State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PUBLICLY FUNDED REMEDIATION ELEMENT
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JON S. CORZINE
Governor

MARK N. MAURIELLO
Acting Commissioner

February 24, 2009

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Regulatory Approach to Fort Monmouth Landfills

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) has reviewed the regulatory status of the 9 inactive landfills at Fort Monmouth, which as you know is a frequent topic of discussion now that Fort Monmouth is scheduled to close.

The Army and NJDEP have been discussing soil cover requirements for the landfills since at least 1996. You have recently informed me that the Army has started planning and estimating for a project to place one foot of additional soil cover on all 9 landfills. Before that project proceeds much further, I want to clarify the SRP's position on soil cover for the landfills.

Shallow soil sampling conducted by Fort Monmouth has shown that all of the existing landfill soil covers have soil contamination present above NJDEP's residential and non-residential direct contact soil remediation standards (SRS). The soil covers therefore pose a direct contact threat according to the SRS. In our comments on the M-12/M-14, and M-18 Landfills (on July 25 and August 14, 2007), we stated that remedial action is required to minimize or eliminate the **direct contact** threat.

The SRP would accept the placement of one additional foot of well-vegetated clean soil cover to eliminate the **direct contact** threat. The SRP is awaiting confirmation that the NJDEP Division of Solid and Hazardous Waste would accept one additional foot of soil cover as a proper final cover for the landfills.

However, the landfills could pose environmental threats other than the direct contact threats, especially since all of the landfills border on a stream. In order to evaluate and approve final remedial actions for any of the landfills, the SRP would need to collectively review recent **surface water, sediment, and ground water** sampling data for each landfill. Additional sampling of these media was requested in our letters on the M12/M14 and M18 Landfills, and similar requests will most likely be made when existing reports on the other landfills are reviewed in detail.

If the landfills are found to be adversely impacting those media to a significant degree, **more protective remedial actions** such as impermeable caps, subsurface cutoff walls, or leachate collection systems could be required.

Attachment 1, NJDEP Site Remediation Program (SRP) Regulatory Approach – Fort Monmouth Landfills, was prepared to summarize the above and our approach to the landfills. You or your staff may contact me at 609-633-0766 with any questions on the above, the attachment, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., Site Manager
Bureau of Investigation, Design and Construction

Attachment

ATTACHMENT 1

NJDEP Site Remediation Program (SRP)
Regulatory Approach - Fort Monmouth Landfills

Background

Fort Monmouth contains 9 landfills, ranging in area from 1.4 to 7.2 acres. Six (6) of the landfills (M-2, M-3, M-5, M-8, M-12, and M-14) reportedly received a wide variety of wastes including demolition debris, scrap metal, asbestos, vegetative waste, unwashed hazardous materials containers, photographic chemicals, sewage sludge, incinerator ash, oil filters, batteries, fluorescent tubes, and electronic components. The other 3 landfills (M-4, M-18, and CW-3A) reportedly received only demolition debris. Eight (8) stopped operating between 1957 and 1969; the last (M-8) stopped operating in 1981.

Fort Monmouth is scheduled to be closed in 2011, with all property transferred to municipal or private ownership. The exact fate of the landfills isn't known yet, but the landfills may become much more accessible to the public after 2011.

Landfill Cover / Surface Soils

A well-vegetated soil cover approximately one foot in thickness exists on the surface of the great majority of the surfaces of all 9 landfills, but there are areas of exposed waste deposits on some of the landfills. However, the surface soils on all of the landfills contain contaminants in excess of New Jersey Soil Remediation Standards (SRS). In some instances, this appears to be caused by specific waste materials such as PCBs, but in many locations the soil contaminants are indicative of historic fill.

In locations where the SRS are exceeded, the SRP would accept placement of an additional one foot-thick clean soil cover to eliminate any direct contact threat. Existing areas of exposed waste deposits would need to either be removed, or properly regraded and covered with 1 to 2 feet of clean soil cover. The SRP will verify that the NJDEP Division of Solid and Hazardous Waste (DSHW) will accept one additional foot of soil cover as a proper final cover for the landfills.

However, the SRP will collectively review surface water, sediment, and ground water sampling results to determine whether an additional one-foot soil cap alone will suffice as a final remedial action for a given landfill (see below).

Ground Water

Ground water has been sampled at all landfills. Remedial action for ground water has been conducted at 2 of the landfills: ORC injections at the M-2 Landfill and HRC

injections at the M-5 Landfill. Monitored natural attenuation (MNA) in conjunction with a Classification Exception Area (CEA) has been proposed at 6 landfills (M-3, M-4, M-8, M-12, M-14, & M-18). No further action (NFA) was proposed for ground water at the CW-3A Landfill.

NJDEP will continue to evaluate proposed ground water remedial actions at the various landfills in accordance with the Technical Requirements. Ground water sampling results will also be evaluated in conjunction with surface water and sediment sampling results. All ground water contamination must be delineated to the New Jersey Ground Water Quality Standards (GWQS).

Surface Water and Sediment

All of the Fort Monmouth landfills are located adjacent to surface water bodies (streams). Therefore, the surface water and sediments near the landfills must be sampled and analyzed for all applicable parameters to determine if the landfills are impacting the environment. Samples must be collected upstream of, adjacent to, and downstream of each landfill. The resulting data will be evaluated to determine if each landfill is impacting the adjacent stream. Surface water sampling results will also be evaluated to determine whether low-level ground water contamination beneath the landfills is having an impact on the streams.

If sampling results indicate that a given landfill is adversely impacting an adjacent stream to a significant degree, more protective remedial actions (such as an impermeable cap, a subsurface cutoff wall, a leachate collection system, etc.) may be required for that landfill. Aquatic biota studies may also be required to further assess the condition of surface water bodies.

Other Requirements

The NJDEP DSHW requires that the landfills be evaluated for methane gas generation and that passive or active gas venting systems be installed as necessary. Fort Monmouth must perform a methane gas evaluation for each landfill or present existing documentation and data that conclusively show that subsurface methane gas does not exist at each landfill.

Deed Notices

Deed notices would be required for all of the landfills, due to the documented presence of the waste deposits, even if No Further Action (NFA) status is achieved based upon the above requirements.