Continental Dam and Spillway Restoration

SANTA MARIA RESERVOIR COMPANY

Water Supply Reserve Account

Grant Application

July 9, 2013

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COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

CONTINENTAL SPILLWAY REHABILITATION & DAM SEEPAGE MITIGATION

Name of Water Activity/Project

SANTA MARIA RESERVOIR COMPANY

Name of Applicant

RIO GRANDE BASIN ROUNDTABLE

Approving Basin Roundtable(s)
(If multiple basins specify amounts in parentheses.)

Amount from Statewide Account: $962,750

Amount from Basin Account(s): $51,000

Total WSRA Funds Requested: $1,013,750

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Required Exhibits

A. Statement of Work, Budget, and Schedule
B. Technical Specifications – Continental Dam Improvements
C. Studies, Engineering, Documentation
D. Maps
E. Photos
F. Letters of Recommendation

Appendices – Reference Material

1. Program Information
2. Insurance Requirements
3. WSRA Standard Contract Information (Required for Projects Over $100,000)
4. W-9 Form (Required for All Projects Prior to Contracting)

Instructions

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCB). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCB staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCB website at: http://cwcb.state.co.us Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Greg Johnson – WSRA Application
Colorado Water Conservation Board
1580 Logan Street, Suite 200
Denver, CO 80203
gregory.johnson@state.co.us

If you have questions or need additional assistance, please contact Greg Johnson at: 303-866-3441 x3249 or gregory.johnson@state.co.us.

Water Supply Reserve Account – Application Form
Revised December 2011

Part I. - Description of the Applicant (Project Sponsor or Owner);

1.	Applicant Name(s):	**Santa Maria Reservoir Company**		
	Mailing address:	P.O. Box 288 Monte Vista, CO 81144		
	Taxpayer ID#:	84-0418055		
	Primary Contact:	Jay Yeager	Position/Title:	Manager
	Email:	rgcjey@gmail.com		
	Phone Numbers:	Cell: 719-850-1111	Office:	719-852-3556
	Alternate Contact:	Connie Pleasant	Position/Title:	Admin. Assistant/Sec.
	Email:	pleasant@gojade.org		
	Phone Numbers:	Cell:	Office:	719-852-3556

2. Eligible entities for WSRA funds include the following. What type of entity is the Applicant?

[ ] Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.

[X] Public (Districts) – authorities, Title 32/special districts, (conservancy, conservation, and irrigation districts), and water activity enterprises.

[ ] Private Incorporated – mutual ditch companies, homeowners associations, corporations.

[ ] Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.

[ ] Non-governmental organizations – broadly defined as any organization that is not part of the government.

3. Provide a brief description of your organization

Santa Maria Reservoir Company (SMRC) is an eligible applicant under Senate Bill 06-179. SMRC was incorporated in 1931 to "safeguard, protect, and manage the rights of all water users and consumers of water" for the Santa Maria Reservoir Company, which includes both Continental Reservoir and Santa Maria Reservoir. Continental Reservoir is located in Hinsdale County, Colorado. Santa Maria Reservoir is located in Mineral County, Colorado. The reservoirs are used by SMRC to store water for use in connection with the Rio Grande Canal and the Monte Vista Canal. The water from the reservoirs is used to supply irrigation water to four counties within the state of Colorado. Those counties include Rio Grande, Saguache, Conejos, and Alamosa counties. The water districts that SMRC supplies are 20, 21, 22, 26, and 27 in Irrigation Division No. 3 of the state of Colorado.

Santa Maria Reservoir Company owns both Continental Reservoir and Santa Maria Reservoir. Continental Reservoir and Santa Maria Reservoir operate separately and in conjunction with one another. Continental was initially designed in 1911; the dam was redesigned and constructed between May 1925 and December 1928. Santa Maria Reservoir was constructed in 1910 in the crater of an old volcano. Both reservoirs were constructed for storage and distribution capabilities. Of the water that is managed by SMRC, nearly ninety percent of the water goes through the Rio Grande Canal, which serves some of the best water rights in the San Luis Valley. The remaining ten percent of the water goes to the Monte Vista Canal also serving high priority water rights. There are 5,400 shares of stock in the Santa Maria Reservoir Company. These shares are owned by approximately 225 stockholders and mostly split into groups of 10 shares. These two reservoirs are responsible for irrigating nearly 70,000 acres in the San Luis Valley.

In 2007, SMRC began the Santa Maria Reservoir Company Rehabilitation Initiative to begin upgrading the reservoir system. SMRC obtained Water Supply Reserve Account (WSRA) funding to conduct a hydrologic and hydraulic analysis of the two reservoirs and the delivery system which carries water into Santa Maria. SMRC contracted the URS Corporation to conduct engineering studies of the reservoirs and the conveyance system. The studies conducted identified the Continental dam and spillway deficiencies, and Santa Maria conveyance system repair necessities and hydraulic improvement requirements. The studies also addressed solutions to the findings.

Through their analysis of the reservoir system, URS assessed the potential dam safety issues at Continental. Their focus was on the seepage that is occurring along the left abutment of the dam. This seepage issue has caused storage restrictions to be placed upon Continental Reservoir. SMRC is hoping to lift the storage restriction through the completion of this project. However, the storage restriction cannot be lifted without also addressing the spillway. Through the studies, URS was able to determine the hydrologic/hydraulic adequacy of the Continental spillway. URS determined that the spillway size was adequate. However, the studies concluded that the condition of the spillway was inadequate and thus the spillway needed to be replaced.

