

UNITED STATES DISTRICT COURT
DISTRICT OF NEW MEXICO

FILED

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UNITED STATES)

Plaintiff)

v.)

STATE OF NEW MEXICO ENGINEER)
And others including:)
CHERYL DUTY)

[Signature]
CLERK ALI S. BARQUE

Civil Action No.
CIV01 0072 BB/WWD
ANSWER TO UNITED STATES'
COMPLAINT

I. Description of Property

This answer to the aforementioned complaint is in reference to the property located at the $S\frac{1}{2}SE\frac{1}{4}SE\frac{1}{4}$ of Section 13 T12N R16W NMPM located in McKinley County New Mexico. The property is under land contract to Joan and Richard Bowser from Cheryl Duty. Cheryl Duty was the named defendant on the complaint and Joan and Richard Bowser are making this answer on her behalf for this property.

II. Initiation and Purpose of Water Rights

There are two water rights claimed for this property with two separate initiation dates.

The oldest claim is the right for water required to maintain the property in its natural state. The property is part of the Zuni Mountain Forest Land and the Flora and Fauna thereon have lived there and used this water since the creation of the Zuni Mountain Forest. We maintain that this date predates all human uses and therefore has precedent over all claims stated in the original complaint. This request is not a request for the right to divert water, but that water diverted by other sources not be permitted to withdraw from this property the amount of water required to maintain the flora and fauna herein.

The second claim for this property is for domestic water rights. The property was originally part of the Cibola National Forest and later put into private hands through Homestead Laws. Domestic water rights were included with the transfer. Therefore, the date for these water rights is the date of transfer of this property from

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Cibola National Forest into private hands. Joan and Richard Bowser purchased the property in August of 1997 and have used the property as a second primary residence since June of 1996.

III. Source of Water


The source of water for these rights is precipitation that falls on the property; runoff from adjoining properties to the south, west, and east; water flowing through the property as part of the six mile draw; and groundwater running under the ground surface of the property. We claim the right to divert surface waters for domestic use. There is no claim for groundwater except that diversions of groundwater from other sources not be allowed to deplete the property of water to sustain existing flora and fauna as stated previously.

IV. Amount of Water Claimed

The water claimed for **domestic water use** is **0.35 acre feet per year** based on an average consumption of 80 gpd per person for a 4 person family. The consumption average was taken from Water Supply and Pollution Control by Warren Vessman, Jr. and Mark J. Hammer (Harper and Row, 1985) Table 4.2 and is an average value for rural domestic water use in the United States.

The amount of water required to maintain existing flora and fauna is harder to define. We have estimated this amount based on evapotranspiration. Evapotranspiration is a measurement of how much water is transpired through plant leaves. This is generally considered an indicator of how much water is taken up by the plant from the ground. A map showing evapotranspiration rates for the world is included with this answer. The rate for the Zuni area can only be estimated with this graph. Using an average rate of 25 mm per month yields a required depth of 0.99 feet per year. The property is 20 acres in size. Therefore we are claiming **primordial water right of 19.8 acre feet per year for the maintenance of existing flora and fauna.**

