Biological Assessment
Of a
Proposed Construction of a Wastewater Treatment Facility on Camp Shelby Training Site, Mississippi

Prepared for the
Mississippi Army National Guard
P.O. Box 5027
Jackson, MS 39296

By
The Nature Conservancy
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December 2005

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effluent will better comply with the discharge limits for pollutants such as fecal coliforms and ammonia. The improved quality of the wastewater will enhance the CSTS's capabilities to support its national defense related training and mobilization missions while minimizing adverse impacts on natural resources both on and off the installation.

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 Background

To improve the treatment of the installation's wastewater and to reduce the level of waste concentrations discharged, the CSTS is pursuing two projects: 1) rehabilitation of the existing collection system; and 2) construction of a 1 MGD multi-cell partially mixed aerated lagoon WTF that is proposed to replace the existing 10 MGD activated sludge WTP. The CSTS is rehabilitating the existing collection system under the installation's Operations and Maintenance program that is addressed in prior NEPA documents.

In addition to reducing the installation's wastewater discharge flow from 10 MGD to 1 MGD, the discharge point would be moved from its present location on an unnamed tributary to Weldy Creek to the Leaf River. The proposed lagoon system will be better able to treat the fluctuating wastewater flows that are inherent at the CSTS. A multi-cell design will enable operators to vary the treatment to match the varying waste flow. The new WTF effluent would be discharged into the Leaf River in lieu of the present location in the Weldy Creek watershed.

2.2 Wastewater Treatment Plant Design

The proposed new WTF would consist of three major components: 1) influent pump station, 2) three 8-foot deep earthen lagoon cells, and 3) a forcemain discharge line to transport the treated effluent to the Leaf River (Figure I). A description of the project components is presented below.

2.2.1 Influent Pump Station

The influent pump station will be constructed adjacent to the influent gravity sewer line at the existing WTP as shown in Figure 3. This arrangement was selected to take maximum advantage of the installation's existing collection system infrastructure. The new influent pump station will intercept the flow of wastewater prior to it entering the existing WTP and pump it to the new WTF for treatment.

The pump station will be a precast concrete wetwell and valve pit with associated piping and controls. The wetwell and valve pit will be installed in an area within the existing cleared gravity sewer route or immediately adjacent to the cleared sewer route. The wastewater will be pumped through a forcemain to the new wastewater treatment lagoon. The forcemain will be installed within a 20-foot wide cleared route and will likely follow the existing access road to the present WTP, thus minimizing the amount of clearing that would be associated with this work. The forcemain will be installed by open trench method. The clearing will be graded to efficiently drain surface runoff and seeded and grassed to protect against erosion.

2.2.2 Lagoon System

The lagoon system will be located on a 15-acre site to contain the three 8-foot deep lagoon cells. A multi-cell design is proposed to provide operational flexibility to effectively accommodate the fluctuations in the wastewater flows generated by the CSTS. The multi-cell design will also result in reduced, or optimized, power consumption by turning off the aerator in the lagoon cells that are not needed when the volume of wastewater influent is low. Concrete flow control structures with weir gates will "split" flow, as necessary, to the lagoon cells to match flow and treatment needs. Buried piping will transport wastewater to the lagoon cells. Floating aerators will provide oxygen and mixing consistent with partial-mix aerated treatment standards. The lagoon cells will be constructed by standard earthen construction techniques and equipment. All excavated material generated within the construction site will be used in the construction of the lagoon dikes. As necessary, additional materials will be trucked to the site from appropriate established borrow pits. A lagoon liner system consisting of a synthetic liner or a modified soil system will prevent leakage through the lagoon bottom. The lagoon dikes will be constructed at an appropriate slope to minimize erosion and facilitate maintenance. Aerators will be controlled by timers that will be set in accordance with desired treatment levels. Gas chlorine and sulfur dioxide disinfection will be provided. A concrete disinfection basin will provide for 30 minutes of detention at average flow levels before the treated effluent is delivered to the discharge line via an effluent pump station for discharge to the Leaf River.

