National Park Service
U.S. Department of the Interior

Carlsbad Caverns National Park
Eddy County, New Mexico

WASTEWATER SYSTEM REHABILITATION

FINDING OF NO SIGNIFICANT IMPACT

The National Park Service (NPS) at Carlsbad Caverns National Park (Park), located in Eddy County in southeastern New Mexico, proposes rehabilitation of the wastewater system that services Park facilities above Carlsbad Cavern. The existing sewage system, installed in 1972, collects waste from Park facilities via approximately 3,000 feet of 4 to 6-inch galvanized metal pipe and, with the help of a lift station located at the Bat Cave Draw restrooms, carries the waste through 4,800 feet of 6 to 8- inch galvanized metal sewer pipe to waste disposal ponds at the foot of a steep escarpment south of the Park facilities.

Completion of the Carlsbad Caverns National Park Final General Management Plan (NPS 1996) gave rise to a study of the effects of development on groundwater infiltration and cave resources. The infiltration study identified sewage leaks as a main source of contamination. The purpose of the Wastewater System Rehabilitation project is to restore the function of the existing wastewater collection and treatment system by replacing deteriorating forcemain and outfall pipes and wastewater treatment pond liners. The action is needed to prevent further contamination of groundwater and the significant Park resources located in Carlsbad Cavern below the Park facilities. In 2002, the Carlsbad Caverns Resource Protection Plan (NPS 2002a) presented the preferred alternative discussed in this document and summarized seven rejected alternatives. The selected action is needed to address continued maintenance problems and prevent further deterioration of groundwater quality.

Selected Action (Preferred Alternative)

The NPS Selected Alternative is Alternative B (NPS Preferred Alternative) in the Environmental Assessment (EA). The Preferred Alternative consists of three primary rehabilitation activities.

Rehabilitation of Forcemain Waste Gathering Pipeline

The Preferred Alternative entails replacement of 880 linear feet of existing 4 to 6- inch forcemain waste gathering pipelines with 8- inch (outside diameter) double- walled high density poly ethylene (HDPE) pipe, and construction of 60 feet of new forcemain line

across Bat Cave Draw. The forcemain will be buried under the Bat Cave Draw parking lot, trenched and buried under Bat Cave Draw, and buried under the existing sidewalk that connects the Visitor Center with the pedestrian entrance to Carlsbad Cavern. Approximately 0.39 acre of construction disturbance is anticipated from rehabilitation of the forcemain pipeline, of which only 0.09 acre will be new disturbance.

Rehabilitation of Wastewater Outfall Pipeline

The wastewater outfall pipeline will be replaced with 6- inch double- walled HDPE pipe. The new gravity sewer outfall will be constructed west of the existing sewer outfall, through the Visitor Center parking area for a distance of approximately 760 linear feet. An 85- foot connection will be added to the existing Visitor Center sanitary sewer. From the edge of the Visitor Center parking area, a new outfall pipeline will be constructed down the steep escarpment aboveground on pylons, a distance of about 3,065 feet. At the base of the escarpment, approximately 335 feet of the new gravity sewer outfall will be buried in trenches behind the water tank and pumping station building. From the pumping station, the outfall pipeline will be installed in a trench in the south shoulder of the access road for an additional 4,070 feet to the existing sewage disposal ponds. The existing underground pipeline leading to the lagoons will be abandoned in place. Rehabilitation of the outfall pipelines will result in approximately 5.72 acres of construction disturbance, of which 3.46 acres will be new disturbance to the Park.

Rehabilitation of Sewage Treatment Ponds

The eroded embankments of the ponds will be repaired, and inlet/outlet valves will be replaced. The lining of two existing, empty, dry sewage disposal ponds will be replaced with new HDPE liners. Wastewater pond rehabilitation will result in 6.07 acres of construction disturbance in previously disturbed areas.

