

February 28, 2006

03-23551-05

Mr. Dale Denio Dayton Land Developers, LLC 451 Lakeshore Boulevard Incline Village, Nevada 89451

SUBJECT: PERCOLATION AND SOIL TESTING

Santa Maria Ranch Phase III

Dayton, Nevada

Dear Mr. Denio:

Converse Consultants (Converse) is pleased to report the results of percolation and soil testing for above mentioned project. From February 8, 2006 to February 11, 2006, Converse performed sixteen percolation tests for the proposed home sites area, and evaluated the on-site soils for on-site sewage disposal. The purpose of the percolation testing was to supply preliminary data to the Nevada Division of Environmental Protection as part of the subdivision review. Additional, testing will be required by the individual lot owners for the actual individual septic system design. In addition, Converse collected four soil samples from 0 to 2 feet in the flood-plain area. These soil samples were analyzed for total mercury content.

## PERCOLATION TEST

Percolation tests were performed between 0.5 to 4 feet below ground surface (fbgs). The area predominantly consisted of sandy silts with occasional gravels and cobbles. There was also some strata of sandy clay and gravelly silts. Some of the onsite soils where found to be cemented. The protocol outlined in NAC 444.796 was followed for this testing. The following table summarizes the result of this testing and the field work sheet is attached.

Location	Percolation Rate (min./in.)	Depth (ft.)	Soil Type
PT-1	240	2.0	Sandy Silt with Gravel and Cobbles (ML) (Cemented)
PT-2	40	3.0	Sandy Silt with Gravel (ML)
PT-3	60	4.5	Sandy Silt (ML)
PT-4	80	0.5	Silty Sand (SM)
PT-5	34	2.5	Silty Sand (SM) (Cemented)
PT-6_	2.5	3.0	Sandy Silt with Gravel (ML)
PT-7	80	0.5	Sandy Clay (CL)
PT-8	80	0.5	Sandy Silt (ML)
PT-9	21.8	2.0	Sandy Silt (ML)



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Location	Percolation Rate (min./in.)	Depth (fL)	Soil Type
PT-10	60	0.5	Sandy Silt (ML)
PT-11	Did Not Perc	1.0	Sandy Clay (CL) (Bottom of Test in Cemented Material)
PT-12	240	1,0	Silt with Gravel and Boulders (ML) (Strongly Cemented)
PT-13	6.7	4.0	Gravelly Silt (GM) (Slightly Cemented)
PT-14	24	4.0	Sandy Silt (ML)
PT-15	17.1	3.0	Boulders and Cobbles with Sandy Silt (GM/ML) (Slightly Cemented)
PT-16	120	3.0	Sandy Clay (CL) (Strongly Cemented)

Non continuous cemented soils were identified starting at approximately 1 to 3.5 feet below grade in some of the test pits. Some of the more heavy cemented soils did not have acceptable percolations rates. Of the 16 percolation test performed four had percolation rates of 120 minutes per inches or higher. Based on these results the lots should be developable but care should be taken when locating the individual disposal systems to identify an area and elevations with suitable percolations rates on some lots engineered system maybe required. Additional, testing will be required by the individual lot owners for the actual individual septic system design.

## MERCURY CONTENT TEST

Santa Maria Ranch, Phase III, is being subdivided for single family housing. Dayton Land Developers, LLC, will be developing the roads and subdividing project area into lots. The lots will be sold to individuals for final development. A portion of the project is in the Nevada Carson River Mercury Site (NCRMS). The NCRMS is 50 miles in length within the Carson River and its flood-plain begins near Carson City, Nevada, and extends downstream to Lahontan Valley. Contamination at the site is a legacy of the Comstock mining era of the late 1800's when mercury was imported for the processing of gold and silver ore. Nine lots will have riverfront access and contain portions of flood-plain for the Carson River. The actual home sites are located on a buff over looking the Carson River.

In December of 1994 the Environmental Protection Agency (EPA) finalized a Human Health Risk Assessment and Remedial Investigation Report for the 50-mile. During the assessment, the EPA set residual clean up levels at 80 parts per million (ppm) for total mercury content in residential soils. This means that soil containing mercury levels up to 80 ppm do not require any clean up action and are safe to be used in residential applications. Using this information, NDEP has determined that no soil with mercury levels over 80 ppm should be located within the top two feet of finished lots within subdivision developments.



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Soil samples were collected from 0 to 2 feet below grade within the flood-plain area at the four locations specified on the attached map. The soil from each test pit area was composed, placed in a laboratory supplied jar, and delivered to a Nevada Certified Laboratory¹ under proper chain-of-custody, and analyzed for total mercury. The results show that no samples contained mercury levels approaching 80 ppm. The following table summarizes the laboratory results.

DATE TEST PIT		SAMPLE LOCATION	SAMPLING INTERVAL IN FEET	MERCURY mg/kg
2/10/2006	8-1	N39° 12.901' W119° 36.459'	0 to 2	25.1
2/10/2006	B-2	N39° 12.957' W119° 36.351'	0 to 2	0.22
2/10/2006	B-3	N39° 13.018' W119° 36.208'	0 to 2	3.24
2/10/2006	B-4	N39° 13.058' W119° 36.085'	0 to 2	7.37

Based upon the above results and the information supplied by Dayton Land Developers, LLC that indicating that they do not plan any mass grading in the floodplain area, Converse does not recommend any additional soil sampling for mercury during the development of the Phase III project.

Thank you for the opportunity to submit this report. If you have any questions, please call me at 775-856-3833.

Respectfully submitted,

**CONVERSE CONSULTANTS** 

Kathi Brandmueller, PE, CEM<sup>2</sup> Project Manager

Attachment: Site Map

Boring Logs

Laboratory Results

Field Data

<sup>1</sup> I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

<sup>&</sup>lt;sup>2</sup> I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all Federal, State, and local statues, regulations, and ordinances.