

**Arizona Water Protection Fund
FY 2014 Grant Application Review**

Application # WPF0409 Applicant: City of Holbrook
Title of Project: Hidden Cove Riparian Restoration
Project

Additional materials were submitted with this application that could not be reproduced and distributed for review. These materials may be reviewed in person at the Arizona Water Protection Fund offices at (3550 N. Central Avenue, 2nd Floor, Phoenix). The additional materials available are the following:

<input type="checkbox"/>	Maps	
<input type="checkbox"/>	Photographs	
<input checked="" type="checkbox"/>	Disk (3) (2)	1) Application
<input type="checkbox"/>	Other	2) Existing Plans

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WPFO 409
Arizona Water Protection Fund
Application Cover Page
FY 2014

AUG 28 2013

Water Protection Fund

Title of Project: Hidden Cove Riparian Restoration Project													
Type of Project: <input checked="" type="checkbox"/> Capital or Other <input type="checkbox"/> Water Conservation <input type="checkbox"/> Research	Stream Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral												
Your level of commitment to maintenance of project benefits and capital improvements: <input type="checkbox"/> < 5 years <input type="checkbox"/> 5-10 years <input type="checkbox"/> 11-15 years <input checked="" type="checkbox"/> 16-20 years													
Applicant Information: Name/Organization: City of Holbrook Address 1: 465 1st Ave Address 2: P.O. Box 970 City: Holbrook State: AZ ZIP Code: 86025 Phone: (928)524-6225 Fax: (928)524-2159 Tax ID No.: XXXXXXXXXX	Inside an AMA: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, which AMA: <input type="checkbox"/> Phoenix <input type="checkbox"/> Tucson <input type="checkbox"/> Prescott <input type="checkbox"/> Pinal <input type="checkbox"/> Santa Cruz												
Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation													
Contact Person: Name: Randall Sullivan Jr. Title: Finance Director Phone: (928)524-6225 Fax: (928)524-2159 e-mail: rsullivan@ci.holbrook.az.us	Any Previous AWPFF Grants: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please provide Grant #(s):												
Arizona Water Protection Fund Grant Amount Requested: \$ 98,441.00 If the application is funded, will the Grantee intend to request an advance: <input type="checkbox"/> Yes <input type="checkbox"/> No	Matching Funds Obtained and Secured: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Applicant/Agency/Organization:</th> <th style="text-align: right; border-bottom: 1px solid black;">Amount (\$):</th> </tr> </thead> <tbody> <tr> <td>1. Applicant</td> <td style="text-align: right;">\$ 2,400</td> </tr> <tr> <td>2. Arizona Recreational Trails Grant</td> <td style="text-align: right;">\$ 18,490</td> </tr> <tr> <td>3. National Park Service</td> <td style="text-align: right;">\$ 4,590</td> </tr> <tr> <td>4. U.S. Fish and Wildlife Service</td> <td style="text-align: right;">\$ 2,750</td> </tr> <tr> <td style="text-align: right;">Total:</td> <td style="text-align: right;">\$ 28,230</td> </tr> </tbody> </table>	Applicant/Agency/Organization:	Amount (\$):	1. Applicant	\$ 2,400	2. Arizona Recreational Trails Grant	\$ 18,490	3. National Park Service	\$ 4,590	4. U.S. Fish and Wildlife Service	\$ 2,750	Total:	\$ 28,230
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Total:	\$ 28,230												
Has your legal counsel or contracting authority reviewed and accepted the Grant Award Contract General Provisions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A													
Signature of the undersigned certifies understanding and compliance with all terms, conditions and specifications in the attached application. Additionally, signature certifies that all information provided by the applicant is true and accurate. The undersigned acknowledges that intentional presentation of any false or fraudulent information, or knowingly concealing a material fact regarding this application is subject to criminal penalties as provided in A.R.S. Title 13. The Arizona Water Protection Fund Commission may approve Grant Awards with modifications to scope items, methodology, schedule, final products and/or budget.													
Randall Sullivan, Jr.	Financial Director (928)524-6225												
Typed Name of Applicant or Applicant's Authorized Representative	Title and Telephone Number												
<i>Randall Sullivan JR</i>	<i>8/26/2013</i>												
Signature	Date Signed												

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CITY OF HOLBROOK



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August 28, 2013

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Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

AUG 28 2013

Water Protection Fund

To Whomever It May Concern:

The City of Holbrook is pleased to submit the 2014 AWPf proposal titled "Hidden Cove Riparian Restoration Project." The City of Holbrook has been actively planning the restoration of riparian habitat at this site with the involvement of the National Park Service, the U.S. Fish and Wildlife Service, and local community members. Restoration of the proposed 11.1 acres of high elevation riparian, wetland, and upland habitats will serve as important wildlife habitat, especially resident and migratory birds such as the gray flycatcher (*Empidonax wrightii*), MacGillivray's warbler (*Oporornis tolmiei*), and the black-throated warbler (*Dendroica nigrescens*).

In 2012, the City of Holbrook completed a restoration concept design plan for Hidden Cove to protect and restore the geological, biological, and archaeological features at this site. The City has already received funds through the Arizona State Parks Recreational Trails Program Grant Program in 2012 to help restore damage to biological resources at the site. All maintenance, through this agreement, will be performed by the City of Holbrook.

If you have any questions or would like additional information, please do not hesitate our Financial Director, Randall Sullivan Jr. at (928)524-6225. Thank you for your consideration, and we look forward to restoring this important habitat in the Little Colorado River Watershed.

Sincerely,

A handwritten signature in cursive script that reads "Randall Sullivan Jr.".

Randall Sullivan, Jr.

CITY OF HOLBROOK

HIDDEN COVE RIPARIAN RESTORATION PROJECT

AWPF GRANT PROPOSAL

AUGUST 28, 2013

Due by 3:00p.m., August 28th, 2013

Executive Summary

The Hidden Cove Riparian Restoration project proposes to create 11.1 acres of cottonwood-willow, wetland, and upland habitat in the Little Colorado River Watershed near Holbrook, AZ. The project area will be irrigated by tertiary treated effluent already available and approved for use by the City of Holbrook. Hidden Cove is located adjacent to the Leroux Wash and northwest of Holbrook, Arizona. Initial cultural surveys, preliminary site analyses, and a restoration concept design have been completed. This proposal will provide funds to improve the area by restoring riparian and wetland habitats, improving valuable wildlife habitat, and providing opportunities for natural resource education.

Riparian and wetlands ecosystems in Arizona have been greatly altered and reduced by water development projects, deforestation, agriculture, and non-native species invasion. Seasonal flooding once provided alluvial seed beds for native cottonwood and willow. However, modifications to flows through damming and water diversions have altered natural conditions of riparian habitats. As a result, wildlife species, particularly resident and migratory bird populations, have declined with the loss of suitable cottonwood-willow and wetland habitats. In the arid southwest, native wetland and riparian habitats have disproportionately higher species diversity and density than any other habitat type.

This project encompasses the work of a broad partnership of stakeholders within the area including the City of Holbrook, the National Park Service River, Trails, and Conservation Assistance Program and Petrified Forest National Park, Arizona Game and Fish Department, Natural Resource Conservation Service, U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program, and local schools and community groups. This restoration project will help create 11.1 acres of riparian cottonwood-willow habitat, shallow wetlands, grass and wildflower fields, and upland scrubland habitats. These areas will provide habitat for resident and migratory birds. This restoration work is the first phase in restoring riparian habitat as part of the Hidden Cove Park Restoration Plan completed by the City of Holbrook in 2012. The design removes invasive species, utilizes existing infrastructure and effluent, and restores cottonwood-willow habitat that will provide opportunities for wildlife observation and natural resource education. This project will also provide a positive example of riparian restoration with community support and public involvement.

Funding of this proposal will add important habitat to the Little Colorado River watershed for a variety of wildlife species, including resident and migratory bird species. This area is already a valuable spot for bird watching, hiking, and environmental education opportunities for the local community. Restoration will enhance these current uses of the area while also restoring degraded riparian and wetland habitats. In order to accomplish the 11.1 acre riparian and wetland restoration, the following objectives are proposed:

1. Prepare the site for restoration by removing non-native species through mechanical and chemical techniques including follow-up treatments.
2. Create 6.1 acres of riparian cottonwood-willow flood irrigated habitat in an existing fallow agricultural field
3. Create 1.3 acres of shallow wetlands and 0.6 acres of native grass and wildflower fields along eastern edge of the existing fallow agricultural field.
4. Create 3.1 acres of drip irrigated upland habitat along the borders of the fallow agricultural field.
5. Utilize existing infrastructure and effluent to irrigate the restored area using flood irrigation in the shallow wetlands and riparian cottonwood-willow habitats and drip irrigation in the upland habitats.

This will be accomplished by completing the following tasks:

1. Develop a detailed restoration design plan based on the existing conceptual design
2. Clear the site through removal of non-native invasive weed species with follow-up treatment
3. Create 11.1 acres of riparian, wetland, and upland habitats
4. Maintain restored areas to ensure successful establishment of plantings
5. Monitoring the success of the techniques used

Introduction

Background

Riparian ecosystems are renowned for their high levels of biodiversity, productivity, and dynamism (Noss and Cooperrider 1994). In the landscape of the Colorado Plateau, these ecosystems comprise small habitat areas, but support disproportionately higher species diversity and density than any other habitat type. However, modifications to free-flowing water through diversions or impoundments have been a major factor in the loss and degradation of these habitats. Such modifications reduce flooding frequency, alter the quality of sediment beds, and convert historically mixed aged stands of diverse riparian vegetation to monocultures. The Little Colorado River, including Leroux Wash, has been an important water source for prehistoric and historic populations who have lived in and around Holbrook, Arizona. However, riparian habitats along this corridor have been modified extensively by flood-control, water delivery, and agricultural activities, which have affected the native vegetation and the wildlife that depend on them.

While Hidden Cove is primarily known for its unique cultural resources, an evaluation of the site's ecological characteristics encouraged the City of Holbrook along with federal, state, and non-profit partners, including the National Park Service River, Trails, and Conservation Assistance Program, Petrified Forest National Park, Arizona Game and Fish Department, U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program, the Navajo County Historical Society, the State Historic Preservation Office, and Natural Resource Conservation Service to propose restoring native habitat at the site, starting with 11.1 acres of native riparian, wetland, and upland habitat. Attached with this submittal is the fully executed City of Holbrook Resolution supporting the restoration of Hidden Cove, which was adopted by the City on August 19th, 2013. This first phase of restoration work for the Hidden Cove area will help restore high elevation riparian and wetland habitats. It is believed that restoring high elevation riparian habitats, such as Hidden Cove, will benefit a number of wildlife species, such as the gray flycatcher (*Empidonax wrightii*), MacGillivray's warbler (*Oporornis tolmiei*), and the black-throated gray warbler (*Dendroica nigrescens*). This restoration project supports the plans and efforts coordinated by the U.S. Fish and Wildlife Service and the Arizona Game and Fish department, as outlined in conservation plans such as the Coordinated Implementation Plan for Bird Conservation in Northern Arizona (2005) and the Arizona Partners in Flight Bird Conservation Plan (1999). The City of Holbrook has already completed extensive planning work including public hearings, initial cultural surveys, preliminary site analyses, and a conceptual restoration design plan for the site. The restoration of these habitats will involve, but is not limited to, the following activities:

1. Develop a detailed design plan for the proposed area
2. Remove and treat invasive weed species from the existing fallow agricultural field
3. Create flood irrigated riparian cottonwood-willow habitat using native cottonwood and willow species and shallow wetland areas with native bulrush and grass species.
4. Create a drip irrigated upland area with a variety of native shrubs and grasses.

The Hidden Cove property is situated in the City of Holbrook (a town along Route 66 and Interstate 40), and near the popular Petrified Forest National Park. The property includes geological, historical, biological, and archaeological rarities. While the site is popular for its archaeological features, unrestricted use of the site for a number of years degraded the resources of the site, leading the City of Holbrook to propose restoring the site's ecological and historical features to provide important habitat for resident and migratory birds, and to encourage natural resource education opportunities and awareness. The park's topography is split between a high sandstone mesa and a lower riparian basin on the southern portion. Water historically runs from the sandstone mesa into the lower basin. Archaeological evidence suggests that ancient Puebloan peoples as well as ranchers managed the water for food cultivation. A permanent wastewater treatment pond currently sits on the western end of the lower basin. Pond overflow feed a small stream that runs along the southern border of the site. Human alterations to this basin have altered the ecological and riparian characteristics of this site, resulting in non-native species invasion, reductions in existing wildlife habitat, and a loss of native vegetation. Native plant species have been replaced with several non-native invasive plant species including Tamarisk (*Tamarix spp.*), Russian olive (*Elaeagnus angustifolia*), halogeton (*Halogeton glomeratus*), camelthorn (*Alhagi pseudalhagi*), and Russian thistle (*Salsola tragus*).

Once completed, this project would create an additional 11.1 acres of riparian, shallow wetland, and upland habitat within the Little Colorado River watershed. The project will consist of creating 6.1 acres of riparian cottonwood/willow habitat, 1.3 acres of shallow wetland habitat, 0.6 acre of native grass and wildflower fields, and 3.1 acres of upland shrubland habitat (Figure 3). The restoration techniques that will be employed include: clearing and removal of non-native invasive plants from the project site, retrofitting an existing outflow structures from the adjacent pond to periodically flood irrigating the site and providing water for drip irrigation in the upland habitats, bioengineering and containerized stock planting of native riparian and wetland species, regular maintenance to treat resprouting exotic weeds and operate the flood and drip irrigation systems, and monitoring activities to ensure project success.

The treated effluent provided by the City of Holbrook Painted Mesa Water Reclamation Facility at the holding pond is released from an outflow valve located at the northwest corner of the project site. The pond currently holds 46.3 million gallons of water at the site. The valve will be retrofitted to provide periodic flood irrigation to the cottonwood/willow riparian habitats and shallow wetlands and drip irrigation to the upland areas. Currently, the City of Holbrook will require 19 million gallons of water per year for the site, to adequately irrigate the created habitats.

Momentum for restoring riparian habitat at Hidden Cove was initiated by site visits from the State Historic Preservation Office, Arizona Game and Fish Department, and local federal agencies. Archaeological survey work for seven miles of proposed trails was done by Petrified Forest National Park and a report will be completed soon. Site recording of over 300 petroglyphs was completed and the data is being prepared for submission to the Arizona State Museum. Environmental concerns have also been addressed by state and federal partners and will be reported in an Environmental Determination document. The City used feedback from the

local community, archaeological experts, and biological experts to develop a restoration conceptual design for the site as well.

Figure 1 shows the location of Hidden Cove Riparian Restoration area, which is located in Section 26, Township 18 North, Range 20 East of the Gila/Salt River Base and Meridian, in Navajo County, Arizona. **Figure 2** is an aerial map showing project acreage, project location boundaries, and the water source for the site. **Figure 3** is the project schematic map of the Hidden Cove Riparian Restoration site. **Figure 4** is an artist rendering of the completed restoration and **Figure 5** shows photos of existing site conditions.

Goal(s):

1. Remove and treat non-native invasive weed species on the site that may outcompete with native vegetation.
2. Establish 11.1 acres of native habitat, including 6.1 acres of riparian cottonwood-willow habitat, 1.3 acres of shallow wetlands, 0.6 acre of native grass and wildflower fields, and 3.1 acres of upland shrubland habitat.
3. Utilize existing water infrastructure and tertiary treated effluent to irrigate the restored habitat.
4. Monitor the project success of the 11.1 acre riparian, wetlands, and upland habitat revegetation through photo and plant monitoring.

Objective(s):

1. Create 6.1 acres of flood irrigated riparian cottonwood-willow habitat in a fallow agricultural field
2. Create 1.3 acres of flood-irrigated shallow wetlands at the project site along a constructed hiking trail within the fallow agricultural field.
3. Create a 0.6 acre field of native grasses and wildflowers along the western edge of the flood irrigated field
4. Restore 3.1 acres of upland shrubland habitat on the areas bordering the agricultural field.
5. Obtain valuable information to apply to future restoration activities at Hidden Cove.

Statement of Problem(s):

- Damaged/Degrading riparian habitat
- Excessive reproduction of exotic plant species
- Lack of habitat for high elevation riparian species
- Insufficient reproduction of native plant species

Statement of cause(s) of problem(s)

- Land conversion for agriculture
- Modification of stream flow through the site
- Introduction of exotic weed species
- Unrestricted recreational use of sensitive habitats on the site

Statement of project-related remedies or solutions:

- Remove exotic plant species from the 11.1 acre Hidden Cove site and revegetate with native riparian, wetland, and upland species.
- Grade the site to allow for flood irrigation of native riparian and wetland vegetation.
- Monitor the revegetation site for potential success of other revegetation efforts within the Hidden Cove project area.

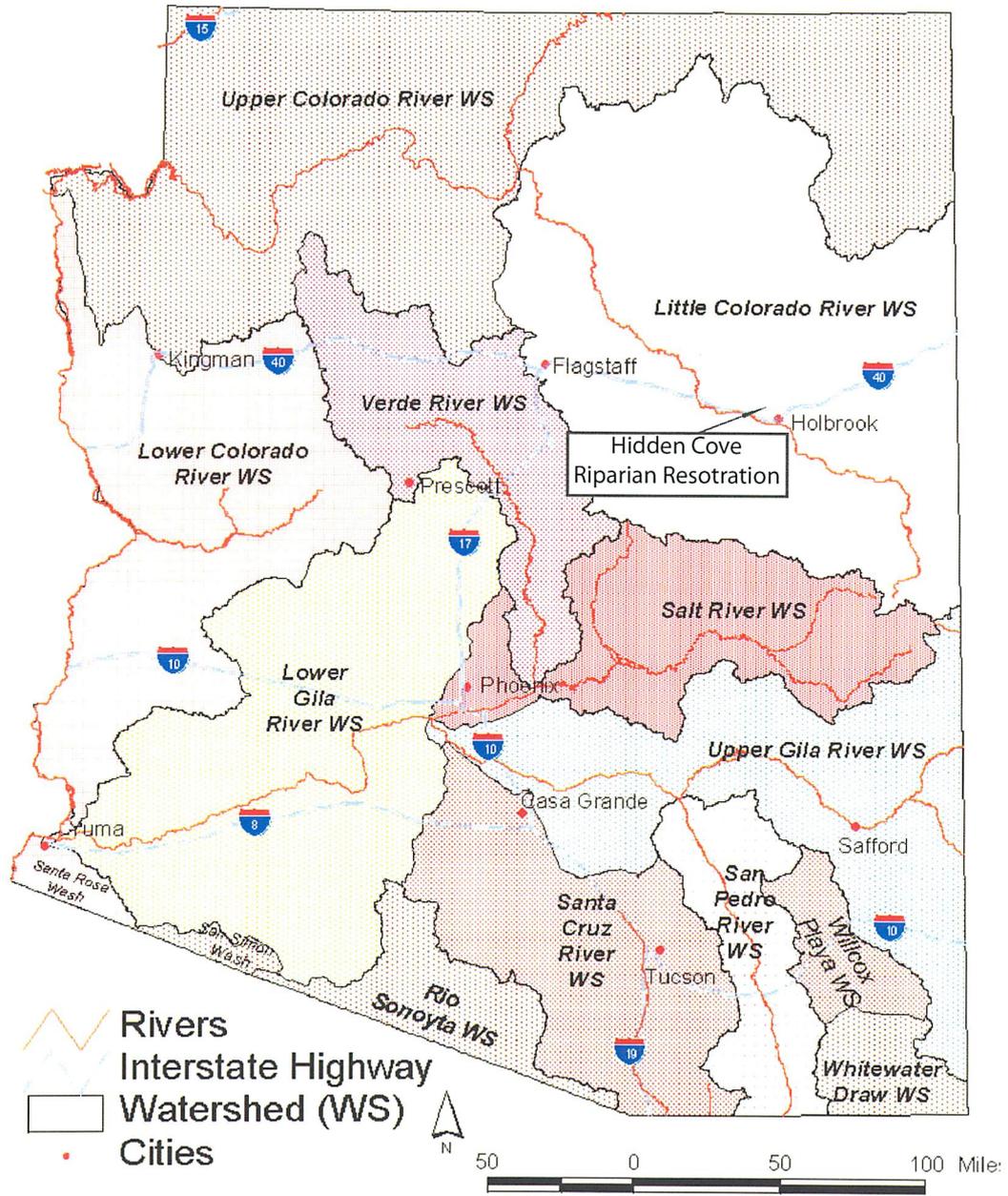
Statement of project years of benefit:

The 11.1 acre restoration will be designed to allow flood and drip irrigation of the restored habitats. The City of Holbrook intends to monitor the success of this project, and will use the information to plan, and where feasible, implement additional restoration and control programs in the foreseeable future. Follow-up maintenance required at this 11.1 acre site will consist of ongoing site irrigation (flood and drip irrigation) weed eradication and tree stand evaluation. It is anticipated that the drip irrigation site will require 2-3 years of follow up irrigation. The flood irrigated agricultural field habitat will require frequent irrigation for 2 years and then less irrigation for the next 3-5 years. The City of Holbrook will be responsible for follow-up maintenance of the Hidden Cove Site for at least 20 years post project term. The projected years of benefit for this project should exceed 50 years.

