

May 9, 2011

Karen Pecheny – District Clerk  
Sweetwater County Conservation District  
29 Winston Dr. Suite 110,  
Rock Springs, WY 82901  
(307)- 382-9741

Re: Refined Proposal to Provide SWCCD/BKWAG 2011-2012 Project Work

Karen,

Following discussions with WDEQ regarding the 2011-2012 work proposal sent to you on April 15<sup>th</sup> EDE has revised the proposal as follows. The goal of the revision is to minimize the overall project cost while still providing the monitoring and data to meet SWCCD goals. The revision has been made based on reaching understanding of what support and funding WDEQ can provide for the project and of what amount of data analysis/reporting WDEQ requires from the project to carry into the TMDL process. Primary findings affecting the revision of the proposal:

- WDEQ can provide no funding for the proposed SWCCD work done in advance of the TMDL assessment process. This is because sampling specifically in support of WDEQ TMDL development is required to go through a competitive RFP process (which this has not). Also, were WDEQ to provide funding for the proposed work in this case, it would set a precedent where WDEQ funding could be requested for any sampling in conservation districts, as the argument could be made that sampling results may support future TMDL development.
- WDEQ can supply a limited number of transducers to monitor flow depth in 2011, and automatic samplers in 2012, and the minimum manpower to monitor these devices.
- WDEQ requires no reporting of SWCCD sampling efforts to support the TMDL development, only a comprehensive data file of sampling results with completed QA/QC.

Please review the revised proposal document and forward it on to the appropriate BKWAG and SWCCD personnel for comment. EDE is available upon request to discuss this proposal with the SWCCD.

The approach to complete the work proposed in this revised proposal should be to strive to provide for 2011-2012 monitoring that will contribute

meaningfully to WDEQ TMDL development, but during the project should funding limit the work that can be completed, the primary focus should be on furthering the data collected to date for the SWCCD that can be used to:

- evaluate changes in the impaired status of Bitter and Killpecker Creeks,
- isolate watershed areas contributing to the impairment,
- and assess viability and possibility of BMP implementation.

As with the preceding proposal, the revised monitoring plan presented is separated into 4 phases each given individual project codes and 6 additional project codes which cover data compilation and project management tasks not directly related to sampling. Only total cost for codes SWC1102, SWC1105, and SWC1204 have been changed in this proposal from the original proposal.

The 4 monitoring phases for this proposed project scope are submitted as spring 2011, fall 2011, spring 2012, and fall 2012. 2012 sampling planning is presented herein at WDEQ's request with the assumption that SWCCD wishes to help tie 2011 and 2012 data acquisition for TMDL development together, and that WDEQ will be able to provide monitoring equipment (automated samplers, etc.) and personnel in 2012. 2012 sampling cost proposals are presented herein at SWCCD's request in order to provide comprehensive budget planning for the district over the 2 year period, even though the immediate priority is SWCCD acceptance and funding for the immediate 2011 period (Fiscal 2011 and Fiscal 2012). The comprehensive planning will allow for both SWCCD and DEQ understanding of project scope for the two year program and to prepare for cooperation during the WDEQ TMDL development process scheduled to begin in 2012.

Note that successful completion of the work outlined in this proposal having one of the goals to provide an acceptable foundation for TMDL development, requires rigid devotion to WDEQ and EPA requirements for monitoring, data collection, and data handling. As such, project oversight/management and quality control may require more attention than for the 2006 thru 2010 supplemental sampling, where focus was placed primarily on source identification and BMP recommendations and brief summary reports of data collection, with less intent on applying the data acquired to development of watershed water quality standards. The proposed 2011-2012 project SAP and quality assurance project plan (QAPP) will therefore need to be more in line with that of the 2004-2005 319 grant project. One requirement being regular review and reporting of sampling SOP, data handling, and integrity (monthly to quarterly) by the project manager (namely the natural resources district coordinator for the SWCCD) as required in WDEQ SAP and QAPP guidelines. These tasks can be delegated to EDE to complete for the most part but SWCCD should consider budgeting monies for their own oversight and involvement in the project beyond the costs presented for the consulting work in this proposal. Costs in this

proposal include estimation of time for project oversight and management by EDE to meet the levels anticipated in the SAP and QAPP.

The following listing of projects/tasks provides for BKWAG/WDEQ project work in 2011 and 2012 to include tasks as recommended during the April 7<sup>th</sup>, BKWAG meeting/discussions and is presented to serve as the scope of work for the sampling project. Dollar amounts for the estimated costs to complete the work are itemized following the listing of projects in a cost estimate table.

