FACT SHEET REGARDING LANDFILLS 6 AND 7 RESTORATION "CONSTRUCTION ACTIVITIES CONTINUE FOR SPRING 98" FORT SHERIDAN IL
4/1/1998
U S ARMY

Fort Sheridan
Environmental Restoration Program
Fact Sheet

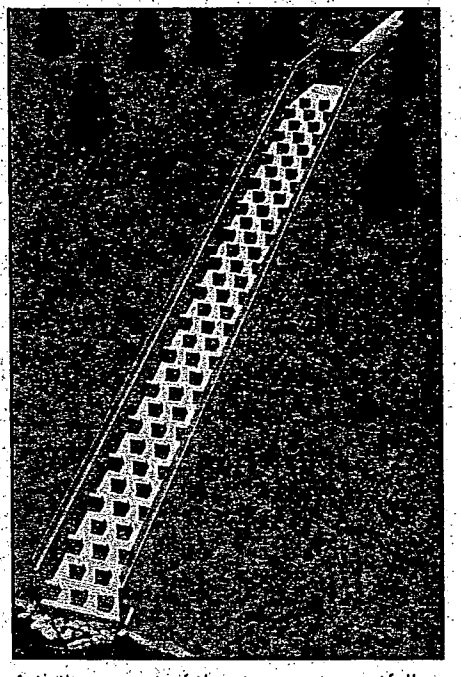
Landfills 6 & 7 Restoration
Construction Activities Continue for Spring '98

U.S. Army Garrison — Fort McCoy, Wisconsin — April 1998

Summary

This fact sheet is second in a series which detail planned construction activities for the Landfills 6 & 7 restoration project. The overall goal of this project is to place protective caps over the landfills and return the land to productive use. Prior to placing the caps, some initial steps are required. Work on these initial steps began in the fall of 1997. Many of the activities completed during the fall were featured in our first fact sheet, dated August 1997. These include: relocation of utilities; demolition of buildings 450 and 451; installation of 24 inch and 36 inch storm drains on the south side of Landfill 6; installation of 72 inch and 84 inch main drain lines on the north side of Landfills 6 and 7 crossing Patten Road; and digging test pits around the perimeter of the landfills.

As construction season approaches, work activities are set to resume. This fact sheet will summarize the portions of the project scheduled for this year. The detailed designs for these aspects of the construction are available for review at the local libraries (see back page).



Artist's concept of the stormwater outfall structure, which when constructed, will have a capacity of 238,000 gallons per minute. Concrete baffles retard water flow into Lake Michigan. Shoreline protection features not shown.

Installation of the Storm Drainage System

As discussed in the August 1997 fact sheet, installation of a new storm drain is an integral part of the landfill restoration. Portions of the system were placed during the fall with completion expected this summer. Work is also scheduled this year on an additional component of the storm drain designed to carry water down to Lake Michigan.

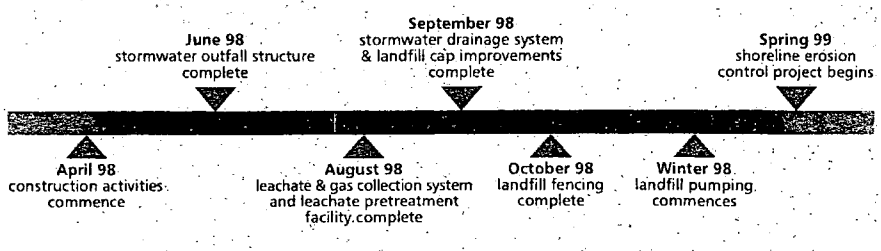
This stormwater outfall structure, which resembles a concrete waterfall, is designed to carry extremely heavy amounts of rain and snowmelt down to Lake Michigan. Illinois state law requires that the storm drainage system accommodate the volume of water generated by a "one-hundred year storm." This historical measure of the magnitude of a storm that occurs once every one hundred years is defined, in the northern Chicago/Lake Michigan area, as 6.7 inches of rain in a 24-hour period. Such a storm would result in 238,000 gallons per minute (enough water to fill 15 swimming pools every minute) to enter Lake Michigan from the outfall. Therefore, a strong, well-built structure is necessary.

To meet the stringent requirements, the designed waterfall is a structure 18 feet wide with sidewalls 8 feet tall and an overall length of 260 feet, extending from the top of the bluff to the shoreline. A series of 3 feet tall concrete baffles will slow the water, directing it to flow around and between the baffles, dissipating the water's energy. At the base of the outfall structure is a channel filled with stone, called riprap, to further slow the water and

(continued, next page)

Schedule/Timeline

Construction activities are scheduled to begin in April 1998 and will continue through October 1998. The timeline at right shows the estimated schedule for the continuing construction activities.

