



STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor

Allen Biaggi, Director

Leo M. Drozdoff, P.E., Administrator

March 4, 2009

Erin Merrill
NORCAL Waste Systems
160 Pacific Avenue
San Francisco CA 94111

Reference: With respect to NORCAL Waste Systems and the correspondence dated 12/24/08 Response

Subject: First Technical Review of Jungo Landfill Application (Application)

Dear Ms. Merrill:

Thank you for your Response, the Nevada Division of Environmental Protection (NDEP) has had an opportunity to conduct a preliminary review and herein provides comments. The NDEP will continue reviewing the Application upon receipt of a response. Please provide a response to these comments within 60 days of receipt.

The primary concerns the NDEP has are related to whether there is sufficient characterization of the subsurface soils and a reasonable understanding of the engineering properties necessary to address the regulatory requirements of *NAC 444.6795 Location restrictions: Unstable areas. (NRS 444.560)*. Please note that this terms includes:

(e) "Unstable area" means a location which is susceptible to natural or man-made features that are capable of impairing the integrity of some or all of the structural components of a municipal solid waste landfill unit that will prevent the release of the solid waste, or any by-product thereof, from that landfill. The term includes poor foundation conditions, areas susceptible to mass movements and karst terrains.

In the NDEPs view, the suspect soils (landfill bottom being almost directly adjacent) in combination with being located in a Seismic Impact Zone (NAC 444.6793) present a problematic site condition. Accordingly the NDEP will be reserving authority to require further investigation. To try to clarify, at the landfill boundary there will be some 100psi of effective stress either in or adjacent to the Sandy-Silt/Silty-Sand layers with little to no cohesion. Coupled with a seismic event at partial buildout may compromise the integrity of the liner.

Additionally, it will be difficult to determine whether "settlement" has taken place in the waste mass or in the subsurface soils for the purpose of maintaining grade to sumps. In view of the critical slope necessary to promote drainage some 1600' and knowing only the last point taken prior to the next expansion does not provide assurance drainage is being maintained throughout the entire distance.

The NDEP will not assume "no leakage" through the liner, nor remove from consideration further protective measures for the groundwater as the site is restricted (NAC 444.678 Location restrictions: Generally. (NRS 444.560) The location of a Class I site must:

9. Unless approved by the solid waste management authority, **not** be within 1,000 feet of any surface water or 100 feet of the uppermost aquifer if the site is approved after September 2, 1992.



1. All drawings must be 200'/?
2. Please revise the HELP Model, Foundation Settlement, Slope Stability Calculations to reflect a Unit Weight of $\sim 45\text{lbs/ft}^3$ for the waste mass.
3. Please include soil loss due to wind at the facility (NRCS Custom Soil Resource Report for Humboldt County).
4. Please provide detailed sump design drawings, both in plan and in elevation with depths to groundwater included.
5. Please include (*i.e.* show) the Final Cover, with detailing, (Drawing 4) in conjunction with the LCRS and Gas Collection Piping detail.
6. Previously the NDEP requested:

NAC 444.680 Please provide the following:

- (d) *Show any proposed soil borrow areas.* [As a matter of note calculations show a deficit of $\sim 132,000\text{ yd}^3$ of soil, please identify where this will be taken from]

The NDEP cannot find any soil borrow area(s) identified. It is understood that the landfill will progress in a modular fashion with excavation taking place ahead of disposal, please show these areas in conjunction with various phases of the site.

7. Please provide a cross section (in elevation) showing the excavation in each of the phases with distance/depth to water and detailing (adjacent soil profiles would also be helpful).
8. Please return the number of employees previously submitted and then removed. Please do not remove anything from the application not directly commented on or required to remove.
9. Please remove references to "sheetflow" this site is predominantly subject to "Ponding" (NRCS Custom Soil Resource Report for Humboldt County).
10. Are the PE Stamps and signature either scanned or computer generated?
11. Please provide updated and current Groundwater Elevations for each of the borings.
12. Please include in the Closure Plan a process for verification of Interim Closure for the site. This would include a request to the NDEP for a site visit and inspection to confirm Partial Closure and confirmation Financial Assurance is no longer required for this particular area.
13. It is not clear for each of the expansions (modules) how Run-on and Run-off will be managed. The NDEP cannot authorize a release onto adjacent properties; accordingly all waters must be managed onsite. Please provide details for each expansion.
14. Are the blow counts corrected or uncorrected in the Well logs?
15. Please remove "Conceptual Design" and Replace with "Final Design", the NDEP will not review Conceptual Designs

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16. Just to clarify, is NORCAL proposing a 5 foot soil Cap with membrane?

Any questions regarding this may be directed to the undersigned at 775-687-9477 or jtaylor@ndep.nv.gov.

Sincerely,



Jon Taylor PE CEM
Staff Engineer III
Solid Waste Branch
Bureau of Waste Management

JT:cb

cc: Ken Haskell Golder Associates Inc. 1009 Enterprise Way Suite 350 Roseville CA 95678

cc: Eric Noack
Ed Glick

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