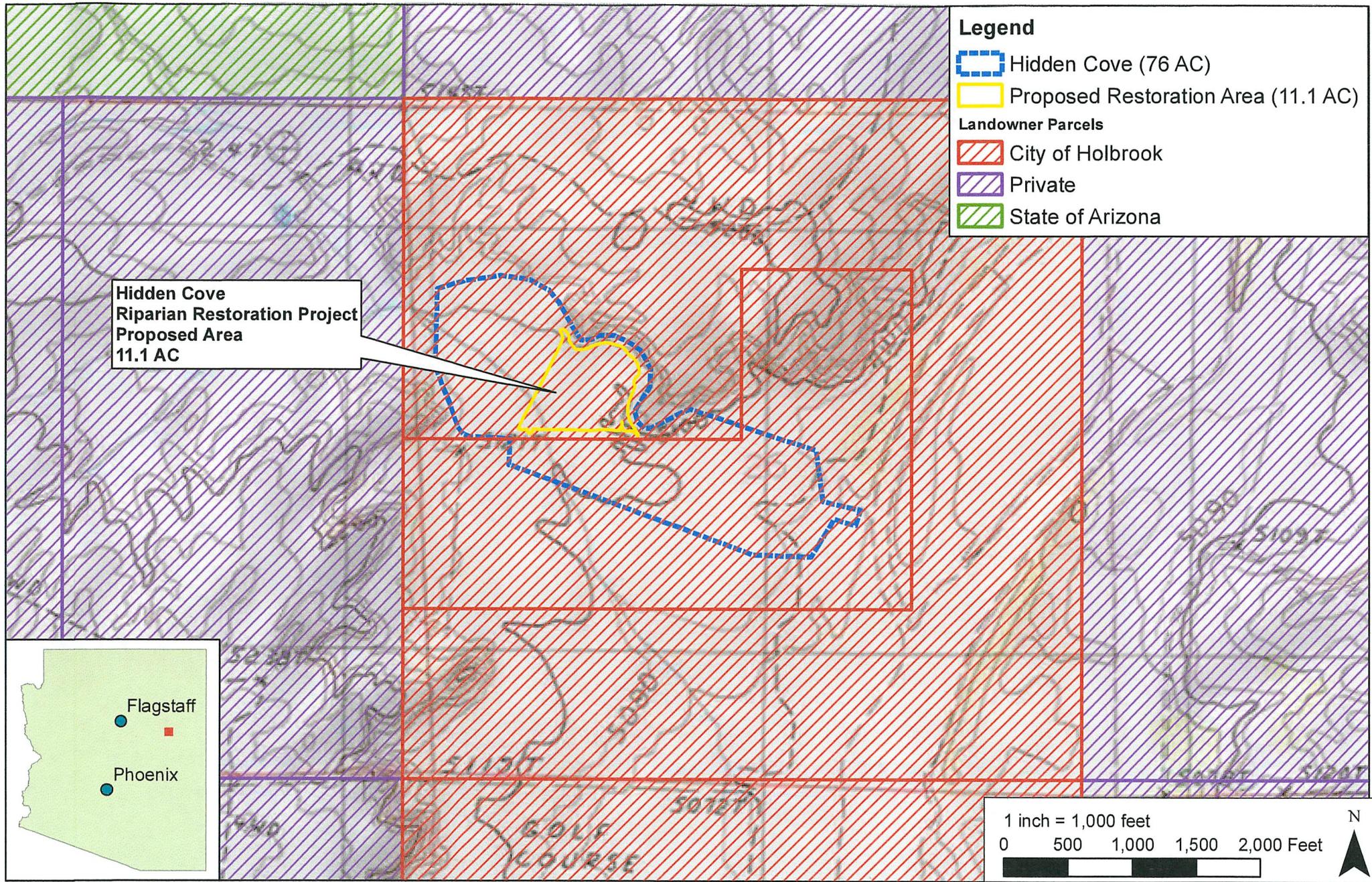
Project Location & Environmental Contaminant Information FY 2014

Project Location Information			
1. County: Navajo	2. Section: 26	3. Township: 18N	4. Range: 20E
<p>5. Watershed: Little Colorado River WS</p> <p>6. 8 or 10 Digit Hydrologic Unit Code (HUC): 1502000903</p> <p>7. Name of USGS Topographic Map where project area is located: Holbrook</p> <p>8. State Legislative District: 06 (Information available at: http://azredistricting.org/districtlocator/)</p> <p>9. Land ownership of project area: City of Yuma</p> <p>10. Current land use of project area: Vacant</p> <p>11. Size of project area (in acres): 11.1</p> <p>12. Stream Name: Leroux Wash</p> <p>13. Length of stream through project area: 1,350 ft</p> <p>14. Miles of stream benefited: 0.5 <u>miles</u></p> <p>15. Acres of riparian habitat: 11.1 <u>acres</u> will be:</p> <div style="margin-left: 300px;"> <input type="checkbox"/> Enhanced <input type="checkbox"/> Maintained <input type="checkbox"/> Restored <input checked="" type="checkbox"/> Created </div>			
<p>16. Provide directions to the project site from the nearest city or town. List any special access requirements: From Downtown Holbrook, head west on I-40 toward Flagstaff. Take exit 283 to Perkins Valley Road. Turn right onto Perkins Valley Road and then an immediate right onto Golf Course Road. Before entering the Golf Course, make a right onto a paved road. Follow the road east and then north. Make a left where the road ends and travel approximately 0.2 miles.</p>			
Environmental Contaminant Location Information			
<p>1. Does your project site contain known environmental contaminants? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:</p> <p>2. Are there known environmental contaminants in the project vicinity? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:</p> <p>3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>			

Arizona Watershed Map FY 2014



Title of Project: Hidden Cove Riparian Restoration Project



HIDDEN COVE RIPARIAN RESTORATION

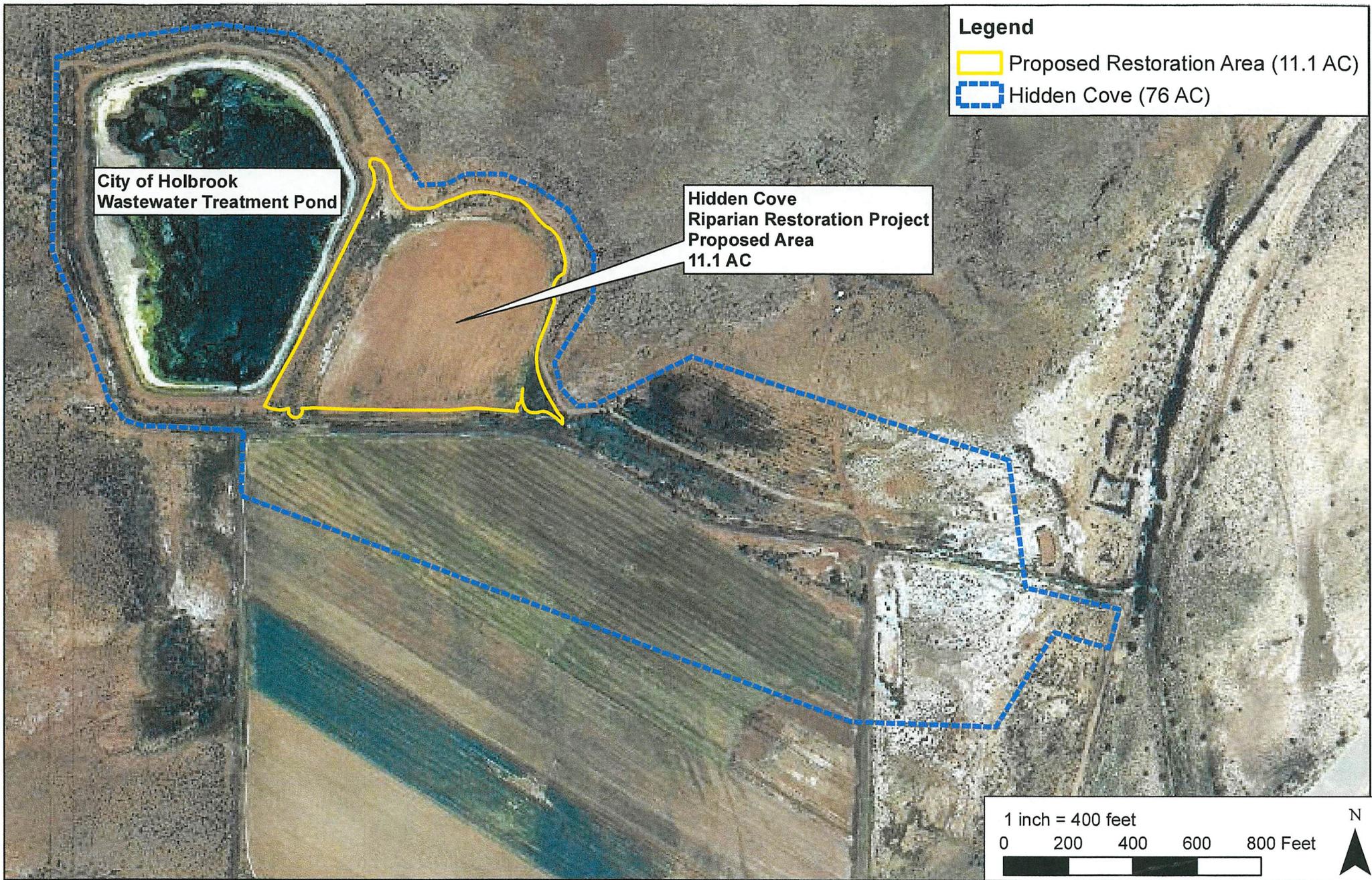
Date: 8/26/2013



Prepared by:
Fred Phillips Consulting, LLC

FIGURE I
Location Map





HIDDEN COVE RIPARIAN RESTORATION

Date: 8/26/2013



Prepared by:
Fred Phillips Consulting, LLC

FIGURE 2
Project Area





1 inch = 400 feet
 0 200 400 600 800 Feet

Date: 8/26/2013

HIDDEN COVE RIPARIAN RESTORATION

Prepared by:
 Fred Phillips Consulting, LLC

FIGURE 3
 Project Schematic





HIDDEN COVE RIPARIAN RESTORATION
Designed By: FFC & NPS
Drawn By: Robert Chambers

Figure 4
Date 8/14/13

CONCEPTUAL ARTIST RENDERING

Scope of Work

Task #1: Permits, Authorizations, Clearances, and Agreements

Task Description: The Grantee shall obtain all permits, authorizations, clearances and agreements necessary to conduct the work described in this Scope of Work, including but not limited to cultural resource clearances (SHPO), necessary access agreements, and resolutions in support of this project. Specific site surveys for cultural resources, completion of site analysis reports, and the Environmental Determination document will be completed with grant funds.

Task Purpose: To comply with all local, state, and federal requirements and obtain legal access to project area.

Deliverable Description: Copy of SHPO clearance and Environmental Determination document.

Deliverable Due Date: Prior to ground disturbing activities

AWPF Reimbursable Costs: \$0.00

Task #2: Prepare and Submit Restoration and Monitoring Plans

Task Description: The Grantee shall prepare and submit all plans necessary to conduct the Scope of Work described below. The project work plans shall consist of the following:

1. Site Clearing Plan

The Site Clearing Plan will describe all the clearing activities and methodologies for invasive species removal for the 11.1 acre site. Invasive plant species found at the site will be identified and removed using the best methods available to allow for revegetation with native plant species. Re-sprouting vegetation will be removed, burned, and mulched. This plan will contain a map that delineates how the remaining vegetation will be removed from the site after restoration work is completed.

2. Revegetation Planning Design/Construction Documents for 11.1 Acre Revegetation Site

Based on the data collected by the City of Holbrook in 2012 to assess soil salinity and depth to water, the Grantee will develop a Revegetation Plan. The Revegetation Plan will include the following details:

1. A detailed planting design for the revegetation of the 6.1 riparian cottonwood willow habitat, 1.3 acre shallow wetlands, 0.6 native grass and wildflower field, and 3.1 acre high elevation upland shrubland. The plan will include plant species types, plant spacing, and planting methods.
2. A majority of the 8 acre fallow agricultural field is already prepared for flood-irrigation. Local farmers will be hired to fine tune areas of the field in need of leveling due to drifting sand and erosion. This will prepare the field for the irrigation of the shallow wetland, grass and wildflower area, and riparian cottonwood-willow habitats.

3. Finish Grading and Irrigation Design

Once site clearing is complete, the project design team and contractors will need to finish grading the field for the shallow wetland, grass/wildflower and cottonwood-willow habitats. The flood irrigation gates will also need to be designed to help contain water levels within flood irrigated area. The Grantee will also design a drip irrigation system for the upland habitat portion of the project. The finished grading, irrigation gates, and drip system designs will detail work for the following by the Grantee:

1. Fine Tune leveling of the shallow wetland, wildflower and cottonwood/willow habitats in the fallow agricultural field.
 2. Construction of irrigation gates to allow water levels to be raised or lowered.
 3. Construction of the drip irrigation system surrounding the agricultural field
4. Monitoring Plan

The Monitoring Plan shall be designed to evaluate the success of the revegetation efforts and survival of the species planted. Monitoring activities shall consist of, but not limited to photo points and measurement of vegetation growth and vigor. The Monitoring Plan shall also describe routine monitoring for damage to the revegetation due to wildlife or human activities. The Monitoring Plan shall include, at a minimum:

- Map(s), to scale, of the Project Area showing the proposed monitoring sites.
- Attributes to be measured
- Rationale for the number and location of monitoring points
- Procedures used to measure attributes
- Equipment list
- Discussion of quality assurance/quality control
- Sample data sheets and photo point record sheets

Task Purpose: To develop detailed plans for constructing and monitoring 11.1 acres of riparian, wetlands, and upland habitat at Hidden Cove.

Deliverable Description

1. Site Clearing Plan
2. 11.1 Revegetation Plan
3. Final Grading and Irrigation Design Plan
4. Revegetation Monitoring Plan

Deliverable Due Date: The Site Clearing Plan will be submitted one month after Contract Execution and completion of the remaining plans will be after appropriate work needed for completion of the plan.

AWPF Reimbursable Costs: \$12,051.00

Task #3: Implement Site Clearing Plan

Task Description: All invasive vegetation at the site will be cleared through herbicide treatments and mechanical removal through disking and grubbing of the site. Treatment methods will utilize an integrated approach to treat invasive species on site, which include tamarisk, Russian olive, camelthorn, halogeton, and Russian thistle. Vegetation will be removed from the site by grubbing the area with a tractor and then removing the cleared plant material by burning on site. Resprouting vegetation will then be treated with herbicide treatments to prevent reinfestation of the area prior to planting. Details for clearing activities will be listed in the Site Clearing Plan (see Task #1). The site will also be graded to level the existing field to effectively flood irrigate the proposed shallow wetland and cottonwood/willow habitats.

Task Purpose: To clear invasive vegetation from the site and enable native plant restoration.

Deliverable Description: A report with photo/written documentation of the cleared 11.1 acre area and a site map.

Deliverable Due Date: 2 months after final contract execution

AWPF Reimbursable Cost: \$3,442.00

Task #4: Fine tune Site Leveling and Construct Flood irrigation Gates and Drip Irrigation System

Task Description: Approximately 8 acres of riparian cottonwood-willow, shallow wetland, and grass/wildflower habitat will be graded and leveled. The remaining upland habitat area will retain its current topography.

Valuable existing native habitat (cottonwood and willow species) will be avoided during excavation. Irrigation gate(s) will be installed at the site to raise and lower water levels at the site.

More detailed plans for this task will be outlined in the revegetation and monitoring plans section at the end of this grant proposal.

Task Purpose: To irrigate wetland, grass/wildflower, and riparian and wetland areas. This new topographic configuration will improve the long term success of these new habitats for terrestrial and wetland wildlife.

Deliverable Description: A report including photos and written documentation showing the completion of the riparian and wetland habitat grading. The report will also include as-built drawings of the completed work and the final irrigation design and any problems encountered during this phase of the project.

Deliverable Due Dates: 6 months after final Contract Execution

AWPF Reimbursable Cost: \$30,915.00

Task #5: Revegetate 11.1 Acres of Native Habitat

Task Description: The 11.1 acres of riparian, wetland, and upland areas will be revegetated with plant species that match site conditions based on the depth to water and soil salinity analysis completed by the City of Holbrook in 2012. Prior to planting, native plant propagules, poles, and plugs will be prepared for planting. The main field will be periodically flood irrigated using water released from the pond. As the western portion of the existing field is prone to flooding and has higher soil salinity, it will be planted with native shallow wetland grass species (alkali bulrush, Olney's three-square, and other native species) to prevent the regeneration of invasive species. The eastern portion of the field will be planted with native riparian cottonwood and willow species, creating a flood irrigated riparian habitat that eventually drains into the adjacent stream. Upland areas surrounding the site will be revegetated with native grasses and shrubs and a drip irrigation system will be installed. All plant material in the upland areas will be planted near ground water, reducing the need for long-term irrigation in the area after the plants have successfully established at the site.

The site will be maintained during the first two growing seasons. This will include irrigation system operation and maintenance, treatment of resprouting invasive weeds species and replanting of dead trees. More detailed plans on this task will be outlined in the revegetation and monitoring plans found at the end of this grant.

Task Purpose: To restore 11.1 acres of native wetland, riparian, and upland habitat at Hidden Cove and to ensure the successful establishment of plantings.

Deliverable Description:

1. Annual/Quarterly reports including planting and irrigation plans, photos, and project revegetation activities to date.
2. A final year report describing all revegetation construction activities for the 11.1 acre project.

Deliverable Due Date: Reports will be completed every 4 months after Contract Execution detailing work completed, challenges encountered, and success of methods used. The report will contain as-built drawings of the final planting design as well as site maps and photos of the work completed.

AWPF Reimbursable Cost: \$37,961.00

Task #6: Post Revegetation Monitoring Surveys

Task Description: Following revegetation efforts, the monitoring activities outlined in the Monitoring Plan (prepared in Task #1) will be conducted. Monitoring will be completed monthly during the growing season (May to October) during the first two growing seasons. Both quantitative and qualitative techniques will be used to monitor vegetation growth at the Hidden Cove Project Site. Variables that will be monitoring will include native tree and shrub height measurements, survivorship, condition, and factors affecting growth; rate of exotic weed recolonization; and success of native herbaceous ground cover growth. Monitoring will help determine success of the project by documenting native riparian and wetland vegetation establishment and survivorship and control of exotic species re-growth. Additionally, this

monitoring effort will help guide future revegetation efforts within Hidden Cove and in other areas in the Little Colorado River watershed.

Deliverable Description: Annual and final monitoring reports on the revegetation activities and growth success for the 11.1 acre project site. The reports will include a detailed description of all monitoring activities and results and will include photos, growth data and cover analysis, and project activities to date.

Deliverable Due Dates: 12 and 24 months after Contract Execution

AWPF Reimbursable Cost: \$3,677

Task #7: Overall Project Coordination

Task Description: For this project, there must be a coordinator that is familiar with the grant contract, the deliverables involved and the standard procedures of the AWPF program. The City of Holbrook and the project consultant will execute the project coordination. Project Coordination will include negotiating contracts with outside services involved with the project to make sure:

1. All deliverables are being fulfilled as stated in the contract.
2. All reporting information and budgetary forms are submitted to the AWPF in a timely manner in accordance with the grant contract.
3. Any problems or difficulties that arise during the grant project are addressed and satisfactorily resolved.

Project coordination will also include gathering deliverables from the involved parties and packaging the quarterly, annual and final reports necessary for project completion.

Task Purpose: To update the AWPF on all project activities and ensure that all project activities are properly coordinated and progressing in a timely manner.

Deliverable Description: Semi-Annual Progress Reports with a narrative of all project activities that relate to the deliverables in Tasks#1-5, including photographs and all data collected in tabular and graphical format.

