at proposed (4) sites					
Lodging		8	$85	NA	680

Riverstone Ranch Site Investigation
Table - Detailed Costs

	Miscellaneous Items	4	$50	NA	200
	Subsistence	10	$35	NA	350
	4WD Truck	1000	$1	NA	650
			Subtask Total:		*$2,030*
Subtask: 8b – Conduct cylinder infiltrometer tests at proposed (4) sites					
	2WD car rental	1.6	$350	NA	560
	Lodging	16	$85	NA	1360
	Miscellaneous Items	4	$50	NA	200
	Subsistence	20	$35	NA	700
	4WD Truck	1000	$1	NA	650
			Subtask Total:		*$3,748*
Subtask: 8c – Initial Recharge Feasibility Study Report (Deliverable 10)					
	Shipping	0.5	$50	NA	25
	Reproduction	2	$50	NA	100
			Subtask Total:		*$135*
	8.00% Overhead: $1131.20		**Task Total**		**$55,401**

Riverstone Ranch Site Investigation
Table - Detailed Costs

Task: 09 - Coordination Meeting to Present Initial Feasibility Study Results and Phase II Recommendations

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 9a - Prepare for and conduct meeting (Sierra Vista)					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	12	$125	NA	1500
Staff Hydrologist	Buchanan	6	$85	NA	510
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$3,300*
Subtask: 9b - Meeting notes (Deliverable 11)					
Program Director	Milczarek	0.25	$145	NA	36.25
Project Manager	Moore	2	$125	NA	250
			Subtask Total:		*$286*
Other Direct Costs					
Subtask: 9a - Prepare for and conduct meeting (Sierra Vista)					
2WD car rental		0.2	$350	NA	70
Reproduction		1	$50	NA	50
			Subtask Total:		*$130*
Subtask: 9b - Meeting notes (Deliverable 11)					
Reproduction		0.5	$50	NA	25
			Subtask Total:		*$27*
	8.00% Overhead: $11.60		**Task Total**		**$3,743**
			PROPOSAL GRAND TOTAL:		**$113,922**

Table 3 - Optional Task Cost Summary

	Total Costs
10 - (Optional) Conduct Detailed Recharge Feasibility Study	**$68,458**
10a - Project Management	$5,867
10b - Drilling and logging at up to six boreholes (avg depth of 75 ft bgs)	$45,392
10c - Laboratory Analysis	$6,108
10d - Prepare summary documents (Deliverable 12)	$11,091
11 - (Optional) Install Shallow Monitor Wells	**$84,049**
11a - Project Management	$4,127
11b - Drilling and well completion for monitor wells	$55,166
11c - Conduct aquifer tests on six completed monitor wells	$6,656
11d - Laboratory Analyses	$4,294
11e - Install Pressure Transducers	$4,772
11f - Process and analyze data; prepare technical memoradum	$9,035
12 - (Optional) Detailed Recharge Facility Report	**$10,609**
No Subtask	$10,609
13 - (Optional) Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations, If Required	**$3,770**
13a - Prepare for and conduct meeting (Sierra Vista)	$3,430
13b - Meeting notes (Deliverable 15)	$340
15 - (Optional) Preparation of Draft and Final Technical Memorandum	**$10,055**
No Subtask	$10,055

Table 3 - Optional Task Cost Summary

	Total Costs
Contingency for Optional Tasks	**$19,999**
No subtask	$19,999
Optional Task A - Geophysical Survey	**$34,210**
Aa - Coordination and Oversight	$2,390
Ab - Geophysical Survey	$27,000
Ac - Data Integration with Geologic Data	$4,820
Proposal Grand Total	**$231,151**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: 10 - (Optional) Conduct Detailed Recharge Feasibility Study

	Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs				
Subtask: 10a - Project Management				
Program Director Milczarek	4	$145	NA	580
Project Manager Moore	40	$125	NA	5000
Clerical Staff Torres	4	$65	NA	260
		Subtask Total:		*$5,840*
Subtask: 10b - Drilling and logging at up to six boreholes (avg depth of 75 ft bgs)				
Program Director Milczarek	6	$145	NA	870
Project Manager Moore	8	$125	NA	1000
Senior Hydrologist Rice	120	$95	NA	11400
Hydrologist 1 Calabrese	32	$75	NA	2400
Clerical Staff Torres	2	$65	NA	130
		Subtask Total:		*$15,800*
Subtask: 10c - Laboratory Analysis				
Laboratory Manager Yao	2	$135	NA	270
Hydrologist 1 Calabrese	8	$75	NA	600
		Subtask Total:		*$870*
Subtask: 10d - Prepare summary documents (Deliverable 12)				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	32	$125	NA	4000
Senior Hydrologist Rice	24	$95	NA	2280
Hydrologist 1 Calabrese	40	$75	NA	3000
AutoCAD/GIS Osorio	16	$75	NA	1200
Clerical Staff Torres	2	$65	NA	130
		Subtask Total:		*$10,900*
Drilling Costs				
Subtask: 10b - Drilling and logging at up to six boreholes (avg depth of 75 ft bgs)				
Mob/Demob	1	$1,500	NA	1500
Per Diem	10	$350	NA	3500
Drive Coring - 1.5 ft long split spoon (2" by 6" liners)	150	$45	NA	6750
Drilling (Hollow Stem Auger, 6-inch diameter)	750	$18	NA	13500
		Subtask Total:		*$27,270*
Lab Costs				
Subtask: 10c - Laboratory Analysis				
GSA - Saturated Hydraulic Conductivity (6-inch Repacked Core)	6	$100	NA	600
GSA - Particle Size Analysis - Wet Sieve	30	$65	NA	1950
GSA - Atterberg Limits	30	$55	NA	1650

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

GSA - Bulk Density (2-inch core)	30	$10	NA	300
GSA - Moisture Content (Oven)	30	$10	NA	300
		Subtask Total:		*$5,184*

Other Direct Costs

Subtask: 10a - Project Management				
Communications	0.5	$50	NA	25
		Subtask Total:		*$27*
Subtask: 10b - Drilling and logging at up to six boreholes (avg depth of 75 ft bgs)				
Lodging	10	$85	NA	850
Miscellaneous	6	$50	NA	300
Subsistence	10	$35	NA	350
4WD Truck	1000	$1	NA	650
		Subtask Total:		*$2,322*
Subtask: 10c - Laboratory Analysis				
Miscellaneous	1	$50	NA	50
		Subtask Total:		*$54*
Subtask: 10d - Prepare summary documents (Deliverable 12)				
Communications	1	$50	NA	50
Reproduction	2	$50	$2	102
Shipping	0.5	$50	NA	25
		Subtask Total:		*$191*
	8.00% Overhead: $2596.16	**Task Total**		**$68,458**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: 11 - (Optional) Install Shallow Monitor Wells

	Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs				
Subtask: 11a - Project Management				
Program Director Milczarek	4	$145	NA	580
Project Manager Moore	24	$125	NA	3000
Clerical Staff Torres	8	$65	NA	520
		Subtask Total:		*$4,100*
Subtask: 11b - Drilling and well completion for monitor wells				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	12	$125	NA	1500
Senior Hydrologist Rice	96	$95	NA	9120
Hydrologist 1 Calabrese	24	$75	NA	1800
Clerical Staff Torres	4	$65	NA	260
		Subtask Total:		*$12,970*
Subtask: 11c - Conduct aquifer tests on six completed monitor wells				
Program Director Milczarek	2	$145	NA	290
Project Manager Moore	8	$125	NA	1000
Senior Hydrologist Rice	24	$95	NA	2280
Hydrologist 1 Calabrese	24	$75	NA	1800
Clerical Staff Torres	2	$65	NA	130
		Subtask Total:		*$5,500*
Subtask: 11d - Laboratory Analyses				
Laboratory Manager Yao	2	$135	NA	270
Hydrologist 1 Calabrese	8	$75	NA	600
		Subtask Total:		*$870*
Subtask: 11e - Install Pressure Transducers				
Project Manager Moore	1	$125	NA	125
Senior Hydrologist Rice	10	$95	NA	950
Hydrologist 1 Calabrese	2	$75	NA	150
		Subtask Total:		*$1,225*
Subtask: 11f - Process and analyze data; prepare technical memoradum				
Program Director Milczarek	8	$145	NA	1160
Project Manager Moore	32	$125	NA	4000
Senior Hydrologist Rice	24	$95	NA	2280
AutoCAD/GIS Osorio	16	$75	NA	1200
Clerical Staff Torres	4	$65	NA	260
		Subtask Total:		*$8,900*
Drilling Costs				

