

Discussion Items
Corrective Action Design
C&L Landfill, Fayetteville, Arkansas

1. Our comparison of the spot elevations obtained by Blew & Associates via on-ground surveying to the aerial topography elevations indicates that the aerial topography is sufficiently accurate for use in preparing construction drawings for the corrective action. Therefore, we will proceed with the design using the aerial topography.
2. We are performing the Hydrologic Evaluation of Landfill Performance (HELP) model for the baseline cap (18-inch barrier soil layer with 1E-05 permeability and 6-inch vegetative layer) and at least one alternative (i.e., synthetic liner overlain by 12-inch barrier soil layer and 6-inch vegetative layer). However, based on the fact that the permeability requirement for the baseline cap is not more stringent, we anticipate that the baseline cap will be the most cost effective alternative and therefore, are proceeding with the preliminary design based on that assumption.
3. The conceptual proposed grading that has been prepared is based on a compilation of independent data including property boundary survey, landfill boundary (derived from geophysical survey and visual observations), and aerial topography. Based on this compilation, it appears the extent of the landfill is at or beyond the property boundary in a few locations. To achieve a 2-foot cap over the landfill area, a strip of land approximately 15 feet wide will be required outside of the proposed landfill cap in order to clear and grade up to the required 2-foot cap. To simplify instruction to the contractor and relieve the City from buying additional property, we propose to instruct the contractor to relocate all landfill material that falls outside the property boundary to areas within the property boundary and begin formal landfill cap construction approximately 15 feet inside the property boundary. This will require the contractor to excavate and handle portions of existing landfill debris. Also, this will require a temporary construction easement with surrounding property owners for offsite construction activity.
4. The conceptual proposed grading contemplates smooth slopes across the landfill areas so that stormwater runoff from upland areas will sheet flow across the landfill instead of by concentrated channel flow, which is now the case. This will require the contractor to fill volumes and smooth areas that would otherwise remain rough; however, the end result will be a more stable and maintainable landfill cap. Excess surface debris could be used to fill extra volume areas which result from this proposed grading plan. Also, high areas of the landfill could be leveled to help balance the cut/fill of the site.
5. Based on visual observations during the field investigation, it appears that the relatively small landfill area at the south end of the site consists mostly of surface debris. We propose that this material be relocated to one of the other larger landfill areas prior to capping.
6. Due to the heavy vegetation and tree growth, clearing and grubbing will result in removal of at least 6 inches of surface soil with the grass, brush, and tree roots. Soil from the small area of the landfill where existing soil cover exceeds 1 foot should be graded across the site to smooth out the terrain before placement of the 2-foot cover. Note that the existing topography of the entire site is extremely rough with many areas of uneven terrain between waste cells such that neither a ground survey nor an aerial survey can be 100% accurate.

So, it will be necessary for the construction contractor to do some rough grading of the site after clearing and grubbing to prepare the surface for placement of the 2-foot cover.

7. Due to the number of trees and brush onsite, we recommend that the contractor be required to mulch all large onsite vegetation in the areas of disturbance and use the mulch for surface stabilization and "mulch socks" which will benefit erosion control and prevention during and after construction. Additionally, cleared top soil should be staged for use with seed and mulch after the cap has been constructed.
8. It is our understanding that the banks of the onsite creek consist of various surface materials including exposed rock, overburden, and landfill debris. We propose to remove and rebuild areas of the banks where landfill debris is present within 2 feet of the bank surface. Otherwise, the banks will remain undisturbed and water flow will be maintained from upstream to downstream creek inverts.
9. For final stabilization, we recommend that slopes steeper than 5H:1V be covered with an erosion control blanket in addition to typical seed and mulch to prevent erosion during establishment of vegetation after construction.
10. This conceptual grading plan does not contemplate storm water runoff storage or treatment in the form of ponds during or after construction. It is assumed that the contractor will handle runoff during construction according to NPDES requirements. In the event post construction storm water ponds are desired, then we propose the construction of berms and swales along the creek banks to divert storm water runoff to the east end of the site where runoff can be collected and managed in ponds prior to discharge to the creek and offsite property. Alternatively, the creek can be dammed at the east end of the site to accommodate a storage volume for rate/volume attenuation and treatment of runoff.