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**Scope of Work for Proposed BKWAG/SWCCD 2011-2012  
Sampling to Support WDEQ TMDL Development**

**Spring 2011 Sampling (Fiscal 2011)**  
**SWC1102**

- Task 1) Conduct 5 day geomean E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1. Conduct single sample inorganic SW sampling to include chloride and traditional suite at sites BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5.
- Task 2) Conduct opportunistic single sample grab samples for E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1 during high flows (dependent on lab availability). Conduct opportunistic single sample grab samples for chloride bacteria sampling at project sites: BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5 during high flows (dependent on lab availability).
- Task 3) Visit the following sites (and any others deemed appropriate) at least once each (same day as inorganic samples as possible) to record the presence or absence of flow, approximate amount of flow, general site conditions, and photograph: KC-3, KC-6, KC-4, KCS-4, KCS-5, BC-1, BC-3, BC-3a, LBC-1, BCS-3, BCS-4, BC-8, DHC-1, BC-5, SWC-1, BC-10, BC-11, BC-12, DM-1, TM-1, BC-13, BC-14, BC-15, and BC-7.
- Task 4) Install and monitor/download pressure transducers measuring continuous stage data at BC-2, BC-4, BC-9, (possibly BC-10 or BC-5), BC-6, KC-1, KC-2, and KC-5 and barometric pressure at Rock Springs and Point of Rocks. A total of ten transducers to be obtained from WDEQ and EDE for the project as possible (installation sites are subject to change slightly based on field fit for the best channel properties giving the most reliable flow/depth relationship). Survey/resurvey channel cross section and slope at all sites used and take flowmeter flow measurements as possible/necessary. Install staff gauge as necessary at all sites (number dependent on condition of existing staff gauges at BC-2,

BC-4, BC-5, BC-6, KC-1, and KC-2; at least 2 at sites BC-9 or BC-10 and KC-5). Derive/update flow/depth ratings at all sites using the survey data and computer flow/depth/slope modeling.

**Spring 2011 Project Work (Fiscal 2011)**  
**SWC1103**

- Task 1) Complete SAP for proposed 2011 and 2012 project sampling and reporting.
- Task 2) Initiate and continue contact with Bridger Coal Company, Black Butte Coal Company, and Rock Springs WWTP to obtain historic and contemporary Bitter Creek flow data and water quality records.
- Task 3) Maintain partnership with City of Rock Springs through correspondence and meetings to identify bacteria sources and aid in implementing BMPs.
- Task 4) Complete QA/QC for data collected for the SWCCD by EDE to date, and including spring 2011 data as applicable.
- Task 5) Provide general project support to include project contacts requested with City of Rock Springs, Reliance, Point of Rocks, Sweetwater County, DEQ, BLM, etc. Prepare a statement of purpose and benefit for the SWCCD to submit to local public entities and industry outlining the benefit of continued SWCCD involvement in the WDEQ TMDL development process. Explore possibility of funding contributions from local business/industry. Renew sampling access agreement with Anadarko for 2011 and 2012 so that sampling may be conducted at these sites as deemed necessary.
- Task 6) Complete stage/flow/parameter correlation for stage data collected for the SWCCD by EDE to date, and including spring 2011 data as applicable. Complete spring monitoring and data integrity reviews and status reporting per SAP.

**Spring 2011 Sampling Memorandum (Fiscal 2012)**  
**SWC1104**

- Task 1) Prepare a brief sampling and sampling results summary memorandum based on spring 2011 sampling for BKWAG/DEQ review and input. Provide recommendations, based on sampling results, for continued 2011 and 2012 project sampling.

**Fall 2011 Sampling and Reporting (Fiscal 2012)**  
**SWC1105**

- Task 1) Conduct 5 day geomean E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1. Conduct single sample inorganic SW sampling to include chloride and traditional suite at

- sites BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5. Consider additional sampling at other historic project sites in substitute for any of these sites which may be dry for the fall.
- Task 2) Conduct opportunistic single sample grab samples for E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1 during high flows (dependent on lab availability). Conduct opportunistic single sample grab samples for chloride bacteria sampling at project sites: BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5 during high flows (dependent on lab availability).
- Task 3) Visit the following sites (and any others deemed appropriate) at least once each (same day as inorganic samples as possible) to record the presence or absence of flow, approximate amount of flow, general site conditions, and photograph: KC-3, KC-6, KC-4, KCS-4, KCS-5, BC-3, BC-3a, LBC-1, BCS-3, BCS-4, BC-8, DHC-1, BC-5, SWC-1, BC-10, BC-11, BC-12, DM-1, TM-1, BC-13, BC-14, BC-15, and BC-7.
- Task 4) Continue monitoring/download of pressure transducers measuring continuous stage data at BC-2, BC-4, BC-9, (possibly BC-10 or BC-5), BC-6, KC-1, KC-2, and KC-5 and barometric pressure at Rock Springs and Point of Rocks. Take flowmeter flow measurements as possible/necessary.
- Task 5) Prepare a comprehensive 2011 sampling and sampling results summary report based on spring and fall 2011 sampling for BKWAG/DEQ review and input. Provide up to date reporting of continuous flow measurement at transducer sites and calculate E. coli and chloride flow loading for the 2011 spring and fall samples. Provide completed QA/QC for 2011 data. Provide recommendations, based on sampling results, for continued 2012 project sampling.