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Subtask: 11b - Drilling and well completion for monitor wells					
	Mob/Demob	1	$1,500	NA	1500
	Per Diem	10	$350	NA	3500
	Surface Completion	6	$350	NA	2100
	Well Development	18	$250	NA	4500
	ADWR Well Permit	6	$200	NA	1200
	Drive Coring - 1.5 ft long split spoon (2" by 6" liners)	90	$45	NA	4050
	Complete 2-inch Sch 40 PVC well casing, 0.20 slot screen, and steming materials	450	$20	NA	9000
	Drilling (Hollow Stem Auger, 6-inch diameter)	450	$18	NA	8100
			Subtask Total:		*$36,666*

Lab Costs

Subtask: 11d - Laboratory Analyses					
	GSA - Saturated Hydraulic Conductivity (6-inch Repacked Core)	6	$100	NA	600
	GSA - Particle Size Analysis - Wet Sieve	18	$65	NA	1170
	GSA - Atterberg Limits	18	$55	NA	990
	GSA - Bulk Density (2-inch core)	18	$10	NA	180
	GSA - Moisture Content (Oven)	18	$10	NA	180
			Subtask Total:		*$3,370*

Instruments Costs

Subtask: 11b - Drilling and well completion for monitor wells					
	Campbell Data Logger (CR1000)	2	$1,350	$100	2800
	Pressure Transducers and cable	6	$150	$100	1000
			Subtask Total:		*$4,104*
Subtask: 11e - Install Pressure Transducers					
	Pressure transducer and datalogger assembly	6	$500	NA	3000
			Subtask Total:		*$3,240*

Other Direct Costs

Subtask: 11a - Project Management					
	Communications	0.5	$50	NA	25
			Subtask Total:		*$27*
Subtask: 11b - Drilling and well completion for monitor wells					
	Lodging	5	$85	NA	425
	Miscellaneous Items	4	$50	NA	200
	Subsistence	5	$35	NA	175
	4WD Truck	800	$1	NA	520
			Subtask Total:		*$1,426*
Subtask: 11c - Conduct aquifer tests on six completed monitor wells					
	Lodging	4	$85	NA	340
	Miscellaneous Items	4	$50	NA	200

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

	Subsistence	4	$35	NA	140
	4WD Truck	600	$1	NA	390
			Subtask Total:		*$1,156*
Subtask: 11d - Laboratory Analyses					
	Miscellaneous	1	$50	NA	50
			Subtask Total:		*$54*
Subtask: 11e - Install Pressure Transducers					
	Miscellaneous Items	2	$50	NA	100
	Subsistence	1	$35	NA	35
	4WD Truck	230	$1	NA	149.5
			Subtask Total:		*$307*
Subtask: 11f - Process and analyze data; prepare technical memoradum					
	Communications	1	$50	NA	50
	Shipping	0.5	$50	NA	25
	Reproduction	1	$50	NA	50
			Subtask Total:		*$135*
	8.00% Overhead: $3739.56		**Task Total**		**$84,049**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: 12 - (Optional) Detailed Recharge Facility Report

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: No Subtask					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	40	$125	NA	5000
Senior Hydrologist	Rice	8	$95	NA	760
Staff Hydrologist	Buchanan	24	$85	NA	2040
AutoCAD/GIS	Osorio	16	$75	NA	1200
Clerical Staff	Torres	4	$65	NA	260
			Subtask Total:		*$10,420*
Other Direct Costs					
Subtask: No Subtask					
Shipping		0.5	$50	NA	25
Communications		1	$50	NA	50
Reproduction		2	$50	NA	100
			Subtask Total:		*$189*
	8.00% Overhead: $14.00		**Task Total**		**$10,609**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: 13 - (Optional) Coordination Meeting to Present Detailed Feasibility Study Results and Recommendations for Additional Field Investigations, If Required

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: 13a - Prepare for and conduct meeting (Sierra Vista)					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	12	$125	NA	1500
Staff Hydrologist	Buchanan	6	$85	NA	510
Clerical Staff	Torres	2	$65	NA	130
			Subtask Total:		*$3,300*
Subtask: 13b - Meeting notes (Deliverable 15)					
Program Director	Milczarek	0.25	$145	NA	36.25
Project Manager	Moore	2	$125	NA	250
			Subtask Total:		*$286*
Other Direct Costs					
Subtask: 13a - Prepare for and conduct meeting (Sierra Vista)					
2WD car rental		0.2	$350	NA	70
Reproduction		1	$50	NA	50
			Subtask Total:		*$130*
Subtask: 13b - Meeting notes (Deliverable 15)					
Reproduction		1	$50	NA	50
			Subtask Total:		*$54*
	8.00% Overhead: $13.60		**Task Total**		**$3,770**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: 15 - (Optional) Preparation of Draft and Final Technical Memorandum