Deliverable Due Date: As needed and stated with the other deliverables described in this grant application.

AWPF Reimbursable Cost: \$5,355.00

Task #8: Final Report

Task Description: The Grantee shall prepare and submit a comprehensive final report in accordance with the Arizona Water Protection Fund Final Report Guidelines. The final report shall include a summary of all methodologies used, outcomes of all tasks, analysis of all project data, suggestions for any changes or future actions, and an evaluation of the success of meeting project objectives. The Grantee shall provide all data generated under this Contract, unless otherwise specified in the Special Provisions.

Task Purpose: To provide a comprehensive final report for public distribution that gives a detailed description of the project and showcases its benefits to the State of Arizona.

Deliverable Description: Final Report

Deliverable Due Date: 36 months after Contract Execution

AWPF Reimbursable Cost: \$ 5,040.00

Detailed Budget Breakdown

DETAILED BUDGET BREAKDOWN Holbrook AWPf Grant Project

AWPF Funding Request					
Item	Item/Hours	Unit	Rate	Match Source	Total
Task #1 Permits, Authorizations, Clearances and Agreements					
See Match Budget					
Total for Task #1					\$ -

Task #2 Prepare and Submit Plans					
Site Clearing Clearing Plan					
Outside Services:					
Principal	2.00	Hour	\$ 90.00		\$ 180.00
Restoration Designer	8.00	Hour	\$ 75.00		\$ 600.00
AutoCAD/ArcGIS Operator	8.00	Hour	\$ 75.00		\$ 600.00
Revegetation Planning Design/Construction Documents for 11.1 Acre Revegetation Site					
Outside Services					
Principal	10.00	Hour	\$ 90.00		\$ 900.00
AutoCAD/ArcGIS Operator	25.00	Hour	\$ 75.00		\$ 1,875.00
Other Direct Costs:					
Principal Travel	2.00	Day	\$ 41.00		\$ 82.00
Principal Mileage	180.00	Mile	\$ 0.55		\$ 99.00
Finish Grading and Irrigation Design					
Excavation and Grading Design (Grading design and As built)					
Outside Services					
Principal	8.00	Hour	\$ 90.00		\$ 1,080.00
AutoCAD/ArcGIS Operator	4.00	Hour	\$ 75.00		\$ 600.00
Civil Engineer, PE	40.00	Hour	\$ 100.00		\$ 4,000.00
Other Direct Costs:					
Principal/Engineer Travel	2.00	Day	\$ 41.00		\$ 82.00
Engineer Mileage	180.00	Mile	\$ 0.55		\$ 99.00
Trimble R-8 Survey unit	2.00	Day	\$ 300.00		\$ 600.00
Monitoring Plan					
Outside Services:					
Biologist, MS	8.00	Hour	\$ 85.00		\$ 680.00
Subtotal					\$ 11,477.00
Administration: (5%)					\$ 574.00
Total for Task #2					\$ 12,051.00

Task #3 Implement Site Clearing Plan					
Outside Services:					
D6 H LGP Dozer with Operator	8.00	Hour	\$ 175.00		\$ 1,400.00
COH Labor to burn cleared materials	16.00	Hour	\$ 15.71		\$ 251.00
COH Project Manager Oversight	8.00	Hour	\$ 59.34		\$ 475.00
COH Herbicide Applicator	16.00	Hour	\$ 29.50		\$ 472.00
Other Direct Costs					
Herbicide Mix	100.00	gallons	\$ 6.50		\$ 650.00
Truck Rental	3.00	days	\$ 30.00		\$ 30.00
Subtotal					\$ 3,278.00
Administration: (5%)					\$ 164.00
Total for Task #3					\$ 3,442.00

Task #4: Implement Site Land Leveling, Construct Flood Irrigation Gates and Drip Irrigation System					
Outside Services:					
Finish grading of Field					
Civil Engineer set grade stakes for grading/Check Grades	16.00	HR	\$ 100.00		\$ 1,600.00
Laser Equipment	40.00	HR	\$ 40.00		\$ 1,600.00
Tractor and laser scraper	32.00	HR	\$ 200.00		\$ 6,400.00
Backhoe	32.00	HR	\$ 115.00		\$ 3,680.00
Construct Water inlet and outlet structures					
slide gates (pipe, stoplog concrete, slide gate)(materials and labor)	2.00	Each	\$ 5,000.00		\$ 10,000.00
Oversight of channel construction-Principal	8.00	Hours	\$ 80.00		\$ 640.00
Other Direct Costs:					
riprap 12"-18" and erosion control fabric	15.00	cyds	\$ 120.00		\$ 1,800.00
Mainline/3/4" Poly Laterals/Spaghetti Tubing and Pressure comp emitters)	3.10	Acre	\$ 500.00		\$ 1,550.00
Drip irrigation Pump (2" Trash Pump, hose and micron filter)	1.00	Lump	\$ 1,200.00		\$ 1,200.00
Travel Engineer	1.00	Days	\$ 41.00		\$ 41.00
Trimble R-8 Survey unit for setting grades	1.00	day	\$ 300.00		\$ 300.00
Mileage	180.00	Miles	\$ 0.48		\$ 632.00
Subtotal					\$ 29,443.00
Administration: (5%)					\$ 1,472.00
Total for Task #4					\$ 30,915.00

DETAILED BUDGET BREAKDOWN Holbrook AWPf Grant Project

AWPF Funding Request					
Item	Item/Hours	Unit	Rate	Match Source	Total
Task #5: Revegetate 11.1 Acres of Native Habitat					
Construction Oversight of 11.1 Acre Revegetation (Consultant)					
Outside Services:					
Principal	24.00	Hours	\$ 90.00		\$ 2,160.00
Other Direct Costs:					
Travel Estimated	3.00	Days	\$ 41.00		\$ 123.00
Mileage	600.00	Miles	\$ 0.55		\$ 330.00
6.1 Acres of Cottonwood/Willow Revegetation					
Capital Outlay:					
Native Understory Seed Mix (4lbs/acre)	24.00	pounds	\$ 45.00		\$ 1,080.00
Bobcat Rental (to auger 600 holes for 1 gallon pots)	2.00	days	\$ 400.00		\$ 800.00
Trailer Rental	5.00	Days	\$ 50.00		\$ 250.00
Truck Rental	1.00	Weeks	\$ 300.00		\$ 300.00
Glue, Gloves and Shovels	1.00		\$ 100.00		\$ 100.00
1.3 Acres of shallow marsh revegetation					
Capital Outlay:					
Trailer Rental	2.00	days	\$ 50.00		\$ 100.00
Truck Rental	0.50	Weeks	\$ 300.00		\$ 150.00
0.6 Acres of native grass/wildflower revegetation					
Capital Outlay:					
Native wildflower Seed Mix (4lbs/acre)	2.00	pounds	\$ 100.00		\$ 200.00
Trailer Rental	2.00	Days	\$ 50.00		\$ 100.00
Truck Rental	0.20	Weeks	\$ 300.00		\$ 60.00
Glue, Gloves and Shovels	1.00		\$ 100.00		\$ 100.00
3.1 Acres of native upland revegetation					
Capital Outlay:					
Plugs of native grasses (black grama, blue grama, Arizona fescue)	500.00	plugs	\$ 1.50		\$ 750.00
Bobcat Rental (to auger 600 holes for 1 gallon pots)	2.00	days	\$ 400.00		\$ 800.00
Trailer Rental	5.00	Days	\$ 50.00		\$ 250.00
Truck Rental	1.00	Weeks	\$ 300.00		\$ 300.00
Glue, Gloves and Shovels	1.00		\$ 100.00		\$ 100.00
Two Year Site Weed Maintenance/Irrigation/Month					
20.00	Months		\$ 1,360.00		\$ 27,200.00
One month includes one maintenance person 10 hrs wkx4 wks/\$16/hr plus \$700 parts/herbicide/truck (Truck use \$300/week*1 weeks=\$300)					
(garlon herbicide 1 gal/\$100 gal/month (\$100/month grant) gas for drip irrigation Water Delivery (Two Years)					
300.00	gallons		\$ 3.00		\$ 900.00
Subtotal					\$ 36,153.00
Administration: (5%)					\$ 1,808.00
Total for Task #5					\$ 37,961.00
Task #6: Two-Year Post Revegetation Monitoring (consultant)					
Year One Plant Monitoring (bi-monthly two 1-day sessions)					
Outside Services:					
Biologist	8.00	Hours	\$ 55.00		\$ 440.00
Laborer	8.00	Hours	\$ 17.00		\$ 136.00
Plant Monitoring Report, Biologist	20.00	Hours	\$ 55.00		\$ 1,100.00
Year Two Plant Monitoring (2 sessions In May and October)					
Outside Services:					
Biologist	8.00	Hours	\$ 55.00		\$ 440.00
Laborer	8.00	Hours	\$ 17.00		\$ 136.00
Plant Monitoring Report, Biologist	20.00	Hours	\$ 55.00		\$ 1,100.00
Other Direct Costs:					
Printing and Photomonitoring	Lump		\$ 150.00		\$ 150.00
Subtotal					\$ 3,502.00
Administration: (5%)					\$ 175.00
Total for Task #6					\$ 3,677.00

DETAILED BUDGET BREAKDOWN Holbrook AWPB Grant Project

AWPB Funding Request					
Item	Item/Hours	Unit	Rate	Match Source	Total
Task #7 Overall Project Coordination					
Outside Services:					
Biologist, MS	60.00	Hours	\$ 85.00		\$ 5,100.00
				<i>Subtotal</i>	\$ 5,100.00
				Administration: (5%)	\$ 255.00
				Total for Task #7	\$ 5,355.00

Task #8 Final Report					
Outside Services:					
Biologist, MS	50.00	Hours	\$ 85.00		\$ 4,250.00
Editor	10.00	Hours	\$ 40.00		\$ 400.00
Other Direct Costs:					
Printing Materials Postage	Lump		\$ 150.00		\$ 150.00
				<i>Subtotal</i>	\$ 4,800.00
				Administration: (5%)	\$ 240.00
				Total for Task #8	\$ 5,040.00

Total AWPB Request \$ 98,441.00

Detailed Matching Funds Breakdown

DETAILED MATCHING FUNDS BREAKDOWN

Holbrook AWPf Grant Project

Item	AWPF Funding Request				
	Item/Hours	Unit	Rate	Source	Total
Task #1 Permits, Authorizations, Clearances and Agreements					
NPS Archaeologist	30.00	hours	\$ 26.00	National Park Service	\$ 780.00
Total for Task #1					\$ 780.00

Task #2 Prepare and Submit Plans					
Site Clearing Plan					
None					
Design/Construction Documents for 11.1 Acre Revegetation Site					
NPS Landscape Architect	20.00	Hours	\$ 53.00	National Park Service	\$ 1,060.00
Finish Site Grading and Irrigation Design					\$ -
None					\$ -
Monitoring Plan					\$ -
None					\$ -
Total for Task #2					\$ 1,060.00

Task #3 Implement Site Clearing Plan					
None					
Total for Task #3					\$ -

Task #4: Implement Site Land Leveling, Construct Flood Irrigation Gates and Drip Irrigation System					
None					
Total for Task #4					\$ -

Task #5: Revegetate 11.1 Acres of Native Habitat					
Construction Oversight of 11.1 Acre Revegetation (Consultant)					
Outside Services:					
Biologist	37.00	hours	\$ 65.00	AZ Rec Trails Grant	\$ 2,405.00
6.1 Acres of Cottonwood/Willow Revegetation					
Outside Services:					
Planting Labor	Lump		\$ 3,800.00	AZ Rec Trails Grant	\$ 3,800.00
Cost includes(2 laborersx40hrsx\$25/hr) (Foreman 40hrsx\$45/hr)					
Capital Outlay:					
1 gallon Riparian Trees (Sycamore, Gooding willow, cottonwood, New Mexico olive)	600.00	1 gallons	\$ 4.00	AZ Rec Trails Grant	\$ 2,400.00
1.3 Acres of shallow marsh revegetation					
Outside Services:					
Planting Labor	Lump		\$ 1,425.00	AZ Rec Trails Grant	\$ 1,425.00
Cost includes(2 laborersx 15hrs x\$25/hr) (Foreman 15 hrs x\$45/hr)					
Capital Outlay:					
4" native marsh plant plugs	1,100.00	Plugs	\$ 1.50	AZ Rec Trails Grant	\$ 1,650.00
0.6 Acres of native grass/wildflower revegetation					
Outside Services:					
Planting Labor	Lump		\$ 1,710.00	AZ Rec Trails Grant	\$ 1,710.00
Cost includes(2 laborersx 18hrs x\$25/hr) (Foreman 18 hrs x\$45/hr)					
Capital Outlay:					
4" Plugs of native grasses (black gramma, blue gramma, Arizona fescue)	1,700.00	plugs	\$ 1.50	AZ Rec Trails Grant	\$ 2,550.00
3.2 Acres of native upland revegetation					
Outside Services:					
Planting Labor	Lump		\$ 950.00	AZ Rec Trails Grant	\$ 950.00
Cost includes(2 laborersx 10hrs x\$25/hr) (Foreman 10 hrs x\$45/hr)					
Capital Outlay:					
1 gallon Shrubs (Four-wing saltbush, mountain mahogany, etc.)	400.00	1 gallons	\$ 4.00	AZ Rec Trails Grant	\$ 1,600.00
Total for Task #5					\$ 18,490.00

Task #6: Two-Year Post Revegetation Monitoring (consultant)					
Year One Plant Monitoring (bi-monthly 2 sessions 1 days session)					
None					\$ -
Year Two Plant Monitoring (2 sessions In May and October)					
None					\$ -
Total for Task #6					\$ -

Task #7 Overall Project Coordination					
Outside Services:					
NPS Landscape Architect	30.00	Hours	\$ 53.00	National Park Service	\$ 1,590.00
USFWS Biologist	30.00	Hours	\$ 55.00	US Fish and Wildlife	\$ 1,650.00
COH Manager	30.00	Hours	\$ 60.00	City of Holbrook	\$ 1,800.00
Total for Task #7					\$ 5,040.00

Task #8 Final Report					
Outside Services:					
NPS Landscape Architect	20.00	Hours	\$ 53.00	National Park Service	\$ 1,060.00
USFWS Biologist	20.00	Hours	\$ 55.00	US Fish and Wildlife	\$ 1,100.00
COH Manager	10.00	Hours	\$ 60.00	City of Holbrook	\$ 600.00
Total for Task #8					\$ 2,760.00
Match Total					\$ 28,130.00

STATE HISTORIC PRESERVATION OFFICE Review Form

In accordance with the State Historic Preservation Act (SHPO), A.R.S. 41-861 *et seq*, effective July 24, 1982, each State agency must consider the potential of activities or projects to impact significant cultural resources. Also, each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. Therefore, it is understood that **recipients of state funds are required to comply with this law** throughout the project period. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance, **including those on private and federal lands.**

The State Historic Preservation Office (SHPO) must review each grant application recommended for funding in order to determine the effect, if any, a proposed project may have on archaeological or cultural resources. To assist the SHPO in this review, the following information **MUST** be submitted with each application for funding assistance:

- A completed copy of this form, and
- A United States Geological Survey (USGS) 7.5 minute map
- A copy of the cultural resources survey report if a survey of the property has been conducted, and
- A copy of any comments of the land managing agency/landowner (i.e., state, federal, county, municipal) on potential impacts of the project on historic properties.

NOTE: If a federal agency is involved, the agency must consult with SHPO pursuant to the National Historic Preservation Act (NHPA); a state agency must consult with SHPO pursuant to the State Historic Preservation Act (SHPA),

OR

- A copy of SHPO comments if the survey report has already been reviewed by SHPO.

Please answer the following questions:

1. Grant Program: Arizona Water Protection Fund
2. Project Title: Hidden Cove Riparian Restoration Project
3. Applicant Name and Address: City of Holbrook, 451 N. 1st Ave., Holbrook, AZ 86025-2501
4. Current Land Owner/Manager(s): City of Holbrook
5. Project Location, including Township, Range, Section: Township 18 North, Range 20 East of the Gila/Salt River Base and Meridian, Section 26, City of Holbrook, Navajo County, Arizona
6. Total Project Area in Acres (or total miles if trail): 11.1 acres
7. Does the proposed project have the potential to disturb the surface and/or subsurface of the ground? YES NO
8. Please provide a brief description of the proposed project and specifically identify any surface or subsurface impacts that are expected: The Hidden Cove Riparian Restoration project proposes to create 11.1 acres of cottonwood-willow, wetland and marsh, and upland habitat in the Little Colorado River Watershed near Holbrook, AZ. The proposed site is a bladed agricultural field.

The site will be graded for flood irrigation. Seeds, plugs, and 1 to 5 gallon plants will be installed throughout the proposed restoration site.

9. Describe the condition of the current ground surface within the entire project boundary area (for example, is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, etc.). Estimate horizontal and vertical extent of existing disturbance. Also, attach photographs of project area to document condition: The current condition of the ground surface is a bladed field. Vertical disturbance is approximately 1 foot and the entire 11.1 was previously disturbed during construction of a waste water pond, road construction, and agricultural use.

10. Are there any known prehistoric and/or historic archaeological sites in or near the project area?

YES NO

11. Has the project area been previously surveyed for cultural resources by a qualified archaeologist?

YES NO UNKNOWN

If YES, submit a copy of the survey report. Please attach any comments on the survey report made by the managing agency and/or SHPO

12. Are there any buildings or structures (including mines, bridges, dams, canals, etc.), which are 50-years or older in or adjacent to the project area? YES NO

If YES, complete an Arizona Historic Property Inventory Form for each building or structure, attach it to this form and submit it with your application.

13. Is your project area within or near a historic district? YES NO

If YES, name of the district:

Please sign on the line below certifying all information provided for this application is accurate to the best of your knowledge.

Randall Sullivan Jr 3/26/13
Applicant Signature /Date

RANDALL L SULLIVAN JR
Applicant Printed Name

FOR SHPO USE ONLY	
SHPO Finding: <input type="checkbox"/> Funding this project will not affect historic properties. <input type="checkbox"/> Survey necessary – further GRANTS/SHPO consultation required (<i>grant funds will not be released until consultation has been completed</i>) <input type="checkbox"/> Cultural resources present – further GRANTS/SHPO consultation required (<i>grant funds will not be released until consultation has been completed</i>)	
SHPO Comments	
For State Historic Preservation Office:	Date:

**STATE OF ARIZONA
HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No. _____ Survey Area: _____

Historic Names (*enter the name(s), if any that best reflect the property's historic importance*): _____

Address: _____

City or Town: _____ Vicinity County: _____ Tax Parcel No.: _____

Township: _____ Range: _____ Section: _____ Quarters: _____ Acreage: _____

Block: _____ Lot(s): _____ Plat (Addition): _____ Year of plat (addition): _____

UTM Reference – Zone: _____ Easting: _____ Northing: _____

USGS 7.5' quadrangle map: _____

ARCHITECT: _____ not determined known Source: _____

BUILDER: _____ not determined known Source: _____

CONSTRUCTION DATE: _____ known estimated Source: _____

STRUCTURAL CONDITION

- Good (*well maintained; no serious problems apparent*)
- Fair (*some problems apparent*) Describe: _____
- Poor (*major problems; imminent threat*) Describe: _____
- Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use: _____

Sources: _____

PHOTO INFORMATION

Date of photo: _____
View Direction (looking towards): _____

Attach a recent photograph of property in this space.
Additional photographs may be appended.

SIGNIFICANCE

To be eligible for the National Register, a property must represent an important part of the history or architecture of an area. The significance of a property is evaluated within its historic context, which are those patterns, themes, or trends in history by which a property occurred or gained importance. Describe the historic and architectural contexts of the property that may make it worthy of preservation.

A. HISTORIC EVENTS/TRENDS – Describe any historic events/trends associated with the property: _____

B. PERSONS – List and describe persons with an important association with the building: _____

C. ARCHITECTURE – Style: _____ no style

Stories: _____ Basement Roof Form: _____

Describe other character-defining features of its massing, size and scale: _____

INTEGRITY

To be eligible for the National Register, a property must have integrity (i.e. it must be able to visually convey its importance). The outline below lists some important aspects of integrity. Fill in the blanks with as detailed a description of the property as possible.