**Fall 2011 Project Work (Fiscal 2012)**  
**SWC1106**

- Task 1) Complete fall monitoring and data integrity reviews and status reporting per SAP. Continue contacts with Bridger Coal Company, Black Butte Coal Company, and Rock Springs WWTP to obtain historic and contemporary Bitter Creek flow data and water quality records. Continue partnership with City of Rock Springs through correspondence and meetings to identify bacteria sources and aid in implementing BMPs. Provide general project support to include project contacts requested with City of Rock Springs, Reliance, Point of Rocks, Sweetwater County, DEQ, BLM, etc.

**Spring 2012 Project Work (Fiscal 2012)**  
**SWC1201**

- Task 1) Prepare and present a project summary presentation at the annual BKWAG meeting in March.
- Task 2) Assess the proposed 2012 water quality sampling plan to further the project development and confirm/modify the sampling plan as necessary. Determine preferred placement for WDEQ ISCO automatic samplers in 2012. Modify SAP as appropriate.
- Task 3) Complete spring monitoring and data integrity reviews and status reporting per SAP. Continue to pursue project contacts with City of Rock Springs, Reliance, Point of Rocks, Sweetwater County, DEQ, BLM, etc. in order to share project information and refine conclusions on water quality results from 2011 sampling. General project support as conditions/needs dictate including meetings/conference calls.

**Spring 2012 Sampling (Fiscal 2012)**  
**SWC1202**

- Task 1) Conduct 5 day geomean E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1. Conduct single sample inorganic SW sampling to include chloride and traditional suite at sites BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5.
- Task 2) Conduct opportunistic single sample grab samples for E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1 during high flows (dependent on lab availability). Conduct opportunistic single sample grab samples for chloride bacteria sampling at project sites: BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5 during high flows (dependent on lab availability).
- Task 3) Visit the following sites (and any others deemed appropriate) at least once each (same day as inorganic samples as possible) to record the presence or absence of flow, approximate amount of flow, general site conditions, and photograph: KC-3, KC-6, KC-4, KCS-4, KCS-5, BC-3, BC-3a, LBC-1, BCS-3, BCS-4, BC-8, DHC-1, BC-5, SWC-1, BC-10, BC-11, BC-12, DM-1, TM-1, BC-13, BC-14, BC-15, and BC-7.
- Task 4) Continue to monitor/download pressure transducers measuring continuous stage data at BC-2, BC-4, BC-9, (possibly BC-10 or BC-5), BC-6, KC-1, KC-2, and KC-5 and barometric pressure at Rock Springs and Point of Rocks. Take flowmeter flow measurements as possible/necessary.
- Task 5) Install and monitor ISCO automatic samplers on loan from WDEQ to collect paired chloride/stage measurements at sites selected from 2011 monitoring, possibly at Rock Springs: KC-2, KC-5, a possible site downstream of KCS-5, KC-1, BC-2 and BC-9 and at

point of Rocks: TM-1, DM-1, BC-6 , BC-13, and BC-10. At this time propose 5 samplers and relocation between Rock Springs sites and Point of Rocks sites during spring/summer 2012.

**Spring 2012 Sampling Memorandum (Fiscal 2013)**  
**SWC1203**

- Task 1) Prepare a brief sampling and sampling results memorandum based on spring 2012 sampling for BKWAG/DEQ review and input. Provide recommendations, based on sampling results, for continued 2012 project sampling.