SMRC plans to update the reservoir system in two phases. Phase I of the rehabilitation process addresses the Santa Maria support system and canal improvements. SMRC applied for and received a WSRA grant of $463,750. SMRC will use the grant money along with a loan for $1, 405,163 to implement Phase I.

<u>Phase II Implementation:</u> The second phase to update the reservoir system will address the dam seepage and spillway conditions at Continental Reservoir. SMRC is seeking funds to address these issues at Continental so that they can lift storage restrictions and restore Continental Reservoir to its full storage capacity. The completion of Phase II will help to ensure that SMRC is able to meet the

demands of both present and future water storage and irrigation needs of the San Luis Valley and Colorado.

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

X	The Applicant will be able to contract with the CWCB using the Standard Contract
	The Applicant has reviewed the standard contract and has some questions/issues/concerns. Please be aware that any deviation from the standard contract could result in a significant delay between grant approval and the funds being available.

6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

None apply

Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

	Nonconsumptive (Environmental or Recreational)
X	Agricultural
	Municipal/Industrial
	Needs Assessment
	Education
	Other Explain:

2. If you feel this project addresses multiple purposes please explain.

- **Remove State imposed storage restrictions on Continental Reservoir**
- **Support Sub-district's attempts to achieve sustainable use of groundwater**
- **Increase storage capacity for the Basin's depletion and augmentation water**
- **Manage agricultural water more effectively**
- **Improve sustainability of 70,000 irrigated acres**
- **Provide additional storage to support DWR's efficient management of Compact water**
- **Prevent further deterioration of water-control assets and reduce maintenance needs**
- **Improve flood control capability and flexibility in responding to drought**
- **Maximize Basin storage capacity when water is available**
- **Continue to provide a popular and safe public recreation area**
- **Maintain best management practices for high altitude recreational uses**
- **Sustainably preserve wildlife habitat to meet Colorado Parks & Wildlife objectives**

3. Is this project primarily a study or implementation of a water activity/project? (Please check only one)

	Study	X	Implementation

4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)
26,716	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Length of Pipe/Canal Built or Improved (linear feet)
	Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)
	Area of Restored or Preserved Habitat (acres)
	Other -- Explain:

4. To help us map WSRA projects please include a map (Exhibit B) and provide the general coordinates below:

Latitude: 37,5379 Longitude: 107,12291

5. Please provide an overview/summary of the proposed water activity (no more than one page). Include a description of the overall water activity and specifically what the WSRA funding will be used for. A full **Statement of Work** with a detailed budget and schedule is required as **Exhibit A** of this application.

(next page)

Due to dam seepage and spillway conditions deteriorating at Continental Reservoir, the State has imposed a storage limitation at the reservoir for the past twenty years. Currently, Continental Reservoir has been limited to storing only 15,000 acre feet. However, the reservoir has a designed capacity of 26,716 acre feet, which means that the reservoir has been operating at a storage deficiency of nearly 12,000 acre feet for the past 20 years.

Both Continental Reservoir and Santa Maria Reservoir play a major role in providing the necessary water needed to keep the agricultural entities of the Rio Grande Basin operating and maintaining economic growth and stability. Many people in the San Luis Valley rely on the water from these reservoirs for their livelihood. Thus, the inability of these reservoirs to store and supply adequate water could greatly impact the economic growth and stability of the San Luis Valley. In view of the critical role that Continental and Santa Maria Reservoirs play for the entire Rio Grande watershed and for downstream states of the Compact, this illustrates how critically important it is that Continental Reservoir is working at its full storage capacity.

This reality is further illuminated when thinking of the current situation that is faced by the Rio Grande Basin. We are currently experiencing the most serious drought in recorded history, existing water supplies are over appropriated, the aquifer is critically depleted, and the fact remains that we need to remain responsive to Compact obligations. These realities illustrate that without the much needed repairs to Continental, the Rio Grande Basin does not hold much promise of meeting tomorrow's water needs unless we maximize all available water storage capabilities.

The completion of this project has numerous benefits. It improves the capability of SMRC to continue providing irrigation water to shareholders, it provides additional storage for augmentation and depletions as ground water Sub-districts are formed, it maintains and upgrades benefits for multiple stakeholders in the Rio Grande Basin, and it helps improve water management in the upper Rio Grande watershed. Equally important, the completion of this project will meet the 2050 goals of the Statewide Water Supply Initiative (SWSI) by lifting the storage limitation at Continental Reservoir.

By addressing the problems at Continental Reservoir, we are addressing multiple consumptive needs. This project will lift the storage restrictions placed upon Continental, and will allow SMRC the capability to restore the reservoir water levels to the original designed capacity. With that goal reached, the Project will improve SMRC's ability to meet the water needs of the San Luis Valley, and will provide more storage for the upcoming and existing Sub-districts so they can replace stream depletions to the Rio Grande caused by groundwater use. This project also supports DWR's management of Colorado's Rio Grande Compact water. Along with addressing consumptive needs, the project also has many non-consumptive benefits. Some of the benefits include improving flood control and enhancing the reservoirs popular year-round recreational uses. Some of the recreational activities that can be enjoyed include: fishing, boating, ice fishing, snowmobiling, hiking, camping, duck and geese hunting in the fall, horseback riding, cross country skiing and archery. Another non-consumptive benefit of the project is that it will preserve the wildlife habitat found in and around Continental Reservoir.