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: No Subtask					
Program Director	Milczarek	8	$145	NA	1160
Project Manager	Moore	40	$125	NA	5000
Staff Hydrologist	Buchanan	24	$85	NA	2040
AutoCAD/GIS	Osorio	16	$75	NA	1200
Clerical Staff	Torres	8	$65	NA	520
			Subtask Total:		*$9,920*
Other Direct Costs					
Subtask: No Subtask					
Shipping		0.5	$50	NA	25
Reproduction		2	$50	NA	100
			Subtask Total:		*$135*
	8.00% Overhead: $10.00		**Task Total**		**$10,055**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: Contingency for Optional Tasks

	Quantity	Unit Cost	Shipping	Total Cost
Other Direct Costs				
Subtask: No subtask				
Contingency	20000	$1	NA	18518
		Subtask Total:		*$19,999*
8.00% Overhead: $1481.44		**Task Total**		**$19,999**

Riverstone Ranch Site Investigation
Table 4 - Detailed Costs

Task: Optional Task A - Geophysical Survey

		Quantity	Unit Cost	Shipping	Total Cost
Personnel Costs					
Subtask: Aa - Coordination and Oversight					
Project Manager	Moore	16	$125	NA	2000
Clerical Staff	Torres	6	$65	NA	390
			Subtask Total:		*$2,390*
Subtask: Ac - Data Integration with Geologic Data					
Program Director	Milczarek	4	$145	NA	580
Project Manager	Moore	24	$125	NA	3000
Staff Hydrologist	Buchanan	4	$85	NA	340
AutoCAD/GIS	Osorio	12	$75	NA	900
			Subtask Total:		*$4,820*
Other Direct Costs					
Subtask: Ab - Geophysical Survey					
Geophysical Survey		1	$25,000	NA	25000
			Subtask Total:		*$27,000*
	8.00% Overhead: $2000.00		**Task Total**		**$34,210**
			PROPOSAL GRAND TOTAL:		**$231,151**

ATTACHMENT E

WestLand Scope of Work & Fee Estimate

ATTACHMENT E

WestLand Resources, Inc.
Engineering and Environmental Consultants

October 17, 2013

Mr. John Wallace
JE FULLER/HYDROLOGY & GEOMORPHOLOGY
40 East Helen Street
Tucson, Arizona 85705

RE: PROPOSAL FOR REGULATORY REVIEW AND BIOLOGICAL, CULTURAL, AND PALEONTOLOGICAL ANALYSES AT RIVERSTONE RANCH - REVISED WESTLAND PROPOSAL NO. P7796.13

Dear Mr. Wallace:

WestLand Resources, Inc. (WestLand), is pleased to submit this proposal for environmental services in support of the Cochise County and the Nature Conservancy site investigation at Riverstone Ranch, Arizona. The proposal described herein consists of services and an estimated budget for the work described in ***Tasks 2*** and ***4*** of the Scope of Work Outline provided to WestLand dated September 9, 2013. ***Task 2*** entails a Draft and Final Regulatory Review Report that outlines the general anticipated permitting requirements for recharge projects within the San Pedro River Basin, and the Riverstone Ranch Project specifically. ***Task 4*** consists of biological, cultural, and paleontological resource analyses at Riverstone Ranch.

The total estimated cost to complete this work is **$22,000**. Below, we discuss the work proposed to fulfill these tasks and the estimated budget for each task.

TASK 2. DRAFT AND FINAL REGULATORY REVIEW REPORT

Under this task, WestLand will prepare a Regulatory Review Report that summarizes the permitting requirements from federal and state regulations for the construction of recharge facilities. This report will include, but will not be limited to, a discussion of the Clean Water Act; the Clean Air Act; the Arizona Department of Environmental Quality Aquifer Protection Program; the Arizona Department of Water Resources Recharge Program; the Endangered Species Act; the National Historic Preservation Act; and the National Environmental Policy Act. Our understanding is that the discussion of Arizona state surface water rights will be provided by other members of the Project Team and incorporated into the Regulatory Review Report.