**Fall 2012 Sampling and Reporting (Fiscal 2013)**  
**SWC1204**

- Task 1) Conduct 5 day geomean E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1. Conduct single sample inorganic SW sampling to include chloride and traditional suite at sites BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5. Consider additional sampling at other historic project sites in substitute for any of these sites which may be dry for the fall.
- Task 2) Conduct opportunistic single sample grab samples for E. coli bacteria sampling at project legacy sites: BC-2, BC-4, BC-9, BC-6, and KC-1 during high flows (dependent on lab availability). Conduct opportunistic single sample grab samples for chloride bacteria sampling at project sites: BC-2, BC-4, BC-9, BC-6, KC-1, KC-2, and KC-5 during high flows (dependent on lab availability).
- Task 3) Visit the following sites (and any others deemed appropriate) at least once each (same day as inorganic samples as possible) to record the presence or absence of flow, approximate amount of flow, general site conditions, and photograph: KC-3, KC-6, KC-4, KCS-4, KCS-5, BC-3, BC-3a, LBC-1, BCS-3, BCS-4, BC-8, DHC-1, BC-5, SWC-1, BC-10, BC-11, BC-12, DM-1, TM-1, BC-13, BC-14, BC-15, and BC-7.
- Task 4) Continue to monitor/download pressure transducers measuring continuous stage data at BC-2, BC-4, BC-9, (possibly BC-10 or BC-5), BC-6, KC-1, KC-2, and KC-5 and barometric pressure at Rock Springs and Point of Rocks. Take flowmeter flow measurements as possible/necessary.
- Task 5) Install/monitor automatic samplers on loan from WDEQ to collect paired chloride/stage measurements at sites selected from 2011 monitoring, possibly at Rock Springs: KC-2, KC-5, a possible site downstream of KCS-5, KC-1, BC-2 and BC-9 and at point of Rocks: TM-1, DM-1, BC-6 , BC-13, and BC-10. At this time propose 5

samplers and relocation between Rock Springs sites and Point of Rocks sites during spring/summer 2012.

- Task 6) Prepare a comprehensive 2011 - 2012 sampling and sampling results project report based on spring and fall 2011 and 2012 sampling for BKWAG/DEQ review and input. Provide up to date reporting of continuous flow measurement at transducer and ISCO sites and calculate E. coli and chloride flow loading for the 2012 spring and fall samples. Provide completed QA/QC for 2012 data. Provide recommendations, based on sampling results, for any continued project sampling or for TMDL development/assignment.

**Fall 2012 Project Work (Fiscal 2013)**  
**SWC1205**

- Task 1) Complete fall monitoring and data integrity reviews and status reporting per SAP. Continue contacts with Bridger Coal Company, Black Butte Coal Company, and Rock Springs WWTP to obtain contemporary Bitter Creek flow data and water quality records. Continue partnership with City of Rock Springs through correspondence and meetings to identify bacteria sources and aid in implementing BMPs. Maintain project contacts requested, and as develop, with City of Rock Springs, Reliance, Point of Rocks, Sweetwater County, DEQ, BLM, etc. General project support as conditions/needs dictate including meetings/conference calls.

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**Cost Estimate for Proposed BKWAG/SWCCD 2011-2012  
Sampling to Support WDEQ TMDL Development**

EDE has prepared the following cost estimate to complete these 2011-2012 project tasks (outlined above) for the SWCCD. The SWCCD fiscal year noted beside the project name above indicates the timeframe in which the project is anticipated to be completed. Several of these project tasks overlap in information and data collection and EDE has attempted to prepare cost estimates with this in mind, only assessing the cost for overlapping work within one of the associated tasks. In the event that some or portions of the proposed work tasks are not accepted by the SWCCD it may be necessary to make some minor adjustments to the remaining task budgets where work overlap had been anticipated.

Several project tasks have been included that have lower priorities than others and can be removed from the proposal if budget constraints require it, though inclusion of these tasks would result in a better end product and was proposed during the April 7<sup>th</sup>, 2011 BKWAG meeting. Tasks having a high

priority that EDE anticipates a significant level of help/support from WDEQ for completion are those relating to the transducers to measure continuous stage and the ISCO automatic samplers. Additionally, help from WDEQ on any of the remaining tasks should be welcomed by the SWCCD.

For all monitoring/field work EDE attached a 10% contingency in order to provide consideration for weather delays, additional trips, equipment malfunctions, monitoring changes, lab delays, etc. which may occur and require more work hours and expenditures.

To estimate costs for installation and monitoring of the stage pressure transducers and automated samplers EDE assumed labor and monitoring would be shared by EDE and WDEQ. WDEQ has also pledged to provide transducers and automated samplers. It is likely some EDE cost proposed under these tasks will be reduced based on WDEQ help, but without more detail/planning at this time, it was felt prudent to prepare the cost estimate as is. Along these lines EDE budgeted 4 separate trips to collect samples from the automated samplers in 2012 (in addition to installation of the samplers) which may be reduced or unnecessary depending on WDEQ involvement. WDEQ aid may also be incorporated in ratings development, channel surveys, station installation, QA/QC and monitoring/data integrity checks per SAP requirements during the project, all of which could reduce hours EDE has budgeted into the cost estimate for these items, and reduce the overall project cost to SWCCD.

