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American Cave and Karst Center Interpretive Program FINAL REPORT

Grant # C9994861-00

Application Title: American Cave and Karst Center Interpretive Program

Application #: NPS00-18

Memorandum of Agreement # M-02174329

Project Period: July 1, 2002 - June 30, 2004 extended to March 31, 2007

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Organizations/Agencies/Businesses

Bluegrass Grotto
Boy Scout Troop 747
City of Horse Cave
Cleveland Grotto
Dayton Underground Grotto
Diamond Caverns
Greater Cincinnati Grotto
Green River Grotto
Hart of Kentucky Grotto
Hart County Solid Waste
Kentucky Division of Water
Mammoth Cave National Park
National Speleological Society
Project Wet
Project Wild
Salem Baptist Church
Upper Green River Biological Preserve
U.S. Environmental Protection Agency
Western Kentucky University
Wittenberg University Speleological Society

Individual Volunteers

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Kent Fuller	Martin Dominik
Joseph Kronk	Kristen Baughman
Charles Pflanze	Bryan Welch
Steve Petruniak	Jennifer Spiegel
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Carla Crabb	Bill Simpson
Wade Crabb	Danny Conrad
Gary Berdeaux	Shannon Johnson
Acris Crabb	Dave Foster
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- Teacher Workshop Notices/Agendas
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- Sample Visitor Survey Sheet
- Teacher Workshop Evaluation Forms
- News Clippings
- Photos (additional photos are available upon request)

Executive Summary

The American Cave and Karst Center Interpretive Program is an educational project of the American Cave Conservation Association and the American Cave and Karst Center. The goal of the project was to reduce groundwater pollution by making the public more aware of karst environments and impacts that are damaging to them.

The American Cave Conservation Association completed 100 percent of the project

objectives that were outlined in our proposal for 319 funding. The program objectives were to provide educational programs to the public and school children, to train school teachers, and to educate people through volunteer involvement in nonpoint source cleanup efforts. The target audience for the educational program was the general public and school children grades 2 through 12.

The program resulted in completion of a substantial number of educational programs and public conservation activities. During the project period, we provided more than 2,000 interpretive tours at the American Cave and Karst Center which focused attention on threats to groundwater in karst regions. Approximately 25,000 people participated directly in the educational and interpretive programs.

The project also resulted in the cleanup of four major dump sites which were related to significant cave resources. Two of the sites were directly in the recharge basin for Hidden River Cave. A third site was located over Diamond Caverns, one of Kentucky's oldest show caves. The fourth site helped clean up a dump on the newly created Upper Green River Biological Preserve. This dump was over the only known major cave on the Preserve and was directly adjacent to the Green River.

The dump clean ups resulted in the participation of more than 100 volunteers and provided an opportunity for substantial press coverage. The dump cleanups were featured in "American Caves" magazine and in local newspaper articles. Additionally, Louisville Courier-Journal feature writer Byron Crawford wrote an article describing our efforts to educate the public about issues in karst regions.

In conducting the activities of this program, we partnered with 20 different organizations and agencies including eight cave exploring clubs, boy scout troops, private businesses, Mammoth Cave National Park, Western Kentucky University, and even a local Baptist Church.

Introduction and Background

The *American Cave and Karst Center Interpretive Program* was developed by the American Cave Conservation Association at the American Cave and Karst Center. The Association and the Center are located in Horse Cave, Kentucky in the heart of one of the world's most significant karst regions.

In karst areas, groundwater recharge is concentrated at discrete points called sinkholes. The lack of filtration from thin soils and increased surface runoff into sinkholes leads to a higher risk of groundwater pollution from nonpoint sources. Consequently, problems, such as acid mine drainage, disposal of agricultural chemicals and wastes, urban runoff, soil erosion, and ineffective septic systems, are often compounded in karst areas.

There is a substantial need for improved public understanding of karst and the way surface actions impact subsurface resources, and vice-versa, in Kentucky. Groundwater pollution has led to well-documented damage to Mammoth Cave National Park (Leitheuser, 1988), Lost River Cave (Crawford and others, 1986), Sloans Valley Cave (Hopper and Hansen, 1995) and numerous other cave systems and watersheds.

Hidden River Cave in Horse Cave, Kentucky is a classic example of what can happen when the people who live in a karst region allow waste materials to enter a karst aquifer. "The destiny of this cave was to become one of the worst examples of groundwater pollution in the United States." (Lewis, 1993)

A ten year effort to restore Hidden River Cave's watershed culminated in the opening of a new regional waste treatment facility in 1989. As the sewage problems abated, populations of cave animals began to recover. By 1993, Hidden River Cave was open to the public again, and the American Cave Conservation Association had also opened the American Cave and Karst Center at the site.