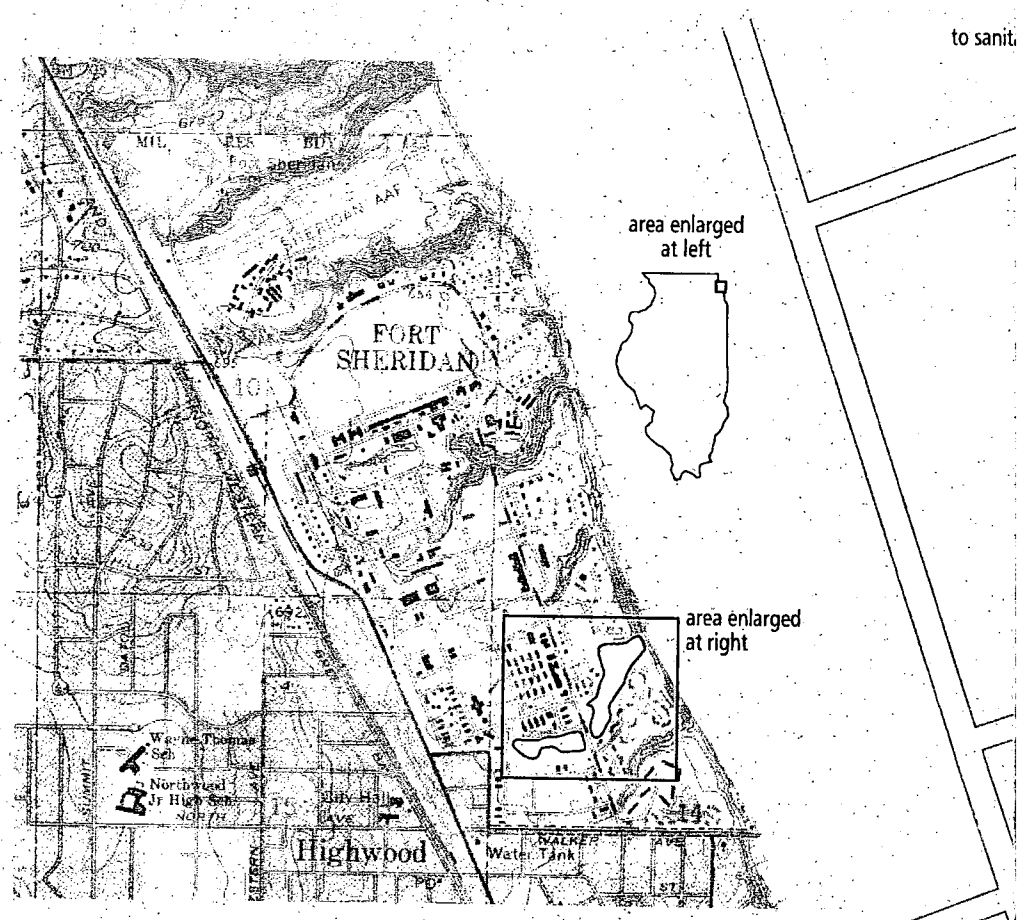


prevent erosion of the beach. The outfall structure, constructed into the bluff, will expose only one-to-two feet of sidewall above ground. Finally, the design includes a railing along the sides and across the bottom of the structure.

Construction of the stormwater outfall structure is scheduled to begin in early spring and to be completed in June of 1998. Completion of the storm drainage line is planned for September 1998.

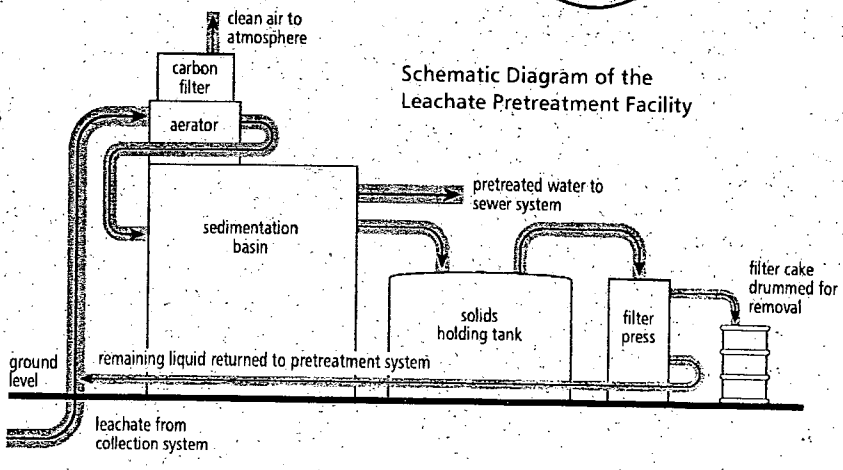
Leachate Collection System and Pretreatment Facility