Cost estimate summaries for each of the 10 proposed project items are presented in tabular form in the following table. More detail of the derivation of these estimates is presented at the end of this document for each individual project.

EDE has scoped and estimated this project assuming a thorough level of reporting would be provided during the project with a final product report after fall 2012 with significant detail (more developed than the reporting that has been done during the recent 2006 – 2010 supplemental sampling). This requirement and budget should be revisited as project completion nears.

EDE feels it has anticipated work items and expenditures reasonably and correctly based on the information at hand (albeit with the conservatisms identified above), but welcomes BKWAG, SWCCD, and WDEQ input in refining project requirements and reducing as possible the overall project cost.

Note that as currently proposed project work requires funding for \$37,688 within SWCCD Fiscal 2011 (ending June 30<sup>th</sup>, 2011) (a portion of this is project work, QA/QC, etc. which could be extended into fiscal 2012), \$78,882 within SWCCD Fiscal 2012 (ending June 30<sup>th</sup>, 2012), and \$53,665 within SWCCD Fiscal 2013 (ending June 30<sup>th</sup>, 2013). Note that no work is scoped in this proposal for general project support including a 2013 BKWAG meeting, etc.

following completion of the monitoring summary report for the project at the end of 2012 or early 2013. Note also, that no monies are budgeted in this proposal for SWCCD project management responsibilities for this project which, as detailed previously, will be more involved than for recent supplemental sampling as directed within the project SAP. Of note, is that the consulting cost projected for this project in this proposal is on par with the consulting cost expended to complete the 2004-2005 319 study and report for the BKWAG.

Please review this proposal and contact EDE with questions, comments or concerns. EDE understands the cost of the work detailed herein is large and expects that a thorough discussion/review of project needs/expectations will be necessary between the involved parties throughout the project, to adjust the scope to meet the available funding. In order to begin 2011 monitoring in a timely/effective fashion EDE encourages all parties to provide any comment as soon as possible. As always, thank you for the opportunity to provide this proposal and continue working for SWCCD.

Respectfully,



Russell Hamilton, PE

**Cost Estimate by Project Code**

<b>SWC1102 - Spring 2011 Sampling Total</b>	<b>\$20,703</b>
<b>SWC1103 - Spring 2011 Project Work</b>	<b>\$16,965</b>
<b>SWC1104 - Spring 2011 Sampling Reporting</b>	<b>\$3,888</b>
<b>SWC1105 - Fall 2011 Sampling and Reporting</b>	<b>\$23,979</b>
<b>SCW1106 - Fall 2011 Project Work</b>	<b>\$4,986</b>
<b>SWC1201 - Spring 2012 Project Work</b>	<b>\$15,162</b>
<b>SWC1202 - Spring 2012 Sampling</b>	<b>\$30,867</b>
<b>SWC1203 - Spring 2012 Sampling Reporting</b>	<b>\$3,888</b>
<b>SWC1204 - Fall 2012 Sampling and Reporting</b>	<b>\$44,089</b>
<b>SWC1205 - Fall 2012 Project Work</b>	<b>\$5,688</b>