Because of this successful groundwater restoration effort, Hidden River Cave and the American Cave and Karst Center are uniquely suited for public interpretation of groundwater concepts and issues. The American Cave Conservation Association operates the facility on a year-round basis. Since opening in 1993, more than 200,000 visitors and school students have toured the Center's groundwater exhibits and groundwater tours.

Therefore, a primary goal of this program was to provide the newly developed American Cave and Karst Center with an educational programming tool to reach the public with its unique message. In order to help the public better understand and avoid problems which lead to contamination of groundwater in karst areas, the project focused on three major educational objectives.

Objective 1 was to educate the public and school children by providing interpretive programs on a daily basis. The programs were offered at the American Cave and Karst Center in Horse Cave. The Center combines a high quality museum with exhibits on karst geology and groundwater with tours into Hidden River Cave, a large natural cavern which was heavily damaged by groundwater pollution from the 1940s through the 1980s. Hidden River Cave provided us with an opportunity to showcase a groundwater restoration success story to the public.

Objective 2 was to train school teachers by providing two professional development workshops. Our goal was to involve a minimum of 25 teachers in the workshops.

Objective 3 was to conduct four volunteer sinkhole dump cleanups. This activity would serve multiple purposes. It would provide a strong opportunity to involve volunteers and the news media in our groundwater conservation programs, and it would directly remove a potential source of groundwater contamination.

Materials & Methods

The project was conducted by the American Cave Conservation Association (ACCA). The ACCA is a nonprofit organization founded for educational purposes. The ACCA operates the American Cave and Karst Center on behalf of the City of Horse Cave, Kentucky. The following describes the objectives and project activities which were produced as part of this educational project:

Objective 1. To educate the public and school children by providing interpretive programs to the public and school children.

This objective was accomplished by providing interpretive tours focused on groundwater

issues at Hidden River Cave and the American Cave and Karst Center. The Center's museum houses the nation's largest exhibit focused on groundwater, karst geology and the rare endemic population of species dwelling in these unique natural systems. The Center is also located at the entrance to Hidden River Cave. Hidden River Cave was once one of the most polluted caves in America. Its restoration in the 1990s became a nationally known environmental success story.

One of the unstated goals of the project was to help institutionalize a long term groundwater education program by supporting the newly created American Cave and Karst Center in its infancy. The program enabled us to operate interpretive tours year-round, seven days per week at the American Cave and Karst Center. An education brochure was printed and mailed to Kentucky science teachers to help promote participation in the program. Additionally the American Cave Conservation Association distributes brochures in display racks along interstate 65 from Indiana to Tennessee to encourage visitors to stop at the Center.

The interpretive programs began at a large groundwater display in the American Cave Museum which depicts a cross section of a karst landscape showing various features such as sources of groundwater pollution, wells, sinkholes, caves, springs a lake and a river. From there the tour descends into a large karst window (the entrance to Hidden River Cave). At the cave entrance is a display which depicts the Hidden River Cave drainage basin and shows a long list of human activities which have led to groundwater pollution including: domestic and industrial sewage, leaking gasoline storage tanks, train and truck wrecks, a propane storage leak, and pollution from the Horse Cave and Cave City Sewage Treatment Plants which once drained directly into sinkholes upstream from Hidden River Cave.

The major theme of the tour is a discussion of the impacts on the cave from the various sources of pollution and the cave's eventual restoration as part of the Environmental Protection Agency's multimillion dollar investment in improved sewage treatment facilities at Cave City and Horse Cave.

The remainder of the tour involves descending a flight of steps to the underground river; viewing historic water pumping equipment, and following a restored trail through the cave. In places along the tour, blind crayfish and cavefish can occasionally be spotted, a reinforcement of the groundwater recovery theme. In the 1980s the only cave animals to be found were sewage worms and anaerobic bacteria.

The American Cave Conservation Association maintains a daily log sheet of the number of tours given and the number of participants in each tour. During the 21 month period when records were kept for this 319 grant period, we provided a total of 2,144 interpretive tours to 20,005 visitors.