2.2.3 Discharge Line

The 12- to 20-inch underground discharge line will leave the lagoon system to reach the new discharge location on the Leaf River. A 20-foot wide right-of-way will be required during construction, and a 15-foot wide permanent easement will be needed for long-term maintenance and operations. The easement will be grassed and maintained. Air release valves will be constructed in concrete manholes at highpoints along the route to release entrapped air and to ensure hydraulic capacity is maintained. The discharge location at the Leaf River will be protected with riprap placed on a 2:1 slope.

2.3 Closure of Existing Wastewater Treatment Plant.

Following completion of construction of the new WTF, the existing activated sludge WTP would be closed in accordance with a Closure Plan that will be coordinated with the MDEQ. There are no specific regulatory standards for the closure. The closure action will involve the existing buildings, sludge digester, settling tanks, drying beds, chlorination facility, pipes, laboratory, and control facilities. All residual chemicals and liquids will either be transferred for use at the new WTF, or disposed of in accordance with established regulations.

3.0 DESCRIPTION OF THE PROPOSED ACTION AREA

3.1 Habitat Types

Currently the proposed construction site and adjacent area is a mixture of pine hardwood stands, grassy ruderal areas, recent clearcuts, and roads. The forested areas would

and relatively open areas but its presence on the CSTS has not been confirmed.

4.0 SURVEY METHODOLOGY AND RESULTS

4.1 Previous Survey Results

On 22 November 2003, Ed Wester surveyed an area containing the proposed action area for gopher tortoise burrows as part of the State of Mississippi Contract No. 03-A&E-10-F by Southern Ecosystems Research, LLC of Auburn, Alabama. Survey areas were divided into a series of consecutive, adjacent 10-15 meter wide transects. The centerline of each transect was walked by a member of the survey team responsible for locating burrows on either side of the centerline. Sets of adjacent transects were temporarily flagged to insure complete area coverage. Transects extended a minimum of 100 meters from previously mapped colony bounds, from the last new active burrows encountered, or to the limits of suitable habitat. Areas of unsuitable habitat were examined to the extent that isolated patches of potentially suitable habitat were identified and surveyed. All burrows discovered during the survey (Table I) were categorized by age, activity status and occupancy. Tortoise occupancy was determined by examination of burrow with a remote video system or by direct observation of a tortoise.

Table I. Results of a 22 November 2003 gopher tortoise burrow survey in the Proposed area for a new wastewater treatment facility on the Camp Shelby Training Site

Burrow #	Age	Activity Status	Occupancy
R2349	Adult	inactive	No
E2587	Adult	inactive	No
E2588	Adult	inactive	No
R2347	Adult	inactive	No
E2581	Adult	old	No
E2584	Adult	old	No
E2586	Adult	old	No
E2589	Adult	old	No
E2582	Adult	active	Yes
R2350	Adult	active	Yes
E2583	Adult	active	Yes
E2585	Adult	active	Yes
R2348	Adult	active	Yes

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Matt Hinderliter
Camp Shelby Field Office
December 12, 2005
C:/GIS Projects/Final_WTF_proposed_action_site

No warranty is made by the State/Territory/National Guard Bureau as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a living document, in that it is intended to change as new data become available and is incorporated into the Enterprise GIS databas

Legend

Construction Box
Disinfection Basin and Effluent
Lagoon

Gopher tortoise burrows

STATUS

active
inactive
old
November 2005 survey area
600ft. buffer

Figure II. Survey areas around the proposed action area construction box for the Wastewater Treatment Facility at the Camp Shelby Training Site, Mississippi