### Cost Estimate by Task

<b>SWC1102 - Spring 2011 Sampling</b>	<b>Fiscal 2011</b>	<b>Priority</b>
Task 1: 5-day Bacteria and Inorganic	\$8,974	High
Task 2: High Flow Bacteria/Chloride Grab	\$3,920	Medium
Task 3: Comprehensive Project Site Visit	\$865	Low
Task 4: Transducer Installation and Monitoring	\$6,944	High
<b>Total</b>	<b>\$20,703</b>	
<b>SWC1103 - Spring 2011 Project Work</b>	<b>Fiscal 2011</b>	
Task 1: 2011-2012 SAP	\$2,088	High
Task 2: Industry Contacts - SW flow/quality	\$1,908	Medium
Task 3: Rock Springs meetings and BMPs	\$2,106	Medium
Task 4: QA/QC up to 2011	\$4,104	High
Task 5: Requested Project Support	\$2,250	High
Task 6: Stage/Flow/Parameter up to 2011	\$4,509	High
<b>Total</b>	<b>\$16,965</b>	
<b>SWC1104 - Spring 2011 Sampling Memorandum</b>	<b>Fiscal 2012</b>	
Task 1: Spring Sampling Summary	\$3,888	Medium
<b>Total</b>	<b>\$3,888</b>	
<b>SWC1105 - Fall 2011 Sampling and Reporting</b>	<b>Fiscal 2012</b>	
Task 1: 5-day Bacteria and Inorganic	\$8,094	High
Task 2: High Flow Bacteria/Chloride Grab	\$3,920	Medium
Task 3: Comprehensive Project Site Visit	\$865	Low
Task 4: Transducer download/storage/review	\$2,000	High
Task 5: 2011 Sampling Report	\$9,100	High
<b>Total</b>	<b>\$23,979</b>	
<b>SCW1106 - Fall 2011 Project Work</b>	<b>Fiscal 2012</b>	
Task 1: General Project Support	\$4,986	High
<b>Total</b>	<b>\$4,986</b>	
<b>SWC1201 - Spring 2012 Project Work</b>	<b>Fiscal 2012</b>	
Task 1: BkWAG Compilation and Presentation	\$6,954	High
Task 2: Assess 2012 Monitoring Plan/ISCO Sites	\$3,222	High
Task 3: General Project Support	\$4,986	High
<b>Total</b>	<b>\$15,162</b>	
<b>SWC1202 - Spring 2012 Sampling</b>	<b>Fiscal 2012</b>	
Task 1: 5-day Bacteria and Inorganic	\$8,094	High
Task 2: High Flow Bacteria/Chloride Grab	\$3,920	Medium
Task 3: Comprehensive Project Site Visit	\$865	Low
Task 4: Transducer download/storage/review	\$5,213	High
Task 5: ISCO Installation and Monitoring	\$12,775	High
<b>Total</b>	<b>\$30,867</b>	
<b>SWC1203 - Spring 2012 Sampling Reporting</b>	<b>Fiscal 2013</b>	
Task 1: Spring Sampling Summary	\$3,888	Medium
<b>Total</b>	<b>\$3,888</b>	
<b>SWC1204 - Fall 2012 Sampling and Reporting</b>	<b>Fiscal 2013</b>	
Task 1: 5-day Bacteria and Inorganic	\$8,094	High
Task 2: High Flow Bacteria/Chloride Grab	\$3,920	Medium
Task 3: Comprehensive Project Site Visit	\$865	Low
Task 4: Transducer download/storage/review	\$5,213	High
Task 5: ISCO Installation and Monitoring	\$12,775	High
Task 6: 2012 Sampling Report	\$13,222	High
<b>Total</b>	<b>\$44,089</b>	
<b>SWC1205 - Fall 2012 Project Work</b>	<b>Fiscal 2013</b>	
Task 1: General Project Support	\$5,688	High
<b>Total</b>	<b>\$5,688</b>	

