Barr Milton Watershed Proposal

Reviewer

Proposal for Solicitation Number
RO-WQC04018

Submitted to:
Colorado Department of Public Health & Environment
4300 Cherry Creek Drive So, A-4
Denver, CO 80246-1530

Prepared by:

EnviroGroup Limited

7208 South Tucson Way, Suite 125
Englewood, Colorado 80112
(303) 790-1340 Phone
(303) 790-1347 FAX
tliebert@envirogroup.com

September 12, 2003

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I. Executive Summary

Addressing water quality via watershed stakeholders group is an increasingly common practice in the United States increasing the awareness and interactions between regulators and community participants. The success of a stakeholders group depends upon the active involvement of all of the stakeholders and the exchange of information and knowledge between participants. EnviroGroup Limited (EnviroGroup) understands the purpose of this project is to *develop a greater understanding of the Barr Lake and Milton Reservoir watershed relating to water quality standards and use classifications.* Our proposal, in conjunction with the project Facilitator, will produce an active and participatory group of stakeholders in the watershed. Our data-centric approach to communication within groups comprised of differing levels of technical knowledge has proven successful on other projects, and our understanding of the collaborative process will prove valuable.

EnviroGroup provides a full range of environmental consulting services to clients in Colorado and across North America. Based in Englewood, Colorado, our staff is experienced in water quality and watershed issues, as well as collaborative process decision making and group facilitation. The individuals we propose for this project are respected in their fields and excellent communicators.

The RFP sets out a series of core deliverables designed to produce a credible and inclusive water quality database for the watershed, supporting the development of an active and interested watershed stakeholders group. EnviroGroup has set forth a comprehensive plan to accomplish these goals, by not just meeting the requirements of the RFP, but adding to them. Our GIS and environmental data management experience coupled with experience on high profile, collaborative process projects have demonstrated success with difficult issues, and we look forward to applying these skills with the Barr Milton Watershed stakeholders group.

Our study approach is threefold:

First, we will use a modified Map-Based Stream Narrative[1] approach to engage stakeholders and increase trust between laypersons and watershed specialists. We will also use GIS on a laptop computer to invite inspection of the available water quality data, informing and engaging the stakeholders group.

Second, our expertise in environmental data management techniques will allow us to assemble an efficient, effective, and credible database of water quality data. We will leverage the database with our experience in water quality to provide thoughtful and professional technical review and analysis.

Finally, EnviroGroup's senior water resources professionals will utilize their excellent technical communications abilities to provide meeting progress reports, semi-annual progress reports, draft technical reports, and a final project report that are adhere to our high professional standards. Deliverables will be on-time and within budget.

[1] Johannes, Mark 2002. "Assembly of Map-Based Stream Narratives to Facilitate Stakeholder Involvement in Watershed Management", JAWRA 38:2, pp 555-562, April 2002. A copy of this paper is attached to this proposal.

II. Company Overview

EnviroGroup Limited is a full service environmental consulting firm, providing experienced and personal service to industrial, natural resource, state agency and commercial clients across North America and Europe. Our staff includes environmental, civil, geotechnical and chemical engineers, geologists, hydrologists and geochemists, and regulatory and GIS specialists with over 15 years average experience. Our services include site assessments, environmental management system development, CERCLA and RCRA investigation, design and implementation, and permitting and remediation. EnviroGroup was incorporated in 1991 and is headquartered in Englewood, Colorado with satellite offices in Boston and Seattle.