Another initial step in the landfill restoration is to remove water from the landfills. Pumps will remove this water, called leachate, allowing the contents to settle prior to placement of the permanent cap. As shown on the figure to the right, a series of new leachate collection wells, along with the existing gas vent wells, will carry the leachate from the landfills to the leachate pretreatment facility. All of the wells are large enough to accommodate the PVC leachate collection piping and the gas collection piping. For the first 3 years, leachate is expected to flow at a rate of 19–20 gallons per minute. Once the bulk of the leachate is removed and the landfills settle, the flow rate will decrease to 5 gallons per minute.



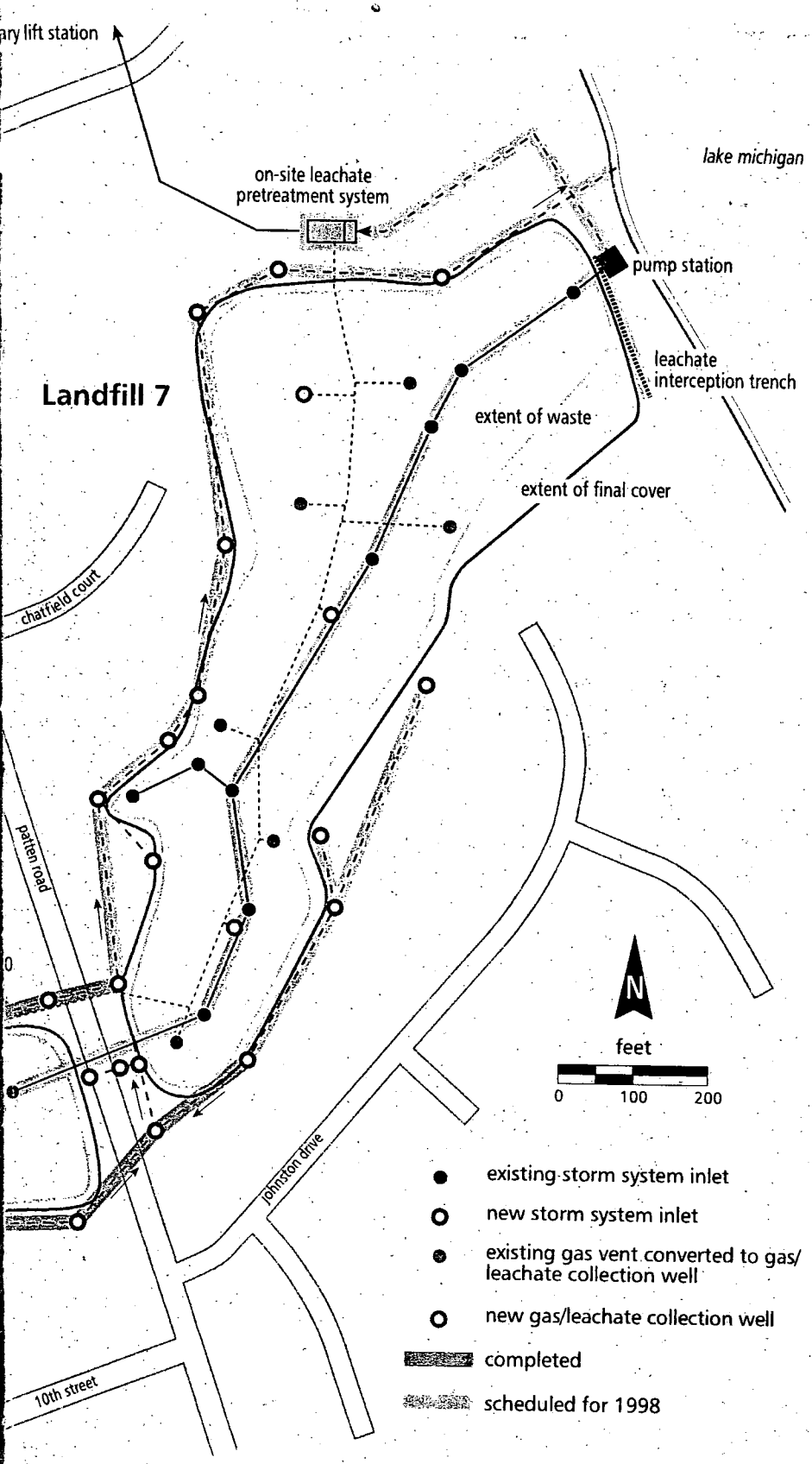
A new interception trench constructed at the east end of Landfill 7 will capture any leachate moving through the landfill. The trench will be 175 feet long, 12–18 feet deep and 5 feet wide. A synthetic fabric liner will line the trench to keep out soil and a perforated drain pipe will collect any leachate. Finally the trench will be filled with gravel. Placed on the east side of Landfill 7, the trench will direct the collected leachate to a sump, where the leachate will be pumped into the Leachate Pretreatment Facility (illustrated at right). The pumps used can handle a total of 30 gallons per minute, but will only run intermittently.