The focus of this report will be broad, with the purpose of providing an overall understanding of what is required for a recharge project at Riverstone Ranch as well as other potential recharge projects in similar locations. Under this scope of work, WestLand will prepare a Draft Report for submittal to the Project Team and a Final Report that will incorporate comments from the Team. The budget associated with this task ***(Table 1)*** assumes that one hard-copy and one digital copy of the Draft and Final Reports will be

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2020 N. Central Avenue • Suite 695 • Phoenix, AZ 85004 • 602•888•7000 Fax 866•457•2838
1750 S. Woodlands Village Blvd. • Suite 150 • Flagstaff, AZ 86001 • 928•225•2218 Fax 866•457•2838

delivered to the Project Team and that only minor edits and responses to comments on the Draft Report will be required. The Final Report will include formal responses to comments from the Project Team.

TASK 4. PERFORM NATURAL RESOURCES ANALYSIS

Under this task, WestLand will conduct biological, cultural, and paleontological analyses of Riverstone Ranch. Our understanding is that the property is an 1,800-acre parcel located just west of the San Pedro River near Hereford, Arizona ***(Attachment)***. These analyses will provide a discussion of the areas of the property to avoid and seasonal constraints to consider as a result of the biological, cultural, and paleontological resources that occur in the general vicinity of the property.

The biological resources analysis will entail a one-day site visit by a WestLand biologist and the development of a written Biological Evaluation (BE). The BE will include a description of the biological resources on the property and a screening analysis to evaluate the potential for species listed as threatened or endangered under the Endangered Species Act to occur on the property. No species-specific surveys will be completed under this scope. WestLand will prepare a Draft BE for review by the Project Team and a Final BE that addresses comments from the Project Team. The budget associated with this task ***(see Table 1)*** assumes that one hard-copy and one digital copy of the Draft and Final BEs will be delivered to the Project Team and that only minor edits and responses to comments on the Draft BE will be required. The Final Report will include formal responses to comments from the Project Team.

The survey for cultural resources will involve a Class I survey and a sample Class II survey of the property to assess the potential for occurrence of significant archaeological and paleontological resources within the project area. The Class I survey will entail a records search to identify any previously recorded cultural resources surveys and archaeological sites within the property and a 1-mile buffer around the property. The records search will include a review of the AZSITE online archaeological database as well as an examination of historical General Land Office and topographic maps. Bureau of Land Management paleontological predictability maps will also be extrapolated to the project area, based on the occurrence of certain soil formations, to assess the potential for occurrence of paleontological resources within the project area. An informal Class II sample survey of approximately 80 acres will be conducted in those areas of the property with high potential for containing buried cultural and/or paleontological resources. Areas close to watercourses will be selected for the cultural resources sample survey, and erosional features that are present in the appropriate geological setting will be examined for paleontological specimens. WestLand will prepare a Draft Cultural and Paleontological Letter Report for review by the Project Team and a Final Cultural and Paleontological Letter Report that addresses comments from the Team. The budget associated with this task ***(see Table 1)*** includes the costs associated with evaluating cultural sites for eligibility for listing on the National Register of Historic Places, such that potentially eligible sites can be avoided. This budget does not include recording of cultural sites to Arizona State Historic Preservation Office standards or the acquisition of Arizona State Museum site numbers. This budget also assumes that one hard-copy and one digital copy of the Draft and Final Reports will be delivered to the Project Team and that only minor edits and responses to comments on the Draft Report will be required. The Final Report will include formal responses to comments from the Project Team.

COST

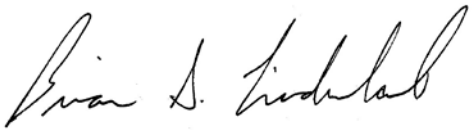
The estimate of the total budget to complete this work is **$22,000** ***(see Table 1)*** to be billed at WestLand's current billing rates against a not-to-exceed budget. The costs associated with specific tasks may be more or less than the estimates provided, but WestLand will not exceed the total project budget without authorization from JE Fuller.

Table 1. Cost Summary by Task

Task	Cost
Task 2 – Draft and Final Regulatory Review Report	$ 8,400
Task 4 – Perform Natural Resources Analysis	$ 13,600
Total	**$ 22,000**

If you find this proposal to be acceptable, we understand that you will be providing us with a subcontracting agreement. Should you have any questions or require additional information, please do not hesitate to call. We look forward to the opportunity to work with you on this project.

Respectfully,
WestLand Resources, Inc.



Brian S. Lindenlaub
Principal Consultant

BSL:pmd
Attachment: Riverstone Ranch Location Map

cc: David Cerasale, WestLand Resources, Inc.

Riverstone Ranch Location Map