EnviroGroup is very familiar with the geologic and hydrogeologic conditions of the Front Range area, based on work at the Redfield Site, Asarco Globe Plant Site, Scott's Liquid Gold site, Rocky Flats Industrial Park NPL site, the PSCo Leyden Underground Gas Storage Facility, and other natural resource and industrial sites throughout Colorado. EnviroGroup has investigated these and other sites with solvent and metals contamination and has used a number of source identification and fingerprinting techniques successfully, including use of parent and daughter compound ratios, degradation rates, and indicator compounds. EnviroGroup has implemented groundwater, surface water, and soil remediation remedies at a large number of sites, including industrial facilities, mining and metals sites, and petroleum facilities. We are experienced with intrinsic bioremediation, vapor extraction, dual phase extraction, a variety of hydraulic control techniques, and permeable reactive barriers. EnviroGroup has evaluated solvent sources, migration rates, time of release assessments, natural attenuation, and engineered groundwater remediation systems. Source identification is important to ensure that pathways are properly understood, a necessary step for predicting future fate and transport of contaminants. Engineered groundwater remediation systems are evaluated to select the system that provides the most appropriate solution for the site conditions and plume characteristics (e.g., French drain, extraction and injection wells, *in-situ* bioremediation). EnviroGroup is also very familiar with Colorado water quality and quantity law and practice due to our long term presence in the Denver area and Clean Water Act experience.

EnviroGroup has experience on several high profile sites, working closely with clients, regulatory agencies, and communities to investigate and address complex multimedia impacts. We have the skills and database tools necessary to deal with large volumes of data, ensuring data quality, retrieval, and usability. Because many of our projects involve interaction with large numbers of community members, we have considerable experience in community relations, including public meetings and presentations, preparation of posters and easy to understand graphics, and development of websites to disseminate project information. On all projects, we work closely together and with our clients.

Although EnviroGroup has performed work for several of the potential project stakeholders listed in the RFP, no conflicts of interest are foreseen for EnviroGroup nor any individuals proposed to work on this contract. All proposed project team members are named in this proposal, and project personnel will not be switched or substituted. Brief biographies of the principal project team members are provided in section VII. More detailed resumes are included in Appendix A.

III. Relevant Experience

EnviroGroup Limited has advised numerous clients on data quality objectives, database management and water shed issues.

Wyoming Department of Environmental Quality – Former BP Refinery, Casper

EnviroGroup is part of a team of consultants advising WDEQ on groundwater, surface water, and soil contamination issues at a former refinery in Wyoming, including data adequacy, data objectives, and data management matters.

Primary Contact	Secondary Contact

EnviroGroup has billed approximately $525,000 over three years as a subcontractor. The project is ongoing and based on time and materials on an as-needed basis. Tasks have been completed on-time and within budget constraints.

ASARCO Globe Plant

EnviroGroup has represented ASARCO Globe Plant smelter in Denver for over 10 years as the primary consultant for multimedia investigations and cleanup at the ASARCO Globe Plant, including evaluation of impacts on the South Platte Coalition of Urban River Evaluation and attended frequent stakeholder meetings, TMDL issues, and data management using Access and GIS tools, including over 20,000 sample records.

Primary Contact	Secondary Contact

This project is ongoing and EnviroGroup has billed approximately __ over 12 years. Tasks have been completed on-time and within budget constraints. The work has been conducted on a time and materials basis, meeting all annual cost projections and Consent Order schedules within EnviroGroup's control.

Redfield Site Litigation

EnviroGroup has been the primary consultant for the investigation and mitigation of indoor air, groundwater, soil, and surface water impacts related to historic solvent releases at a former manufacturing plant in Denver. Large quantities of data are managed through a custom designed GIS/Access database.

Primary Contact	Secondary Contact

This project is ongoing, and EnviroGroup has several million dollars over five years. The contract is based on time and materials on an as-needed basis. Tasks have been completed on-time and within budget constraints.