### Cost Estimates by Unit Cost

Project/Task	Unit	Cost
<b>SWC1102 - Spring 2011 Sampling</b>		
<b>Task 1</b>		
Bacteria Analytical (Wy. Analytical) (35 samples)	\$45	\$1,575
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$870
Technician	\$63	\$3,528
Mileage Hwy.	\$0.7	\$770
Mileage off road	\$1	\$25
materials (marker posts, staff gauges, as needed)	\$800	\$800
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$8,158</b>
	<b>10% contingency</b>	<b>\$816</b>
	<b>Total</b>	<b>\$8,974</b>
<b>Task 2</b>		
Bacteria Analytical (Wy. Analytical) (7 samples)	\$45	\$315
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$290
Technician	\$63	\$1,764
Mileage Hwy.	\$0.7	\$595
Mileage off road	\$1	\$10
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$3,564</b>
	<b>10% contingency</b>	<b>\$356</b>
	<b>Total</b>	<b>\$3,920</b>
<b>Task 3</b>		
Technician	\$63	\$630
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$100
	<b>Subtotal</b>	<b>\$786</b>
	<b>10% contingency</b>	<b>\$79</b>
	<b>Total</b>	<b>\$865</b>
<b>Task 4</b>		
Per Diem	\$145	\$435
Technician	\$63	\$2,016
Engineer/Hydrologist	\$99	\$1,584
Project Management	\$126	\$504
Mileage Hwy.	\$0.7	\$714
Mileage off road	\$1	\$60
materials containers, cables, locks, etc.)	\$1,000	\$1,000
	<b>Subtotal</b>	<b>\$6,313</b>
	<b>10% contingency</b>	<b>\$631</b>
	<b>Total</b>	<b>\$6,944</b>
<b>SWC1102 - Spring 2011 Sampling Total</b>		<b>\$20,703</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1103 - Spring 2011 Project Work</b>		
Task 1	Technician	\$63
	Engineer/Hydrologist	\$99
	Project Management	\$126
	<b>Total</b>	<b>\$2,088</b>
Task 2	Technician	\$63
	Engineer/Hydrologist	\$99
	Project Management	\$126
	<b>Total</b>	<b>\$1,908</b>
Task 3	Technician	\$63
	Engineer/Hydrologist	\$99
	Project Management	\$126
	<b>Total</b>	<b>\$2,106</b>
Task 4	Technician	\$63
	Engineer/Hydrologist	\$99
	<b>Total</b>	<b>\$4,104</b>
Task 5	Technician	\$63
	Engineer/Hydrologist	\$99
	<b>Total</b>	<b>\$2,250</b>
Task 6	Technician	\$63
	Engineer/Hydrologist	\$99
	<b>Total</b>	<b>\$4,509</b>
<b>SWC1103 - Spring 2011 Project Work</b>		<b>\$16,965</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1104 - Spring 2011 Sampling Memorandum</b>		
Task 1	Technician	\$63
	Engineer/Hydrologist	\$99
	Project Management	\$126
	<b>Total</b>	<b>\$3,888</b>
<b>SWC1104 - Spring 2011 Sampling Memorandum</b>		<b>\$3,888</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1105 - Fall 2011 Sampling and Reporting</b>		
<b>Task 1</b>		
Bacteria Analytical (Wy. Analytical) (35 samples)	\$45	\$1,575
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$870
Technician	\$63	\$3,528
Mileage Hwy.	\$0.7	\$770
Mileage off road	\$1	\$25
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$7,358</b>
	<b>10% contingency</b>	<b>\$736</b>
	<b>Total</b>	<b>\$8,094</b>
<b>Task 2</b>		
Bacteria Analytical (Wy. Analytical) (7 samples)	\$45	\$315
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$290
Technician	\$63	\$1,764
Mileage Hwy.	\$0.7	\$595
Mileage off road	\$1	\$10
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$3,564</b>
	<b>10% contingency</b>	<b>\$356</b>
	<b>Total</b>	<b>\$3,920</b>
<b>Task 3</b>		
Technician	\$63	\$630
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$100
	<b>Subtotal</b>	<b>\$786</b>
	<b>10% contingency</b>	<b>\$79</b>
	<b>Total</b>	<b>\$865</b>
<b>Task 4</b>		
Per Diem	\$145	\$0
Technician	\$63	\$630
Engineer/Hydrologist	\$99	\$1,188
Mileage Hwy.	\$0.7	\$0
Mileage off road	\$1	\$0
	<b>Subtotal</b>	<b>\$1,818</b>
	<b>10% contingency</b>	<b>\$182</b>
	<b>Total</b>	<b>\$2,000</b>
<b>Task 5</b>		
Technician	\$63	\$3,780
Engineer/Hydrologist	\$99	\$3,960
Project Management	\$126	\$1,260
Materials (check prints)	\$100	\$100
	<b>Total</b>	<b>\$9,100</b>
<b>SWC1105 - Fall 2011 Sampling and Reporting</b>		<b>\$23,979</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SCW1106 - Fall 2011 Project Work</b>		
Task 1		
Technician	\$63	\$1,512
Engineer/Hydrologist	\$99	\$2,970
Project Management	\$126	\$504
<b>Total</b>		<b>\$4,986</b>
<b>SCW1106 - Fall 2011 Project Work</b>		<b>\$4,986</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1201 - Spring 2012 Project Work</b>		
Task 1		
Per Diem	\$145	\$290
Technician	\$63	\$2,772