Alternatives Considered

The EA analyzed two alternatives with respect to their environmental impacts: 1) the no action alternative, which is to leave the existing wastewater management operation and condition; and 2) the NPS selected alternative (preferred alternative), which is to replace the existing 4 to 6- inch forcemain line and 6 to 8- inch outfall lines of galvanized pipe with 8- inch (outside diameter) double- walled HDPE pipe, and also replace the sewage pond liners.

Environmentally Preferred Alternative

In accordance with DO- 12 (NPS 2001), the NPS is required to identify the "environmentally preferred alternative" in all environmental documents including EAs. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA), which is guided by the Council on Environmental Quality (CEQ). As stated in Section 2.7 (D) of the NPS DO- 12 Handbook: "The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in NEPA (Section 101(b))." This environmental policy is stated in six goal statements, which include:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2. Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment that supports diversity and variety of individual choice without adversely affecting cultural resources;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA, 42 USC 4321- 4347).

In summary, the environmentally preferred alternative is the alternative that not only results in the least damage to the biological and physical environment but also that best protects, preserves, and enhances historic, cultural, and natural resources.

Alternative B, the NPS preferred alternative and the selected action is the environmentally preferred alternative for the following reasons:

- Fulfills the responsibilities of each generation as trustee of the environment for succeeding generations (NEPA criterion 1) by protecting Carlsbad Caverns from continued adverse impacts of wastewater seepage and potential contamination.
- Attains the widest range of beneficial uses of the environment without degradation (NEPA criterion 3) in that it allows continued use of the resource while limiting destructive contamination. Thus, not only does Alternative B best meet the purpose and need of this project, it also best fulfills the criteria established by the CEQ.
- In addition, Alternative B will promote and support environmentally sound management of the Park's resources, as outlined in existing NPS Resource Management Plans.
- While the Park currently allows for a good balance between population and resource use, Alternative B will neither contribute nor interfere with meeting this goal.
- Alternative B will neither contribute nor interfere with meeting goal number 6.

Mitigation

In order to minimize impacts to surrounding areas, various mitigation actions will be employed. These measures are summarized in the table below.

MITIGATION MEASURES	
Resource Area	Mitigation
General Considerations	The NPS project manager will ensure that the project remains confined within the parameters established in compliance documents and that mitigation measures are properly implemented.
	A 30- foot- wide construction corridor overlying the existing pipeline will be used during installation of the replacement pipeline, except for the pedestrian path between the Visitor Center and the pedestrian entrance to Carlsbad Cavern, where the construction corridor width is

MITIGATION MEASURES	
Resource Area	Mitigation
	restricted to 12 feet and the pipeline will be placed under the existing path. These construction zones will be identified and fenced before beginning the activity, and all disturbances will be confined to the fenced areas. All project personnel will be instructed that their activities must be confined to within fenced areas. Disturbance beyond the fenced construction zone will be prohibited.
	Construction vehicles and equipment will also be confined to the construction corridor and existing roads. Temporary access roads will not be built.
	All fencing, tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project work site upon project completion.
	The construction contractor will be required to have an approved hazardous spill plan. Any spill of hazardous materials, fuel, etc., will be cleaned up immediately. Hazardous materials clean- up kits will be available at the staging area and on any fuel and oil trucks. Equipment will be checked daily to identify and repair any leaks.
	All demolition debris, including visible concrete and metal pieces, will be immediately hauled from the Park to an appropriate disposal location. All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project work limits upon project completion. Any asphalt surfaces or concrete surfaces damaged due to work on the project will be repaired.
	All contractor- related staging for construction supplies and equipment will occur in previously disturbed areas negotiated and approved by the Contractor, the Park, and other affected parties. Large staging areas will be located outside the Park. Smaller staging areas in the park will be in the tennis courts on top of the escarpment or by the wastewater lagoons at the base of the escarpment within the construction limits. Construction- related offices or laboratories will be located outside Park boundaries. Fueling and daily maintenance of all machinery and vehicles will be conducted outside Park boundaries in White City or other approved areas.
Air Quality	Idling of construction vehicles will be limited to reduce construction equipment emissions.
	Construction dust associated with exposed soils will be controlled with the application of water or other approved dust palliatives.
	Dust- creating activities will be suspended when winds are too high to prevent visible dust clouds from affecting sensitive receptors.
Water Quality	Best management practices (BMPs), as identified and utilized by the NPS, will be used for sediment control during construction to avoid potential impacts to water quality. Sediment control measures could include silt fencing, temporary earthen berms, sediment traps, erosion check structures, and filters. Any stockpiled soil material will have sediment control measures placed around the perimeter. Drainage will be constructed in depressions along the new section of gravel road to allow for surface water flow.
	Regular site inspections will be conducted during the construction period to ensure that sediment control measures were properly installed and are functioning effectively.

