

Recommendation 359  
Plant Indigenous Flowering Plants on Industrial Landfills

Background

On July 23, 2018, DOE provided the CAB a presentation on D Area Ash Project (1) showing the project boundary of 90 acres+/- . The basin and landfill cover is made up of a Geosynthetic Cap in accordance with Removal Action Design Plan (2). According to the plan, common clean fill was placed on the ash as a foundation covered by a Geosynthetic Clay Layer (GCL) followed by a Geosynthetic Drainage Layer (GDL). These layers were then covered by a 20-inch layer of common fill with 4 inches of top soil to support grass growth as a natural erosion and protective cover. The grass is mown on a regular basis to avoid rooting of weeds below the GCL layer. Grass has been planted and mowing schedules have been established. There are a number of fill options available. Sarrato (3) has suggested a topsoil layer of 6 inches.

On the same day, Dr. Rhodes of the SR Ecology Lab provided the CAB a presentation on Pollinator activities on the SRS (4). Rhodes, highly recommended the need for growing local varieties of flowering plants at SRS to enhance the habitat for pollinators to survive. Rhodes, in a verbal conversation mentioned that Site Remediation Team was opposed to planting flowering plants on the D Area Ash Basin, as it will impact the mowing schedule. If not mowed, deep-rooted plants will grow and penetrate the GCL and GDL and damage the cover which could allow water migration to carry contaminants to the watershed of the site.

Discussion

The current design used to cap D Area is designed to offer 30 or more years of protection and are well suited for the purpose. This comes at an ongoing cost to mow and maintain the area without benefiting the local eco system to any great degree.

The local soil conditions to the area including SRS are often a sandy soil mix over clay at some depth. It is noted that trees are able to penetrate the natural clay soil while many grasses and wildflowers are shallow rooted or not robust enough to penetrate the natural clay barrier. If low growing plants are utilized, pop-up trees and other deep-rooted species could be monitored and selectively pulled at a frequency much lower than mowing grass. These deep-rooted plants would easily be seen from a distance for select removal before they could penetrate the clay. This approach which should cost less than regular mowing schedule, provide a more indigenous habitat to local wildlife (pollinators), and still provide an erosion barrier for the landfill. It should be easy to see a tree / deep rooted weeds coming up among the shorter growth being planted and pulled well before they could ever root deep enough to impact the liner cap.

Recommendation

The SRS CAB recommends that DOE-SR:

1. Consider design improvements that include a clay barrier above the GCL and GDL for future landfills so that local flowering plants, clover and grass can be planted and monitored on the top of the landfill.
2. Consider shallow rooted wild flowers, grasses and clover indigenous to the area that would also provide habitat for pollinators.
3. Plant indigenous wild flowers and other pollinator habitat plants surrounding D Area Ash Basin and other areas not impacted by GCL/GDL concerns.

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References:

- (1) Adams, Karen, July 2018, "D Area Ash Project", A presentation to SRS CAB on July 23, 2018
- (2) SRNS-RP-2014-00459, March 2015, "Removal Action Design Plan (RADP) for the 488-4D Ash landfill and 488-2D Ash Basin (U)".
- (3) Sarrato, M, et al, WSRC-RP-93-0878, - Rev. 1, "Economic Evaluation of Closure CAP Barrier Materials Volume I and Volume II (U)
- (4) Rhodes, O.E., July 24,2018, "Pollinator Activities on the SRS".