CUMBERLAND VALLEY ANALYTICAL SERVICES
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Water Analysis Report

Analysis Report For	Copy To
Anderson Valley Farms **Harrisonville , PA 17228**	**Ocker, Cliff**

Sample ID	Date/Time Sampled	Date/Time Received	Date Reported
13245 012	**05/30/2012 8:00 AM**	**05/31/2012 10:00 AM**	**01/09/2013**

Farm/Client	Sample Description	Test(s) Requested
BORBA 16/17	WATER TROUGH-WELL WATER	**LIVESTOCK SUITABILITY** **COLIFORM/ E COLI C...**

	Results	Farm Survey Average	Expected Levels in Drinking	Possible Problem Level for Cattle
pH	**7.56**	7.0*	6.8 - 7.5	< 5.5 or > 8.5
Nitrate as Nitrogen, ppm	**24.8**	7.7*	0 - 10	23
Nitrate as NO3, ppm	**109**	33.8*	0 - 44	100
Total Coliform, colonies per 100 ml	**<1**		< 1	15
E.Coli, Colonies per 100 ml	**<1**		< 1	10
Hardness, ppm $CaCO_3$	**280**	208*	0 - 180	
Total Dissolved Solids (TDS), ppm	**556**	368	0 - 500	3000
Chloride, ppm	**68**	59	0 - 250	300
Sulfates, ppm	**39**	81	0 - 250	500
Calcium (Ca), ppm	**75.4**	65	0 - 100	150
Phosphorus (P), ppm	**0.252**	0.7	0 - 0.3	0.7
Magnesium (Mg), ppm	**22.3**	24	0 - 29	100
Potassium (K), ppm	**3.32**	4	0 - 20	20
Sodium (Na), ppm	**62.8**	46	0 - 100	300
Iron (Fe), ppm	**<0.05**	0.79	0 - 0.03	0.4 (taste)
Manganese (Mn), ppm	**0.123**	0.17	0 - 0.05	0.05 (taste)
Zinc (Zn), ppm	**0.033**	0.12	0 - 5	25
Copper (Cu), ppm	**<0.01**	0.07	0 - 0.6	0.6

"Farm Survey Average" is from a survey of 3600 water samples collected from livestock operations throughout the United States in a study by Socha et al. Those values with an * are an average of 350 samples from problem farms reported by R. Adams and W. Sharpe. "**Expected Levels**" are based primarily on criteria for water fit for human consumption. "**Possible Problem Levels for Cattle**" is based primarily on research literature and field experiences. Source: Variability of Water Composition and Potential Impact on Animal Performance. Mike T. Socha, et al. University of Nebraska, North Platte, NE 69101; Water Intake and Quality for Dairy Cattle. Richard S. Adams and William Sharpe. Penn State College of Agricultural Sciences, Cooperative Extension.