Location - Original Site Moved: Date: _____ Original Site: _____

DESIGN

Describe alterations from the original design, including dates: _____

MATERIALS

Describe the materials used in the following elements of the property:

Walls (structure): _____

Walls (sheathing): _____

Windows: _____

Roof: _____

Foundation: _____

SETTING

Describe the natural and/or built environment around the property: _____

How has the environment changed since the property was constructed? _____

WORKMANSHIP

Describe the distinctive elements, if any, of craftsmanship or method of construction: _____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

Individually Listed; Contributor; Non-contributor to _____ Historic District

Date Listed: _____ Determined eligible by Keeper of National Register (date: _____)

RECOMMENDATIONS ON NATIONAL REGISTER ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property is is not eligible individually.

Property is is not eligible as a contributor to a listed or potential historic district.

More information needed to evaluate.

If not considered eligible, state reason: _____

Key Personnel

The following pages include the resumes of the City of Holbrook staff who will supervise, coordinate, and perform a majority of the work specified in this grant application. The project team also includes experts from federal and state agencies who will provide oversight and assistance to the City during the course of this project. A contractor will also be employed to provide assistance in revegetation of the site and project coordination. Together the project team has over 30 years of experience in riparian revegetation, land grading, grant and construction project management, and ecological monitoring throughout the State of Arizona. This project team was also responsible for developing the restoration concept plan for the Hidden Cove project area.

RANDALL LEE SULLIVAN JR

1308 West Buffalo St.
Holbrook, AZ 86025
(928)241-0346
rsullivan@ci.holbrook.az.us

Skills & Abilities

Proficient in excel and word with the ability to learn any software
Accounting system conversions
Grade II in Water distribution and Waste Water Collections
Grade I in water treatment and waste water treatment
Solid understanding of accounting and grants
Strong analytical skills and problem solving
Organized and reliable able to work independently or in a team environment
Energetic and motivated

Experience

Crew Supervisor **BALLARD TRUSS**

1999-2001

Trained and guided crew, built and inspected constructed trusses

Department supervisor **THE HOME DEPOT**

2002-2004

Acting night operations manager, New hire trainer

Senior Accountant **NAVAJO COUNTY FINANCE**

2004-2008

Supervised payroll, A/P, A/R, Audits, Bank Reconciliations, IRS compliance, Grants administration, Financial Statements

Assistant city manager **CITY OF HOLBROOK**

2008-present

Supervise accounting office including billing ,payroll, A/P, A/R, Audits, Bank Reconciliations, IRS compliance, Grants administration, Financial Statements.

Education

Northland Pioneer College, **Holbrook, AZ**

- *emphasis in Business*

Northern arizona university, **Flagstaff, AZ**

- *Bachelor of Science in Business Administration*
- *Bachelor of Science in Accountancy*

168 Total Credit hours

Leadership

Thirteen years of supervisory experience, leading by example and training.

Michael W. O'Dell

1411 Bermuda Drive Holbrook Az. 86025

Work # 928-241-0293. Home # 928-524-6519

Email: mwodell@cablone.net

EDUCATION:

Holbrook High School.

455 North Eighth Ave.

Holbrook, AZ 86025

- Graduated (1974).

Pima Community College.

1255 N. Stone Ave.

Tucson, AZ 85709

- Water and Wastewater Treatment Training (1985-1986)
- *Grade 2 Arizona Water and Waste Water Certifications* (1987-2004).
 - ID # OT001586

EMPLOYMENT:

City of Holbrook City Hall

Water Department Technician (Jan 1979-1987)

City of Holbrook Water Department

465 1st Avenue

Holbrook Az. 86025

Phone: (928)524- 6225

- Served as Water Meter Reader for City of Holbrook Water Department.
- Assisted with operations at the Waste Water Treatment Plant
- Assisted with operations at City Reuse Facility in collaboration with Waste Water Treatment Plant
- Performed maintenance at holding pond located at Hidden Cove

Waste Water Treatment Plant Operator (1987-1998)

City of Holbrook Waste Water Treatment Plan

300 Broadcast Lane

Holbrook, AZ 86025

Phone (928)524-2488

- Maintained Arizona certifications for Water and Waste Water operations
- Tested water samples to assess water quality
- Assisted with preparing reports on water testing results
- Operation of treatment of water and waste water for City of Holbrook
- Assisted with development of resources at Hidden Cove
- Planting and maintenance of cottonwood and willow trees at Hidden Cove

Code Enforcement Officer (1998-2013)

Community Development Department

465 1st avenue Holbrook Az. 86025

Phone: (928)524- 6225

- Working with community members to ensure code compliance
- Filling in at the Historic Court House Museum and Visitor Center
- Assisting with operations at the Solid Waste Transfer Site

Parks and Recreation Groundskeeper (2013 –Present)

City of Holbrook Parks and Recreation Department

465 1st avenue Holbrook Az. 86025

Phone: (928)524- 6225

- Lead tour guide at Hidden Cove for community groups
- Facilitated community volunteer events and interpretive programs
- Development of interpretive program at Hidden Cove with special emphasis on petroglyphs and Historic Zuck Ranch found at the site
- Assisted with development of Hidden Cove Park Restoration Concept Plan
- Conducting site analysis for development of Hidden Cove Park Restoration Concept Plan

SKILLS:

- Loader and Back Hoe operator.
- Planting and maintenance of riparian vegetation
- Interpretive guide and program development
- Facilitating and supervising community volunteer events
- Special knowledge of history of Hidden Cove and surrounding prehistoric sites

ORGANIZATIONS:

- Community Leader for Holbrook Clean and Beautiful (affiliated with Keep Arizona Beautiful)
 - Jill Bernstein, Executive Director (602)651-1227
- Member of Horsehead Historic Crossing Historic District Committee
 - David Heward, Chairman (480)310-6355

Joseph C. Winfield

Landscape Architect, RLA

Work Contact Information:

255 N. Commerce Park Loop
Tucson, AZ 85745

520-791-6471
joe_winfield@nps.gov

SUMMARY OF LEADERSHIP QUALIFICATIONS

- 12 years of supervisory experience.
- 21 years of partnership building and getting results for diverse groups and complex projects.

“With the assistance of Mr. Joe Winfield of the RTCA Program, the Black Canyon Heritage Park project has active participation of eight agencies and organizations, has received over \$700,000 in grant funds.”

Bob Cothorn, President, Black Canyon City Community Association – 2010

“With the complicated stakeholder coordination requirements between state, tribes, non-profits and local government, Joe has been awesome in bringing us together to move the project forward.”

Rogene Hill, Assistant City Manager, City of Avondale - 2011

PROFESSIONAL EXPERIENCE

Rivers, Trails and Conservation Assistance Program, 1996 - Present

Tucson, AZ, Landscape Architect

- Awarded over 1.5 million dollars in accumulated grants leveraging over \$4 million for community-based conservation projects.
- Helped organize fifteen conferences or workshops and ten community events to promote conservation of rivers, trails and open space.
- Facilitated the construction and maintenance of 400 + miles of trail, 40 + acres of riparian restoration, and training of over 200 volunteers in trail construction and maintenance techniques.

Devils Tower National Monument, 2005 - 2006

Devils Tower, WY, Park Manager (Superintendent)

- 120-day detail assignment as Acting Superintendent.
- Worked with community leaders and local citizens to organize five major events (June – September to celebrate the Park’s Centennial as America’s first National Monument.
- Facilitated completion of a controversial Climbing Management Plan Update.

Redwood National Park, 1992 – 1996

Crescent City, CA, Supervisory Landscape Architect

- Supervised 20 + permanent and seasonal maintenance and custodial staff to maintain park facilities, including constructing a new education facility with a commercial kitchen.
- Partnered with Ohio State University’s Landscape Architecture Department to provide planning and design services for the Park through a student internship program.
- Awarded a \$900,000 Intermodal Surface Transportation Efficiency Act grant for new trailhead.

Mid-Atlantic Regional Office/America’s Industrial Heritage Project, 1988 – 1992

Philadelphia, PA/Johnstown, PA, Landscape Architect

- Managed the Allegheny Highlands Heritage Center comprised of federal and state employees and private contractors to support historic preservation and folk life activities for a nine county area.

Denver Service Center-Construction Branch/Johnstown Flood National Memorial, 1987 - 1988

Lakewood, CO/St. Michael, PA, Landscape Architect

- Assisted in supervising the construction of a new 7,000 sq. ft. visitor center and support facilities.

Denver Service Center, TEA, Design Branch, 1984 – 1987

Lakewood, CO, Landscape Architect

- Provided landscape architectural services for a wide range of park projects throughout the U.S., which included presenting a park design to Mrs. Coretta Scott King for Martin Luther King NHS.

Dominic A. Barrett

PO Box 39

Pinetop, AZ 85935

Email: dominic_barrett@fws.gov

Office: 928-338-4288 ext. 25

Education:

M.S., Natural Resource Ecology and Management with a specialization in Wildlife Ecology and Management, Oklahoma State University, Stillwater, OK, May 2008 (GPA: 3.92/4.0)

B.S., Fisheries and Wildlife Conservation, Southeastern Oklahoma State University, Durant, OK, Dec. 2004 (GPA: 3.98/4.0; Summa Cum Laude)

Work Experience:

Fish and Wildlife Biologist (GS-11): October 2009 – present

Employer: USFWS Partners for Fish and Wildlife Program, Arizona Fish and Wildlife Conservation Office, Pinetop, AZ

Supervisor: Jeremy Voeltz, Project Coordinator, 928-338-4288 ext. 23

Duties: implement Partners Program, restore habitats, project collaboration, supervise technician

Supervisory Fishery Biologist (GS-12 acting, part-time): May 2012 – September 2012

Employer: USFWS Arizona Fish and Wildlife Conservation Office

Supervisor: Stewart Jacks, Asst. R.D. for Fisheries and Aquatic Resource Conservation, 928-338-4288

Duties: Coordinate fisheries management activities, supervise western AZ staff, maintain relationships

Wildlife Biologist (GS-09): January 2008 – September 2009

Employer: USFWS Cibola National Wildlife Refuge, Ehrenberg, AZ

Supervisor: Mike Oldham, Refuge Manager, 620-486-2393

Duties: plan/conduct biological surveys, wetland management, co-supervise technicians and volunteers

Graduate Research Assistant, Bridge to the Doctorate Fellow: January 2005 – December 2007

Employer: Oklahoma Cooperative Fish and Wildlife Research Unit, Stillwater, OK

Supervisor: David M. Leslie, Jr., Unit Leader, 405-744-6342

Duties: wildlife surveys, live-trapping, analyze data, supervise technicians, work with private landowners

Creel Clerk: September 2004 – November 2004; December 2003 – May 2004

Employer: Oklahoma Department of Wildlife Conservation, Wilburton, OK

Supervisor: James Vincent, Streams Biologist, jvriver@simplynet.net

Duties: creel surveys, pressure counts, data entry and summarization, public education

Laboratory Teaching Assistant: January 2001 – December 2004

Employer: Southeastern Oklahoma State University, Durant, OK

Supervisor: Tim Patton, Associate Professor, 580-745-2284

Duties: multidisciplinary research, assist with biology laboratory exercises, aid students

Fisheries Intern: May 2004 – August 2004

Employer: USFWS King Salmon Fisheries Resource Office, King Salmon, AK

Supervisor: Jeffry Anderson, Fishery Biologist, 907-260-0132

Duties: weir construction and maintenance, monitor salmon escapement, data collection, field support

Research Technician: May 2003 – August 2003

Employer: USDA National Wildlife Research Center Logan Field Station, Logan, UT

Supervisor: Mike Jaeger, Research Wildlife Biologist, 435-797-8187

Duties: animal care, assist federal researchers and graduate students with research, general maintenance

Research Technician: May 2002 – August 2002

Employer: Oklahoma Cooperative Fish and Wildlife Research Unit

Supervisor: David M. Leslie, Jr., Unit Leader, 405-744-6342

Duties: conduct radio telemetry on collared elk, tissue sample collection, trail camera operation

Biologist Aide: intermittent 2000 and 2001

Employer: Oklahoma Department of Wildlife Conservation, Oklahoma City, OK

Supervisor: Jerry Shaw, Research Biologist, 405-521-2739

Duties: remove and age deer jaws using the tooth wear and eruption method, public education

Research Technician: May 2001 – August 2001

Employer: Southeastern Oklahoma State University

Supervisor: Tim Patton, Associate Professor, 580-745-2284

Duties: stream habitat classification, collect stream measurements, data entry and analyses

Trainings/Workshops attended and Certifications:

Collaborative Negotiation Skills for Environmental Professionals. 2012. Phoenix, AZ.

Applied Watershed Restoration Course. 2011. Las Vegas, NM.

USFWS Principles & Techniques of Electrofishing. 2010. Parker, AZ.

USFWS HabITS Training. 2010. Albuquerque, NM.

USFWS Employee Foundations. 2009. Shepherdstown, WV.

USFWS Moist-Soil Management for Maintenance Staff. 2008. San Antonio, NM.

USFWS Non-Game Wildlife Survey Techniques. 2008. Shepherdstown, WV.

USFWS Backhoe Loader and Skid Steer Training. 2008. Cibola, AZ.

Lower Colorado River Basin Riparian Revegetation Workshop. 2008. Las Vegas, NV.

USFWS Motorboat Operator Certification Course. 2004 (refresher 2009). King Salmon, AK.

Applied Fluvial Geomorphology Workshop. 2004. Broken Bow, OK.

Basic Assessment and Restoration of Degraded Streams Workshop. 2004. Oklahoma City, OK.

Workshops Hosted:

Career Explorations and Enhancement Workshop. 2010 – 2012. Pinetop, AZ.

Tribal Wetland Restoration and Construction Workshop. 2011. Pinetop, AZ.

An Introduction to GIS for Natural Resource Management. 2010. Pinetop, AZ.

Refereed Publications:

Barrett, D. A., and D. M. Leslie, Jr. 2012. Spatio-temporal variations in age structures of a partially re-established population of northern river otters (*Lontra canadensis*). *American Midland Naturalist* 168:302–314.

Barrett, D. A., and D. M. Leslie, Jr. 2010. Current distribution of North American river otters in central and eastern Oklahoma, with seven new county records. *Occasional Papers of the Museum of Texas Tech University* 294:1–13.

Funding Received:

Zane Grey Chapter of Trout Unlimited Grant. 2011. Native trout of the Chuska Mountains, Arizona and New Mexico. Trout Unlimited. \$6,000

Bring Back the Natives. 2011. Nutrioso Creek Riparian Restoration and Protection Project. National Fish and Wildlife Foundation. \$12,990

Challenge Cost Share Grant. 2009. Facility Improvements for Waterfowl Hunting Activities. US Fish and Wildlife Service. \$13,255

Challenge Cost Share Grant. 2009. Mesquite (*Prosopis* spp.) Bosque Restoration within the Historic Floodplain of the Lower Colorado River. US Fish and Wildlife Service. \$5,300

Wildlife Conservation Fund Grant. 2009. Mesquite (*Prosopis* spp.) Bosque Restoration within the Historic Floodplain of the Lower Colorado River. Arizona Game and Fish Department. \$5,439

Challenge Cost Share Grant. 2008. Eradication Program for Giant Salvinia (*Salvinia molesta*). US Fish and Wildlife Service. \$14,164

Awards Received:

Special Thanks for Achieving Results (STAR) Award, US Fish and Wildlife Service, 2010 – 2012

AZ Fish and Wildlife Conservation Office MVP Award, US Fish and Wildlife Service, 2011

Quality Performance Award, US Fish and Wildlife Service, 2008

Robert L. Lochmiller II Endowed Scholarship in Wildlife Ecology, Oklahoma State University, 2008

Bridge to the Doctorate Fellowship, National Science Foundation, 2005 – 2007

Graduate Student Fisheries Involvement Award, Oklahoma State University, 2005

Summa Cum Laude, Southeastern Oklahoma State University, 2004

Louis Stokes-Oklahoma Alliance for Minority Participation Scholarship, 2000 – 2004

Emerging Scholar Tuition Fee Waiver, 2001 – 2004

Clifford L. Stevens Scholarship in Biological Sciences, 2002, 2004

Homer F. Cooke Scholarship in Biological Sciences, 2003

Fred Phillips Consulting, LLC

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Fred Phillips Consulting, LLC (FPC) is a Landscape Architecture/Ecosystem Restoration based small business in Flagstaff, Arizona. Fred Phillips established Phillips Consulting in 1998, and now has over 14 years experience in landscape architecture, ecosystem restoration, natural resources planning, restoration ecology, GIS Mapping, site analysis and soil surveying. Our projects include multidisciplinary wetland/aquatic/riparian restoration, commercial and residential landscape design, natural resource planning, and fundraising/eco-business development projects for Native American Tribes, non-profit organizations, federal and state agencies, and private individuals. We strive to accomplish the wise planning, restoration and development of the natural landscapes and ecosystems of the western United States and beyond. FPC also teams with a diverse group of highly qualified engineers and other specialists giving us the ability to implement any type of project.

Project Experience

WETLAND RESTORATION & NATIVE PLANT REVEGETATION

Yuma East Wetlands Restoration Project

Quechan Indian Tribe & City of Yuma, AZ

- Developed restoration plan for 1,400 acre Yuma East Wetlands riparian and wetland restoration, habitat enhancement and agricultural conversion, including restoration detail designs.
- Conducted design, site analysis, engineering, biological monitoring and construction management of over 250 acres of restoration projects.
- Conducted wetland delineation, endangered species surveys, and project construction management; applied for and obtained environmental compliance permits.
- Conducted design, site analysis, engineering, biological monitoring and construction management of over 250 acres of restoration projects.
- Excavated a mile long backwater channel and restored topography of native wetlands.

'Ahakhav Tribal Preserve

Colorado River Indian Tribes, Parker, AZ

- Designed and implemented 5 acres of park facilities, 300 acres of native riparian plant restoration, 500 acres of aquatic/ wetland restoration and protection, ecological monitoring, 3.5 mile trail system and an environmental education program.
- Administrated all construction and restoration operations, personnel management and an annual budget of over \$1.5 million for 5 years.
- Designed, obtained funding for, and established 'Ahakhav native plant nursery that currently grows and sells over 40,000 native plants annually.

Yuma West Wetlands Revegetation Project

City of Yuma, AZ

- Contracted to perform site analysis, design, construction management and monitoring of 50 acre native riparian revegetation project along the Colorado River.
- Fabricated and implemented mitigation plans and compliance for USCOE violations on riverfront project.

Verde River Cooperative Invasive Plant Management Plan

Friend of the Verde River Greenway

- Facilitate stakeholder workshops and planning meetings to prepare restoration strategy
- Develop the Verde River Cooperative Invasive Plant Management Plan for over 450 miles of the Verde River

Las Vegas Wash Master Revegetation Project

City of Las Vegas/Clark County/Southern Nevada Water Authority

- Developed 200 acre 'Revegetation Master Plan for Las Vegas Wash'.
- Developed revegetation construction documents for three riparian and wetland restoration projects, including over 90 acres of the Las Vegas Wash Revegetation Project.

The Limitrophe Restoration Plan

Environmental Defense

- Developed restoration master plan for 25 miles of Colorado River corridor in the Limitrophe District, including existing data research, stakeholder consensus building, and grant writing for the pilot project

Multi-Species Conservation Plan Conservation Opportunity Area Plans

Bureau of Reclamation

- Served as Tribal liaison between federal agencies and other stakeholders in relation to the Multi-Species Conservation Plan.
- Developed riparian restoration plans for the Quechan, Hualapai, Cocopah, Chemehuevi, Quechan and Ft Mojave Indian Tribes.