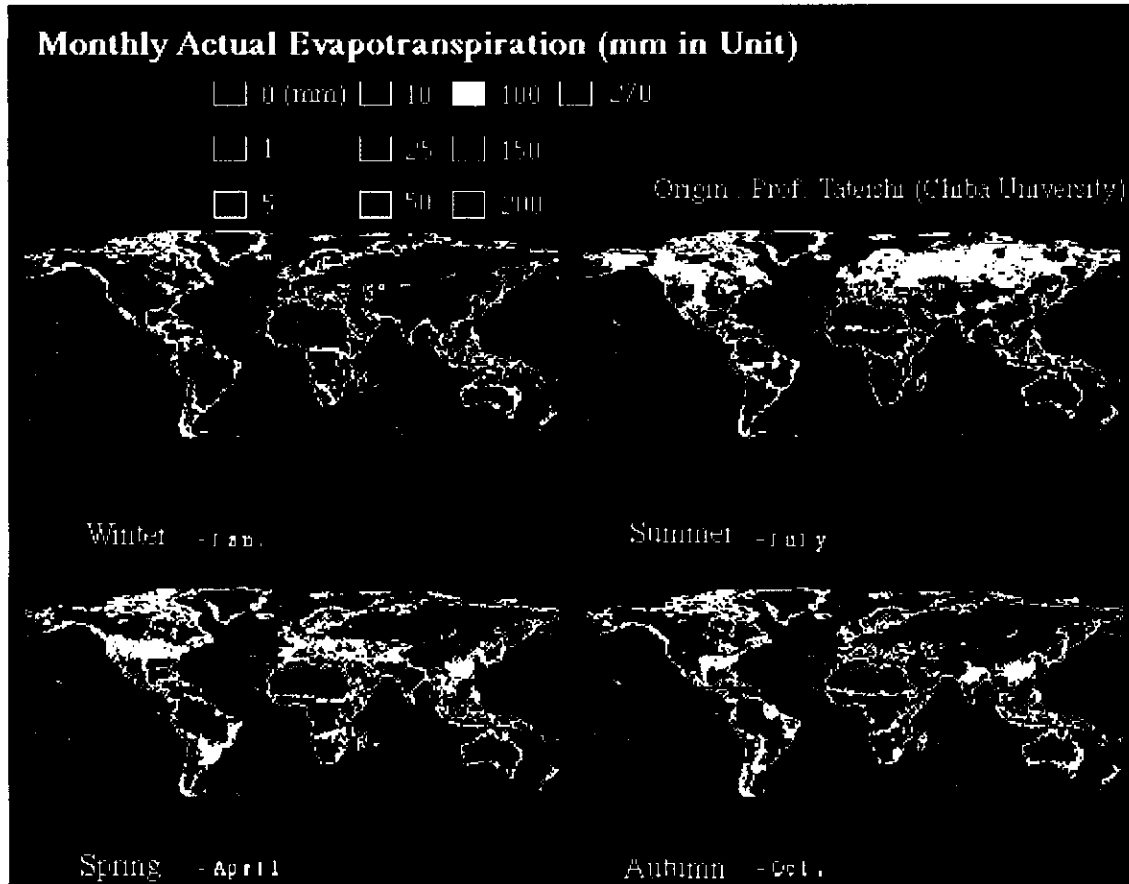
Respectfully Submitted this 19 day of April 2001.


Joan Bowser for Cheryl Duty

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Potential Evapotranspiration



This data set is produced by AHN and Tateishi(Remote Sensing and Image Research Center, Chiba University, Japan). It consists of estimated monthly global potential evapotranspiration(PET), evapotranspiration(ET), water balance on 30-minute latitude-longitude grid. Estimation was based on the Priestley-Taylor method using global data sets including air temperature, albedo, cloudiness, elevation, which are parts of Global Ecosystems Database supplied by NOAA-EPA. Then further calculation was conducted on Thornthwaite method to estimate evapotranspiration using precipitation (supplied by NOAA-EPA) and soil water holding capacity (supplied by GRID-Geneva) data. Almost of all source data were those of approximately 1920 through 1980. The comparison of the latitudinal distribution shows that the larger amount of water surplus in 45N-75N and deficit in 10S-30S rather than those of Legates and Mather. On the other hand, the latitudinal distribution of annual evapotranspiration shows very similar, except in middle-high latitudes region.

Further investigation was conducted to evaluate regional water resources using existing each countries' statistics. Details of it was given in the original documents. The data set is available as an 'Binary' format file. The monthly and annual 'Evapotranspiration Data', 'Potential Evapotranspiration Data' and 'Water Balance Data' consist of total 39 binary format files. The all files are in a raster form (360 lines and 720 pixels).

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