In addition to the public visitors, during this period, we also provided programs to 4,802 school children as part of our school group activity program. The primary difference between the school group programs and the public tours was that the school programs received additional teaching materials (a curriculum guide, for example) and activities. School groups were offered the opportunity to receive a classroom program in water testing, karst geology, or a sinkhole learning activity in addition to the interpretive tours into the cave.

A full time Environmental Education Director, Julie Gee, was employed to oversee the educational activities. We also hired additional assistant educational staff. The educational staff participated in the Southern Kentucky Cave Association Training at Mammoth Cave National

Park and attended the National Interpretive Training Association's annual conference. The Environmental Education Director developed a staff training manual and worked with individual interpretive staff to develop groundwater focused interpretation. Julie Gee departed in 2003 and her position was filled by Peggy Nims. Peggy was among the first round of graduates of Kentucky's new Environmental Education Certification program in 2006.

Since approximately 25% of the tour was related to history and not to nonpoint source issues, the programs were prorated and the nonpoint source program was only billed for the cost of the portion of the interpretive programs which focused on water quality issues. Attached with this report is an outline developed for the interpretive programs. The tour outline was reviewed and approved by the Division of Water prior to implementing the programs. Attached with this report is an copy of the education brochure for the group programs.

Objective 2: To train school teachers by providing two professional development workshops.

The goal of the workshops was to provide Kentucky school teachers with general understanding of karst science and issues and hands on activities that they could take back to their classrooms. The program topics included: karst geology, Project Wet and Project Wild activities, cave biology, and farming in cave country. The teachers were provided with curriculum materials developed by the ACCA (with previous 319 funding) and were taught activities related to teaching about sinkholes and water testing. The teachers were also given an off-trail tour into Hidden River Cave for a first hand look at how subterranean waters move through karst regions.

The first workshop was held on March 4, 2006. It was facilitated by ACCA staff (David Foster, Peggy Nims and Charolay Russell, and Caverna teacher Diane Piper. The workshop had 22 participants. The second workshop was held on March 11, 2006. Seven educators participated in the second program which was facilitated by ACCA's environmental educator Peggy Nims and Project Wet Facilitator Debra Spillman. The program participants included teachers from Park City Elementary, Highland Elementary, Red Cross Elementary, Caverna Middle School, and Austin Tracy (High School) as well as nonformal educators from Lost River Cave and Kentucky Down Under.

In developing and conducting programs targeted at school teachers, special attention was given to identifying karst and groundwater activities which were in accordance with the Kentucky core content for science and social studies assessment standards. Whenever possible ACCA utilized teaching curriculum which was funded in 1992 and 1995 by grants from the Kentucky Division of Water, Nonpoint Source Section and included activities which met assessment standards.

Objective 3: To conduct four volunteer sinkhole dump cleanups.

The volunteer dump cleanups would have multiple benefits. They would provide a strong opportunity to involve volunteers directly in our conservation efforts. They would provide an opportunity to educate the public via press articles about the cleanups. And, they would directly remove unsightly garbage dumps which are a potential source of groundwater contamination. A total of 116 different volunteers participated in this effort, some of them at multiple cleanups.

Dump Site #1: Diamond Caverns Property

The first dump cleanup was held on Saturday, November 9, 2002. The site was a dump near the entrance to Kentucky's historic Diamond Caverns in Park City, Kentucky. The dump site was in the watershed for both Diamond Caverns and Mammoth Cave. Thirty-one volunteers from the American Cave Conservation Association, the Wittenburg University Speleological Society, Boy Scout Troop 747, the National Speleological Society, and local residents assisted in the project. The volunteers hailed from Kentucky and five surrounding states. The project resulted in the filling a 30 yard dumpster with recycled metals; filling a 10 yard dumpster with nonrecyclable trash; and recycling several hundred glass bottles.

Dump Site #2: Privately Owned Field Near Horse Cave, Kentucky

The second dump cleanup was held on Saturday, May 10, 2003. The site was a large sinkhole a few miles south of the town of Horse Cave. The sink drains directly to the Hidden River Cave and is located directly above known cave passages. The dump site was exceptionally large and contained the remains of an entire house trailer that was bulldozed and dumped in the hole. Twenty-four volunteers from the American Cave Conservation Association and the National Speleological Society joined forces to remove 75 bags of garbage, 32 tires, and thousands of pounds of glass, aluminum, appliances, and building materials from the site. The Hart County Solid Waste Coordinator donated the cost of removing the garbage, recyclables and tires to the local landfill and recycling center.