As described in detail in accompanying documentation, this second phase of the SMRC Rehab Initiative implements the recommendations in the recently completed hydraulic and hydrologic studies by URS Corporation. The primary objective of the project is lifting the state-imposed storage limitation at Continental.

WSRA grant funds requested in this proposal represent 25% of total Project cost, with the remaining 75% of costs funded by the obtainment of a CWCB Water Projects Loan by SMRC. Funds will be used to (1) rehabilitate the severely deteriorated spillway and (2) to install a two-stage earthen filter system in order to eliminate long standing seepage problems of a century-old earthen dam.

Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.[1]

This water activity is consistent with Section 37-75-102 because it implements the recommendations of previous studies relating to the deterioration of existing structural elements at Continental Reservoir. This project does not supersede, abrogate, or otherwise impair Colorado's current system of allocating water, nor does it in any way pertain to or affect Colorado's water rights adjudication system, nor does it restrict the ability of any holder of a water right to use or dispose of that water right in any manner permitted under Colorado law. This project in no way diminishes, impairs, or causes injury to any property or contractual right and it actually protects and enhances the value of water rights held by stockholders of the Santa Maria Reservoir Company by improving and preserving the physical structures which are critical elements of their water storage and distribution system.

b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRTs evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

This is affirmed in the cover letter from the Chairman of the Rio Grande Basin Roundtable.

c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] The

[1] 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair, limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.

Basin Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

This water activity meets the provisions of Section 37-75-104(2) because it directly addresses issues of sustainability, which are of the highest priority to the Rio Grande Basin Roundtable. As Phase II of the SMRC Rehab Initiative, this Project supports an important goal of the Statewide Water Supply Initiative (SWSI) which is to increase the ability for this basin to meet current and future consumptive and nonconsumptive needs. This Project aims to remove the state imposed storage limits of Continental Reservoir.

[2] 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

d) Matching Requirement: For requests from the **Statewide Fund**, the applicants is required to demonstrate a **20 percent** (or greater) match of the request from the Statewide Account. Statewide requests must also include a minimum match of **5 percent** of the total grant amount from Basin Funds. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the application was submitted to the CWCB. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

Summary of Project Costs[1]

Item	Description	Cost
1	Continental Dam Improvements	$3,200,000
2	Construction Contingency (12%)	$384,000
	Total Construction Cost	$3,584,000
5	Construction Engineering Support (12%)	$430,080
	Subtotal	$4,014,080
6	Admin and Legal (1%)	$40,141
	TOTAL PROJECT COST	$4,054,221
	TOTAL PROJECT COST (ROUNDED)	$4,055,000

[1] Project costs are based on 2012 dollars and costs should be reevaluated if the Project is bid after 2013.

Summary of CWCB Loan Request Amount

Item	Description	Amount
1	Total Project Cost [1] (rounded)	$4,055,000
	Water Supply Reserve Account (WSRA) Request	
2	*Basin Request*	*$51,000*
3	*Statewide Request*	*$962,750*
4	Total WSRA Request 25% of the Total Project Cost	$1,013,750
	CWCB Small Project Loan Program Request	
5	CWCB Loan Request	$3,041,250
6	CWCB Loan w/1% Service Fee	$3,071,663

[1] Project costs are based on 2012 dollars and costs should be reevaluated if the Project is bid after 2013.

2. For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

Evaluation Criteria – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three "tiers" or categories. Each "tier" is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

Tier 1: Promoting Collaboration/Cooperation and Meeting Water Management Goals and Identified Water Needs

a. The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).

Consumptive & Non-consumptive Needs: Continental Reservoir plays a major role in providing the necessary water needed to keep the agricultural entities of the Rio Grande Basin operating and maintaining economic growth and stability. With confined and unconfined aquifers falling to the lowest levels on record and with drought conditions worsening, this project is critical in helping to ensure that Continental would be fully restored to its full storage capacity. The benefits of this project are numerous and it addresses many consumptive and non-consumptive needs. This project would lift storage restrictions placed upon Continental thus allowing SMRC greater flexibility to meet the needs of the San Luis Valley. The increased storage capability will also be used to help upcoming and existing Sub-districts replace stream depletions to the Rio Grande, along with supporting DWR's management of Colorado's Rio Grande Compact water. This project also addressed many non-consumptive needs which include: increased flood control, enhanced popular recreational uses, and the preservation of the wildlife habitat in and around Continental Reservoir.

Multiple Interests: This Phase II implementation project is of high value to many stakeholders vested in the continued reliable delivery of water through the Rio Grande Canal and the Monte Vista Canal. This includes irrigators in a 70,000-acre agricultural area in four counties. Letters of support demonstrate the high level of consumptive and nonconsumptive value of this project and the importance of its successful completion.