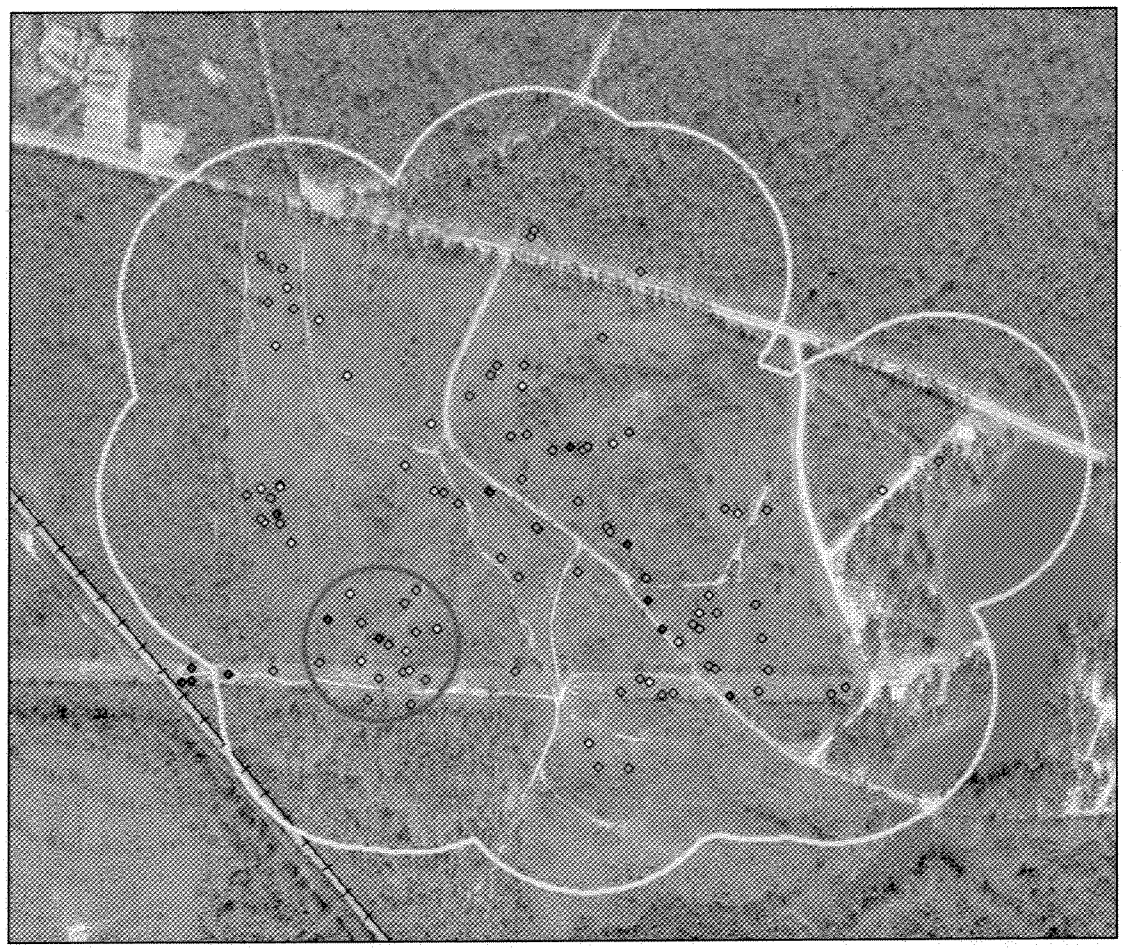
Tortoises will be captured and/or relocated only during April 1 – October 1. Immediately prior to construction the entire proposed construction area and the relocation site will be resurveyed, and each active and inactive burrow will be scoped with a camera to determine occupancy. All occupied burrows will be trapped via bucket traps or Tomahawk live traps for 28 consecutive days; if a burrow cannot be adequately scoped due to an obstruction or other feature, the burrow will be trapped assuming it is occupied. All traps will be checked at least twice daily and will be shaded to avoid heat stress induced mortality. After 28 days, all active and inactive burrows in the construction zone will be excavated by hand or backhoe. A flexible tube, with length graduations marked, will be inserted into the burrow to ensure that the burrow path is not lost and to indicate the distance to the end of the burrow before beginning hand or backhoe excavation. The position of the tube at the end of the burrow will be confirmed by examination with a burrow camera before excavating. The last 2-3 feet of the burrow will be excavated by hand using shovels or small hand spades. Following removal of the tortoise, all excavated burrows will be refilled. To minimize the possibility of disease transmission between tortoises, the remote video system, traps, shovels, and any other tools or supplies used in capturing and relocating tortoises will be disinfected with a diluted bleach solution, alcohol, or antibacterial wipes following use at each burrow.