MITIGATION MEASURES	
Resource Area	Mitigation
	BMPs for drainage and sediment control will be implemented to prevent or reduce non- point- source pollution and minimize soil loss and sedimentation in drainage areas.
Soils	Trenching operations will utilize appropriate equipment to excavate a trench approximately 36 inches wide and 42 inches deep. After trenching is complete, bedding will be placed and compacted in the bottom of the trench and the replacement pipe installed in the bedding. Backfilling and compaction will begin immediately after the pipe is placed into the trench, and the trench surface will be returned to preconstruction contours.
	Any excavated material will be windrowed in the construction zone. Although soil windrowed during construction will be susceptible to some erosion, such erosion will be minimized, as excavated soil will be windrowed for only as long as it will take to dig the trench and install the replacement water line.
	Once construction is complete and disturbed surfaces have been recontoured, erosion mats or other erosion control measures will be used to protect bare, exposed soils from erosion until revegetation could take place, as appropriate.
	During periods of heavy rainfall, the NPS project engineer will issue a temporary stop order and work will be halted. During these stop- work periods, project personnel will continue to check the silt fences and check dams, maintain the silt fences in effective condition, and remove accumulated sediment, as necessary, to ensure that stabilization is maintained.
	Erosion control and sediment control will be required, consistent with BMPs for compliance with the Clean Water Act and with approval of the NPS project engineer.
Archeological Resources	An archeological survey conducted in 2004 (Carlson 2004) identified all known archeological resources in the project area, and all such resources will be avoided during construction activities. If during construction previously undiscovered archeological resources should be uncovered, all work in the immediate vicinity of the discovery will be halted until the resources could be identified and documented and an appropriate mitigation strategy developed in consultation with the State Historic Preservation Office and, if necessary, associated American Indian tribes.
	In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 will be followed.
	Temporary structures such as erosion control fencing may be placed outside the fenced construction limits only after an NPS archeologist has surveyed the area for archeological resources. No materials will be moved off site or out of the Park during this project.
Historic Properties	The Bat Cave Draw parking lot retaining wall and other structures in the Caverns Historic District have been recorded in detail (NPS 1986). Mitigation of impacts to the wall will include dismantling, recovery, and reassembly of the wall in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983),