Many diverse interests of the Rio Grande Basin and of Colorado are served by the Continental and Santa Maria Reservoirs. Continental Reservoir has been used primarily to store irrigation water for agricultural producers spread throughout four counties of the San Luis Valley of Colorado. Continental also stores Colorado Parks and Wildlife (CPW) water, Rio Grande Compact water, San Luis Valley Water Conservancy District water, Trans-mountain water, and water for Subdistrict #1.

Continental Reservoir also provides storage for other entities as needed. For example, CPW currently has a conservation pool in Continental and, like the Rio Grande Reservoir, Continental is used to assist CPW in reaching its water use goals and objectives. Through this Project, SMRC will enhance its ability to further assist the CPW in achieving these goals. The CPW has water rights to three Trans-mountain diversions. As the SMRC Rehab Initiative continues, the CPW, by mutual agreement, will be able to continue to store enough water in Continental to allow for an effective and well-thought-out plan for the most beneficial use to wildlife, and increasing habitat in critical winter range lands. This will allow for a productive fishery; sustained and increased riparian habitat; irrigated lands for wildlife nesting, shelter and forage; fire mitigation management; and provide increased storage for well augmentation.

Upgrading the spillway and addressing the seepage issues at Continental will provide SMRC renewed levels of operational flexibility and cost effectiveness, reducing maintenance and allowing more resources to be devoted to recreation.

Multiple Basins / Statewide Interests: With this restored capacity, CPW will be in a better position to answer water demands in the face of uncontrollable circumstances, such as now face this Basin due to drought. Restored storage capacity provides flexibility in how and when water is distributed to different areas, depending on needs and available resources.

b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.

Cooperation and Collaboration: Some examples of inter-agency collaboration are described in (a) above. Multiple benefits of this Project include: providing water for irrigation and for wildlife, maintaining flood control, providing flexibility in addressing drought conditions, cooperating with federal agencies for fire mitigation, and offering spectacular opportunities for high altitude recreational fishing, hunting, and boating.

As the Rio Grande Basin develops Sub-districts, the availability of storage for well augmentation and stream depletions becomes a priority. In addition to agricultural water management this is of concern to many of the CPW state wildlife areas (SWA), which rely on wells in order to maintain wildlife habitat. CPW currently has surface water rights and wells with a variety of use adjudications on state wildlife areas.

The establishment of groundwater conservation Sub-districts within the SLV may have an effect on the amount of water pumped by any individual well on a SWA, regardless of CPW's active participation in the district. Should a SWA fall within areas which are not regulated by a sub-district, the State Engineer may dictate a set of rules and regulations. Therefore, Trans-mountain water which is collected and stored in these reservoirs may serve to augment wells which cannot be re-adjudicated for the beneficial use of wildlife or which may be reduced in flow as a result of a Sub-district or to comply with State Engineer rules and regulations.

c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

This Project supports the Rio Grande Basin's work to improve the management of surface and ground water supplies by curing problems created by dam seepage and spillway conditions deteriorating at Continental. This water activity greatly improves water management efficiency; promotes increased future storage and distribution capabilities of two reservoirs; and provides SMRC greater flexibility to provide additional storage to third parties. This Project is critically

important, helping in many ways to meet the water supply challenges of the Rio Grande Basin.

Currently, the CPW is researching the amount of water needed to maintain a low flow in the Rio Grande. Lifting the storage limitation at Continental will enable SMRC, during irrigation season, to release Trans-mountain water, thus helping maintain a low flow in the Rio Grande and its tributaries. This will promote the maintenance of fish populations, wildlife habitat, and recreational activities.

In all these ways, this Project effectively addresses the Statewide Water Supply Initiative's Management Objectives and the Rio Grande Basin Roundtable's concerns regarding sustainability, and improved management of surface and ground water resources. The project enhances SMRC's ability to hold and control additional project water, Trans-mountain water, augmentation water, and Rio Grande Compact water.

This Project anticipates future consumptive and non-consumptive needs of the San Luis Valley by upgrading and preserving SMRC's ability to respond to drought, providing storage for Sub-district replacement water, and improves SMRC's ability to respond to changeable and unpredictable circumstances over the coming decades.

Tier 2: Facilitating Water Activity Implementation

d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).

Receiving grant funds from the WSRA Account is critical for this water activity to be implemented. As in the previous funding package, SMRC has negotiated with CWCB to obtain a ratio of grant funds to loan funds of 25% to 75%. This represents a sizeable commitment from the Board and Stockholders of SMRC. The required loan cannot be obtained without SMRC first being awarded the grant funds requested in this proposal.

The Loan Feasibility Document, prepared by the Project's design engineer, Mr. Ed Toms of URS Corporation, describes this grant/loan strategy as follows:

"Total capital expenses for the recommended Project alternatives, including construction and construction contingency, construction engineering, and SMRC's administration and legal support is $4,055,000 (rounded). SMRC is anticipating receiving 25% funding support from the Basin and Statewide grants from the Water Supply Reserve Account (WSRA) for $51,000.00 and $962,750.00 totaling $1,013,750.00. This support would reduce the Project cost to $3,041,250. SMRC is applying for the remaining balance of $3,041,250 through the CWCB Small Project Loan Program. SMRC's loan request, with the CWCB 1% service fee, totaling $30,413, is for the amount of $3,071,663. The annual payment will be $132,480.07, assuming a 30 year loan at an interest rate of 1.75%. Table ES 1 presents a summary of the requested project loan.