IV. Relevant Technical Experience

Multiple previous and current EnviroGroup projects serve to illustrate our understanding and expertise of both Colorado water quality issues and collaborative decision making environments. Selected examples include:

Former BP Refinery RFI Collaborative Process

The environmental closure of corrective action at the former Amoco Refinery in Casper, Wyoming had stalled in federal court when a property Reuse Agreement with the community was reached and a streamlined regulatory cleanup process was established. While employed by another company, Tom Liebert lead a year-long GIS programming effort starting in August 2000 to facilitate decision making during the accelerated schedule RFI process. The resultant GIS-based Decision Support System played a significant role in the Collaborative Process, culminating with the signing the Remedy Agreements in the fall of 2001. EnviroGroup was extensively involved in the collaborative process, including participation at monthly facilitated meetings between BP, WDEQ, EPA, Fish and Wildlife, the City of Casper, and interested community members, providing its expertise in environmental remediation and mitigation systems to the project through the Wyoming Department of Environmental Quality.

Redfield Site

As part of the largest vapor intrusion investigation and remediation project in the U.S., residents allege a solvent plume in groundwater has damaged the use and resale of their homes and subjected them to potential health risks. Working for the defendants, EnviroGroup is pioneering new ways to screen out vapor intrusion sites, providing accurate and efficient testing of both groundwater and indoor air, designing and implementing cost-effective mitigation systems, and winning community support through public meetings and presentations, a project website, and one-on-one interactions with community members. We have developed an integrated GIS-database application to quickly query several years of analytical water and air data along with property information and post data onto thematic maps on a laptop computer. Risk-based data summaries are displayed with physical parameters such as historical groundwater elevations. The intuitive interface is designed to be used as a real-time evaluation tool, allowing rapid visualization of data and access to specific information for a variety of purposes, including litigation.

Republican River Interstate Compact Water Rights Litigation

EnviroGroup staff headed the GIS consulting effort assisting Colorado DWR and the Colorado Attorney General's Office in a vigorous defense protecting the interests of the state and Colorado water users before the United States Supreme Court, including creation and maintenance of the project hydrologic database and GIS system, production of maps and exhibits, and a satellite land use/land cover study and irrigated acreage determination for the 8,000 mi^2 river basin. A settlement was reached in November, 2002.

ASARCO Globe Plant

EnviroGroup has consulted at the Globe Plant Site for more than 12 years. Frequent communication with community members, elected officials, regulatory agencies and other key stakeholders was essential due to the site's high profile. Recently EnviroGroup represented Asarco on the South Platte Coalition for Urban River Evaluation, an active stakeholder group that works cooperatively with regulators to develop effective modeling and sampling techniques designed to better understand the water quality of the South Platte River.

V. Project Approach

EnviroGroup's proposed project approach is collaborative in nature and incorporates efficient and modern environmental data management techniques with a unique state of the art, map-based approach to conducting collaborative decision making in a multi-stakeholder watershed environment. Our project approach reflects our experience in high-profile, collaborative process environmental projects. EnviroGroup will be represented at each of the watershed stakeholders meetings to report on project progress and be available for questions on the watershed water quality information.

Task 1: Assemble the project data

All known, pertinent water quality data for the project area provided by CDPHE and watershed stakeholders will be manipulated into an MS Access based project database. Water quality records, tables and relationships will be structured generally and according to EPA's STORET architecture so that conversion to this and alternative formats and software applications can be performed with a minimum of effort later.

The database will be available to the stakeholders group meetings on a laptop after the second meeting, and the facilitator will be encouraged to utilize this resource when exploring technical questions during the meetings. Stakeholders will be encouraged to identify additional sources of, and contribute their own, water quality data to the database by delivering data to the EnviroGroup representative at the meetings.

As additional water quality data are identified, EnviroGroup will estimate the level of effort needed to input those data into the project database and prioritize them. A limited number of hours are available for this task, and it is not expected that any hardcopy (paper) data or scanned data will be hand entered into the database. EnviroGroup will not purchase data or access to data in this scope of work. However, data made available to EnviroGroup electronically in data files, spreadsheets, or other database formats will be manipulated into and recorded in the project database. Data sources will be recorded and stored in the database.

The project database will be stored at EnviroGroup's office in Englewood, and will be secured by industry standard data QA/QC protocols and regular computer backups, including off-site archives.

