



**FINAL ADDITIONAL ANALYSIS
(RESPONSE TO COMMENTS)**

to the

**NEWHALL RANCH SPECIFIC PLAN
and
WATER RECLAMATION PLANT
FINAL ENVIRONMENTAL IMPACT REPORT**

**Project # 94087
SCH # 95011015**

Volume III
(Comments and Responses)

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March 2003

The Newhall Land and Farming Company (Newhall) has been farming the land that includes portions of the Specific Plan area, and has drilled wells on its property and used the water from these wells to conduct its agricultural operations for many decades. Newhall owns and operates 26 wells to supply their agricultural water (see **Figure 2.5-24, Newhall Land and Farming Company Well Locations**). The total production of these wells are annually reported to the State Water Resources Control Board. Furthermore, the total amount of the agricultural water production by Newhall is reported in the annual Water Reports (see 1998, 1999 and 2000 Santa Clarita Valley Water Reports) which address the years 1980 through 2000. The average annual amount of water that has been pumped and used for agricultural operations in Los Angeles County from 1996 to 2000 is approximately 7,234,038 AFY as shown in Revised Table 2.5-32, Newhall Land and Farming Company Los Angeles County Agricultural Water Use.

As discussed below, water use on Newhall's agricultural lands is calculated utilizing Southern California Edison (SCE) pump tests to calculate total acre-feet of pumpage. Total acre-feet of pumpage is then allocated to each crop based on crop type and historical use. Budgets are prepared each year for each crop and reconciled at the end of the year based on the actual acre-feet pumped. It is important to understand that there can be significant variations in actual water use each year primarily due to the actual number of acres farmed, the type of crops, the amount and distribution of rainfall, and temperatures. CIMIS (California Irrigation Management Information System) data, which is provided by University of California, is a tool that can be used to compare each crop's demand for water with the estimated water allocation to each crop.

Generally, water use for each crop tends to be significantly higher on Newhall's land in Los Angeles County than on land in Ventura County. The basic reason is that the water demand for crops tends to decline dramatically in cooler coastal areas, and Newhall's operations are the farthest inland in Ventura County and continue into Los Angeles County. In addition to a much warmer climate, Newhall's land in Los Angeles County receive less rainfall than other parts of the County, its soils are sandier and extremely sandy in some cases, and most of its irrigation systems are older and less efficient. In addition, Newhall often uses some water in Los Angeles County on dryland acreage for crop emergence, which increases overall water use, and is reflected in regular irrigated crops and is not shown separately. In addition, vegetables, other row crops, alfalfa and sudan pasture are grown on the Newhall Ranch in Los Angeles County year round with several growing cycles on vegetable acreage, which requires irrigation throughout the entire year. Using the SCE-based pump tests, a total of 7,246 acre-feet of water per year over the past five years (1996 to 2000) was pumped by Newhall to irrigate its farmland in Los Angeles County.

Using CIMIS for a comparison, Newhall has calculated a comparison to its estimated water use by crop in Los Angeles County for the past five years (1996 to 2000) by relying on data from the CIMIS station in Piru (Ventura County) and weather data collected to determine the evapotranspiration (ET) of a base crop, which is usually grass with full ground cover, and is used as the basis to calculate the actual water needs of other crops. The CIMIS program takes into consideration all weather factors, which determine a plant's water demand. The base ET for Piru for the most recent 12 months (prior to February, 2001) is 62.75 inches of water per year, which is the actual consumption of the base crop (see Exhibit 1 in *The Newhall Land and Farming Company's Agricultural Water Use Los Angeles County, California 1996 to 2000*, presented in **Appendix 2.5**). Annual evapotranspiration has varied from 56.39 inches to 63.08 inches over the past five calendar years. To convert that to the various crops in the area, crop coefficients are applied (again see Exhibit 1 in **Appendix 2.5**), which are established by the University of California to determine the ET of the specific crop for any given year. The application efficiency of the irrigation system is then considered to determine the acre-feet (or inches) of water required to meet the crop's needs. The application of efficiency is primarily a function of irrigation methods and soil types, which can vary greatly and can have a very large input on the amount of water, which must be pumped in order to deliver and make available to a plant the water it actually needs. Crop coefficients in Newhall's area for citrus are 0.7. Crop coefficients for most vegetables, alfalfa and sudan/pasture are 1.0. Newhall estimates its application efficiencies to be 70 percent for vegetables due primarily to the use of more efficient sprinkler application of water, 60 percent for citrus due to the use of contour furrow irrigation, and 50 percent for alfalfa and sudan/pasture due to strip check surface irrigation and very sandy soils. Given those assumptions, the water demands for Newhall's crops, based on the most recent 12 months of CIMIS data (year 2000), would be 7.41 acre-feet (AF)/acre for vegetables, 6.05 AF/acre for citrus, and 10.37 AF/acre for alfalfa and sudan/pasture.

To compare actual estimated water usage in Los Angeles County by crop as estimated by using the SCE-based pump test information, actual crop acres planted each year can be multiplied by the crop demand based on the CIMIS calculation. As shown below in the revised Table 2.5-32, water demand in Los Angeles County based on the CIMIS calculation would have averaged 7,038 AF over the past five years. The lower of the two methods (i.e., the CIMIS method, which is the most conservative method) was selected to estimate the amount of Newhall's agricultural water annually pumped for irrigation, which is 7,038 acre-feet per year.

See Draft Additional Analysis Appendix 2.5 and Final Additional Analysis Appendix AB for specific information regarding Newhall's past and present use of agricultural water on its land in Los Angeles County.