Table ES.1
Project Loan Summary

Total Project Cost (Rounded)	$4,055,000
Total Project Amount after Anticipated Grant (25%)	$1,013,750
Total Amount Eligible for CWCB Funding (90%)	$3,041,250
1% CWCB Loan Service Fee	$30,413
CWCB Loan (Including 1% Service Fee)	$3,071,663
CWCB Annual Loan Payment	$132,480.07
Number of Shares	5,400
Annual Cost Per Share for Loan	$28.00
Current Assessment per Share	$43.00
New Assessment per Share	$71.00

e. The amount of matching funds provided by the applicant via direct contributions, demonstrable in-kind contributions, and/or other sources demonstrates a significant & appropriate commitment to the project.

Tier 3: The Water Activity Addresses Other Issues of Statewide Value and Maximizes Benefits

f. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs.

This Project directly improves the ability of SMRC to irrigate 70,000 acres of farm and ranch land in the San Luis Valley. Full discussion and details are above, in Tier 1a and Tier 1b.

g. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.

This Project greatly increases SMRC's ability to store, release, and manage Rio Grande Compact entitled waters by upgrading and making critical repairs to the Continental Dam. A full discussion of this element of the Project is above, in Tier 1a and Tier 1b.

h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.

i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

Findings from the URS Hydrology studies have provided a more thorough understanding of the complexities involved in restoring full capacity to Continental Reservoir. Recognizing this, SMRC increased its financial commitment by expanding those studies (2011 WSRA grant), and its stockholders have recently approved the 25% to 75% grant/loan strategy. This sustained re-commitment of funds by SMRC, plus the funds requested here, provides a high level of benefit to Colorado in relation to the grant funds requested, for all the reasons listed above. Additionally, it improves Colorado's ability to meet its commitments to the Rio Grande Compact. This application requests funds for Phase II implementation to restore full operating capacity to Continental Reservoir. This project represents numerous advantages for not only the San Luis Valley but for Colorado as well.

j. The water activity is complimentary to or assists in the implementation of other CWCB programs.

CWCB has twice funded the studies done by the URS Corporation. The studies done by URS were required in order for SMRC to proceed with the implementation of the Project. Other CWCB programs to upgrade or improve reservoirs in the Rio Grande Basin have been provided WSRA funding. The following Rio Grande Basin CWCB Programs were provided funding: the Rio Grande Reservoir, Terrace Reservoir Spillway Replacement, Sanchez Reservoir, and several grants for Platoro Reservoir. This Project is in keeping with CWCB's objective to upgrade deteriorated and aging reservoirs in the San Luis Valley.

Part IV. – Required Supporting Material

1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

Continental and Santa Maria Reservoirs store irrigation water, Sub-district #1 water, Rio Grande Compact water, San Luis Valley Water Conservancy District water, Colorado Parks and Wildlife (CPW) water, and Trans-mountain water. The reservoirs also provide flood control. Continental, with a designed capacity of 26,716 acre feet, and Santa Maria, with designed capacity 43,500 acre feet, irrigates a vast four county area of the San Luis Valley. For the past twenty years, however, Continental has been limited to storing only 15,000 AF due to dam seepage and spillway conditions deteriorating. The deteriorated condition of the conveyance system between Continental and Santa Maria Reservoirs is currently being addressed by Phase I.

Ninety percent of the water managed by SMR goes through the Rio Grande Canal. The remaining 10% of SMRC water goes through the Monte Vista Canal. There are 5,400 shares of stock in the Santa Maria Reservoir Company. These shares are owned by approximately 225 stockholders and mostly split into groups of 10 shares. A total of 70,000 acres is irrigated by

this two-reservoir system.

This project will not broaden SMRC's service area and will not provide for irrigation of any new lands. The present lands irrigated are 70,000 acres, as mentioned above. No new downstream stream depletions will occur due to the proposed Project elements. No additional water supplies will be developed in connection with this Project. No new or increased diversions will be made and no additional storage capacity will be created at the reservoir in this Project, although removal of the State-imposed limitation on storage at Continental is an overall objective of the SMRC Rehab Initiative.

SMRC has the water rights in place for this Project, with no new rights required. As set forth in the Loan Feasibility Study, Table 3.1, excerpted below, is a summary of SMRC's storage water rights and Table 3.2 presents their diversion rights from North Clear Creek, Bennett Creek, and Boulder Creek, all of which are stored by the Santa Maria Reservoir.

(next page)

Table 3.1 - Summary of Storage Water Rights			
Appropriation No.	**Adjudication Date**	**Appropriation Date**	**Amount (ac-ft)**
Santa Maria Reservoir			
1916-81A 1916-2 (Reservoir)	September 13, 1916[1]	August 11, 1986	15,871.21
1916-81A 1916-4 (Reservoir	September 13, 1916[1]	September 22, 1902	21,643.79[2]
		Total Storage Right Santa Maria Reservoir	37,515.00
Continental Reservoir			
1934-1	December 15, 1934	June 1, 1901	8,832
1934-3	December 15, 1934	May 4, 1907	2,557
1934-4	December 15, 1934	May 4, 1907	15,327[3]
		Total Storage Right Continental Reservoir	26,716
		Total System Storage Right	**64,231**

[1] - Original decree amended on remitter June 26, 1924.
[2] - Originally 27,945.85 ac-ft; 6,302.06 ac-ft conditional not made absolute.
[3] - Originally 19,361 ac-ft; 4,034 ac-ft conditional not made absolute.