Once captured, all tortoises will be given a full examination, including: standard morphometric measurements taken, determination of sex, an overall health assessment (lesions, signs of emaciation, shell/tissue damage), inspection for clinical signs of Upper Respiratory Tract Disease (URTD), and a blood sample taken. Clinical signs of URTD include wheezing, ocular or nasal discharge, and palpebral edema. Plasma from the blood sample will be sent to either Dr. Lori Wendland or Dr. Mary Brown at the University of Florida's Department of Pathobiology for testing, either by ELISA or PCR methods. Typical turnaround time for blood testing is one week. Tortoises moved to a recipient site will be confined to their enclosure for a minimum of two weeks; possibly longer if it takes more time to get results from the blood tests. When the results are obtained, the enclosure may be removed only if the relocated and recipient populations are both seronegative for URTD antibodies. If tortoises from only one group are seropositive, a new relocation site must be selected.

Radio transmitters will be placed on all relocated tortoises, and tortoises will be tracked every other day for the first two weeks after enclosure removal. After the first two weeks, tortoises will be tracked twice a week during the active season (April through October) and once a week from November through March. All tortoises will be tracked for one year post-release. Telemetry and monitoring data will include GPS coordinates and dates for each location. If released tortoises excavate new burrows, these features will be noted and recorded during monitoring. If a relocated tortoise moves off-site within that first year, it will be trapped, returned to one of the release burrows at the relocation site, and penned for three weeks prior to removal of the enclosure.

6.3 Proposed Relocation Site

The proposed relocation site is a forested area adjacent to a power line on the western side of Dogwood Lake in the northwestern section of the CSTS Cantonment Area (Figure III). The forested area received a seed-tree cut in 1996-1997, which removed most of the overstory; and



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Matt Hinderliter
Camp Shelby Field Office
December 15, 2005
C:/GIS Projects/WTF Relocation Area

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Legend

Main relocation site

Gopher tortoise burrows

STATUS

active
inactive
old
historic
Relocation site boundary
Railroad

Figure III. Proposed relocation site for gopher tortoises from the Wastewater Treatment Facility at the Camp Shelby Training Site, Mississippi.

Gopherus polyphemus; and an assessment of a relocation procedure for tortoises. Thesis, Orlando, Florida, University of Central Florida.

Florida Game and Fresh Water Fish Commission. 1988. Guidelines for gopher tortoise relocations. Tallahassee, Florida.

Heise, C. D. and D. M. Epperson. 2005. Site fidelity and home range of relocated Gopher Tortoises in Mississippi. Applied Herpetology 2 (2):171-186.

Lohoefener, R. and L. Lohmeier. 1986. Experiments with gopher tortoise (*Gopherus polyphemus*) relocation in southern Mississippi. Herpetological Review 17:37-40.

U.S. Forest Service. 1991. Gopher tortoise. *In* Wildlife Habitat Management Plan (Draft). National Forests in Mississippi.

FINAL
FINDING OF NO SIGNIFICANT IMPACT
FOR
CONSTRUCTION AND OPERATION
OF A
WASTE WATER TREATMENT FACILITY
CAMP SHELBY TRAINING SITE, MISSISSIPPI

Introduction

The Mississippi Army National Guard (MSARNG) prepared an Environmental Assessment (EA) to identify and evaluate potential environmental effects from construction and operation of a Wastewater Treatment Facility (WTF) at Camp Shelby Training Site (CSTS), Camp Shelby, Mississippi. The MSARNG prepared the EA in accordance with National Environmental Policy Act (NEPA, 42 USC 4321 to 4370e.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (CEQ Regulations, 40 CFR Parts 1500-1508), and *Environmental Analysis of Army Actions* (32 CFR 651).

1. Description of Proposed Action and Alternatives

Proposed Action. The MSARNG proposes to construct and operate a WTF at CSTS that can meet the current and future troop requirements that train at CSTS. The proposed WTF would encompass approximately 15 acres at CSTS. More detailed information concerning the proposed action may be found in the attached Environmental Assessment (EA).