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	e.g. Standard 5, for rehabilitation: "distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property would be preserved." Any damage to the stone or mortar during construction will be repaired or replaced with the original stone when possible, or with similar material that matches the color and texture of the existing wall, from a source approved by the Park.
Visitor Use and Experience	No nighttime, holiday, or weekend work (Saturday and Sunday) will be permitted.
	The trail from the Visitor Center to the pedestrian entrance to Carlsbad Caverns will be made passable and safe during non- construction hours.
Visual Resources	Although the replacement line going up the escarpment will be aboveground, it will be distant from most visitor use areas, and the pipe itself will be covered in a non- intrusive material in a flat, non- reflective color that will blend with the escarpment itself. Additionally, regrowth of plants will further mask the pipeline by concealing portions of the pipe itself.
Health & Safety	Before commencing project activity, construction zones will be fenced to exclude public access and exposure to construction hazards, and all construction hazards will be confined to fenced areas.
	Prior to construction activity, a health and safety plan will be in place including an emergency response plan.
Threatened, Endangered, Candidate, and Sensitive Species	All trenching will have at least one end sloped to prevent trapping of wildlife. The Contractor will inspect trenches before refilling to ensure that no wildlife will be buried.
	If any wildlife (lizards, rodents, snakes, etc.) is found, the Contractor will contact a Park biologist and ask for guidance or assistance in removing the wildlife.
	To avoid disturbance of bats and other nocturnal wildlife, nighttime activities will not be permitted. Demolition and construction will take place in the Bat Cave Draw and lower Visitor Center parking lots only between September 1 and April 1 to avoid disturbance of bats during maternity.
	A Park biologist will survey for the presence of special status plants that might be disturbed during construction. As a contract specification, sensitive resource areas will be mapped and flagged or fenced, as appropriate, for avoidance during construction. The flagging will not identify the resource and will be in place only for the duration of the construction. Construction workers will be made aware of any sensitive resource areas so that they could be avoided. The Park superintendent will be notified in advance of any flagged areas that could not be avoided during construction.
	If the wind is blowing significant amounts of dust into the Bat Cave entrance, construction will be stopped until the wind either subsides or changes direction. This only pertains to work in Bat Cave Draw.
	To avoid direct impacts to special status and other migratory birds protected by the Migratory Bird Treaty Act (16 USC. §§703–712), clearing of vegetation will be scheduled between September 1 and April 1, outside of the normal nesting season for most avian species. If it is not possible to avoid vegetation removal during the migratory bird breeding season, pre- construction bird surveys will be conducted by Park biologists to

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	assure that no breeding birds will be affected. Any positive pre-construction survey results or observation of affected species during construction will be discussed with the USFWS to coordinate nesting area avoidance.
	Contractor- selected noncommercial areas outside of the project limits (including but not limited to material sources, disposal sites, waste areas, haul roads, and staging areas) will not encroach upon any species protected under the ESA of 1973. The written proof shall be satisfactory to the NPS and shall include: (1) a current U.S. Fish and Wildlife Service list of all threatened or endangered species in the area and (2) a "no effect" determination by a biological specialist, according to Section 7 of the ESA.
	The Contractor will be required to maintain strict trash control so that no wildlife is attracted to the project area. No food scraps will be discarded or fed to wildlife.
	Before ground- disturbing activities begin, construction workers will be educated about sensitive animals and plants that may be found in the project area so that harm to such species is avoided.
Non- native Vegetation	Soil disturbance will be minimized and all construction limits will be strictly observed during construction.
	Pressure washing and/or steam cleaning all construction equipment before entering the Park to ensure that all equipment, machinery, rocks, gravel, or other materials brought into the Park are clean and weed free.
	Covering all haul trucks bringing fill materials from outside the Park to prevent seed transport.
	Monitoring disturbed areas for up to 2 years following construction to identify growth of noxious weeds or other non- native vegetation. Treatment of non- native vegetation would be completed in accordance with NPS- 13, Integrated Pest Management Guidelines.
	In an effort to avoid introducing non- native/noxious plant species, no imported hay bales will be used. On a case- by- case basis, other materials may be used for erosion control dams, as approved by the Park. Examples of such materials include certified weed- free rice straw, cereal grain straw that has been fumigated to kill weed seed, and wood- fiber products.
	Obtaining all fill, rock, or additional topsoil from the project area if possible, otherwise obtaining weed- free fill, rock, or additional topsoil from sources outside the Park. The weed- free condition of the material from sources outside the Park will have to be approved by the Park. If material from an outside source is not weed free, then the Park may either reject use of material from that source or approve use if appropriate measures are taken to treat the material.

Why the Preferred Alternative will not have a Significant Effect on the Human Environment

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may have both beneficial and adverse aspects and which, on balance, may be beneficial but that may still have significant adverse impacts which require analysis in an EIS: No major adverse or beneficial impacts were identified that will require analysis in an EIS. No impacts to the following resources or topics were identified: wildlife, vegetation, geohazards, geologic resources, soils, air quality; wetlands and floodplains; soundscapes; surface water resources, rare or unusual vegetation habitats, unique and important wildlife or wildlife habitats, socioeconomics, environmental justice, wilderness values, visual resources, Indian trust resources, archeology, museum collections, and cultural landscapes.