Table 3.2 - Summary of Diversion Water Rights	
Diversion Point	**Amount (cfs)**
Santa Maria Supply Ditch – North Clear Creek	150
Santa Maria Supply Ditch – Bennett Creek	25
Santa Maria Supply Ditch – Boulder Creek	100
Total	**275**

2. Please provide a brief narrative of any related studies or permitting issues.

- **A Loan Feasibility Study has been prepared in parallel with this proposal by URS Corporation, in conformance with CWCB's grant/loan requirements. The Loan Feasibility study examines the feasibility of several non-structural and structural alternatives considered by URS and sets forth the recommended alternative. That study establishes the technical, financial, environmental, and institutional feasibility of rehabilitating the Continental spillway and dam.**

- **Recently completed studies by URS Corporation contain the design and engineering recommendations for this Project, as follows:**

- **Through URS analysis at Continental, it was determined that a potential failure of the embankment could occur in the future due to the present condition of the concrete spillway and the uncontrolled seepage from the embankment.**
- **Several nonstructural and structural alternatives were considered to meet the Project's needs. These alternatives also included a No Action alternative. The No Action alternative was deemed not viable due to the loss of the system operation and, if the embankment were to fail, there is a high probability of the loss of life downstream of the dam. URS recommended the following alternatives for each element:**
- **Embankment Preferred Alternative: The proposed modifications include placement of a two-stage filter blanket on the downstream embankment slope and toe drain for seepage collection purposes and a stability buttress. The existing riprap on the downstream slope will be removed and stockpiled and the slope re-graded. A filter blanket will be placed to the invert elevation of the outlet works conduit to prevent piping through the rock fill and along the conduit. A trench will be excavated in the existing downstream rock fill toe to protect the existing head wall. The filter blanket will be a two-stage filter consisting of ASTM 33 sand (filter sand) and No. 89 gravel (drain gravel). The filter sand and drain gravel placed against the re-graded 2H:1V slope will be 3 feet (horizontal distance) thick. The buttress fill will consist of common fill. It will be placed to widen the existing crest by 15 feet at elevation 10290 feet with a 33-foot wide bench at elevation 10265 feet. Drain gravel will be placed closest to the rock fill in the excavated trench followed by a 5-foot wide (horizontal distance) filter sand layer. A toe drain pipe will be placed within the drain gravel above the outlet works conduit for seepage collection. Eighteen-inch diameter HDPE slotted pipe will be installed within the drain gravel to convey the collected seepage water to a metering manhole located left of the existing outlet works headwall. The collected seepage water will outfall in the existing North Clear Creek. The existing left groin drain will be demolished approximately below elevation 10215 feet. If no cloudy seepage is observed from the existing left groin drain, it is proposed to leave the drain in place to outfall within the new two-stage filter blanket. If cloudy seepage is observed, the drain will be grouted.**
- **Spillway Preferred Alternative: The proposed modifications include rehabilitation of the spillway chute and the installation of a USBR Type II stilling basin along the right abutment. The existing concrete spillway chute will be demolished near the toe of the embankment, and a new rectangular spillway chute will be installed, with a new floor slab and chute walls being constructed on the interior of the remaining portion of the existing chute. A drainage system will be installed beneath the spillway chute. This system will consist of an 8-inch. HDPE underdrain pipe embedded in drain gravel with a layer of filter sand on the outside of the gravel. Spillway chute walls will be anchored to the adjacent ground with soil nail anchors and rock bolts, and foundation anchors will be installed to anchor the chute floor to the underlying embankment.**

Background Studies

- **In 2011, with WSRA funds, URS Corporation performed a hydrologic study of Continental Reservoir to determine its required spillway size. This study assessed the hydrologic and hydraulic adequacy of the Continental spillway, according to State's regulations, so as to determine the measures required to lift the current storage restriction.**

- **Completed in 2012, URS Corporation also performed an analysis and identified the shortcomings of the entire SMRC reservoir storage and water delivery system. This Project and all subsequent studies by URS are the result of that analysis. Future phases of the SMRC Rehab Initiative will be based upon those findings.**

- **Since the beginning of planning in 2007, SMRC has conducted numerous site visits and held many meetings with URS Corporation, stockholders, SMRC's Attorney William Paddock, and also with CWCB's grant and loan program staff. Chairman of the Rio Grande Basin Roundtable, Mike Gibson, has advised the project many times over the years, with assistance from the Rio Grande Basin Roundtable's Technical Assistance Subcommittee.**

- **Site visits included inspections of Continental Dam and Santa Maria Dam to assess dam safety issues, including the Continental spillway and seepage along the left dam abutment at Continental. Further field investigations focused on the conveyance system, consisting of portions of Clear Creek, the pipeline, the siphon, and the open ditch.**

- **URS developed the 24-hour, 100-year precipitation using NOAA Atlas II; and local and general storm probable maximum precipitation (PMP) using EPAT and HMR-55A methods. URS developed the flood hydrology using the United States Army Corp of Engineers (USACE) HEC-HMS computer model, using available project data and routing the floods through the existing spillway to determine if the critical storm event meets SEO Rules. These analyses will inform future phases of the SMRC Rehab Initiative and determine the required spillway configuration and other reservoir and dam requirements at Continental Reservoir.**