Task 2: Modified Map-Based Stream Narrative Approach

The stream narrative approach (Johannes, et al. 2002) is a tool designed to solicit multi-disciplinary inputs in the diverse stakeholder environment of watershed management. The approach promotes active involvement of those stakeholders who might otherwise be excluded from the process or intimidated by the highly technical scientific and regulatory watershed management process. This will serve to tap into the wealth of undocumented information and observations known to long-time residents and water users in the watershed.

EnviroGroup will use the map-based narrative concept by producing a large map of the project area to be presented at the first stakeholders meeting. This project map will serve as an initial discussion tool to prompt input from stakeholder meeting participants. Geographic information to be displayed on the map will include:

- Aerial photography or satellite imagery
- Surficial hydrologic features such as streams, ditches, and impoundments.
- Anthropogenic geographical features, such as major roads and political boundaries.
- Identified water quality monitoring locations and other hydrologic and environmental data collection points.

Informal comments on the map's content will be recorded by EnviroGroup at the stakeholders meetings, and a revised map will be produced reflecting additional information, changes, or corrections for display at subsequent meetings as needed.

As the project map changes and the stakeholders group begins to mature, information from specific communities and groups will be prompted for display on the map. The facilitator might ask that certain ideas or non-geographic data be pasted onto the map to acknowledge a special concern. For instance, photographs showing historical wildlife habitat, or changing land use might be pasted onto the map. Future study areas and monitoring locations will be identified.

As the Facilitator sees fit, some criteria might be outlined for information inclusion, and access to the map will be through the stakeholders group, which will be left with the group at the conclusion of EnviroGroup's involvement. In this manner, the project map will evolve into a graphical record of the stakeholder group's interests, concerns and decisions. The project map will reflect the narrative of the group and exhibit the varying levels of information, experience and expertise of the group.

Task 3: Geographic Information System (GIS) Portal to the Project Database

A powerful tool in multi-party decision making is access to decision-making information. Often stakeholders feel that the project data are being shielded from them by arrogant scientific experts, and a perceived lack of communication or consideration of other opinions can sabotage participation in the collaborative process. It is our experience at EnviroGroup that empowering the entire group with unencumbered access to the project data generally rewards the collaborative process with trust and respect for the scientific experts. Opening the project database to all participants may require some extra effort educating participants who are less knowledgeable in environmental science and regulatory requirements, however, participation almost always increases from individuals normally alienated in the regulatory process.

EnviroGroup will produce a simple GIS 'project' or workspace with basic hydrologic and anthropomorphic information. Points where water quality information is contained in the database will be generally located and identified in the GIS (EnviroGroup will not survey or GPS locate any features – monitoring data without geographic coordinate information will be identified and placed by pointing to the project map in the stakeholder meetings). A simple data link will be established in the GIS workspace to allow the GIS user to click on a monitoring location and have the corresponding water quality data in the database queried and displayed in table format. Although the commercial GIS software required to use this functionality will not be delivered, EnviroGroup is capable of producing this deliverable in several commonly used and industry standard GIS applications (ESRI ArcView 3.x, ESRI ArcMap 8.x, or MapInfo 6.5). The specific GIS platform used will be

decided in the stakeholder group meetings to provide the most widespread compatibility with stakeholders' preferences.

This simple point-and-click access to the project database will be available in the stakeholder meetings on a laptop computer, and the will be delivered as a GIS 'project file' at the conclusion of the project.

Task 4: Data Adequacy Review & Report

A review of the project data will be undertaken after all stakeholder-identified data sources are explored. The data review will incorporate spatial and temporal adequacy as well as data usability. Information sensitivity will be addressed, incorporating EnviroGroup's experience in watershed science to identify possible surrogate and indicator data as well as gaps in information. EnviroGroup understands that practical solutions to the environmental, regulatory, and social issues raised by the stakeholders group are sought. A Draft Technical Report, citing sources of existing data, will detail specific data needs and outline sampling methodologies sufficient to fill these gaps. Recommendations for additional monitoring and study or improvements to existing monitoring efforts will be made while referencing appropriate Quality Assurance Protocols.