The site was so large that we were unable to completely clean it up on May 10th and so we decided to continue the work during our fall volunteer project on November 10, 2003. This time, twenty volunteers assisted the project. The volunteers filled a large dumpster with recyclable metals and tires, and also filled approximately 150 bags of garbage.

Assisting both projects were volunteers from Kentucky, Ohio, Michigan, Indiana, and Tennessee. Organization's assisting with the project included students from Western Kentucky University, Blue Springs Caverns, Hart County Solid Waste, and several National Speleological Society grottoes, including the Green River Grotto, the Hart of Kentucky Grotto, the Bluegrass Grotto, and the Wittenburg University Speleological Society.

Dump Site #3: Salem Church Property

The third dump cleanup was held on April 24, 2004. The site was a deep sinkhole next to a small country church, the Salem Baptist Church, in Barren County, Kentucky just south of the town of Horse Cave. The sinkhole is in the watershed of Hidden River Cave and the Green River. Forty-two volunteers, including members of the Salem Baptist Church, the Hart of Kentucky Grotto, the Greater Cincinnati Grotto, the Green River Grotto and the Cleveland Grotto of the National Speleological Society, assisted with the cleanup. The group removed an estimated 9,000 pounds of trash and 2,100 pounds of automobile tires from the sinkhole.

Dump Site #4: Upper Green River Biological Preserve

The fourth dump site that was cleaned was on the newly developed Upper Green River Biological Preserve in Hart County, Kentucky. The Preserve was purchased by Western Kentucky University with funding from the Kentucky Heritage Land Conservation Fund. The dumpsite was on a bank directly above the Green River and over the recharge area for the only known cave on the preserve. Thirty-four volunteers filled a 20 cubic yard dumpster which was donated by Hart County Solid Waste. The cleanup crew included members of the American Cave Conservation Association; the Hart of Kentucky Grotto, the Green River Grotto, the Dayton Underground Grotto, the Bluegrass Grotto, the Wittenberg University Speleological Society, local

Boy Scouts, and Western Kentucky University students and faculty. The group removed numerous large appliances including a freezer, a refrigerator, three pairs of washers and dryers, a stove, two lawnmowers, a golf cart, numerous boxsprings, couches, chairs and table parts, and the remains of two automobiles. A tractor was required to move materials down the road to an area where the dumpster could be located. Numerous bags of additional waste materials such as glass, plastics, paper, building shingles, tires, car batteries, and drums of discarded motor oil were also removed from the site.

Results & Discussion

The American Cave and Karst Center Interpretive Program assisted the American Cave Conservation Association and the American Cave and Karst Center with providing educational programs to nearly 25,000 people who participated directly in the interpretive programs and workshops. Additionally, the project cleaned up four major dump sites and involved more than 100 volunteer participants in the cleanup efforts. The project resulted in additional media exposure which helped educate thousands of Kentuckians about issues related to dumping and groundwater pollution in Kentucky's karst regions.

The project completed 100% of the activity goals that were planned and reached the estimated number of participants stated in our original goal. Our workshop goal was to reach 25 teachers. 29 attended the workshops. Our interpretive program goal was to provide 1000 programs to an estimated 14,000 people. We provide 2,144 programs to 24,807 people. Our sinkhole cleanup was to provide 4 volunteer cleanups. We actually conducted five cleanups resulting in thousands of pounds of waste removed from sensitive karst locations at four separate sites.

The project required several time extensions due to the following factors. The American Cave Conservation Association took on too much grant work at the same time with insufficient staff. At one point during this project, we were managing three nonpoint source implementation grants, operating the American Cave and Karst Center, and conducting a \$2 million dollar fund-raising drive to expand the Center. We were doing this with 4 full time employees and a handful of part-time interpreters. The reporting and activity requirements of these grants and projects led to staff fatigue and increased turn over, which in turn required additional training time.

The project occurred during a period when the American Cave Conservation Association suffered severe financial problems. The fallout from the September 11th tragedy and later Katrina, as well as a national recession, created a substantial reduction in our operating income from donors. This forced us to spend more staffing time raising funds and cut into time devoted to operating programs.

Our primary recommendation regarding future utilization of 319 funding for educational programming is that consideration be given to promoting proposals that strengthen institutions providing long term groundwater education programs. We also recommend amending the 319 guidelines to make some of them more applicable for educational programs. Currently the 319 guidelines seem skewed towards technical and research proposals. We would argue that public education in this field is equally important.