- **In the spring of 2013 Deere & Ault Associates Inc. performed inundation mapping for Continental Reservoir, Santa Maria Reservoir, and Rio Grande Reservoir. The purpose of this study is to perform dam breach modeling in accordance with the latest breach guidelines published by the Colorado Dam Safety Branch. This inundation mapping is very important and is part of SMRC's emergency action plan (EAP). Flood routing models and inundation mapping shall be based on the USGS 10-meter Digital Elevation Model (DEM) or best available topographic mapping. Funding for this Project was received from the CWCB and Colorado Dam Safety Branch Inundation Mapping Grant Program.**

Permitting Issues: **Included in Exhibit C, are copies of several early special use permits issued in and around 1908. Included with the permits are correspondence from SMRC's attorney, describing the very minimal extent to which this Project will need additional permits. To address SMRC's concern with regard to the wetland area above Continental, the following preliminary study was conducted:**

- **In November, 2012, SMRC contracted with Charles O. Spielman, consulting geological engineer, to perform a preliminary assessment as to the likelihood that a fen, or fens, might be present in the area immediately upstream of the present Continental Reservoir high water line. Since this is an area that would be flooded by an increase in the maximum allowed capacity of the reservoir, this information would be needed in future phases of the SMRC Rehab Initiative. This study examined the subject area from a geological perspective, briefly reviewed selected literature regarding the definition of a fen, and assessed the geologic, topographic, and moisture conditions relative to the formation of fens. This study concluded that it is very unlikely that a fen, or fens, exist in the subject area. The brief preliminary study is included in its entirety.**

3. Statement of Work, Detailed Budget, and Project Schedule

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement**. All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

Please provide a detailed statement of work using the template in Exhibit A. Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant 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 statement 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.

PAYMENT

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. 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 the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

The above statements are true to the best of my knowledge:

Signature of Applicant: Jay Yeager

Print Applicant's Name: JAY YEAGER

Project Title: Continental Dam + Spillway Restoration - Phase II

Return an electronic version (hardcopy may also be submitted) of this application to:

Greg Johnson – WSRA Application
Colorado Water Conservation Board
1580 Logan Street, Suite 200
Denver, CO 80203
gregory.johnson@state.co.us

Exhibit A

Budget

Scope of Work

Schedule

Scope of Work and Budget

The following Scope of Work and Budget for Phase 2 Project will follow the technical specifications provided by URS Corporation for the Continental Dam Rehabilitation Project. These specifications are included in Exhibit B. The following Tasks will be included along with each task estimated cost.

Task	Task Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Mobilization, Demobilization, and Preparatory Work	1	Lump Sum	$300,000	$300,000
2	Selective Demolition	1	Lump Sum	$50,000	$50,000
3	Erosion and Sediment Control	1	Lump Sum	$25,000	$25,000
4	Dewatering	1	Lump Sum	$20,000	$20,000
5	Unclassified Excavation - Spillway	260	Cubic Yard	$15	$3,900
6	Rock Excavation	1,775	Cubic Yard	$25	$44,375
7	Riprap Excavation	560	Cubic Yard	$10	$5,600
8	Riprap Bedding	145	Cubic Yard	$100	$14,500
9	Riprap	560	Cubic Yard	$10	$5,600
10	Foundation Preparation	2,310	Square Foot	$5	$11,550
11	Foundation Anchors	1,550	Linear Foot	$50	$77,500
12	Wall Anchors	150	Each	$800	$120,000
13	Micropile Anchors	960	Linear Foot	$40	$38,400
14	Micropile Concrete Cap	38	Cubic Yard	$700	$26,600
15	Existing Spillway Surface Preparation	1	Lump Sum	$10,000	$10,000
16	Backfill Concrete	122	Cubic Yard	$350	$42,700
17	Spillway Foundation Drain	575	Linear Foot	$40	$ 23,000
18	Spillway Concrete Slabs	560	Cubic Yard	$850	$476,000
19	Spillway Concrete Walls	665	Cubic Yard	$950	$631,750
20	Fabricated Steel Bridge	1	Lump Sum	$70,000	$70,000
21	Chain Link Fence and Gates	750	Linear Foot	$10	$7,500
22	Clearing and Grubbing	2	Acre	$2,500	$4,000
23	Stripping and Stockpiling Topsoil	1,320	Cubic Yard	$6	$ 7,920
24	Unclassified Excavation - Dam	8,625	Cubic Yard	$15	$129,375
25	Common Fill	20,850	Cubic Yard	$15	$ 312,750
26	Filter Sand	2,640	Cubic Yard	$100	$264,000
27	Drain Gravel	3,675	Cubic Yard	$100	$367,500
28	Toe Drain Piping	170	Linear Foot	$40	$6,800