William Thomas Reitze

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University of Arizona
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Petrified Forest National Park
1 Park Road
Petrified Forest, AZ 86028
William_Reitze@nps.gov
(928)524-6228 ex. 268

EDUCATION

University of Arizona **2004 to the Present**

Anticipated Date of Graduation: August 2013

ABD Ph.D. Student, Department of Anthropology with an emphasis on geoarchaeology and a minor in Geosciences

Advisor Dr. Vance Holliday

Colorado State University **2002 to 2004**

M.A., Anthropology (Archaeology), 2004

Thesis Title: "High Altitude Occupation and Raw Material Procurement: Dollar Mountain, a Northwestern Wyoming Example"

Advisor Dr. Lawrence Todd

University of New Mexico **2000 to 2002**

B.S., Anthropology (Archaeology) and a minor in Earth and Planetary Sciences, 2002

Honors Project: Paleoindian raw material procurement and use from the Martin Folsom Site, New Mexico

Advisor: Dr. Bruce Huckell

University of Colorado **1998 to 2000**

PROFESIONAL EMPLOYMENT

2011-present	<i>Park Archaeologist, Petrified Forest National Park</i>
2008-2010	<i>Caretaker of University Indian Ruin, Department of Anthropology, University of Arizona</i>
2006-2009	<i>Teaching Associate, Department of Anthropology, University of Arizona</i>
2006-2010	<i>Research Associate, Department of Anthropology, University of Arizona</i>
2006-2008	<i>Geoarchaeology Lab Manager, Department of Anthropology and Geosciences, University of Arizona</i>
2004-2006	<i>IGERT Trainee, Department of Anthropology, University of Arizona</i>
2004	<i>Teaching Assistant, Department of Anthropology, Colorado State University</i>

Curriculum Vitae
William Thomas Reitze

PUBLICATIONS

- 2011 Evidence for Younger Dryas Global Climate Oscillations and Human Response in the American Southwest
Quaternary International 242(2011). By Jesse A.M. Ballenger, Vance T. Holliday, Andrew Kowler, William T. Reitze, Mary Prasciunas, D. Shane Miller, Jason D. Windingstad
- 2009 Geoarchaeology of Mockingbird Gap (Clovis) Site, Jornada Del Muerto, New Mexico
Geoarchaeology 24:3. By Vance T. Holliday, Bruce B. Huckell, Marcus Hamilton, William Reitze, and James Mayer
- 2009 The Estancia Basin
Archaeology Southwest 23:3
- 2008 Further Investigations at the Lucy Site, Central New Mexico
Current Research in the Pleistocene 25:58
- 2008 The Kutoyis Bison Hunting Locality on the Two Medicine River, Blackfeet Indian Reservation, Glacier County, Montana
Report prepared for the Tribal Historic Preservation Office and the National Park Service Tribal Preservation Program. By M. Nieves Zedeno, Jesse A.M. Ballenger, William T. Reitze, Nicholas C. Laluk, and Robert M. Jones

MANAGEMENT EXPERIENCE

- 2011- **Park Archaeologist, Petrified Forest National Park**
present Petrified Forest, Arizona
As the Park Archaeologists I personally manage the entire archaeological program at Petrified Forest National Park. This includes the review of research permit applications and completed documents of research within the Park in addition to facilitating research by interested and qualified participants. I manage a crew of field archaeologists, crew leaders, and volunteers doing continual site assessments and survey work. I also develop and plan survey projects for undocumented areas of the park and the new boundary expansion areas. I manage the budget and funding for the archaeology program and actively seek additional project funding. I manage NAGPRA concerns and work with associated tribal groups to address their issues and interest in the park.
- 2007 to **Kutoyis Archaeological Project**
2010 Montana
I was the full time Field Director for over four months over a period of three summer seasons. Also an additional 4 month of .25 time supervising volunteers conducting lab work and additional time spent on report preparation for additional

Curriculum Vitae
William Thomas Reitze

grants, professional presentations, and publications. As part of the in-field and continuing management work I have built a geographic information system to manage spatial data within individual sites and between sites across the landscape. This system was built to inform additional archaeological survey and excavation work as well as used for land management recommendations to the Blackfoot Tribe. I also managed the field records and artifact recording database.

2006-
2008 **Geoarchaeology Lab Manager**
Tucson, Arizona
I managed the Geoarchaeology Lab in the Anthropology and Geoscience Departments for 24 months at .5 time. I managed salaried employees, student research assistants, and volunteers. I managed the day to day operations including ordering supplies, building and managing record data bases, teaching methodologies and monitoring quality standards. I also wrote contract bids for additional work and prepared final reports of research.

FIELD EXPERIENCE

2011-
present **Park Archaeologist, Petrified Forest National Park**
Petrified Forest, Arizona

2008-
2010 **Caretaker of University Indian Ruin**
Tucson, Arizona

2007-
2010 **Field Director, Kutoyis Archaeological Project**
Glacier County, Montana- summer

2006-
2010 **Geoarchaeology Field Research Assistant**
Arizona, New Mexico, and Texas- spring and summer

2007-
2008 **Dissertation Research Project, Occupation of the Estancia Basin**
Central New Mexico

March
2007 **Co-Principle Investigator, Safford Mammoth Site**
Safford, Arizona

May
2005 **Field Geoarchaeologist, Mogollon Rim Historic Ecology Project**
Overgaard, Arizona

Summer
2003 **Field Supervisor, Greybull River Impact Zone project**
Northwestern Wyoming

Summer
2002 **Field Excavator, El Mirón Project**
Ramales del la Victoria, Spain

Curriculum Vitae
William Thomas Reitze

Summer **Field Excavator, Boca Negra Folsom site**
2001 Albuquerque, New Mexico

Fall **Field Excavator, Spanish Colonial Irrigation Systems Project**
2001 Central New Mexico

PROFESSIONAL MEMBERSHIPS

Society of American Archaeology
Plains Anthropological Society
Geological Society of America
Anthropology Graduates at the University of Arizona (AGUA)

GEORGE F. CATHEY, P.E.

3080 South Walkup Drive • Flagstaff, Arizona 86001 • (928) 266-6192 • george@oxbow-eco-eng.com

EDUCATION

Master of Science in Civil Engineering - Environmental Emphasis

12/2002

University of New Mexico, Albuquerque, NM

- GPA: 3.9, thesis defense passed with distinction, Ford Foundation Fellowship Recipient
- Conducted a US Department of Energy funded project to evaluate an innovative in-situ microbial remediation technique to treat uranium contaminated groundwater.

Bachelor of Science in Civil Engineering

5/2000

University of New Mexico, Albuquerque, NM

- GPA: 4.0, Graduated *summa cum laude*, 1st in engineering class
- Participated in Waste-Management Education and Research Consortium (WERC) International Design Contest as part of a multidisciplinary team of engineering students. Designed a full-scale passive chemical and biological system to treat acid mine drainage. Designed and built a working bench scale model that received top honors out of 40 competing universities.

PROFESSIONAL EXPERIENCE

Civil Engineer/Owner

5/2013 – PRESENT

Oxbow Ecological Engineering, LLC, Flagstaff, AZ

Founded a consulting firm that integrates engineering & ecological principles to restore, enhance, & conserve river, riparian, wetland, & wildland systems. The firm has the experience and capabilities to guide habit restoration projects from concept to completion, offering a comprehensive set of services to help scope, survey, plan, design, permit, and administer restoration projects.

Civil Engineer

5/2009 – 5/2013

Natural Channel Design, Inc., Flagstaff, AZ

Acted as a civil engineer and project manager for river, riparian, and wetland restoration and improvement projects. Worked as part of an interdisciplinary team of ecologists, riparian specialists, geomorphologists, and engineers to guide projects from concept to completion. Coordinated and collaborated with a variety of private, non-profit, local, state, and federal partners in project development and delivery. Scoped potential projects and developed conceptual designs and cost estimates for RFQ/RFP. Planned and conducted RTK GPS topographic surveys and developed contour maps. Completed calculations and modeling for and designs of: land re-contouring, levee removal, water delivery and drainage systems, water control structures, fish habitat and river stabilization structures, non-native fish barriers, cast-in-place reinforced concrete and timber structures, and native revegetation planting plans. Completed feasibility studies and presented results and recommendations to project partners. Assisted ecological staff in developing applications for federal and state permits. Prepared complete bid and construction document packages, including cost estimates, drawings, and technical specifications. Coordinated and conducted pre-bid meeting and site showings for potential contractors. Provided construction phase services including staking and construction administration. Developed and maintained in-house quality standards for data management, surveying, drafting, design, project documentation, budgeting, and billings. Trained and mentored EIT's.

Project Engineer

11/2007 – 5/2009

Shephard-Wesnitzer Inc., Flagstaff, AZ

Acted as a project engineer for site planning, grading, drainage and habitat restoration and infrastructure development projects. Delivered design and construction packages, which included drawings, technical specifications, engineer's estimates, design reports, permits, and easements for public and private sector clients. Worked closely with project managers to scope and budget potential projects and to track budgets of ongoing projects. Coordinated design work with multidisciplinary teams that included architects, engineers, and construction contractors. Oversaw and coordinated the design and drafting activities of EIT's and draftsmen.

Project/Regional Engineer

5/2003 – 6/2007

Ducks Unlimited, Inc., Rancho Cordova, CA

Planned, surveyed, designed, and constructed civil works associated with wetland and wildland restoration and improvement projects in northern California, as a project engineer (5/03-3/06) and as a regional engineer (4/06-6/07). Worked as part of a multidisciplinary biologist-engineer team to guide projects from concept to completion. Managed multiple projects with aggregate annual budgets averaging \$2 million. Coordinated and collaborated with a variety of private, state, and federal partners in project development and delivery. Scoped potential projects with biological staff and developed conceptual designs and cost estimates for funding proposals. Planned and conducted extensive RTK GPS topographic surveys and developed design contour maps. Completed calculations for and designs of: levees, land re-contouring, open channel and pressure flow water delivery and drainage systems, water control structures, and cast-in-place reinforced concrete. Completed feasibility studies and presented results and recommendations to project partners. Assisted biological staff in developing applications for federal and state permits. Prepared bid and construction documents, including drawings and technical specifications. Coordinated and conducted pre-bid meeting and site showings for potential contractors. Procured contracts, insurance, and performance and payment bonds from contractors. Managed construction activities including: staking, inspection, change order negotiation, contract dispute resolution, scheduling, budget tracking, and material procurement. Trained and mentored project engineers assigned to projects in northern California.

LICENSURE, TRAINING, & PROFICIENCIES

Professional Engineering Licenses

California (#C69688), Arizona (#52164), New Mexico (#21540), Texas (#109570)

Specialized Training

David Rosgen's Wildland Hydrology Short Courses: Applied Fluvial Geomorphology (Level I), River Morphology and Applications (Level II), River Assessment and Monitoring (Level III), and River Restoration and Natural Channel Design (Level IV), Arizona Floodplain Management Association HEC-RAS Short Course

Software/Equipment Proficiencies

AutoCAD Civil 3D (Drafting and Civil Engineering Design), VisualAnalysis (Concrete, Steel, & Timber Structural Finite Element Analysis Modeling), HEC-RAS/RiverCAD (Hydraulic Modeling), RIVERMorph (Stream Restoration and Assessment), Trimble 4400, 4700, 5700, and R8 RTK GPS base/rover units, TSC1, TSCe, TSC2 GPS controllers, Total Station, Laser Level

PROJECT HIGHLIGHTS

Laguna Division Conservation Area - Water Delivery System and Wetland Restoration Project, Yuma, AZ

(Project Budget: \$25 million)

Engineer of Record for all civil works associated with the restoration of 1,250 acres of riparian and wetland habitat along a historic reach of the Lower Colorado River, between Imperial and Laguna Dams, near Yuma Arizona. Completed all modeling, design, and associated construction packages (specifications, drawings, and quantity take-offs) for a 2,600 foot long, 48-inch diameter HDPE pipeline and associated cast-in-place concrete headworks and outlet works facilities to deliver water to the wetland complex. Completed all design and associated construction packages (specifications, drawings, and quantity take-offs) for invasive species removal and wetland and riparian habitat re-contouring operations on the site (~1.5 million cubic yards of proposed earthwork), as well as automated, solar powered, SCADA equipped wetland water control facilities housed in cast-in-place concrete structures.

Gila River Restoration Project at Apache Grove, Apache Grove, AZ

(Project Budget: ~\$750,000)

Worked to restore natural stream function on a private cattle ranch by removing a large agricultural dike and associated tamarisk thickets along a 1.6 mile reach of the Gila River near Duncan, AZ. Evaluated existing and proposed conditions for the removal of the dike and floodplain re-contouring operations using geomorphic criteria and a detailed HEC-RAS model. Developed tamarisk removal and mass grading plans for dike removal and flood-plain re-contouring. Staked the site for construction and oversaw mass-grading.

Haigler Creek Fish Barrier Project, Haigler Creek, AZ

(Project Budget: ~\$175,000)

Combined research on historic timber dam construction techniques with finite element structural analysis and geomorphic/hydraulic analysis to design a fourteen foot tall and fifty foot wide timber fish barrier to protect a native Gila trout reintroduction area from the upstream migration of non-native trout. Produced a construction package that included a cost estimate, drawings, and specifications.

Gray Lodge State Wildlife Area - Water Delivery System Improvements - Phase 5 & 6, Gridley, CA

(Project Budget: ~\$2.6 million)

Surveyed, designed, and managed construction for nine miles of earthen canal and associated levees and infrastructure to deliver water to over 3,000 acres of wetland habitat. Borrow sites within wetland areas adjacent to the canal were strategically designed to improve habitat and incorporated multiple vector control BMP's. Modeled the entire open channel delivery system with HEC-RAS.

Sacramento National Wildlife Refuge – Tracts A, B, & C Vernal Pool Restoration Project, Willows, CA

(Project Budget: ~\$500,000)

Investigated feasible alternatives to restore natural hydrology to 755 acres of natural/remnant vernal pools and vernal pool-alkali meadow complexes that were being impacted by off-site agricultural run-off. Conducted a complete topographic survey and inventory of vernal pool features as part of the study. Worked with biological staff to obtain funding for the recommended design alternative. Oversaw the development of Phase I and II design and construction packages, which included hydraulic modeling, earth calculations, and water control structure design. Oversaw construction administration services for the projects.

Llano Seco Ranch - Redwood Siphon Engineering Assessment and Funding Proposal, Llano Seco Ranch, CA

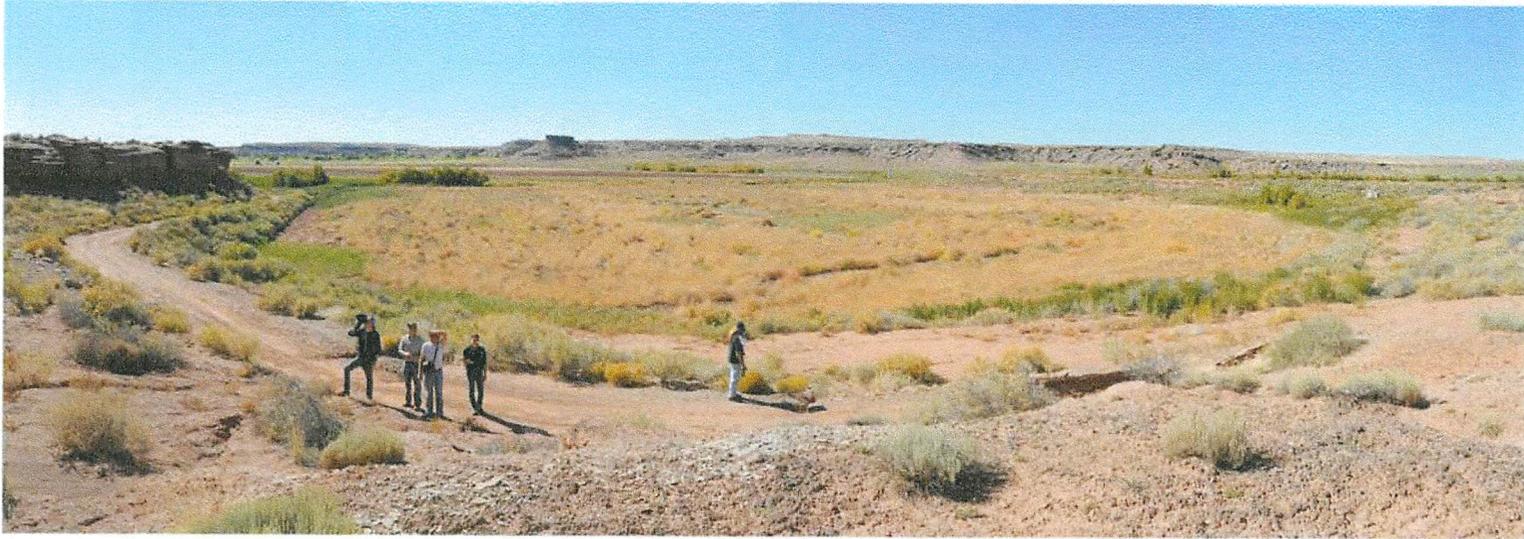
(Funding Secured: ~\$2 million)

Investigated feasible alternatives to replace 1,700 linear feet of dilapidated 60-inch redwood box culvert that delivered water to over 2,000 acres of critical wetland habitat on private, state, and federal land. Aided biological staff in developing a proposal that secured \$2 million in state funds to replace existing culvert with 60 inch diameter 32.5 SDR HDPE pipe.

Pit River Land & Cattle - Water Diversion Weir Retrofit, Alturas, CA

(Project Budget: ~\$240,000)

Retrofitted an existing concrete weir/dam, located in-line with the Pit River, with over-shot gates to improve water delivery to flood-plain wetlands on adjacent state and private lands and stabilize eroded river banks upstream of the weir. Completed the project (survey/design/construct) in 6 months and \$50,000 under budget.



North End of Field



View from Western Edge of Field near Pipe Outfall

HIDDEN COVE RIPARIAN RESTORATION Figure 5

Site Visit Photos

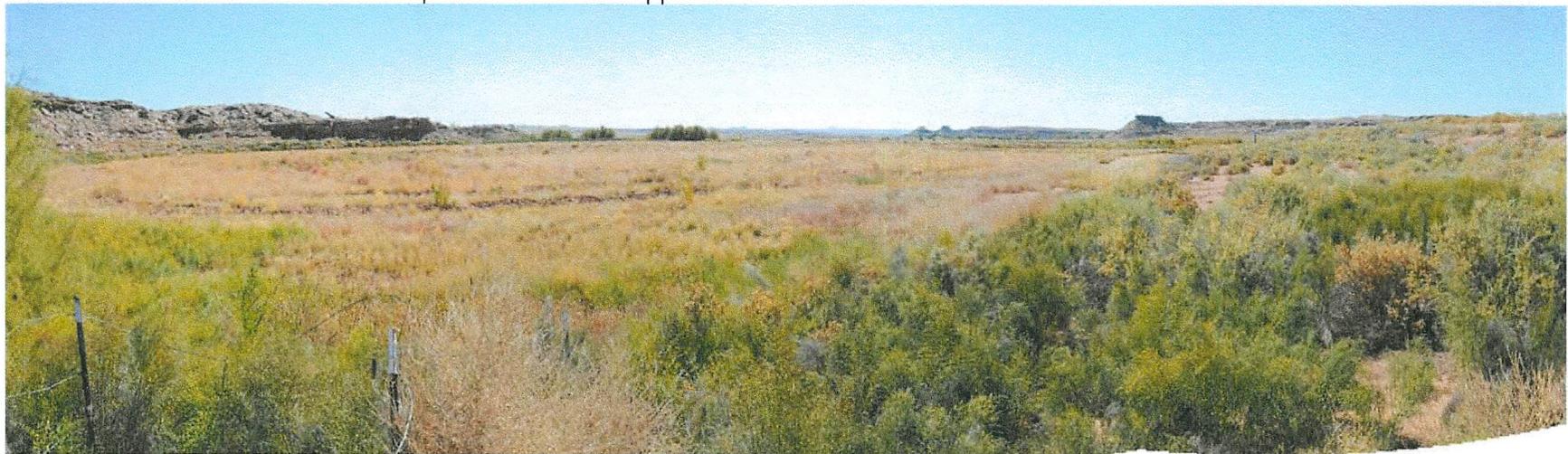


Date: 10/16/2012





Pipe Outfall from Upper Pond at northwest end of field



View of field near Pipe Outfall

HIDDEN COVE RIPARIAN RESTORATION Figure 5

Site Visit Photos



Date: 10/16/2012



Revegetation and Monitoring Plans

The area to be restored at Hidden Cove will feature native riparian species, open water aquatic habitat, wetland, and upland habitats, a much greater diversity of habitat than currently exists at this site. The result will be riparian and wetland habitats that will be more functional and attractive to birds and wildlife. The revegetation design was developed based on the results obtained from the Depth to Water and Soil Salinity Analysis completed by the City of Holbrook in 2012. Long-term monitoring of this site is described in the following monitoring plan, and will continue for two years once the site construction and revegetation is completed. Vegetation monitoring will yield more quantifiable results than our immediate observations.

EXOTIC SPECIES CLEARING

The main field of the site is currently dominated by exotic weeds such as halogeton, camelthorn, and Russian thistle, with Russian olive and tamarisk growing along the degraded stream bank and around the wastewater treatment pond. Removal of vegetation will be necessary to successfully plant native riparian species. The main field will initially be completely cleared by mechanical grubbing using a low-track bulldozer, tractors, or other land grading equipment, which will remove plant material above and below ground. Selective clearing of exotic plant species will be conducted in the upland areas using chainsaws and weed whackers. Native species will remain on the site. Resprouting vegetation will then be treated through monthly herbicide treatments using a backpack sprayer. Care will be taken to prevent over-spraying into other areas and will not be conducted during windy days.