Although the 319 funding we received assisted the American Cave and Karst Center in the short run with providing relevant and effective programs, it did little to strengthen our ability to

continue this work long term. The 40% matching requirement (particularly for nonprofits that keep their administrative costs low), along with relatively high accounting requirements, makes it difficult for a nonprofit to build a sustainable project with 319 help.

This could be remedied by modifying the 319 approach so that institutions could apply for matching grants to help establish endowments for environmental education programs or to support more permanent exhibit development at museums and environmental education centers (which we have done with some of our past 319 funding). We also recommend encouraging educational institutions to submit program requests for projects that are conducted over periods of five years or longer, as opposed to a one to three year basis. This would encourage organizations and nonprofits to invest in trained environmental education staff. It is difficult to hire and/or train a good environmental educator for a project with a brief duration.

Developing consistent long term nonpoint source education programs would be more likely to accomplish the goals of reducing nonpoint source pollution. The challenge of getting funding for educational programs lies in the difficulty of demonstrating immediate impacts. For example, our program's impact on a child might not be demonstrated until years later when the child is grown and involved in a business which has an impact on karst or groundwater. Tom Aley, Director of the Ozark Underground Laboratory in Missouri, operates a karst education program similar to ours. Our program is modeled after his. Tom has been doing this work for more than 30 years. He routinely gets calls from former students who participated in his program years ago. In many cases, he says, they don't remember the specifics about karst ... but they remember enough to recognize that there are environmental issues that they should look into, and they call him to ask for technical advice when they encounter a potential problem. With land management issues, half the battle is getting the people who make decisions to recognize a potential problem ... before it occurs.

The following methods were used to evaluate the project's success:

- Every teacher who participated in the teacher workshops was asked to provide an evaluation form. Although not all teachers returned their evaluation sheets, those who did overwhelmingly rated the workshop as either "very good" or "excellent". A summary of the evaluations and samples of completed evaluation sheets are attached with this report.
- As a measure of success of our public interpretive programs, a questionnaire was distributed randomly at the museum front counter. It was completed by 224 cave/museum visitors. The questionnaire asked visitors if they were familiar with the terms karst and nonpoint source pollution before they visited the museum, and also asked several additional questions to determine if their visit had increased their understanding.

The goal was for 50% of the visitors to profess improvement in their understanding of these resources. An analysis of the questionnaires showed that more than 75% of those who were unfamiliar with the terms karst and nonpoint source pollution left the museum with additional information about these concepts. Interestingly enough, the survey also showed that less than 15% of the museum visitors were familiar with the term karst and less than 13% were familiar with the term nonpoint source pollution prior to their visit to the American Cave and Karst Center.

This survey was conducted as part of our 98 Learning To Live With Caves and Karst 319

grant, however, the results are valid for the current program. The American Cave and Karst Center Interpretive program utilized the same tour that was conducted with funding from the 98 grant. A copy of the entire survey result was included in our Final Report from our grant application #NPS98-14, Grant #C9994861-98.

- As a measure of success for the sinkhole dump cleanup projects, photo documentation of the sites was conducted prior to the cleanup and after the cleanup, and the press was also notified and invited to the sites. Attached are several news clippings and photos taken at the sinkhole cleanup projects. Additional photos are available upon request.
- A quantitative measure of success can be provided by looking at the numbers of participants in the program activities. Nearly 25,000 people participated in the interpretive tours. 29 teachers participated in the workshops. 116 volunteers participated in the dump cleanups. These numbers met or exceeded our initial program goals.
- The project generated 10 newspaper articles in the Hart County News and the Louisville Courier-Journal, and four articles in "American Caves" magazine. The press coverage provided additional program exposure to thousands of newspaper readers.

Conclusions

The *American Cave and Karst Center Interpretive Program* was successful in that it met or exceeded the stated program goals. Our only recommendation for strengthening the program would be to either reduce the matching requirement for nonprofits or modify the program guidelines to make them more applicable to organizations which primarily conduct educational programming. As the 319 program is currently designed, it is ineffective at strengthening organizations that receive assistance because the size of the required match makes it almost impossible for an organization to get sufficient help to cover base operating costs.

We have a few final recommendations that might be of assistance in making 319 funding more effective in environmental education.

- Offer additional points when scoring environmental education programs to proposals which address ways of institutionalizing groundwater and nonpoint source education/or at least provide programming of a longer duration than one to two years.
- Require that recipients of 319 funding for education projects in Kentucky have at least one volunteer or staff person who has successfully complete Kentucky's new environmental education certification program. This is a new program in Kentucky that we should all support.
- Provide more representation for nonprofit organizations on the advisory group that reviews proposals. In our opinion, the nonprofits are not adequately represented.