Short- term minor construction impacts from the preferred alternative will occur to cave resources and groundwater, special status species, visitor experience, and Park operations. These impacts will last for the duration of construction and will be mitigated. Long- term, moderate, and beneficial impacts will occur to cave resources and groundwater, visitor experience, and Park operations as a result of the decreased groundwater seepage, sewage back- ups and failures, and improved wastewater system function. Negligible to minor long- term adverse impacts will occur to historic structures as a result of modifications to stone-work in specific locations. Minor long-term adverse impacts may occur to special status plants if individual plants cannot be avoided during construction, since these species are difficult to re- establish.

Degree of effect on public health and safety: The project location is in an area that is accessible to the public. The Preferred Alternative will include mitigation measures that would protect the public from construction hazards by restricting construction to fenced construction corridors.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: As described in the EA, the ecologically critical areas of Carlsbad Caverns are the caves. Overall impacts to the cave ecosystems under the preferred alternative will be long- term, localized, minor, and beneficial as a result of eliminating wastewater seepage.

The area of potential effect was surveyed for archeological resources November 3–4, 2004. Two previously recorded sites were re- recorded and their eligibility for listing in the National Register of Historic Places was reaffirmed. The two sites will be fenced and avoided for protection during the construction period, and there will be no impacts to archeological resources.

Rehabilitation of the Park's wastewater system will result in negligible to minor, long-term adverse impacts to the historic structures of the Caverns Historic District.

By letter dated May 15, 2007 the office of the New Mexico State Historic Preservation Officer concurred that rehabilitation of the wastewater system would have *no adverse effect* upon the park's historic properties.

Degree to which effects on the quality of the human environment are likely to be highly controversial: There were no highly controversial effects were identified during either preparation of the EA or the public review period.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: There were no highly uncertain, unique, or unknown risks identified during either preparation of the EA or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The preferred alternative neither establishes an NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: As described in the EA, cumulative impacts were determined by combining the impacts of the preferred alternative with other past, present, and reasonably foreseeable future actions. Reasonably foreseeable future development is anticipated for improvements to the parking areas and roads at the Park. The long- term cumulative impact of this and other foreseeable projects will be minor and beneficial to cave resources and groundwater quality and to visitor experience and Park operations. The long- term cumulative impact of this and other foreseeable actions will be negligible to minor and adverse to históric structures.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: As described in the EA, the area of potential effect was surveyed for archeological resources November 3–4, 2004. Two previously recorded sites were re- recorded and their eligibility for listing in the National Register of Historic Places was reaffirmed. The two sites will be fenced and avoided for protection during the construction period, and there will be no impacts to archeological resources.

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Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: As described in the EA, the preferred alternative will not adversely affect an endangered or threatened species or its critical habitat.

Whether the action threatens a violation of federal, state, or local environmental protection law: The preferred alternative violates no federal, state, or local environmental protection law.

Impairment of Park Resources or Values

In analyzing impairments in conjunction with the NEPA analysis for this project the NPS takes into account the fact that if an impairment were likely to occur, by operation of the CEQ's regulations at 40 CFR, such impacts would be considered to be major or significant. This is because the context and intensity of the impact would be sufficient to render what would normally be a minor or moderate impact to be major or significant. Taking this into consideration, NPS guidance documents note that "Not all major or significant impacts under a NEPA analysis are impairments. However, all impairments to NPS resources and values would constitute a major or significant impact under NEPA. If an impact results in impairment, the action should be modified to lessen the impact level. If the impairment cannot be avoided by modifying the proposed action, that action cannot be selected for implementation." "Interim Technical Guidance on Assessing Impacts and Impairment to Natural Resources" National Park Service, Natural Resource Program Center, July 2003.

