Scope of Work

WATER ACTIVITY NAME – Bauer Lake Water Company
GRANT RECIPIENT – Bauer Lake Water Company
FUNDING SOURCE – Water Supply Reserve Account, Southwest Basin

INTRODUCTION AND BACKGROUND
Bauer Lake Water Company owns and operates Bauer Reservoir #2. The reservoir provides irrigation and stock water to shareholders via ditches and pipeline (as of summer of 2006). Most of the shareholders are also shareholders in Lower Bauer West Lateral, Inc., a separate company formed to own and operate the pipeline that replaced much of the delivery ditch.

Bauer Reservoir #2 is located in Montezuma County about 3.3 miles north of Mancos, Colorado. The dam and reservoir are north on Highway 184. The dam is on Chicken Creek, which is a tributary to the Mancos River. The dam is located in Section 17, Township 36 north, Range 13 west.

The Southwest Basin Roundtable approved a $100,000 grant from Basin Funds for the rehabilitation of Bauer Reservoir #2, which was subsequently approved by CWCB Board. This is the scope of work for the grant.

REQUEST FOR TIME EXTENSION
The current expiration date of the grant, as included in the purchase order, is June 30, 2011. Bauer Lake Water Company is requesting an extension of the grant until December 31, 2011. The reason for the extension is due to the time required to prepare the engineering design report to the Dam Safety Branch of the Division of Water Resources and respond to their comments. The construction of the work at Bauer Lake must be completed between mid-September and early November so as not to interfere with the irrigation season and prior to winter weather.

It became clear in early September that the design report was not going to be approved in time to allow construction in 2010. The turn around between the State and Harris Water Engineering to address technical issues has taken longer than expected, but those issues will be addressed by early 2011 so that construction can occur in the fall of 2011.

All tasks for the project remain the same. Attached are the updated task completion schedule and the updated budget showing expenses to date.

OBJECTIVES
The project objectives are to design, obtain Colorado State Engineer approval and construct a pressurized outlet works that satisfies the needs of Bauer Reservoir #2 shareholders and satisfies the state regulations. The project objectives include analysis of existing structures, design of new inlet and outlet structures, engineering design report, and construction completion. Please see the Tasks below for a better description of these objectives.

TASKS
Provide a detailed description of each task using the following format.

TASK 1 – Pressurizing the Existing Outlet Pipe

Description of Task
Currently, a 30" CMP pipe connects the inlet and outlet structures. This pipe was originally installed in 1974, which cannot be pressurized. Bauer Reservoir #2 users would like to see the CMP pipe replaced with material capable of being continually under pressure. This task is to develop a design for the type of sleeve to be installed inside the CMP and proper installation procedures. After initial analysis of the integrity of the existing structures, additional modifications may need to be made to support the CMP pipe modifications. The Soil Conservation Service Technical Release No. 46, "Gated Outlet Appurtenances – Earth Dams" will be used in the design of the inlet and outlet structures.

Method/Procedure
Procedures for creating the engineering design report entail: research state requirements; evaluate alternative materials and designs for the outlet pipe; design and draft outlet works; design and draft inlet works; unofficially coordinate with dam safety inspector prior to formal submittal; coordinate with Bauer Lake representatives; submittal of design report and plans; respond to modification by the State; and coordination with state departments to obtain approval.

Deliverable
The final deliverable will be an engineering design report that will describe the design and installation of the sleeve, modifications and/or design of the inlet and outlet structures, and include construction drawings of all components.

TASK 2 – Screen Headgate Structure

Description of Task
The unscreened, oversized headgate can only be opened partially to supply the needed water. This means it is very sensitive to minor adjustments and regularly gets clogged by crawdads and trash. Clearing these obstructions requires frequent cycling of the headgate to flush the debris through the outlet structure and out the overflow. This is a manual operational problem and wastes water. The headgate structure needs to have a proper screen that fits and operates correctly. The Soil Conservation Service Technical Release No. 46, "Gated Outlet Appurtenances – Earth Dams" in conjunction with other technical references will be used in the design of the screen.

Method/Procedure
Procedures for creating the engineering design report entail: research state requirements; evaluate alternative materials and designs for the screen; design and draft the screen; unofficially coordinate with dam safety inspector prior to formal submittal; coordinate with Bauer Lake

representatives; submittal of design report and plans; respond to modification by the State; and coordination with state departments to obtain approval.

Deliverable
The final deliverable will be an engineering design report that will describe the design and installation of the screen and include construction drawings of all components.

TASK 3 – Connecting Outlet Structure to Delivery Pipeline

Description of Task
The CMP pipe discharges into a cement tower, and in normal operation, the pipe vents to atmosphere, using only the lower portion of this tower. After the sleeve has been installed, the pipe will not need to vent to atmosphere and will require another type of connection to the delivery pipe. A new connection will be designed to satisfy both the downstream needs and pressurization of the system.

Method/Procedure
Procedures for creating the engineering design report entail: research state requirements; evaluate alternative materials and designs for the connection pipeline; design and draft the connection pipeline; unofficially coordinate with dam safety inspector prior to formal submittal; coordinate with Bauer Lake representatives; submittal of design report and plans; respond to modification by the State; and coordination with state departments to obtain approval.

Deliverable
The final deliverable will be an engineering design report that will describe the design and installation of the connection pipe and include construction drawings of all components.

TASK 4 – Flow Measurement Ability

Description of Task
Flow measurement was removed when the pipeline replaced the first section of ditch, eliminating any ability to measure flow at the dam, a requirement Bauer Reservoir #2 needs to rectify, both for Bauer management and state record keeping requirements. A new flow measurement will be specified.

Method/Procedure
Procedures for creating the engineering design report entail: research state requirements; evaluate alternative materials and designs for the flow measurement; design and draft the flow measurement; unofficially coordinate with dam safety inspector prior to formal submittal; coordinate with Bauer Lake representatives; submittal of design report and plans; respond to modification by the State; and coordination with state departments to obtain approval.

Deliverable
The final deliverable will be an engineering design report that will describe the design and installation of the connection pipe and include construction drawings of all components.

REPORTING AND FINAL DELIVERABLE

Reporting: The application shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the scope of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

BUDGET

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, $/unit of material for construction, etc.). Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

The attached budget itemizes each major Task of this work. The allocation of funds between tasks and persons may change.

SCHEDULE

Please see the attached task completion schedule depicting work items associated to Tasks One through Four, as described above. It is estimated that an additional 6 months to December 31, 2011 (from the original completion date of June, 2011) are needed to prepare the technical designs and complete construction.

PAYMENT

Payment will be made based on actual expenditures and invoicing by the water activity sponsor. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed.

All products, data and information developed as a result of this grant must be provided to CWCB in hard copy and electronic format as part of the project documentation.