FINISH SITE GRADING

After the site is cleared of invasive vegetation, the main field will be graded to create a flood irrigated riparian and wetland habitats. The 6.1 acre riparian cottonwood and willow, 1.3 acre shallow wetlands and 0.6 acre native grass and wildflower fields will all be within the existing fallow ag field on site. The finished grading will adjust levels in the field to accommodate the water needs of each of the habitats. The 3.1 acres of upland shrubland habitat will retain its current topography. Valuable existing native habitat will be avoided during site grading. This new topographic configuration will diversify habitats for wildlife.

The Grantee will conduct site grading work based on the design of the lowered wetland and riparian areas. During construction the Grantee will make design revisions as needed in the field, any changes in design will be submitted to the AWPf for comment and approval. When site grading is completed the grantee will provide the AWPf with an as-built map of the created wetland cells.

IRRIGATION DESIGN AND SET-UP

The created 6.1 acre cottonwood willow, 1.3 acre shallow wetland, and 0.6 acre native grass and wildflower habitats will be flood irrigated by using the existing pond outflow valve. Irrigation will occur every two weeks (April-Sept) and every month (Oct-March) until the end of the first growing season. For the second growing season, the trees will be irrigated for the same rates as the first year unless less frequent irrigation is necessary. After the second growing season, the area will be irrigated as needed to sustain the restored riparian habitat. The 3.1 acres of upland

shrubland habitat will be drip irrigated with a 5 horse trash pump or the equivalent necessary to provide enough pressure and water to the 3.1 acres of upland habitat. The pump will draw water from the existing pond and be delivered to plants through poly tubing and pressure compensating emitters. In the first growing season plants in the drip irrigation system will be irrigated 3 days a week from April-September for 2 hours each watering session. From October-March the plants will be irrigated once every other week for two hours. The second growing season the plants in the drip irrigation system will be irrigated 2 days a week from April-September for 2 hours each watering session. From October-March the plants will be irrigated once every other week for two hours. If adequate seasonal rain/snow occur the irrigation schedule for both drip and flood irrigation will be adjusted accordingly.

11.1 REVEGETATION PROJECT PLAN

The restored area will feature native riparian species, shallow wetlands, and upland habitats—a much greater diversity of habitat than currently exists at this site. The result will be wetlands and riparian habitats that will be more functional and attractive to birds and wildlife.

Revegetation Construction Activities

This project will involve a total of 11.1 acres of native plant revegetation including 6.1 acres of created riparian cottonwood and willow habitat; 1.3 acres of shallow wetlands habitat; 0.6 acres of native grass and wildflower fields, and 3.1 acres of upland shrubland habitat. The shallow wetland habitat will be planted with plugs, and seeds of native wetland species, and will be irrigated using flood irrigation from the channel. The riparian and upland habitat will be planted with propagules of native riparian species, including cottonwood, willow, and shrubs. The planting work will be supervised by a crew foreman and a skilled landscape laborer who will supervise community volunteers. The upland shrubland revegetation will be drip irrigated using pumps drawing water from the retrofitted outflow valve. The final revegetation design will be completed based on the results from the soil and depth to water analyses.

Planting

The plant list located on the next page outlines the native plant species that will be used in the revegetation project.

The final planting design will determine the density and location of these species within the site, which will be based on the results of the soil and depth-to-water analyses and other site conditions. Wetland species planted will be plugs from local native stock or purchased from a nursery local to the region. The planting density of the wetland species will be determined in the final planting design. In the riparian area, approximately 200 to 500 trees (cottonwood, Goodding willow, and sandbar willow) per acre will be planted at 10-15 ft. spacing, depending on site suitability and species. A 3-foot hog-wire fence will be installed around each 1 gallon cottonwood and willow propagules to prevent browsing by porcupine or other herbivores, the poles, plugs and seeds will not be fenced. The area will be hand-weeded during native vegetation establishment to limit the encroachment of exotic plant species, thereby enhancing the natural recruitment of native grasses and forbs. Planting activities also include hand-broadcasting seeds of alkali sacaton (*Sporobolus airoides*), blue grama (*Bouteloua gracilis*), and other native under-story species to promote under-story development in the revegetation area.

Holbrook Riparian Restoration Project

Native Plant List for Project

Common Name	Scientific Name	Most Effective Planting Type
Wetland Plants		
Olney's Three-square	<i>Schoenoplectus americanus</i>	Plug
California Bulrush	<i>Schoenoplectus californicus</i>	Plug
Alkali Bulrush	<i>Schoenoplectus maritimus</i>	Plug
Hardstem Bulrush	<i>Schoenoplectus acutus</i>	Plug
Common Three-square	<i>Schoenoplectus pungens</i>	Plug
Spikerush	<i>Eleocharis macrostachya</i>	Plug
Torrey spikerush	<i>Eleocharis rostellata</i>	Plug
Baltic rush	<i>Juncus balticus</i>	Plug
Cooper Rush	<i>Juncus cooperi</i>	Plug
Riparian Plants		
Herbaceous Plants		
Evening Primrose	<i>Oenothera mexicana</i>	Seed
Common sunflower	<i>Helianthus annuus</i>	Seed
Grasses		
Alkali Sacaton	<i>Sporobolus airoides</i>	Seed
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Seed
Shrubs		
Three-leaf sumac	<i>Rhus trilobata</i>	Containerized Plants
Wax currant	<i>Ribes cereum</i>	Containerized Plants
Shrubby Cinquefoil	<i>Dasiphora fruticosa (var. floribunda)</i>	Containerized Plants
Wood's rose	<i>Rosa woodsii</i>	Containerized Plants
Trees		
Arizona Ash	<i>Fraxinus velutina</i>	Containerized Plants
Sandbar Willow	<i>Salix exigua</i>	Cutting
Fremont Cottonwood	<i>Populus fremontii</i>	Containerized Plants
Goodding Willow	<i>Salix gooddingii</i>	Containerized Plants
Rocky Mountain Maple	<i>Acer glabrum</i>	Containerized Plants
Arizona Sycamore	<i>Platanus wrightii</i>	Containerized Plants
Thin-leaf Alder	<i>Alnus tenuifolia</i>	Containerized Plants
New Mexico Olive	<i>Forestiera neomexicana</i>	Cutting
Upland Plants		
Herbaceous Plants		
Globemallow	<i>Sphaeralcea coccinea</i>	Seed
Skyrocket	<i>Ipomopsis aggregata</i>	Seed
Silver Lupine	<i>Lupinus argenteus</i>	Seed
Penstemon	<i>Penstemon spp.</i>	Seed
Grasses		
Blue Grama	<i>Bouteloua gracilis</i>	Seed
Arizona Fescue	<i>Festuca arizonica</i>	Seed
Black Grama	<i>Boutelous eripodia</i>	Seed
Shrubs		
Four-Wing Saltbush	<i>Atriplex canescens</i>	Seed
Broom Baccharis	<i>Baccharis sarothroides</i>	Containerized Plants
Desert prince's plume	<i>Stanleya pinnata</i>	Seed
Rocky Mountain bee plant	<i>Cleome serrulata</i>	Seed
Mountain Mahogany	<i>Cercocarpus montanus</i>	Containerized Plants

Weeding

When planting is complete the grantee will conduct regular maintenance of the revegetation site for two years. Maintenance activities will be conducted during the growing season and will include: maintaining the irrigation system, removing exotic weeds, and re-planting vegetation in the case of mortality.

MONITORING STRATEGY AND SUCCESS CRITERIA

In addition to providing information about the success of this project, this monitoring plan will help test the methods proposed for the remaining actions.

Vegetation Monitoring

The primary purpose of monitoring vegetation is to determine if vegetation is establishing and thriving, if conditions are suitable for the vegetation planted, document the success of the project, and help guide future revegetation efforts. Vegetation sampling will target about 3 percent of the population. Monitoring will occur two times during the first two growing seasons (May through October). Both quantitative and qualitative techniques will be used to monitor vegetation growth at the site. Transects will be established at the site to measure quantitative growth parameters for tree, shrub, and herbaceous vegetation species. Transects will include all tree/shrub species that are present on the site and will be selected randomly using the following method:

1. A computer will be used to generate one random number within each acre of the site. The random number will correspond to a planting hole on the overall planting design for the area.
2. Vegetation transects will be assigned to random planting holes. These transects will include the randomly selected planting hole plus the consecutive holes that correspond to each plant species until all species planted on site are accounted for.

For tree and shrub species, including cottonwood, willow, and mesquite, the following parameters will be measured:

- *Plant height (ft)* – A measuring rod with interval markings will be used to measure the height of the plant from base of the trunk to the top of the tallest up-stretched leaf.
- *Tree condition* – Overall vegetation condition will be recorded for each tree in a transect and overall health will be recorded on a 0-4 scale. A score of 0 will be given to any plant that is dead; 1, for poor condition; 2, for fair condition; 3, for good condition; and 4, for excellent condition and vigorous growth. If a plant dies and is another plant is planted in its place no data will be recorded on it to ensure accurate data collection. The survival rate will be calculated from this measurement.
- Factors affecting growth:
 - Mammal Browsing= MB
 - Insect browsing = IB
 - Volunteer competition = VC and note volunteer plant type
 - Herbicide affects =H
 - Hog wire rub= HWR
 - Water Stress = WS
 - Insect Presence = IP Unknown
 - ETC - be specific but consistent
- Percent survival rate – Dead verses alive.

In order to quantitatively measure herbaceous vegetation and native and exotic species re-growth, cover will be measured and monitored using systematic sampling of permanent quadrats. Each quadrat will be marked with flagging in order to relocate them in subsequent monitoring sessions. The Daubenmire cover scale will be utilized to estimate cover of vegetation species, substrate, and woody debris occurring in each quadrat. Measuring and estimating cover will help determine the growth rate and success of the species that can not be accurately measured using the techniques to measure trees and shrubs (i.e. herbs, grasses, sedges, bulrushes, and rushes). Cover measurements will also help with determining the dominant species within different cover classes and extent of non-native vegetation re-colonization. This method will also be used to measure cover of the herbaceous wetland species.

Photo Point Monitoring

Qualitative data-collection methods for vegetation will include photo point monitoring. Five permanent photo point stations will be located on site from a vantage point that captures the overall site growth. Photos will include a landmark feature in the background for reference such as a rock outcropping or distant hill. Photos will be taken three times during the growing season (May, July, and October) each year: at the beginning of the season, during the middle of the season, and at the end of the season. Each photo point will be marked with rebar and construction fence and a GPS point will be taken at each spot in order to relocate the points.

Photos will be taken with the same type of camera, at the same height, and same compass bearing as the previous photos. The previous photos should be brought to make sure the photos are aligned with the previous photos. The frame number, speed, f-stop, aperture, photo name and description should be recorded for each photo.

Quality Assurance/Quality Control

Productive native habitat development is the primary criterion that measures project success. The following table specifies success criteria for vegetation, criteria that the Design Team will use to assess the success of this revegetation project in relation to pre-treatment conditions.

Success Criteria for Native Vegetation Species in the Revegetation Project

Species	5-year goal		10-year Goal	
	Percent Survival	Height (inches)	Percent Survival	Height (inches)
Fremont Cottonwood	80-100	200-300	60-90	240-360
Gooding Willow	80-100	200-265	60-75	220-300
Sandbar Willow	75-80	135-265	60-80	140-280
Four-Wing Saltbush	60-80	24-60	50-80	24-72

Certain site features may influence vegetation health, including: insect damage, browsing, soil erosion and drift, and “edge effects,” including vandalism. These conditions will be noted through the monitoring period. Baseline conditions for vegetation at Hidden Cove were documented in the Hidden Cove’s biological evaluation from the results of preliminary site analysis. This data provides information that is required to assess whether the project objectives are being met. The Design Team can use it to compare survival and growth rates to soil salinity, depth-to-water, and plant health. Plant health is a function of growth rate, survival, extent of insect damage or browsing, weed encroachment, and regeneration.

Existing Plans/Reports/Information

The Hidden Cove Riparian Restoration Project is part of several efforts along the Colorado Plateau to restore high elevation riparian habitats that will provide important habitat for wildlife and opportunities for natural resource education and awareness. The current proposal is the first step of implementing the restoration concept plan for the site. The plan for this site is based on regional efforts by the U.S. Fish and Wildlife Service, the City of Holbrook, and others to restore habitat, especially for resident and migratory birds.

The existing plans and reports are included below:

1. Hidden Cove Park Restoration Concept Plan – City of Holbrook
2. Coordinated Implementation Plan for Bird Conservation in Northern Arizona – Arizona Steering Committee Intermountain West Joint Venture
3. Arizona’s Comprehensive Wildlife Conservation Strategy 2005-2015 – Arizona Game and Fish Department
4. Arizona Partners in Flight Bird Conservation Plan – Arizona Game and Fish Department
5. Hidden Cove Bird Monitoring List for the Hidden Cove Field Guide – City of Holbrook

Community Support

The following pages are resolutions and letters of support for the 11.1 acre Hidden Cove Riparian Restoration Project.



United States Department of Interior

NATIONAL PARK SERVICE
Petrified Forest National Park
P.O. Box 2217
1 Park Road
Petrified Forest, Arizona 86028



August 21, 2013

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

RE: Arizona Water Protection Fund Grant Proposal and the City of Holbrook, Hidden Cove
Riparian Restoration Project

Dear Arizona Water Protection Fund Commission:

The Petrified Forest National Park (PEFO) Archaeology Division is providing this letter of support for the Hidden Cove Riparian Restoration Project. The Archaeology Division has been cooperating with the City of Holbrook, the NPS Rivers, Trails, and Conservation Assistance Program, Arizona Game and Fish, U.S. Fish and Wildlife Service, and the Natural Resource Conservation Service to provide technical assistance for this project. PEFO archeologists have, and will continue, to support this project with cultural resource experience, information and guidance on cultural compliance by participation in meetings and site planning visits. Our staff time and resources are estimated at approximately 60 hours and \$2,700. This technical assistance estimate is provided to demonstrate the support of the PEFO Archaeology Division in this project.

The PEFO Archaeology Division recognizes the importance of joining with our neighbors and partners in preserving and protecting natural and cultural resources, while educating and involving the community. It is our pleasure to support this project and support the City of Holbrook, in this and future conservation efforts.

Regards,

William Reitze
Petrified Forest National Park
National Park Service



U.S. DEPARTMENT OF THE INTERIOR
US FISH AND WILDLIFE SERVICE

Arizona Fish and Wildlife Conservation Office
PO Box 39

Pinetop, AZ 85935
(t) 928-338-4288, (f) 928-338-4763



August 5, 2013

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

RE: Arizona Water Protection Fund Grant Proposal and the City of Holbrook, Hidden Cove
Riparian Restoration Project

Dear Arizona Water Protection Fund Commission:

The USFWS Partners for Fish and Wildlife Program (hereafter referred to as "Partners Program"). Arizona Fish and Wildlife Conservation Office is providing this letter of support for the Hidden Cove Riparian Restoration Project. This project is a cooperative effort involving the City of Holbrook, National Park Service, Partners Program, Arizona Game and Fish Department, and others. The Partners Program will provide wildlife habitat and resources expertise, information, guidance, and participation in meetings. Our staff time and resources are estimated at approximately 120 hours and \$5,400. This value estimation is provided upon request for purposes of demonstrating partner involvement and leveraging of resources.

The Partners Program recognizes the importance of the Hidden Cove Riparian Restoration Project for wildlife habitat, education, awareness, and community involvement. It is our pleasure to partner with the City of Holbrook in support of this project and future conservation efforts.

Regards,

Dominic Barrett
Fish and Wildlife Biologist
USFWS Partners for Fish and Wildlife Program
Arizona Fish and Wildlife Conservation Office



United States Department of the Interior
NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
RIVERS, TRAILS, and CONSERVATION
ASSISTANCE
255 N. Commerce Park Loop
Tucson, Arizona 85745



August 21, 2013

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

RE: Arizona Water Protection Fund Grant Proposal and the City of Holbrook, Hidden Cove
Riparian Restoration Project

Dear Arizona Water Protection Fund Commission:

The National Park Service, Rivers, Trails, and Conservation Assistance Program (RTCA), Arizona RTCA Field Office is providing this letter of support for the Hidden Cove Riparian Restoration Project. This project is a collaborative effort involving the City of Holbrook, Arizona Game and Fish Department, U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program, Petrified Forest National Park, Natural Resource Conservation Service, and the National Park Service, Rivers, Trails, and Conservation Assistance Program, and others. The RTCA Program will assist in project management, natural and cultural resource technical assistance, and meeting facilitation. Our professional and financial contributions are estimated at approximately 320 hours and/or \$19,200. This technical assistance estimate is provided to demonstrate our involvement and support.

The City of Holbrook requested assistance to the RTCA Program beginning in 2010 to facilitate a community-based planning process to create a vision, goals, and development concept plan for the Hidden Cove Area. This process led to the City Council's approval of a plan identifying 80 acres for riparian restoration. RTCA is pleased to be a part of the Hidden Cove Riparian Restoration Project to increase wildlife habitat, facilitate environmental education, and encourage community involvement. We fully endorse the City of Holbrook's application to the Arizona Water Protection Fund in support of the City's and State's conservation goals.

Warmest Regards,

Joseph C. Winfield
Landscape Architect, RLA

HOLBROOK

ARIZONA
CHAMBER OF COMMERCE

Aug. 14, 2013

Randy Sullivan
City of Holbrook
465 1st Ave
Holbrook, AZ 86025

Re: Hidden Cove Riparian Restoration Project

Dear Mr. Sullivan,

The Holbrook Chamber of Commerce has worked in partnership with the City of Holbrook in projects that benefit the City of Holbrook and its inhabitants. We fully support this proposed project and similar projects that are planned for the Hidden Cove area. We are excited to partner with the City of Holbrook, National Park Service, Arizona Game and Fish Department, US Fish and Wildlife and the many other local stake holders that are involved in the Hidden Cove project. We would like to be a part of this initiative that will improve the native habitats in our area.

The Holbrook Chamber of Commerce strongly supports the restoration effort and urges the Arizona Water Protection Fund to give the grant application its positive consideration.

Sincerely,



Kathleen Smith
Executive Director
Holbrook Chamber of Commerce

1308 Smithson Drive
Holbrook, Arizona 86025

August 9, 2013

Re: Hidden Cove Riparian Restoration Project

To Whom It May Concern:

I am writing in support of the Hidden Cove Riparian Restoration Project near Holbrook, Arizona.

I retired earlier this year, following a career in forestry, international business (including living overseas for eight years), and most recently in education. From August, 2005, through May, 2013, I was a math teacher at Holbrook High School, where I also sponsored two clubs – the Outdoor Club and the Running Club. Both clubs fostered appreciation and understanding of the natural environment as well as cultural diversity and the need to preserve and protect these treasures. (The term “Running Club” was somewhat misleading. The club members who demonstrated the ability to run five miles non-stop were eligible to participate in strenuous single or multi-day excursions including backpacking in the Grand Canyon and the lower Little Colorado River, kayaking at Lake Powell, cross-country skiing and snowshoeing in the White Mountains and the San Francisco Peaks area, and mountain biking near Moab, Utah.) For many of these students, it was their first experience with any of these activities, and some former students have gone on to introduce others to the joys of “communing with nature,” to use an overused phrase. Some have also participated in volunteer efforts in environmentally related projects.

As an educator, I foresee opportunities to expose a greater number of our youth to the concept of environmental responsibility with the Hidden Cove Project, and it’s through this type of exposure that we can foment a shift toward actively protecting our resources. Local and regional science classes and interested clubs could well take advantage of the opportunity to visit riparian areas, observe restoration projects, volunteer in the physical work of reestablishing the natural environment, and learn through monitoring changes.

It’s also worthwhile to note that the cultural resources associated with the Hidden Cove Park will serve as a catalyst to protect and restore an environment that existed at the time the petroglyphs were being created. With the high ratio of Native American students in northern Arizona schools, this can be a source of pride, as well as an opportunity to participate in protection of invaluable resources that uniquely relate to them.

Although not as critical from my viewpoint, but noteworthy nonetheless, this park can also be an economic boost for the region. The facility will serve as an additional opportunity for visitors to enjoy the amazing qualities that exist around Holbrook, and encourage them to spend more time (and money!) here.

It's easy and costs nothing for someone to advocate for a project like this one, but I believe strongly enough in its merits that I have spoken with Mike O'Dell about volunteering in both the development and ongoing operation of the park. I hope my experiences in forestry and resource protection, education, and interactions with Native American youth can be an asset in this endeavor.