Engineer/Hydrologist	\$99	\$2,772
Project Management	\$126	\$630
Mileage Hwy.	\$0.7	\$490
<b>Total</b>		<b>\$6,954</b>
Task 2		
Technician	\$63	\$1,134
Engineer/Hydrologist	\$99	\$1,584
Project Management	\$126	\$504
<b>Total</b>		<b>\$3,222</b>
Task 3		
Technician	\$63	\$1,512
Engineer/Hydrologist	\$99	\$2,970
Project Management	\$126	\$504
<b>Total</b>		<b>\$4,986</b>
<b>SWC1201 - Spring 2012 Project Work</b>		<b>\$15,162</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1202 - Spring 2012 Sampling</b>		
<b>Task 1</b>		
Bacteria Analytical (Wy. Analytical) (35 samples)	\$45	\$1,575
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$870
Technician	\$63	\$3,528
Mileage Hwy.	\$0.7	\$770
Mileage off road	\$1	\$25
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$7,358</b>
	<b>10% contingency</b>	<b>\$736</b>
	<b>Total</b>	<b>\$8,094</b>
<b>Task 2</b>		
Bacteria Analytical (Wy. Analytical) (7 samples)	\$45	\$315
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$290
Technician	\$63	\$1,764
Mileage Hwy.	\$0.7	\$595
Mileage off road	\$1	\$10
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$3,564</b>
	<b>10% contingency</b>	<b>\$356</b>
	<b>Total</b>	<b>\$3,920</b>
<b>Task 3</b>		
Technician	\$63	\$630
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$100
	<b>Subtotal</b>	<b>\$786</b>
	<b>10% contingency</b>	<b>\$79</b>
	<b>Total</b>	<b>\$865</b>
<b>Task 4</b>		
Per Diem	\$145	\$145
Technician	\$63	\$2,142
Engineer/Hydrologist	\$99	\$2,376
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$20
	<b>Subtotal</b>	<b>\$4,739</b>
	<b>10% contingency</b>	<b>\$474</b>
	<b>Total</b>	<b>\$5,213</b>
<b>Task 5</b>		
Per Diem	\$145	\$1,305
Technician	\$63	\$6,048
Engineer/Hydrologist	\$99	\$2,376
Mileage Hwy.	\$0.7	\$1,715
Mileage off road	\$1	\$70
Shipping	\$50	\$100
	<b>Subtotal</b>	<b>\$11,614</b>
	<b>10% contingency</b>	<b>\$1,161</b>
	<b>Total</b>	<b>\$12,775</b>
<b>SWC1202 - Spring 2012 Sampling</b>		<b>\$30,867</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1204 - Fall 2012 Sampling and Reporting</b>		
<b>Task 1</b>		
Bacteria Analytical (Wy. Analytical) (35 samples)	\$45	\$1,575
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$870
Technician	\$63	\$3,528
Mileage Hwy.	\$0.7	\$770
Mileage off road	\$1	\$25
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$7,358</b>
	<b>10% contingency</b>	<b>\$736</b>
	<b>Total</b>	<b>\$8,094</b>
<b>Task 2</b>		
Bacteria Analytical (Wy. Analytical) (7 samples)	\$45	\$315
Inorganic Analytical (Wy. Ag. Lab), (9 samples)	\$60	\$540
Per Diem	\$145	\$290
Technician	\$63	\$1,764
Mileage Hwy.	\$0.7	\$595
Mileage off road	\$1	\$10
Shipping	\$50	\$50
	<b>Subtotal</b>	<b>\$3,564</b>
	<b>10% contingency</b>	<b>\$356</b>
	<b>Total</b>	<b>\$3,920</b>
<b>Task 3</b>		
Technician	\$63	\$630
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$100
	<b>Subtotal</b>	<b>\$786</b>
	<b>10% contingency</b>	<b>\$79</b>
	<b>Total</b>	<b>\$865</b>
<b>Task 4</b>		
Per Diem	\$145	\$145
Technician	\$63	\$2,142
Engineer/Hydrologist	\$99	\$2,376
Mileage Hwy.	\$0.7	\$56
Mileage off road	\$1	\$20
	<b>Subtotal</b>	<b>\$4,739</b>
	<b>10% contingency</b>	<b>\$474</b>
	<b>Total</b>	<b>\$5,213</b>
<b>Task 5</b>		
Per Diem	\$145	\$1,305
Technician	\$63	\$6,048
Engineer/Hydrologist	\$99	\$2,376
Mileage Hwy.	\$0.7	\$1,715
Mileage off road	\$1	\$70
Shipping	\$50	\$100
	<b>Subtotal</b>	<b>\$11,614</b>
	<b>10% contingency</b>	<b>\$1,161</b>
	<b>Total</b>	<b>\$12,775</b>
<b>Task 6</b>		
Technician	\$63	\$5,670
Engineer/Hydrologist	\$99	\$5,940
Project Management	\$126	\$1,512
Materials (check prints)	\$100	\$100
	<b>Total</b>	<b>\$13,222</b>
<b>SWC1204 - Fall 2012 Sampling and Reporting</b>		<b>\$44,089</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1203 - Spring 2012 Sampling Memorandum</b>		
Task 1		
Technician	\$63	\$1,008
Engineer/Hydrologist	\$99	\$2,376
Project Management	\$126	\$504
<b>Total</b>		<b>\$3,888</b>
<b>SWC1203 - Spring 2012 Sampling Memorandum</b>		<b>\$3,888</b>

<b>Project/Task</b>	<b>Unit</b>	<b>Cost</b>
<b>SWC1205 - Fall 2012 Project Work</b>		
Task 1		
Technician	\$63	\$1,764
Engineer/Hydrologist	\$99	\$3,168
Project Management	\$126	\$756
<b>Total</b>		<b>\$5,688</b>
<b>SWC1205 - Fall 2012 Project Work</b>		<b>\$5,688</b>