Task 5: Modeling Approaches Review & Report

A draft technical report evaluating water quality modeling approaches and tools available and appropriate to Barr Lake and Milton Reservoir will be produced. The report and its recommendations will be presented to the stakeholders group and a consensus sought for future watershed modeling. The draft modeling approaches report will be incorporated into the Final Project Report detailing the modeling approach evaluation, group conclusions and will contain an outline of available and recommended approaches in sufficient detail for scoping and cost estimating future project stages.

Progress Reporting and Project Deliverables

Effective and timely communication of project activities and progress is of paramount importance in an open, collaborative environment. EnviroGroup considers the stakeholders group itself a 'Client of Interest' and will develop a communicative and open relationship with the group as well as the Facilitator and CDPHE.

Brief oral and written progress reports will be presented at each of the group stakeholders meetings, and a representative will be available for informal conversations during the meetings, as well as for several smaller review meetings. The project map and initial versions of database will be made available at each of the stakeholder meetings. These tools may be used either in the facilitation process or in a more informal manner.

Three Semi-Annual Progress Reports, a Draft Technical Report, a Final Project Report, and Executive Summary designed for public outreach will be produced in cooperation with the project Facilitator with drafts to be reviewed by CDPHE. 65 black and white copies of the Semi-Annual Progress Reports, each less than 10 pages, will be produced for the participants. All reports will be made available electronically to all participants, and will be suitable for printing if funded by CDPHE. A single copy of the final Project Map will be produced, and the Project Database and all supporting electronic files will be made available to CDPHE on CD-ROM.

VII. Proposed Staffing

We have assembled a project team that can develop the Barr Milton Watershed Data Reviewer role in a comprehensive, cost-effective manner. The project will be led by Paul Arell, a Senior Engineer with an impressive career in watershed sciences. Mr. Arell will have overall responsibility for the watershed data review and all project deliverables. Tom Liebert has over 11 years of experience in water resources consulting and environmental data management, and will serve as GIS/Database Manager. Three EnviroGroup scientists — Allen Kent, Jack Gardner and JoLynn Tolle— will serve as Data Coordinators to facilitate data gathering and database creation and assimilation of these data into the GIS data layers and database products. Ms. Suzanne Gabriele will oversee project Quality Assurance. Resumes of all proposed project staff are attached.

Mr. Paul Arell

Mr. Arell is a Registered Professional Engineer and Diplomate of the American Academy of Environmental Engineers (Water and Wastewater) with over 30 years of environmental experience ranging from water quality pollution control, to Superfund, to RCRA hazardous waste corrective action. under RCRA. While working at EPA Region VIII Mr. Arell served as project officer on six Section 208 areawide water quality planning projects in the state of Utah. This assignment involved assessing the significance of nonpoint sources, developing BMPs for urban and agricultural runoff, developing water quality standard recommendations, providing technical assistance to local agencies, and ensuring effective public participation in the planning processes. Mr. Arell has written NPDES permits, enforced NPDES permits, planned wastewater treatment facilities, provided CWA grants to municipalities, and managed both the CERCLA and RCRA cleanup programs. Mr. Arell is trained as a facilitator and has participated for nine months in the Denver Community Leadership Forum, a developmental program at the University of Colorado based on a collaborative problem solving model. Mr. Arell has testified before the Colorado Water Quality Control Commission. Mr. Arell has extensive experience in leading disparate groups toward collaborative agreements resulting in negotiated settlements, work plans, and administrative orders. Mr. Arell has provided assistance to a state developing a voluntary cleanup program. He managed the NPDES compliance monitoring and enforcement program across six states, including site inspections and review of discharge monitoring reports to ensure permit compliance.