Thank you for considering this endorsement of the Hidden Cove Riparian Restoration Project. Please don't hesitate to contact me if I can be of assistance. My phone is 928-241-8054, and my email is dandjwehrman@cablone.net.

Sincerely,

John H. Wehrman

27 August 2013

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

RE: Arizona Water Protection Fund Grant Proposal and the City of Holbrook, Hidden Cove Riparian Restoration Project.

Dear Arizona Water Protection Fund Commission:

Students in my history and anthropology courses at Northland Pioneer College support through a variety of volunteer efforts and frequent site visits the ongoing identification, interpretation, and preservation of cultural resources of Hidden Cove.

Volunteers from local chapters of the Arizona Archaeological Society also demonstrate widespread community efforts to identify and provide for educational interpretation of Hidden Cove.

Hidden Cove provides important links between the past and the present for those with diverse and deep roots who live along the Little Colorado River.

Regards,

Michael Lawson, Ph.D.
Advisor, Homolovi Chapter & Little Colorado River Chapter
Arizona Archaeological Society

901 Riverside Dr. SW
Albuquerque, NM 87102

Evidence of Control and Tenure of Land

The City of Holbrook has attached documentation verifying ownership of the land.

Navajo County Assessor

109-31-012

Parcel/Tax ID	109-31-012
Tax Year	2014
Site Address	.
Owner Name	HOLBROOK CITY OF.
Owner Address	PO BOX 970 HOLBROOK, AZ 86025-0970
Tax Area	0355
Land Value	48000.0000
Improvement Value	0.0000
Full Cash Value	48000.0000
Assessed Full Cash Value	7680.00
Limited Value	48000.00
Assessed Limited Value	7680.00
Value Method	Market
Exempt Amount	7680.00
Exempt Type	Full
Use Code	9700
Property Use	9700-MUNICIPAL VACANT LAND
Class Code	Exempt
Assessment Ratio	16.000000
Sale Price	181000.00
Sale Date	5/1/1990 12:00:00 AM
Instrument Type	WD
Book	
Page	5722
Parcel Size	480.00
Township, Range, Section ...	
Legal Description	SECTION 26.T18N,R20E: S2 S2:N2 N2:S2 NW4;SE4 NE4;NE4 SE4 480 ACRES
Property Type	REAL

Evidence of Physical and Legal Availability of Water Flows

Water used at the site will be from tertiary treated effluent released from the adjacent wastewater treatment pond. The attached documentation verifies the authority of the City of Holbrook to use the water at the proposed site.

465 First Avenue
P.O. Box 979
Holbrook, AZ 86025

CITY OF HOLBROOK



Telephone: (928) 524-8225
Fax: (928) 524-2159
holbrookcity@ci.holbrook.az.us

August 28, 2013

Arizona Water Protection Fund Commission
3550 North Central Avenue, Suite 200
Phoenix, Arizona 85012

To Whomever It May Concern:

This letter is to confirm the fact that the Painted Mesa Water Reclamation Facility authorizes the use of approximately 60 acre feet of water per year for the project. This will be a total of 19mg a year.

If you have any questions or would like additional information, please do not hesitate to call me at (928)524-2488.

Sincerely,

A handwritten signature in black ink, appearing to read "Lance Spencer".

Lance Spencer
Painted Mesa Water Reclamation Facility Manager



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Stephen A. Owens
Director

Treatment Plant

May 30, 2008

Ms. Fern Larson, Acting City Manager
City of Holbrook
Post Office Box 970
Holbrook, AZ 86025

City

**Re: City of Holbrook Painted Mesa Water Reclamation Facility (WRF)
Aquifer Protection Permit (APP), File No. #103725 LTF 42292
Significant Amendment Application**

Dear Ms. Larson:

Enclosed is a signed copy of an Individual APP with Fact Sheet for the above referenced facility. The permit conditions shall apply from May 23, 2008 which is the date of the Water Quality Division Director's signature, and shall be valid for the life of the facility. Thank you for your cooperation in protecting the water quality of the State of Arizona.

If you have any questions about this permit or need further assistance, please contact me at (800) 234-5677 ext. 4695 or at (602) 771-4695.

Sincerely,


Taly Gilama, Project Manager
APP & Reuse Unit
Groundwater Section, Water Quality Division

Enclosures (2)

- cc: Asif Majeed, Manager - APP and Reuse Unit, ADEQ
- Lynne Dekarske, Environmental Program Specialist - Groundwater Section, ADEQ
- Jennifer Widlowski Hydrologist, Technical Support Unit
- Robert Casey, Manager, Enforcement Unit, Water Quality Compliance Section
- Cynthia S. Campbell, Manager, Water Quality Compliance Section
- Marcia Colquitt, Manager, Compliance Assurance Unit, Water Quality Compliance Section
- John Gibbons, Manager, Field Services Unit, Water Quality Compliance Section
- Matthew Hodge, Manager, Data Unit, Water Quality Compliance Section
- Steve Camp, Environmental Engineering Specialist-NRO-ADEQ

WRR08 0296

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ
86001

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ
85701



Fact Sheet

Aquifer Protection Permit 103725
 Place ID #6426, LTF # 42292
 SIGNIFICANT AMENDMENT
 City of Holbrook Painted Mesa Water
 Reclamation Facility (WRF)

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an aquifer protection permit for the subject facility that covers the life of the facility, including operational, closure, and post closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. This document gives pertinent information concerning the issuance of the permit. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards at the Point of Compliance; and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

I. FACILITY INFORMATION

Name and Location

Permittee's Name:	City of Holbrook
Mailing Address:	465 1 st Avenue, PO Box 970 Holbrook, Arizona 86025
Facility Name and Location:	City of Holbrook Painted Mesa WRF 301 Broadcast Lane Holbrook, AZ 86025

Regulatory Status

An Aquifer Protection Permit (APP) was issued on December 20, 1999. A Significant Amendment was issued on November 5, 2002. An application for this Significant Amendment was received on October 31, 2006.

Facility Description

The City of Holbrook Painted Mesa Water Reclamation Facility (WRF) has the capacity to collect and treat a maximum average monthly flow of 1.0 million gallons per day (MGD) of wastewater from the City of Holbrook which consists of both residential and commercial/industrial users. The WRF treatment process consists of a head works with influent screening and grit removal, activated sludge biological

treatment, clarifiers, ultraviolet (UV) disinfection, aerobic digester, and an effluent pump station. Effluent generated is store in four unlined ponds. The effluent is disposed at an "irrigation site" at over consumptive rates. The irrigation site consists of a golf course, a tree farm, and an alfalfa farm.

The effluent may also be discharged into a Leroux Wash, tributary to Little Colorado River as regulated under an Arizona Pollutant Discharge Elimination System (AZPDES) Permit AZ0025542. There shall be no sludge drying beds. Sludge shall be transported from the aerobic digester to be used for agricultural application according to state and federal regulations.

Amendment Description

This amendment authorizes discharge of all or some of the effluent to Leroux Wash, tributary to Little Colorado River as regulated under a AZPDES Permit AZ0025542.

Listed below are the changes to the permit as a result of this amendment:

1. Section 2.1, Facility/Site Description: Added AZDPES discharge option in addition to disposal by over irrigation.
2. Section 2.1, Permitted discharging sites: The following discharging site is added to the permit:

Facility	Latitude	Longitude
AZPDES Outfall #001	34° 54' 30"	110° 11' 36"

3. Section 2.1, Permitted discharging sites: Change the name of land application area to irrigation sites.
4. Section 2.4, Point of Compliance (POC): The POC-2 & 3 are added to the permit:

POC	Descriptive Location	Latitude	Longitude
POC-2	South of the WRF (No well)	34° 54' 23" N	110° 11' 23" W
POC-3	750 feet down stream of AZPDES Outfall	34° 54' 29" N	110° 11' 42" W

5. Section 4.2, Table of Monitoring Requirements: Table I-Discharge Monitoring, page 20 of 28. The discharge monitoring for volatile organic compounds is added to the permit.

6. Section 4.2, Table of Monitoring Requirements: Table II – Groundwater Monitoring, page 23 of 28 The groundwater monitoring for volatile organic compounds is added to the permit.

Hydrogeology

The site is located within the Plateau Uplands physiographic province. The province is characterized by stratified sedimentary rocks that have been eroded into canyons and plateaus and by some high mountains.

SURFACE WATER INFORMATION/ 100-YEAR FLOODPLAIN INFORMATION

The site is within the western 100-year flood plain of the ephemeral Leroux Wash. Immediately south of the facility is the confluence of Leroux Wash with the Little Colorado River, a perennial stream. The facility is surrounded by a berm above the 100-year flood.

WATERSHED AND GROUNDWATER INFORMATION

The site is located in the Little Colorado River basin. The local aquifer in this basin includes alluvial sediments, which occur in washes and stream channels, sedimentary and volcanic rocks, and various sandstone deposits.

Groundwater data near the site is sparse. Based on information obtained by the Arizona Department of Water Resources (ADWR), groundwater approximately one mile west of the site is approximately 30 feet below ground surface (bgs). The groundwater flow direction is most likely to the south. The nearest down gradient point of use is approximately one mile from the proposed AZPDES outfall.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

The Water Reclamation Facility is designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in Arizona Administrative Code R18-9-B204.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS (AWQS)

The facility produces secondary treated effluent with nitrogen removal and ultra violet disinfection. The sludge will be transported off site for agricultural use. The facility is not expected to violate AWQS at the point of compliance because of the level of treatment and disposal of the effluent and sludge.

Monitoring and Reporting Requirements

The effluent is monitored weekly for *E. coli*, monthly for nitrogen species, quarterly for metals, annually for volatile organic compounds (VOCs) in accordance with Table I, Section 4.0 of the permit. The sampling point is located at the discharge ponds. The groundwater is monitored semi-annually for nitrogen compounds and total coliform, semi-annual for metals, and annually for VOCs at the POC well (MW#4).

Point of Compliance (POC)

The Points of Compliance are established by the following monitoring locations:

POC #	Descriptive Location	Latitude	Longitude
1	MW #4	34° 55' 58" N	110° 11' 41" W
2	South of the WRF	34° 54' 23" N	110° 11' 23" W
3	750 feet down stream of AZPDES Outfall	34° 54' 29" N	110° 11' 42" W

Groundwater monitoring is not required at POC #s 2 and 3 at the time of permit issuance. The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

IV. STORM WATER AND SURFACE WATER CONSIDERATIONS

There are no storm/surface water considerations required for this facility.

V. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

The applicant has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A202 (B).

Financial Capability

City of Holbrook has demonstrated the financial responsibility necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee is expected to maintain financial; capability throughout the life of the facility.

The permittee submitted a closure cost estimate of \$253,440.00. The permittee provided a statement on its letterhead, according to rule R18-9-A203 (B) (1), to demonstrate financial capability.

Zoning Requirements

The WRF has been properly zoned for the permitted use and the permittee has complied with all Navajo County zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201 (B) (3).

VII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-108(A))

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft permit or other significant action with respect to a permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper prior to the Department making a final permit decision.

Public Comment Period (A.A.C. R18-9-109(A))

The aquifer protection program rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C. R18-9-109(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

VIII. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – APP & Reuse Unit
Attn: Taly Gilama
1110 W. Washington St., Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771- 4695

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-103725
PLACE ID 6426, LTF 42292
SIGNIFICANT AMENDMENT

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2 and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the City of Holbrook is hereby authorized to operate the Painted Mesa Water Reclamation Facility located at 301 Broadcast Lane, Holbrook, Navajo County Arizona, over groundwater of the Little Colorado River Plateau Basin in the NE1/4, NW1/4, NW1/4 Quarter of Section 2, Township 18N, Range 20E, of the Gila and Salt River Base Line and Meridian.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods), unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below; and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

Facility Name: City of Holbrook Painted Mesa Water Reclamation Facility
Facility Address: 301 Broadcast Lane
Holbrook, AZ 86025, Navajo County

Permittee: City of Holbrook
Permittee Address: 465 1st Avenue
Post Office Box 970
Holbrook, Arizona 86025

Facility Contact: Ms. Fern Larson, Acting City Manager
Emergency Phone No.: (928) 524-6225

Latitude/Longitude: 34°54' 24" N/ 110°11' 19" W
Legal Description: Township 18 N, Range 20 E, Section 2, Gila and Salt River Baseline and Meridian

1.2 AUTHORIZING SIGNATURE



Joan Card, Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this 23rd day of May, 2008

THIS PERMIT SUPERCEDES ALL PREVIOUS PERMITS

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The City of Holbrook Painted Mesa Water Reclamation Facility (WRF) has the capacity to collect and treat a maximum average monthly flow of 1.0 million gallons per day (MGD) of wastewater from the City of Holbrook which consists of both residential and commercial/industrial users. The WRF treatment process consists of a head works with influent screening and grit removal, activated sludge biological treatment, clarifiers, ultraviolet (UV) disinfection, aerobic digester, and an effluent pump station. Effluent generated is store in four unlined ponds. The effluent is disposed at an "irrigation site" at over consumptive rates. The irrigation site consists of a golf course, a tree farm, and an alfalfa farm. The effluent may also be discharged into a Leroux Wash, tributary to Little Colorado River as regulated under an Arizona Pollutant Discharge Elimination System (AZPDES) Permit AZ0025542. There shall be no sludge drying beds. Sludge shall be transported from the aerobic digester to be used for agricultural application according to state and federal regulations.

This amendment authorizes discharge of all or some of the effluent to Leroux Wash, tributary to Little Colorado River as regulated under a AZPDES Permit AZ0025542.

The site includes the following permitted discharging sites:

Facility	Latitude	Longitude
WRF	34° 54' 24"	110° 11' 19"
Irrigation site	34° 55' 38"	110° 11' 38"
Storage Pond at irrigation site #001	34° 55' 59"	110° 11' 41"
Storage Pond (former WWTP) #003	34° 54' 57"	110° 11' 44"
Storage Pond (former WWTP) # 004	34° 55' 03"	110° 11' 40"
Storage Pond (former WWTP) # 005	34° 54' 56"	110° 11' 41"
AZPDES Outfall #001	34° 54' 30"	110° 11' 36"

Annual Registration Fee [A.R.S. § 49-242]

The Annual Registration Fee for this permit is established by A.R.S. § 49-242(E) and is payable to ADEQ each year. The design flow is 1.0 MGD.

Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The financial capability was demonstrated through A.A.C. R18-9-A203(B)(2).

The permittee submitted a closure cost estimate of \$253,440.00. The permittee provided a statement on its letterhead, according to rule R18-9-A203 (B) (1), to demonstrate financial capability.

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202 (A) (5)]

The WRF is designed to meet the treatment performance criteria for new facilities as specified in Arizona Administrative Code R18-9-B204.

The WRF meets the requirements for the pretreatment by conducting monitoring as per R18-9-B204 (B) (6) (b) (iii).

All industrial hookups and other non-residential hookups to the treatment system shall be authorized according to the applicable federal, state or local regulations.

2.2.1 Engineering Design

The WRF modifications were designed as per the design plans and specifications prepared by Woodson Engineering & Surveying, Inc., dated March 2006.

2.2.2 Site-specific Characteristics

Not applicable.

2.2.3 Pre-Operational Requirements

Not applicable.

2.2.4 Operational Requirements

1. The permittee shall maintain a copy of the up-to-date O & M manual at the WRF site at all times and shall be available upon request during inspections by ADEQ personnel.
2. The pollution control structures shall be inspected for the items listed in Section 4.2, TABLE III - FACILITY INSPECTION.
3. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and material(s) used shall be documented on the Self-Monitoring Report Form submitted quarterly to the ADEQ Water Quality Compliance Section.
4. The following apply to the land disposal of reclaimed water.
 - a. Disposal methods shall reasonably preclude human contact of reclaimed water.
 - b. Prevent reclaimed water from standing on open access areas during normal periods of use.
 - c. Secure hose bibs discharging reclaimed water to prevent use by the public.
 - d. Providing or using reclaimed water for human consumption shall be prohibited.
 - e. Providing or using reclaimed water for swimming, water skiing, or other full-immersion water activity with potential of ingestion shall be prohibited.
 - f. Signage shall be required for the irrigation site and shall be placed and located as indicated in R18-9-704.H. Table 1, Reclaimed Water Class B+.

2.2.5 Reclaimed Water Classification
[A.A.C. R18-9-703(C) (2) (a), A.A.C. R18-11-303 through 307]

Not applicable. The facility has opted not to classify the effluent.

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

1. The permittee is authorized to operate the WRF with a maximum average monthly flow of 1.0 MGD.
2. The permittee shall notify all users that the materials authorized to be disposed of through the WRF are typical household sewage and shall not include motor oil, gasoline, paints, varnishes, hazardous wastes, solvents, pesticides, fertilizers or other materials not generally associated with toilet flushing, food preparation, laundry facilities and personal hygiene.
3. The permittee shall operate and maintain all permitted facilities to prevent unauthorized discharges pursuant to A.R.S. § 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure¹, uncontrollable leakage, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), of basins, lagoons, impoundments or sludge drying beds, berm breaches, accidental spills, or other unauthorized discharges.
4. Specific discharge limitations are listed in Section 4.2, TABLE I.

2.4 Point of Compliance [A.R.S. § 49-244]

The Points of Compliance are established by the following locations:

P.O.C.#	P.O.C. Locations	Latitude	Longitude
1	MW#4 North of the irrigation site	34° 55' 58"N	110° 11' 41" W
2	South of the WRF	34° 54' 23" N	110° 11' 23" W
3	750 feet down stream of AZPDES Outfall 001	34° 54' 29" N	110° 11' 42" W

Groundwater monitoring is required at point of compliance #1. Groundwater monitoring at POC#3 may be required as stated in Section 3.0. Groundwater monitoring is not required at POC#2.

The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

2.5 Monitoring Requirements [A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and chain of custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and EPA 40 CFR PART 136 for guidance in this regard. Copies of laboratory analyses and chain of custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

2.5.1 Discharge Monitoring

The permittee shall monitor the wastewater according to Section 4.2, TABLE I. A representative sample of wastewater shall be collected before discharge to the ponds at the discharge line from the UV unit.

2.5.2 Facility / Operational Monitoring

Operational monitoring inspections shall be conducted according to Section 4.2, TABLE III.

¹Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre.

1. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented on the Self-Monitoring Report Form (SMRF) submitted quarterly to the ADEQ Water Quality Compliance. If none of the conditions occur, the report shall say "no event" for a particular reporting period. If the facility is not in operation, the permittee shall indicate this on the SMRF.
2. The permittee shall submit data required in Section 4.2, TABLE III regardless of the operating status of the facility unless otherwise approved by the Department or allowed in this permit.

2.5.3 Groundwater Monitoring and Sampling Protocols

The permittee shall monitor the groundwater according to Section 4.2, TABLE II.

Static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80% of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as "dry" for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the Self-Monitoring Report Form (SMRF).

2.5.3.1 POC Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, insufficient water in a well for more than two (2) sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty feet or less from the original well, the ALs and AQLs established for the previously designated POC well shall apply to the replacement well.

2.5.4 Surface Water Monitoring and Sampling Protocols

Routine surface water monitoring is not required under the terms of this permit.

2.5.5 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Ave.
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.6 Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the ADEQ Groundwater Section for approval prior to installation and the permit shall be amended to include any new points.

2.6 Contingency Plan Requirements

[A.R.S. § 49-243(K) (3), (K) (7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1 General Contingency Plan Considerations

At least one copy of the approved contingency and emergency response plan(s) submitted in the application shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any alert level (AL) exceedance or any violation of an aquifer quality limit (AQL), discharge limits (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as if verification sampling has been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition.

2.6.2 Exceeding of Alert Levels/Performance Levels

2.6.2.1 Exceeding of Performance Levels (PL) Set for Operational Conditions

1. If the operational PL set in Section 4.2, TABLE III have been exceeded or condition not met the permittee shall:
 - a. Notify the ADEQ Water Quality Compliance Section within five (5) days of becoming aware of an exceedance of any permit condition in Section 4.2, TABLE III.
 - b. Submit a written report within thirty (30) days after becoming aware of an exceedance or failure to meet any permit condition. The report shall document all of the following:
 - i. a description of the exceedance or conditions not met and its cause;
 - ii. the period of the exceedance, including exact date(s) and time(s), if known, and the anticipated time period during which the exceedance is expected to continue;
 - iii. any action taken or planned to mitigate the effects of the exceedance or

- spill, or to eliminate or prevent recurrence of the exceedance or spill;
- iv. any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an Aquifer Water Quality Standard; and
- v. any malfunction or failure of pollution control devices or other equipment or process.