Alternatives Considered. The MSARNG analyzed the alternatives of using different sites on CSTS and a No Action Alternative.

The alternative of using alternate sites on CSTS for the location of the WTF was considered. Several sites were analyzed, but their locations were deemed less ideal than the preferred site due to the rough terrain at those locations. These sites would require more extensive earthwork which would increase construction costs. This is the only differentiating characteristic of these sites.

The "No Action" alternative was not considered viable since it would require the continued use of the existing facility that is not able to consistently meet treatment limits established by the Mississippi Department of Environmental Quality. This alternative was not considered viable since it would not allow the MSARNG the ability to train the current and future soldiers at CSTS. Therefore, the "No Action" alternative was not considered further.

2. Environmental Analysis

The environmental impacts associated with the proposed action are fully described in the EA. The assessment identifies the environmental characteristics that may possibly be affected by the proposed action, and determines the significance of the impact to each of these characteristics. Based on the analysis contained in the EA, it has been determined that the known and potential impacts of the Proposed Action on land use, air quality, noise, geology and soils, water resources, biological resources, threatened and endangered species, socioeconomics, infrastructure, and hazardous and toxic materials and wastes would not be significant. The proposed action would have no adverse effects on cultural resources or environmental justice.

3. Mitigation

No mitigation measures will be necessary to reduce any adverse environmental impacts to less than significant levels.

4. Regulations

The Proposed Action would not violate NEPA, its regulations promulgated by the CEQ, *Environmental Analysis of Army Actions*, or any other Federal, State, or local regulations.

5. Commitment to Implementation

The National Guard Bureau (NGB) and MSARNG affirm their commitment to implement this EA in accordance with NEPA. Implementation is dependent on funding. The MSARNG and the NGB's Environmental Programs, Training, and Installations Divisions will ensure that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in this EA.

6. Public Review and Comment

The final EA and draft Finding of No Significant Impact (FNSI) were made available for public review and comment from August 19 to September 2, 2005 and the draft EA was made available for public review and comment from June 10 to June 24, 2005, at the locations listed in the EA's public notice. No public comments were received.

For further information, please contact: Mississippi National Guard, Office of Public Affairs, P.O. Box 5027, Jackson, MS 39296-5027.

7. Final Finding of No Significant Impact

After careful review of the EA, I have concluded that implementation of the Proposed Action would not generate significant controversy or have a significant impact on the quality of the human or natural environment. This analysis fulfills the requirements of NEPA and the CEQ Regulations. An Environmental Impact Statement will not be prepared, and the National Guard Bureau is issuing this Finding of No Significant Impact.

6 September 2005
Date

Gerald I. Walter
Colonel, US Army
Chief, Environmental
Programs Division

DEPARTMENTS OF THE ARMY AND AIR FORCE
MISSISSIPPI NATIONAL GUARD
THE ADJUTANT GENERAL'S OFFICE
POST OFFICE BOX 5027
JACKSON, MISSISSIPPI 39296-5027

December 22, 2005

JFH-MS-ARE

U.S. Fish and Wildlife Service
Mississippi Ecological Field Office
Attn: Curtis James
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213

Dear Mr. James

The Mississippi Military Department is preparing a supplemental environmental assessment (EA) for the construction of a waste water treatment facility at Camp Shelby, MS. The new facility, an aerated lagoon system, will discharge less than one million gallons per day. The effluent will be piped directly to the Leaf River. The current activated sludge system is permitted for ten million gallons per day. Upon completion of the new system, the old system will be closed.

The new facility will discharge less effluent, thus improving the aquatic conditions significantly. The critical habitat for the endangered Gulf Sturgeon and threatened Pearl Darter will not be adversely affected.

The preferred site location is closer to the cantonment area than described in the previous EA. The new site may affect up to 13 burrows and 4-5 gopher tortoises. See the enclosed Biological Assessment and the gopher tortoise relocation plan.

The Mississippi Military Department requests formal consultation for this action.

If you have any questions or concerns, please contact the undersigned at (601) 313-6226.

Sincerely,

Robert A. Piazza
Lieutenant Colonel, Mississippi Army
National Guard
Director, Environmental Programs

Enclosure