

El Sur Ranch Water Right
Application Number 30166

Irrigation Requirement and
Erosion Control

California Water Resource Control
Board Testimony

June 16, 2010

View of the Irrigated Pasture and Surrounding Area



Calculated Irrigation Needs

- Climate
- Crop
- Management
- Irrigation System and Management

Calculated Irrigation Needs

- Climate Factors
 - Temperature
 - Wind
 - Solar radiation
 - Humidity
 - Rain
- Limited Local Historical Data
 - Installed electronic weather station
 - Correlated calculated crop water requirement with long term weather data from Monterey, CA

Calculated Irrigation Needs

- El Sur Ranch weather data (August 2004 – January 2007)
- Climatic conditions at the El Sur Ranch (isolated irrigation, high winds, dry surrounding area, dry summers)
- Used FAO Penman-Monteith Method during August 2004 – January 2007, to calibrated the SCS Blaney-Criddle method.

Summary of Crop ET and Irrigation (1975-2007)

- The average annual crop ET is 43.3 inches (3.6 feet).
- The average annual calculated net irrigation requirement is 31.01 inches (2.58 feet).
- The maximum net irrigation requirement is 37.66 inches (3.14 feet).

El Sur Ranch Irrigation System

- The irrigation method and system for El Sur Ranch irrigated pasture is the most appropriate irrigation method for the soils, climate, crop, use of land, and aesthetic qualities of the region.
- The system provides for good control of the water and does not detract from the appearance of the coastline.
- Alternative irrigation methods were reviewed and determined to be unsuitable for the conditions on El Sur Ranch irrigated pastures.

Irrigation Calculation

- Crop water requirement
- Effective precipitation
- Irrigation efficiency based on irrigation system and management considerations
- Leaching requirement (10 percent – not needed every year)
- Diversion requirement

Irrigation Diversion Requirements (1975-2007)

- Based on irrigation system and conditions the target irrigation efficiency is 65 percent.
- The average annual irrigation requirement is 1,087 acre-feet.
- The maximum annual irrigation requirement is 1,320 acre-feet.
- The maximum monthly irrigation requirement is 203 acre-feet.

Irrigation Diversion

El Sur Ranch Estimated Annual Diversion Requirement for 246 acres