- 2. The facility is no longer on alert status once the operational indicator no longer indicates that a PL is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.2 Exceeding of Alert Levels (ALs) Set for Discharge Monitoring

- 1. If an AL set in Section 4.2, TABLE I has been exceeded, the permittee shall immediately investigate to determine the cause of the exceedance. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the exceedance.
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
 - c. Pretreatment source control for industrial pollutants.
- 2. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.
- 3. Within thirty (30) days after an AL exceedance, the permittee shall submit the laboratory results to the ADEQ Water Quality Compliance Section, Enforcement Unit, along with a summary of the findings of the investigation, the cause of the exceedance, and actions taken to resolve the problem.
- 4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.2.2.1. Exceeding Permit Flow Limit

- 1. If the AL for average monthly flow in Section 4.2, TABLE I is exceeded, the permittee shall submit an application for an APP amendment to expand the WRF or submit a report detailing the reasons that expansion is not necessary.
- 2. Acceptance of the report instead of an application for expansion requires ADEQ approval.

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.3.1 Alert Levels for Indicator Parameters

Not required at time of permit issuance.

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4.2, TABLE II has been exceeded, the permittee may conduct verification sampling within five (5) days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms the AL exceedance or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring as follows:

Specified Monitoring Frequency (Section 4.2, Table II)	Monitoring Frequency for AL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in Part 5.0 and specific contingency measures identified in Part 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Section, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Groundwater Section.
4. Within thirty (30) days after confirmation of an AL exceedance, the permittee shall submit the laboratory results to the Water Quality Compliance Section, Data Unit along with a summary of the findings of the investigation, the cause of the exceedance, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.
6. The increased monitoring required as a result of an AL exceedance may be reduced to the monitoring frequency in Section 4.2, TABLE II if the results of four sequential sampling events demonstrate that no parameters exceed the AL.

2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not required at time of issuance.

2.6.3 Discharge Limit (DL) Violations

1. If a DL set in Section 4.2, TABLE I has been violated, the permittee shall immediately investigate to determine the cause of the violation. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the violation;
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
 - c. Sampling of individual waste streams composing the wastewater for the parameters in violation.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. The permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

2. The permittee shall comply with the freeboard requirements as specified in Section 4.2, TABLE III (Facility Inspections) to prevent the overtopping of an impoundment or sludge drying bed. If an impoundment or sludge drying bed is overtopped, the permittee shall follow the requirements in Section 2.6.5.3 and the reporting requirements of Section 2.7.3.
3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.4 Aquifer Quality Limit (AQL) Violation

1. If an AQL set in Section 4.2, TABLE II has been exceeded, the permittee may conduct verification sampling within five (5) days of becoming aware of an AQL being exceeded. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then, the permittee shall increase the frequency of monitoring as follows:

Specified Monitoring Frequency (Section 4.2, Table II)	Monitoring Frequency for AQL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually	Quarterly

In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control

devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 30 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. § 49-201(12) and pursuant to A.R.S. § 49-241

2.6.5.1 Duty to Respond

The permittee shall act immediately to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.5.2 Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances (A.R.S. § 49-201(18)) or toxic pollutants (A.R.S. § 49-243(I)) on the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the ADEQ Northern Regional Office at (928) 779-0313 and the ADEQ Water Quality Compliance Section at (602) 771-4497, within 24 hours upon discovering the discharge of hazardous material which: a) has the potential to cause an AWQS or AQL exceedance; or b) could pose an endangerment to public health or the environment.

2.6.5.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the ADEQ Northern Regional Office at (928) 779-0313 and the ADEQ Water Quality Compliance Section at (602) 771-4497, within 24 hours upon discovering the discharge of non-hazardous material which: a) has the potential to cause an AQL exceedance; or b) could pose an endangerment to public health or the environment.

2.6.5.4 Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.5.2 and 2.6.5.3 to the ADEQ Northern Regional Office at 1801 W. Route 66, Suite 117, Flagstaff, Arizona, 86001 and the ADEQ Water Quality

Compliance Section (see Section 2.7.5), within thirty days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in the notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6 Corrective Actions

Specific contingency measures identified in Section 2.6 have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5, the permittee shall obtain written approval from the Groundwater Section prior to implementing a corrective action to accomplish any of the following goals in response to exceedance of an AQL or violation of an AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer;
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the operator shall submit to the ADEQ Water Quality Compliance Section, a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7 Reporting and Recordkeeping Requirements

[A.R.S. § 49-243(K) (2) and A.A.C. R18-9-A206 (B) and R18-9-A207]

2.7.1 Self Monitoring Report Forms (SMRF)

1. The permittee shall complete the SMRFs provided by ADEQ, and submit them to the Water Quality Compliance Section, Data Unit.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a quarter, the permittee shall enter "not required" on the SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The tables contained in Section 4.0 list the parameters to be monitored and the frequency for reporting results for compliance monitoring. Monitoring and analytical methods shall be recorded on the SMRFs.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for exceeding an AL or violation of an AQL, DL, or any other permit condition being reported in the current reporting period.

2.7.2 Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book (paper copies, forms, or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The log book shall be retained for ten years from the date of each inspection, and upon request, the permit and the log book shall be made immediately available for review by ADEQ personnel.

The information in the log book shall include, but not be limited to, the following information as applicable:

1. Name of inspector
2. Date and shift inspection was conducted
3. Condition of applicable facility components
4. Any damage or malfunction, and the date and time any repairs were performed
5. Documentation of sampling date and time
6. Any other information required by this permit to be entered in the log book

Monitoring records for each measurement shall comply with R18-9 A206 (B) (2).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Water Quality Compliance Section in writing within five (5) days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation, or of an AL exceedance.
2. The permittee shall submit a written report to the Water Quality Compliance Section within 30 days of becoming aware of the violation of any permit condition or discharge limitation. The report shall document all of the following:
 - a. Identification and description of the permit condition for which there has been a violation and a description of the cause;
 - b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
 - c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;
 - d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an Aquifer Water Quality Standard;
 - e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and
 - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

The permittee shall complete the Self-Monitoring Report Form provided by the Department to reflect facility inspection requirements designated in Section 4.2, TABLE III and submit to the ADEQ Water Quality Compliance Section quarterly along with other reports required by this permit. Facility inspection reports shall be submitted no less frequently than quarterly, regardless of operational status.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
Water Quality Compliance Section, Data Unit
Mail Code: 5415B-1
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4681

All documents required by this permit to be submitted to the Water Quality Compliance Section shall be directed to the following address:

Arizona Department of Environmental Quality
Water Quality Compliance Section
Mail Code: 5620G
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4614

All documents required by this permit to be submitted to the Groundwater Section shall be directed to:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4428

2.7.6 Reporting Deadline

The following table lists the quarterly report due dates:

Monitoring conducted during quarter:	Quarterly Report due by:
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

2.7.7 Changes to Facility Information in Section 1.0

The Groundwater Section and Water Quality Compliance Section shall be notified within 10 days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person, or Emergency Telephone Number.

2.8 Temporary Cessation [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the Water Quality Compliance and the the Northern Regional Office at 1801 W. Route 66, Suite 117, Flagstaff, Arizona, 86001 before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

1. If applicable, direct the wastewater flows from the facility to another state-approved wastewater treatment facility.
2. Correct the problem that caused the temporary cessation of the facility.
3. Notify ADEQ with a monthly facility status report describing the activities conducted on the treatment facility to correct the problem.

At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately

following ADEQ approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Water Quality Compliance Section of the operational status of the facility every three (3) years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9 Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

For a facility addressed under this permit, the permittee shall give written notice of closure to the Water Quality Compliance Section and the Southern Regional Office of the intent to cease operation without resuming activity for which the facility was designed or operated.

2.9.1 Closure Plan

Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Section, a Closure Plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the closure plan achieves clean closure immediately, ADEQ shall issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

2.9.2 Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Groundwater Section indicating that the approved Closure Plan has been implemented fully and providing supporting documentation to demonstrate that clean closure has been achieved (soil sample results, verification sampling results, groundwater data, as applicable). If clean closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the terms of Post Closure stated in this permit:

1. Clean closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with the Aquifer Water Quality Standards at the applicable point of compliance;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remedial or mitigative measures are necessary to achieve compliance with Title 49, Ch. 2;
5. Further action is necessary to meet property use restrictions.

2.10 Post-Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9 A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Groundwater Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section a Post-Closure Plan that addresses post-closure maintenance and monitoring actions at the facility. The Post-Closure Plan shall meet all requirements of A.R.S. §§ 49-201(29) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the Post-Closure Plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the Post-Closure Plan.

2.10.1 Post-Closure Plan

A specific post-closure plan may be required upon the review of the closure plan.

2.10.2 Post-Closure Completion

Not required at the time of permit issuance.

3.0 COMPLIANCE SCHEDULE [A.R.S. § 49-243(K) (5) and A.A.C. R18-9-A208]

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section, Enforcement Unit.

If the flow to AZPDES outfall 001 exceeds the limit of 0.25MGD averaged over a quarter, the facility shall submit an amendment within thirty (30) days to install a well at the POC#3. If the POC#3 location is not feasible, the facility shall propose another location in the amendment application.

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 PRE-OPERATIONAL MONITORING (OR CONSTRUCTION REQUIREMENTS)

Not applicable at permit issuance.

4.0 TABLES OF MONITORING REQUIREMENTS

4.2 COMPLIANCE MONITORING

TABLE I
ROUTINE DISCHARGE MONITORING

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1	Before discharge to the ponds			34° 54' 25" N	110° 11' 19" W
Parameter	AL ¹	DL ²	Units	Sampling Frequency	Reporting Frequency
Total Flow ³ : Daily	Not Established ⁴	Not Established	MGD ⁵	Daily ⁶	Quarterly
Total Flow: Average Monthly	0.95	1.0	MGD	Monthly ⁷	Quarterly
Flow to AZPDES: Daily	Not Established	Not Established	MGD	Daily	Quarterly
Flow to AZPDES: Average Quarterly	0.24	.25	MGD	Quarterly ⁸	Quarterly
Flow to AZPDES Average Monthly	Not Established	Not Established	MGD	Monthly	Quarterly
Flow to Irrigation sites: Daily	Not Established	Not Established	MGD	Daily	Quarterly
Flow to Irrigation sites: Average Monthly	Not Established	Not Established	MGD	Monthly	Quarterly
<i>E. coli</i> ⁹ : Single-sample maximum	Reserved	504.0	CFU	Weekly	Quarterly
<i>E. coli</i> : Four (4) of last seven (7) samples	Reserved	126.0 ¹⁰	CFU	Weekly	Quarterly
Total Nitrogen ¹¹ : 5-sampling rolling geometric mean.	8.0	10.0	mg/l	Monthly ¹²	Quarterly

¹AL = Alert Level

²DL = Discharge Limit

³Total flow = flow to the irrigation sites + flow to the AZPDES site

⁴Not established = Monitoring required but no limits have been specified at time of permit issuance.

⁵MGD = Million Gallons per Day

⁶Flow shall be measured using a continuous recording flow meter which totals the flow daily.

⁷Monthly = Calculated value = Average of daily flows in a month.

⁸Quarterly = Calculated value = Average of daily flows in a quarter

⁹ *E. coli* monitoring results that meet the specified discharge limits are considered to demonstrate compliance with A.A.C. R18-11-305.

¹⁰ If at least four (4) of the last seven (7) samples are equal to or less than 126.0 CFU or MPN per 100 ml, report "yes" in the appropriate space on the SMRF (indicating that the standard has been met). If at least four (4) of the last seven (7) samples are greater than 126.0 CFU or MPN per 100 ml, report "no" in the appropriate space on the SMRF (indicating that the standard has not been met).

¹¹Total Nitrogen = Nitrate as N + Nitrite as N + Total Kjeldahl Nitrogen.

¹²A 5-Month Geometric Mean of the results of the 5 most recent samples

4.2 COMPLIANCE MONITORING

TABLE I
DISCHARGE MONITORING (continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Metals (total):					
Antimony	0.0048	0.006	mg/l	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (as free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

4.2 COMPLIANCE MONITORING

TABLE 1
DISCHARGE MONITORING (continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Annually	Annually
Carbon tetrachloride	0.004	0.005	mg/l	Annually	Annually
o-Dichlorobenzene	0.48	0.6	mg/l	Annually	Annually
para-Dichlorobenzene	0.06	0.075	mg/l	Annually	Annually
1,2-Dichloroethane	0.004	0.005	mg/l	Annually	Annually
1,1-Dichloroethylene	0.0056	0.007	mg/l	Annually	Annually
Cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Annually	Annually
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Annually	Annually
Dichloromethane	0.004	0.005	mg/l	Annually	Annually
1,2-Dichloropropane	0.004	0.005	mg/l	Annually	Annually
Ethylbenzene	0.56	0.7	mg/l	Annually	Annually
Hexachlorobenzene	0.0008	0.001	mg/l	Annually	Annually
Hexachlorocyclopentadiene	0.04	0.05	mg/l	Annually	Annually
Monochlorobenzene	0.08	0.1	mg/l	Annually	Annually
Styrene	0.08	0.1	mg/l	Annually	Annually
Tetrachloroethylene	0.004	0.005	mg/l	Annually	Annually
Toluene	0.8	1.0	mg/l	Annually	Annually
Trihalomethanes (total) ¹³	0.08	0.1	mg/l	Annually	Annually
1,1,1-Trichloroethane	0.16	0.2	mg/l	Annually	Annually
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Annually	Annually
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Annually	Annually
Trichloroethylene	0.004	0.005	mg/l	Annually	Annually
Vinyl Chloride	0.0016	0.002	mg/l	Annually	Annually
Xylenes (Total)	8.0	10.0	mg/l	Annually	Annually

¹³Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.2 COMPLIANCE MONITORING

TABLE II
GROUNDWATER MONITORING

Sampling Point Number	Sampling Point Identification			Latitude	Longitude
1	MW #4-			34° 55' 58" N	110° 11' 41" W
Parameter	AL ¹⁴	AQL ¹⁵	Units	Sampling Frequency	Reporting Frequency
Total Nitrogen ¹⁶ :	8.0	10.0	mg/l	Semi-Annual	Semi-Annual
Nitrate-Nitrite as N	8.0	10.0	mg/l	Semi-Annual	Semi- Annual
Nitrite as N	0.8	1.0	mg/l	Semi-Annual	Semi- Annual
Total Kjeldahl Nitrogen (TKN)	Not Established	Not Established	mg/l	Semi-Annual	Semi- Annual
Total Coliform	Absence	Absence ¹⁷	CFU or MPN ¹⁸	Semi-Annual	Semi- Annual
Fecal Coliform	Absence	Absence	CFU or MPN	Semi- Annual	Semi- Annual

¹⁴ AL = Alert Level

¹⁵ AQL = Aquifer Quality Limit

¹⁶ Total Nitrogen is equal to nitrate as N plus nitrite as N plus TKN.

¹⁷ A positive result for total coliform may be verified with an analysis for fecal coliform or *E. coli*. A positive result for fecal coliform or *E. coli* shall be considered an exceedance of the AQL for total coliform.

¹⁸ CFU = Colony Forming Units per 100 ml, MPN = Most Probable Number per 100 ml.

4.2 COMPLIANCE MONITORING

TABLE II
GROUNDWATER MONITORING (continued)

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Metals (total):					
Antimony	0.0048	0.006	mg/l	Semi-annually	Semi-annually
Arsenic	0.04	0.05	mg/l	Semi-annually	Semi-annually
Barium	1.60	2.00	mg/l	Semi-annually	Semi-annually
Beryllium	0.0032	0.004	mg/l	Semi-annually	Semi-annually
Cadmium	0.004	0.005	mg/l	Semi-annually	Semi-annually
Chromium	0.08	0.1	mg/l	Semi-annually	Semi-annually
Cyanide (as free cyanide)	0.16	0.2	mg/l	Semi-annually	Semi-annually
Fluoride	3.2	4.0	mg/l	Semi-annually	Semi-annually
Lead	0.04	0.05	mg/l	Semi-annually	Semi-annually
Mercury	0.0016	0.002	mg/l	Semi-annually	Semi-annually
Nickel	0.08	0.1	mg/l	Semi-annually	Semi-annually
Selenium	0.04	0.05	mg/l	Semi-annually	Semi-annually
Thallium	0.0016	0.002	mg/l	Semi-annually	Semi-annually

4.2 COMPLIANCE MONITORING

TABLE II
GROUNDWATER MONITORING (continued)

Parameter	AL	AQL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Annually	Annually
Carbon tetrachloride	0.004	0.005	mg/l	Annually	Annually
o-Dichlorobenzene	0.48	0.6	mg/l	Annually	Annually
para-Dichlorobenzene	0.06	0.075	mg/l	Annually	Annually
1,2-Dichloroethane	0.004	0.005	mg/l	Annually	Annually
1,1-Dichloroethylene	0.0056	0.007	mg/l	Annually	Annually
Cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Annually	Annually
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Annually	Annually
Dichloromethane	0.004	0.005	mg/l	Annually	Annually
1,2-Dichloropropane	0.004	0.005	mg/l	Annually	Annually
Ethylbenzene	0.56	0.7	mg/l	Annually	Annually
Hexachlorobenzene	0.0008	0.001	mg/l	Annually	Annually
Hexachlorocyclopentadiene	0.04	0.05	mg/l	Annually	Annually
Monochlorobenzene	0.08	0.1	mg/l	Annually	Annually
Styrene	0.08	0.1	mg/l	Annually	Annually
Tetrachloroethylene	0.004	0.005	mg/l	Annually	Annually
Toluene	0.8	1.0	mg/l	Annually	Annually
Trihalomethanes (total) ¹⁹	0.08	0.1	mg/l	Annually	Annually
1,1,1-Trichloroethane	0.16	0.2	mg/l	Annually	Annually
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Annually	Annually
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Annually	Annually
Trichloroethylene	0.004	0.005	mg/l	Annually	Annually
Vinyl Chloride	0.0016	0.002	mg/l	Annually	Annually
Xylenes (Total)	8.0	10.0	mg/l	Annually	Annually

¹⁹Total Trihalomethanes are comprised of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.2 COMPLIANCE MONITORING

TABLE III
FACILITY INSPECTION (Operational Monitoring)

Pollution Control Structures/Parameter	Performance Levels	Inspection Frequency	Reporting Frequency
Pump Integrity	Good working condition	Daily	Quarterly
Treatment Plant Components	Good working condition	Daily	Quarterly
Freeboard in all Ponds	Minimum of three feet	Monthly	Quarterly
Berm Integrity	No visible Erosion	Monthly	Quarterly

4.3 CONTINGENCY MONITORING

Not applicable at time of issuance.

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

1. APP Application dated: March 4, 1999 (APP, signed on 12/20/99)
December 10, 2001 (Significant Amendment, signed 11/5/02), October 31, 2006 (Significant Amendment)
2. Contingency Plan, dated: N/A
3. Final Hydrologist Report dated: April 10, 2007 (Significant Amendment)
4. Final Engineering Report dated: N/A
5. Public Notice dated: August 25, 1999 (APP)
June 21, 2002 (Significant Amendment),
6. Public Hearing, dated: N/A
7. Responsiveness Summary, dated: N/A

6.0 NOTIFICATION PROVISIONS**6.1 Annual Registration Fees**

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based upon the amount of daily influent or discharge of pollutants in gallons per day as established by A.R.S. § 49-242(D).

6.2 Duty to Comply [A.R.S. §§ 49-221 through 263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.3 Duty to Provide Information [A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.4 Compliance with Aquifer Water Quality Standards [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an Aquifer Water Quality Standard at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an Aquifer Water Quality Standard for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.5 Technical and Financial Capability

[A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application, pursuant to A.A.C. R18-9-A203(D), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.6 Reporting of Bankruptcy or Environmental Enforcement [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. the filing of bankruptcy by the permittee;
2. the entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.7 Monitoring and Records [A.R.S. § 49-243(K) (8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8 Inspection and Entry [A.R.S. §§ 49-1009, 49-203(B), and 49-243(K) (8)]

In accordance with A.R.S. §§ 41-1009 and 49-203(B), the permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.9 Duty to Modify [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices authorized by this permit.

6.10 Permit Action: Amendment, Transfer, Suspension, and Revocation

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, suspended, or revoked for cause, under the rules of the Department. The permittee shall notify the Groundwater Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1 Other Information [A.R.S. § 49-243(K) (8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2 Severability

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3 Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer shall be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212 (B) and (C).