In addition to reviewing the definition of "significantly" under the NEPA regulations, the NPS has determined that implementation of the preferred alternative will not constitute an impairment to the integrity of Carlsbad Caverns National Park's resources or values as described by NPS Management Policies (NPS 2006 § 1.4). This conclusion is based on the NPS's analysis of the environmental impacts of the proposed action as described in the EA. The EA identified less than major adverse short- term impacts on cave resources and groundwater quality, special status species, visitor experience, and Park operations. This conclusion is further based on the Superintendent's professional judgment, as guided and informed by the Carlsbad Caverns National Park Final General Management Plan. Although the project has some negative impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore other Park resources and values. Overall, the plan results in benefits to Park resources and values, and it does not result in their impairment.

Tribal Consultation

The 14 American Indian tribes traditionally associated with the lands of the Park were notified by letter of the proposed project on May 24, 2005. Representatives of the Mescalero Apache Tribe visited the Park in March 2006, and identified several locales of significance to them, but the proposed action will not impact any of the identified areas.

Copies of the EA were mailed to each of the tribes for review and comment. Only the Fort Sill Apache Tribe responded. By letter dated April 24, 2007 the tribe stated that "...we have identified no cultural, historical, or religious concerns within the project area."

Public Involvement

The environmental assessment was made available for public review and comment during a 30- day period ending May 4, 2007. Nine responses were received. Six of the respondents expressed support for the proposed project.

By letter dated April 13, 2007, the New Mexico Department of Game and Fish stated that implementation of the proposed project would not result in significant impacts to wildlife or sensitive habitats.

By letter dated May 15, 2007 the office of the New Mexico State Historic Preservation Officer concurred that rehabilitation of the wastewater system would have *no adverse effect* upon the park's historic properties.

The final respondent expressed support for the project but also asked two questions regarding the planning conducted for rehabilitation of the wastewater system. Responses to those questions resulted in no changes to the text of the environmental assessment but are addressed in errata sheets attached to this FONSI. The FONSI and errata sheets will be sent to all agencies, tribes, and commentors.

Conclusion

The preferred alternative does not constitute an action that normally requires preparation of an EIS. The preferred alternative will not have any significant effect on the human environment. Negative environmental impacts that could occur are negligible or minor in intensity. There will be no significant impacts on public health, public safety, threatened or endangered species, historic properties either listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the forgoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Approved:

6/1/07

Mike Snyder — Date
Director, Intermountain Region

Errata Sheet
Wastewater System Rehabilitation Environmental Assessment
Carlsbad Caverns National Park

Substantive comments to the Wastewater System Rehabilitation Environmental Assessment centered on 2 topics: other alternatives and the potential for additional clean up. The topics, which are addressed below, resulted in no changes to the text of the environmental assessment.

Comment: Has any thought been put into creating a sustainable sewer pond system that would incorporate native plant and animal species in order to promote a sustainable, as well as aesthetically optimal pond system? Buildings and mechanical structures do take away from the natural landscape and are an eye sore so to speak.

Response: The current sewage treatment system at Carlsbad Caverns National Park does not incorporate any buildings or mechanical structures. The treatment system utilizes evaporative lagoons as the method of sewage treatment. During the value analysis conducted for the project, a "living machine" technology was evaluated but not chosen as the preferred alternative because of the cost and the fact that the current treatment system is considered very sustainable for the climatic conditions of southeastern New Mexico.

Comment: My second question would be after the construction of the proposed actions is completed. Does the park plan to address any clean up issues needed do to the contamination/leakage of the existing sewer lines? Or does it plan to let the existing sewer leaks flow at their existing rate and be naturally filtered through the cave systems. Is it even feasible to consider some sort of extensive clean up, or has this already been addressed, and is it a non- vital issue?

Response: All sewage leaks that have occurred in the past have been cleaned up by the Park staff. When the existing sewer line is abandoned it will be empty and pose no threat to the Park's geological or natural resources.