The Leachate Pretreatment Facility removes any solids and gasses from the leachate before pumping the treated liquid into the sanitary sewer system. As mentioned in the August 1997 fact sheet, the pretreatment facility will be placed on the north side of Landfill 7. The building housing this facility is a 76-foot x 42-foot metal structure built on a concrete pad. The facility is designed to allow for additional treatment equipment and capacity should the need arise.



Schematic Diagram of the Leachate Pretreatment Facility

At the pretreatment facility, gasses



(principally carbon dioxide and methane) will be removed from the leachate through an aerating process. Air will be bubbled through the liquid, capturing the gasses, and then passed through a carbon filter to remove the impurities before exiting into the atmosphere. The leachate will then be sent to a "sedimentation basin" where impurities suspended in the solution settle out of the liquid so it can then be released to the sanitary sewer. Monitoring the treated leachate as it leaves the facility will ensure it meets the required sanitary sewer standards. The solids, actually a thick liquid called slurry, will be pumped from the basin through a filter press to release excess liquids. The remaining filter cake resembles wet modeling clay and will be placed in drums and disposed of according to appropriate regulations. The liquids squeezed from the slurry will be reprocessed.

Construction of the Leachate Collection System and Pretreatment Facility is scheduled to begin in April with completion by August 1998.

Landfill Cap Improvements

While the above activities are taking place, improvements to the existing landfill cap will begin. Any trash that is outside the perimeter of both landfills, estimated to be 13,000 to 16,000 cubic yards of trash, will be placed within the existing landfills as a consolidation measure. The purpose of the consolidation is three-fold. One, it will reduce the overall size of the landfill cap. Two, it will eliminate dips, curves, and folds in the cap, thereby directing stormwater runoff toward the storm drains. Third, consolidating the trash allows for the most direct routing of the storm drains. Excess soil from other construction projects (i.e., storm drain installation) will be tested and, if clean, used to back fill the removed trash areas. All cracks, holes, and thin spots from erosion or from the interior drains on the existing caps will be repaired. These areas are generally located in the low areas on the existing covers, with most of Landfill 6 constituting a low, or depressed, area. The repair work requires a minimum of six inches of topsoil and an additional twelve inches of clean soil be placed on the caps, compacted and graded to provide proper drainage, then re-seeded to prevent erosion. Upon completion of these activities and once the landfills have settled after draining the leachate, construction of the final cap will begin.

(continued, next page)

Construction for the cap improvements is scheduled to begin in early April with completion in September 1998.

What's Next?

Protection of the Landfill 7 shoreline from the natural eroding action of Lake Michigan is the next major undertaking. Plans for this project are being developed and refined by Dr. Charles Shabica, a local expert on the north shore/Lake Michigan erosion problems. The draft of the design is available for public review at the Information Repositories.

Construction schedules estimate Spring 1999 as the earliest starting time for the shoreline protection project.

Future fact sheets will detail construction activities as the restoration of Landfills 6 and 7 progresses.

For More Information...

If you are interested in learning more about the environmental restoration program, have questions, would like to be included on our mailing list, or are interested in becoming a member of the Fort Sheridan Restoration Advisory Board (RAB), please contact us at:

Fort Sheridan BRAC Office
Attn: Bill Hopkins
Bldg 379
3155 Blackhawk Drive, Suite 17
Fort Sheridan, IL 60037-1289
Phone: 847-266-3900
Fax: 847-266-3905

The Administrative Record for CERCLA activities has been established at the Fort Sheridan BRAC Office. Relevant environmental cleanup documents, including design blueprints, have been placed at the local libraries for your convenience. The addresses of the Fort Sheridan BRAC office and the local libraries are:

Fort Sheridan BRAC Office*
Building 379
Fort Sheridan, IL 60037
847-266-6323

Highland Park Library
494 Laurel Avenue
Highland Park, IL 60035
847-432-0216

Lake Forest Library
360 East Deerpath
Lake Forest, IL 60045
847-234-0636

Highwood Library
102 Highwood Avenue
Highwood, IL 60040
847-432-5404

*Location of Administrative Record

Fort Sheridan BRAC Office
Bldg 379
3155 Blackhawk Drive, Suite 17
Fort Sheridan, IL 60037-1289

Printed on Recycled Paper