



August 4, 2010  
File No.: 77754-2

Jeffory J. Scharff, Esq.  
Scharff, Brady & Vinding  
400 Capitol Mall, Suite 2640  
Sacramento, CA 95814

Re: Dellar Property Landfill Final Cover Reconfiguration  
Sacramento, CA

Dear Mr. Scharff:

This letter report and the attached plates describe our efforts to reconfigure the proposed final closure contours for the Dellar Landfill in an effort to decrease the loss of Elderberry plants and avoid the associated mitigation fees. Dellar landfill is immediately west of the 28<sup>th</sup> Street Landfill Complex adjacent to the American River. Our scope of work included two tasks, a field investigation and preparation of the cap reconfiguration drawings.

#### Field Investigation

Kleinfelder geologist Brian Honea arrived on site on July 23, 2010 at 8:30 AM. Using a Trimble GeoXH Geoexplorer GPS unit, he surveyed the dripline of the Elderberry plants listed in the AECOM memorandum "Dellar Parcel – Blue Elderberry Shrub and VELB Survey Results" dated May 20, 2010. Our report uses the same plant numbering as the AECOM report (EB-1 through EB-17). Due to a dense stand of blackberry vines we were unable to walk the full perimeter of Elderberry plant 10 or even approach Elderberry plant 12 (the location of this plant is approximated in our Plates 1 and 2). The GPS data were post-processed to increase accuracy of dripline delineation. Plate 1 shows the locations of the Elderberry plants.

Borings were advanced to a maximum depth of approximately 2 feet at a location 2 feet outside the dripline of each Elderberry plant location to assess the thickness and nature of the existing soil cover. Boring locations are shown in Plate 1. Table 1 summarizes the results. Photographs of the borings at EB-5 and EB-7 are in Figure 1.

#### Final Cover Reconfiguration

A set of final closure design drawings (Planset) has been prepared for the Dellar Landfill by the City of Sacramento (29-Acre Final Landfill Closure, Dellar Property, Sacramento,

California, 2/26/10, SCS Engineers). Drawing 3 from the Planset is reproduced in Plate 1. This is the grading and drainage plan for the final cover. GPS surveyed locations of the 17 Elderberry plants are also shown on Plate 1. Nine of the 17 Elderberry plants (EB-1 through EB-9) fall within the footprint of the final cover and, with the exception of EB-9, would be removed during construction. The approximate existing ground surface elevation in the immediate vicinity of the plant is also shown on Plate 1 (this elevation was obtained from the existing site topographic map included in the Planset).

With an approximate mitigation cost of \$75,000 per plant, loss of eight Elderberry plants during construction could add up to \$600,000 to the cost of the project. Therefore, Kleinfelder evaluated the proposed final cover design to see if the design could be reconfigured to save some or all of the Elderberry plants.

Plate 2 is a conceptual reconfiguration of the final cover design that preserves Elderberry plants EB-1 through EB-9. The reconfiguration makes two changes to the proposed final cover design:

1. Adjust closure contours to match existing grade in the vicinity of the Elderberry plants.
2. Move the eastern detention basin approximately 380 feet to the south and route storm water flow from the north to the basin via a buried culvert.

The adjusted contours maintain a buffer of at least 20 feet between the Elderberry plant driplines and closure grading activities. The buried culvert is needed to preserve EB-1 which would be affected by the sideslopes of a surface channel discharging to the basin.

#### Discussion

Hand auger borings advanced to a depth of 2 feet near the Elderberry plants falling within the footprint of the proposed final cover encountered debris at locations EB-4 and EB-5. Borings at the remaining locations (EB-1 through EB-3, and EB-6 through EB-9) encountered either no waste or trace amounts. The soil type encountered in the borings was primarily silty sand.

The conceptual final cover reconfiguration (Plate 2) shows that it is possible to preserve the existing Elderberry plants and still construct the final cover. One disadvantage of the approach shown in Plate 2 is the presence of slopes of less than 3% in the northeast corner of the final cover. The minimum typically required by the Regional Water Quality Control Board is 3% although Board staff have accepted shallower slopes on other projects with the understanding that there will be a greater chance of storm water ponding caused by settlement and that the Discharger will be responsible for correction of this situation.

Plate 2 is a conceptual design. Additional work will be required by the design engineer to integrate these changes into the final design, in particular the routing of storm water and sizing of drainage structures for design flows.

#### Limitations

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This report may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The work performed was based on project information provided by the Client. If the Client does not retain Kleinfelder to review any plans and specifications, including any revisions or modifications to the plans and specifications, Kleinfelder assumes no responsibility for the suitability of our recommendations. In addition, if there are any changes in the field to the plans and specifications, the Client must obtain written approval from Kleinfelder's engineer that such changes do not affect our recommendations. Failure to do so will vitiate Kleinfelder's recommendations

Please contact me if you have any questions or require additional information.

Sincerely,

**KLEINFELDER WEST, INC.**



Timothy Crandall, P.E.  
Principal Engineer

#### Attachments

Table 1  
Figure 1  
Plate 1  
Plate 2



Table 1  
Soil Boring Summary  
Dellar Landfill  
July 23, 2010

Elderberry Plant Number	Soil Type	Waste Found in Soil Matrix?	Elderberry Plant Within Footprint of Closure Cap?
1	Dark Brown Silty Sand	No waste encountered	Y
2	Brown to Dark Brown Silty Sand	Trace wood	Y
3	Dark Brown Silty Sand	Trace wood	Y
4	Silty Sand	Brick and glass	Y
5	Silty Sand	Brick & dark wood debris, ashy	Y
6	Silty Sand	No waste encountered	Y
7	Silty Sand	Clear plastic sheet near surface	Y
8	Sand with Silt	No waste encountered	Y
9	Silty Sand	Trace grout	Y
10	Refusal	Debris pile with geotextile fabric	N
11	Sand	Brick and concrete	N
12	No Boring Advanced	NA	N
13, 14, 15	Silty Sand	Trace	N
16	Silt	Brick debris	N
17	Silty Sand	No waste encountered	N

All borings terminated at a depth of 2 feet below grade unless refusal was met.

Figure 1 – Site Photographs



Brick and Wood Debris at EB-5 Boring



Plastic Debris at EB-7 Boring