On behalf of the American Cave Conservation Association, we greatly appreciate the opportunity to work with the Kentucky Division of Water and the Environmental Protection Agency in regard to the receipt and use of 319 funding for educational purposes. We hope our use of these funds to produce more than 2000 interpretive programs, two teacher workshops and four dump clean ups has exceeded the expected goals. Please feel free to contact us if you have any questions regarding this project or require any additional information not presented as part of this report.

Literature Cited

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APPENDIX A. Financial and Administrative Closeout

I

<u>Application Outputs</u>	<u>Beginning Date</u>	<u>Completion Date</u>
1. Submit all draft materials to the Division of Water, Nonpoint Source Section for review and approval	April 2003	March 2006
2. Submit Annual Reports and/or participate in Division of Water sponsored NPS Conference(s)	N/A	N/A (Conferences were not held)
3. Provide 1000 hour long guided interpretive programs to public and school children	January 2003	December 2004
4. Print and distribute 5,000 copies of educational brochure targeted school teachers	July 2003	December 2004
5. Provide 2 professional development workshops for teachers	February 2006	March 2006
6. Print and distribute 5,000 workshop flyers	January 2006	March 2006
7. Sponsor 4 volunteer sinkhole dump cleanups	November 2002.	December 2004
8. Produce and distribute 1000 flyers for each sinkhole dump cleanup (4000 total)	November 2002	December 2004
9. Request Final and Closeout Report Guidelines	March 2007	March 2007
10. Submit three copies Final and Close Out Reports and submit three copies of all products produced by this project	March 2007	March 2007

Budget Summary

Budget Categories	Section 319	Non-federal match	Original Program Budget	Final Budget Expenditures
<u>Personnel</u>	<u>\$21,274.16</u>	<u>\$15,183.27</u>	<u>\$36,360.00</u>	<u>\$36,457.43</u>
Project Director	\$ 5,324.60	\$ 3,175.40	\$ 7,500.00	\$ 8,500.00
Interpreters/Educators	\$15,949.56	\$ 2,703.18	\$18,000.00	\$18,652.74
Fringe Benefits (SUI, FICA, Worker's Comp.)		\$ 4,464.69	\$ 5,100.00	\$ 4,464.69
In Kind Volunteer Hours		\$ 4,840.00	\$ 5,760.00	\$ 4,840.00
<u>Supplies</u>	\$ 299.53		\$ 250.00	\$ 299.53
Water testing equipment				
<u>Travel</u>	\$ 79.35		\$ 124.00	\$ 79.35
Mileage				
<u>Contractual</u> Trash removal and dumping fees		\$ 812.50	\$ 2,000.00	\$ 812.50
<u>Printing/Photo</u>	<u>\$1800.50</u>		<u>\$ 1,131.00</u>	<u>\$ 1800.50</u>
Education program flyers	\$ 900.55		\$ 250.00	\$ 900.55
Teacher workshop flyers	\$ 250.00		\$ 250.00	\$ 250.00
Sinkhole cleanup flyers	\$ 250.00		\$ 400.00	\$ 250.00
Mailing envelopes	\$ 399.95		\$ 231.00	\$ 399.95
<u>Postage</u>	\$2,146.06		\$ 770.00	\$ 2,146.06
10,000 mailings				
TOTAL BEFORE OPERATING COST			\$40,635.00	\$ 41,595.37
Operating Costs (5% of total)		\$2,079.77	\$ 2,031.00	\$ 2,079.77
TOTALS	\$25,599.60	\$18,075.54	\$42,666.00	\$ 43,675.14

* Note 1.- No approved revised budget was submitted. Overall expenditures were similar to original estimates. The only major differences were a reduction in dumping fees (which we were able to get waived) and an increase in the direct cost of printing and postage for mailouts to our projects and workshops. The increased direct costs were offset by the donation of dump fees. Some additional supervisory costs were billed for due to the complexity and length of time required to administer the project. These costs were picked up by the nonfederal funds.

** Note 2. The American Cave Conservation Association was reimbursed \$25,599.60. All dollars were spent; there were no excess project funds to reallocate. This project did generate overmatch in the amount of \$1,009.14 provided by the American Cave Conservation Association. This overmatch was not posted to the grant.

Equipment Summary No equipment was purchased for this project.

Special Grant Conditions No special grant conditions were placed on this project by the USEPA

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