Table 2.5-32
Newhall Land and Farming Company
Los Angeles County Agricultural Water Use

Year	Acres	Crop Type	Based on CIMIS (a)	
			Water Demand (AF)/acre	Water Use (AF)
2000	55	Alfalfa	10.37	570
	150	Sudan/pasture	10.37	1,556
	722	lsd.vegetables	7.41	5,350
		Subtotal		7,476
1999	55	Alfalfa	10.51	578
	150	Sudan/pasture	10.51	1,577
	709	lsd.vegetables	7.51	5,325
		Subtotal		7,479
1998	115	Alfalfa	9.4	1,081
	100	Sudan/pasture	9.4	940
	590	lsd.vegetables	6.71	3,959
		Subtotal		5,980
1997	160	Alfalfa	10.22	1,635
	103	Sudan/pasture	10.22	1,053
	663	lsd.vegetables	7.3	4,840
		Subtotal		7,528
1996	105	Alfalfa	10.21	1,072
	170	Sudan/pasture	10.21	1,736
	537	lsd.vegetables	7.3	3,920
		Subtotal		6,728
Average for Period				7,038

a — CIMIS = California Irrigation Management Information System. Does not include dryland farming or Christmas tree use.

b — AF = acre feet

(2) Nickel Water

The applicant has secured water under contract with Nickel Family LLC in Kern County. This water is 100 percent reliable on a year-to-year basis, and not subject to the annual fluctuations that can occur in dry year conditions. The Nickel water is part of a 10,000 acre-foot quantity of annual water supply that Nickel obtained from Kern County Water Agency ("KCWA") in 2001 pursuant to an agreement between Nickel, KCWA and Olcese Water District ("Olcese"). Under that agreement, Nickel has the right to sell the 10,000 AFY to third parties both within or outside Kern County. See **Appendix 2.5** for copies of the applicable agreements and attachments to the agreements. Because it is not subject to reductions in dry years, the Nickel water is an extremely reliable water supply source for the Specific Plan. The water

Revised Table 2.5-32
Los Angeles County Agricultural Water Use
Using Adjusted CIMIS ET Data to Allocate Actual Water Pumped

Year	Crop Type	Total Irrigated Acres	Adjusted CIMIS Water Use (af/ac)	Adjusted CIMIS Water use (af/yr)	% of Water Use by Crop	Total Pumped Water Based on SCE (af)	Allocation of Total Pumped Water by Crop (af/yr)	Acre Feet/Year per Acre of Crop	LA Co. Irrigated Crops (acres)	LA Co Crop Share of Actual Pumped Water (af/yr)	LA Co Crop Share Using Adjusted CIMIS (af/yr)
2000	Citrus (furrow)	291	6.05	1,761	12.35%	13,798	1,704	5.86			
	Citrus (micro)	811	4.54	3,682	25.83%		3,565	4.40			
	Alfalfa (flood)	55	10.37	570	4.00%		552	10.04	55	552	570
	Sudan/pasture (flood)	150	10.37	1,556	10.91%		1,506	10.04	150	1,506	1,556
	Isd. Vegetables (sprinkler)	902	7.41	6,684	46.90%		6,471	7.17	722	5,180	5,350
					100.00%		13,798		927	7,238	7,476
1999	Citrus (furrow)	291	6.13	1,784	12.56%	16,131	2,025	6.96			
	Citrus (micro)	781	4.6	3,593	25.29%		4,079	5.22			
	Alfalfa (flood)	55	10.51	578	4.07%		656	11.93	55	656	578
	Sudan/pasture (flood)	150	10.51	1,577	11.10%		1,790	11.93	150	1,790	1,577
	Isd. Vegetables (sprinkler)	889	7.51	6,676	46.99%		7,580	8.53	709	6,046	5,325
					100.00%		16,131		914	8,492	7,479
1998	Citrus (furrow)	291	5.48	1,595	13.47%	11,477	1,546	5.31			
	Citrus (micro)	743	4.11	3,054	25.80%		2,961	3.99			
	Alfalfa (flood)	115	9.4	1,081	9.13%		1,048	9.11	115	1,048	1,081
	Sudan/pasture (flood)	100	9.4	940	7.94%		911	9.11	100	911	940
	Isd. Vegetables (sprinkler)	770	6.71	5,167	43.65%		5,010	6.51	590	3,839	3,959
					100.00%		11,477		805	5,798	5,980
1997	Citrus (furrow)	291	5.96	1,734	12.12%	14,862	1,801	6.19			
	Citrus (micro)	803	4.47	3,589	25.08%		3,727	4.64			
	Walnuts (micro)	33	4.47	148	1.03%		153	4.64			
	Alfalfa (flood)	160	10.22	1,635	11.42%		1,698	10.61	160	1,698	1,635
	Sudan/pasture (flood)	103	10.22	1,053	7.35%		1,093	10.61	103	1,093	1,053
	Isd. Vegetables (sprinkler)	843	7.3	6,154	43.00%		6,390	7.58	663	5,026	4,840
					100.00%		14,862		926	7,816	7,528
1996	Citrus (furrow)	291	5.96	1,734	12.84%	13,702	1,760	6.05			
	Citrus (micro)	801	4.47	3,580	26.51%		3,633	4.54			
	Walnuts (micro)	33	4.47	148	1.09%		150				
	Alfalfa (flood)	105	10.21	1,072	7.94%		1,088	10.36	105	1,088	1,072
	Sudan/pasture (flood)	170	10.21	1,736	12.85%		1,761	10.36	170	1,761	1,736
	Isd. Vegetables (sprinkler)	717	7.3	5,234	38.76%		5,311	7.41	537	3,978	3,920
					100.00%		13,702		812	6,826	6,728
Average						13,994	13,994		877	7,234	7,038

CIMIS = California Irrigation Management Information System. Does not include dryland farming or Christmas tree use.
af = acre-feet; ac = acres; yr = year.