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LETTER OF TRANSMITTAL

DIVISION OF WATER CONTROL
SACRAMENTO

TO: Burnt Ranch Water Company
Post Office Box 102
Burnt Ranch CA 95527
ATTN: Kendal

Date: November 2, 2006
Job No. _____
Project: Water Supply Measurements
Burnt Ranch Estates

TRANSMITTED BY: Mail Hand Delivered Pick Up

	<u>Quantity</u>	<u>Description</u>
1.	1	Engineer's Observations
2.		
3.		

REMARKS: Please call if you have any questions.

THIS MATERIAL SENT: upon request

Josh McKnight /ans
Josh McKnight, P.E.

Engineer's Construction Observations

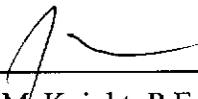
Owner: Burnt Ranch Estates Water District **Date:** 6 December, 2006
Location: Burnt Ranch, CA **Weather:** Sunny
Subject: Water Supply

Observations: Water supply measurements were taken for the Burnt Ranch Estates Water System on 10/29/06. No significant rains have occurred so far this year, so flows in the creek should be at its lowest. The water supply comes from McDonald Creek, and measurements were taken at the intake. Measurements were taken by opening an overflow valve on the pipe from the intake and closing the valve going into the water system. In this way all of the flow is diverted into the overflow. No water was observed to be flowing over the intake dam, so measurements taken represent the total flow from McDonald Creek. Measurements were taken by filling a five gallon bucket from the overflow and making observations of the time. These measurements resulted in a total measured flow of 42.86 gallons per minute (see attached calculation), which is equivalent to 61,718.4 gallons per day.

Calculations: Water availability calculations were performed utilizing the attached analytical methods. These calculations yielded a total water availability of 630, 596 gallons per day.

Conclusion: In considering the above two methods of determining water availability, I would consider the direct measurement method to be more reliable.




Josh McKnight, P.E.
Trinity Valley Consulting Engineers

Water Testing

Project Name: Burnt Ranch Estates Water System
Location: Burnt Ranch, CA
Test Method: 5-gallon container

Date: 10/29/06
Tested by: J. McKnight
Weather: Sunny

Intake

Test No.	Gallons	Time (sec)	Flow Rate (gallons/min)
1	5	7	42.86
2	5	7	42.86
3	5	7	42.86

Average: 42.86

**Water Availability Calculations
Burnt Ranch Estates Water System
Burnt Ranch, CA**

Anticipated Water Flow

Area of Watershed in Acres:	576
Runoff Coefficient	0.42
Average Annual precipitation in feet per year:	2.92
Water flow in acre-feet per year:	706.4064
Water flow in gallons per day:	630596

Figure 819.2A

**Runoff Coefficients for Undeveloped Areas
Watershed Types**

	Extreme	High	Normal	Low
Relief	.28 -.35 Steep, rugged terrain with average slopes above 30%	.20 -.28 Hilly, with average slopes of 10 to 30%	.14 -.20 Rolling, with average slopes of 5 to 10%	.08 -.14 Relatively flat land, with average slopes of 0 to 5%
Soil Infiltration	.12 -.16 No effective soil cover, either rock or thin soil mantle of negligible infiltration capacity	.08 -.12 Slow to take up water, clay or shallow loam soils of low infiltration capacity, imperfectly or poorly drained	.06 -.08 Normal; well drained light or medium textured soils, sandy loams, silt and silt loams	.04 -.06 High; deep sand or other soil that takes up water readily, very light well drained soils
Vegetal Cover	.12 -.16 No effective plant cover, bare or very sparse cover	.08 -.12 Poor to fair; clean cultivation crops, or poor natural cover, less than 20% of drainage area over good cover	.06 -.08 Fair to good; about 50% of area in good grassland or woodland, not more than 50% of area in cultivated crops	.04 -.06 Good to excellent; about 90% of drainage area in good grassland, woodland or equivalent cover
Surface Storage	.10 -.12 Negligible surface depression few and shallow; drainageways steep and small, no marshes	.08 -.10 Low; well defined system of small drainageways; no ponds or marshes	.06 -.08 Normal; considerable surface depression storage; lakes and pond marshes	.04 -.06 High; surface storage, high; drainage system not sharply defined; large flood plain storage or large number of ponds or marshes
Given	An undeveloped watershed consisting of; 1) rolling terrain with average slopes of 5%, 2) clay type soils, 3) good grassland area, and 4) normal surface depressions.		Solution: Relief 0.14 Soil Infiltration 0.08 Vegetal Cover 0.04 Surface Storage 0.06 C = 0.32	
Find	The runoff coefficient, C, for the above watershed.			

Burnt Ranch Estates Water System

C-Values:

Relief	0.22
Soil Infiltration	0.08
Vegetal Cover	0.04
Surface Storage	0.08
C =	0.42

WATERSHED AREA
Approximately 576 Acres

WATERSHED AREA
Burnt Ranch Estates Water System
Burnt Ranch, California
12/06/06 TVCE