Task	Task Description	Estimated Quantity	Unit	Unit Price	Total Price
29	Metering Manhole	1	Lump Sum	$15,000	$15,000
30	Piezometer Modifications	1	Lump Sum	$15,000	$15,000
31	Instrumentation	1	Lump Sum	$29,500	$29,500
32	Aggregate Base Course	45	Cubic Yard	$100	$ 4,500
33	Topsoil Placement	1,320	Cubic Yard	$5	$ 6,600
34	Seeding and Reclamation	1.68	Acre	$5,000	$ 8,400
Construction Subtotal					$3,175,320
Construction Subtotal (Rounded)					$3,200,000
35	Allowance for changes after contract (12%)				$384,000
Construction Total					$3,584,000
36	Engineering during Construction (12%)				$430,080
Construction Total with Engineering during Construction					$4,014,080
OTHER PROJECT COSTS					
37	Admin. and Legal (1%)				$40,141
TOTAL PROJECT COST					$4,054,221
TOTAL PROJECT COST (ROUNDED)					**$4,055,000**

SCHEDULE

Task	Task Description	2014									
		Mar	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
	Bid Process	X	X								
	Notice to Proceed			X							
1	Mobilization, Demobilization, and Preparatory Work			X							
2	Selective Demolition			X							
3	Erosion and Sediment Control			X	X	X	X	X	X	X	X
4	Dewatering			X	X	X	X	X	X	X	X
5	Unclassified Excavation - Spillway			X							
6	Rock Excavation			X	X						
7	Riprap Excavation			X							
8	Riprap Bedding					X					
9	Riprap					X					
10	Foundation Preparation			X							
11	Foundation Anchors				X	X	X				
12	Wall Anchors				X	X	X				
13	Micropile Anchors				X	X	X				
14	Micropile Concrete Cap				X	X	X				
15	Existing Spillway Surface Preparation				X						
16	Backfill Concrete				X	X	X				
17	Spillway Foundation Drain						X	X			
18	Spillway Concrete Slabs					X	X	X			
19	Spillway Concrete Walls					X	X	X			
20	Fabricated Steel Bridge									X	
21	Chain Link Fence and Gates									X	
22	Clearing and Grubbing			X							
23	Stripping and Stockpiling Topsoil			X							
24	Unclassified Excavation - Dam			X	X	X					
25	Common Fill				X	X					
26	Filter Sand						X				

27	Drain Gravel						X				
28	Toe Drain Piping						X				
Task	**Task Description**	**2014**									
		Mar	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
29	Metering Manhole							X			
30	Piezometer Modifications							X			
31	Instrumentation							X			
32	Aggregate Base Course								X		
33	Topsoil Placement								X		
34	Seeding and Reclamation								X		
CONSTRUCTION COMPLETED											X

Exhibit B

Technical Specifications Continental Dam

Technical Specifications Continental Spillway

Project Maps

Exhibit C

Permits

Photos

Letters of Support

The picture of the spillway showing the current conditions and the projected construction areas.

Picture of the Continental Dam and the spillway.

Looking upstream along the spillway approach chute.

Looking down the spillway chute.

Looking up the spillway chute to the dam crest.

Looking down the spillway chute into the stilling basin located at the downstream dam toe.

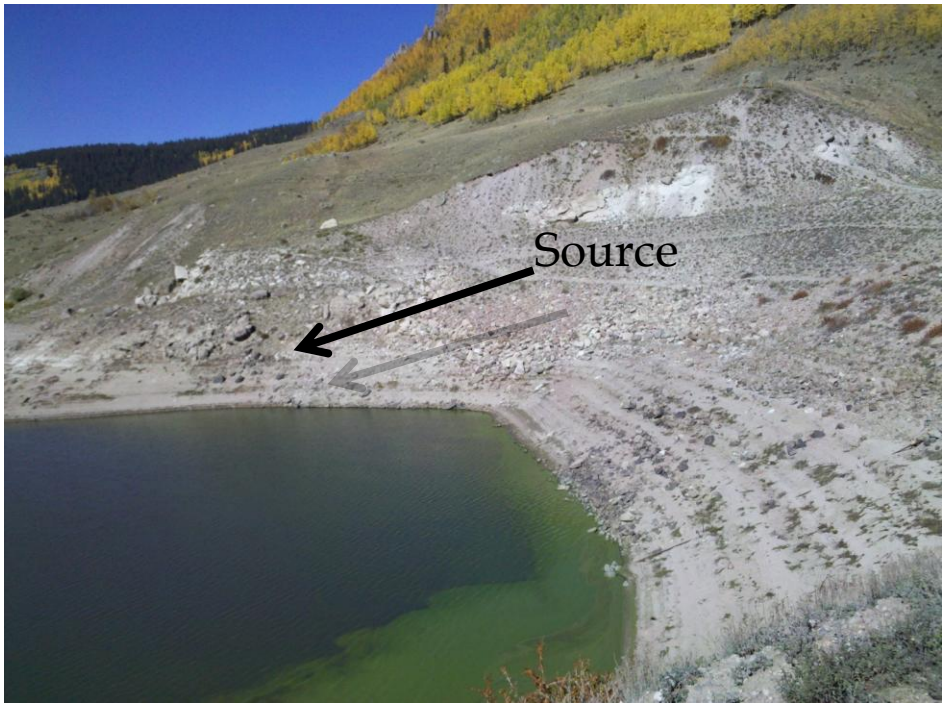
Looking at the spillway chute from the dam toe.

Looking downstream along the spillway approach chute.

Continental Dam

Looking down the downstream dam face

Looking at the upstream dam face.



Picture showing where the seepage is occurring along the upstream dam face.