Mr. Thomas Liebert

Mr. Liebert has provided hydrologic and environmental data management, including GIS, services to federal, state, and private clients throughout the U.S, utilizing his multidisciplinary training as a geographer to build consensus among project stakeholders though innovative methods of data management, access and analysis. His involvement of stakeholders in software scope definitions and dissemination of information to scientists, regulators, courts and the public have resulted in greater understanding of complex hydrologic, environmental and geostatistical analyses. He has used GIS to define data usability, assess data adequacy and define areas requiring further characterization. Additionally, he has used GIS in public information meetings to convey the scope and goals of projects, display the data, and demonstrate data adequacy and uncertainty. Several of Mr. Liebert's recent projects are similar in nature to this proposal, for diverse clients including the Colorado Department of Water Resources, Tampa Bay Water, Texas Water Development Board, and the Wyoming Department of Environmental Quality.

VIII. Financial Status

EnviroGroup is a full services environmental consulting firm that has on-going contractual obligations with several clients. However, we do not view any of these contractual obligations to be in conflict with or in any way limit our ability to perform the conditions of the contract on this project.

EnviroGroup is financially sound and is not involved in bankruptcy proceedings.

Existing contractual agreements that EnviroGroup has in place and where proposed project team members have significant involvement are as follows:

- Redfield Rifle Scope – EnviroGroup is the primary consultant for Brown Group Retail, Inc. on the Redfield Site. EnviroGroup's GIS Specialists and GIS/Database Manager provide technical GIS and database services for this project. These individuals currently spend about 60 percent of their time on this project.

- Aggregate Industries SPCC Plans – EnviroGroup is developing SPCC plans for Aggregate Industries. Mr. Paul Arell is currently providing these services, and currently spends approximately 25 percent of his time on this project.

EnviroGroup Financial statements are available upon request as Confidential Business Information.

IX. Cost Proposal

Our project cost is summarized in the attached Table 1. Our billing rates are $ /hr. for Mr. Arell, the project manager; $ /hr. for Mr. Liebert, the GIS/Database Manager; $ /hr. for Mr. Kent, $ /hr. for Mr. Gardner, and $ /hr. for Ms. Tolle, Data Coordinators; and $ /hr. for Ms. Suzanne Gabriele, QA Manager. Administrative support is billed at $ /hr.

Our total project cost is $.

Task	**Work Included**	**Task Cost**
Stakeholder Meetings	Progress report preparation, meeting attendance, sub-group review conferences for 9 stakeholder meetings	
Database	Assemble all data, create & populate database, additional data acquisition	
Project Map	Acquire GIS data, aerial photos, production of map and ongoing additions to map	
GIS Interface	Develop GIS basemap, program simple interface to project database	
Semi Annual Progress Reports	Produce 3 progress reports and publish 60 copies to distribute at stakeholders meeting	
Data Adequacy Review & Report	Review project data adequacy and write Draft Technical Report	
Modeling Approaches Review & Report	Research modeling approaches/tools and write draft report detailing findings	
Final Report & Executive Summary	Write final project report and executive summary	
Project Administration	Client communication, office administrative costs	
	Total Project Cost	

EnviroGroup charges expenses at the following rates:

Item	Rate
Mileage	
Copying	
Computer	
FAX	
Other Costs	

Invoices will be submitted monthly. Terms are net 30 days.

Attachments

The following items are attached as reference to this proposal:

1. EnviroGroup Limited, “Who We Are”
2. Proposed Project Staff Resumes
    a. Paul Arell, P.E., DEE
    b. Tom Liebert
    c. Allen Kent
    d. Jack Gardner
    e. JoLynn Tolle
    f. Susanne Gabriele
3. Johannes, et al. “Assembly of Map-Based Stream Narratives to Facilitate Stakeholder Involvement in Watershed Management”