

Rachel Thomas
2136 N. Truman Road
Huachuca City, AZ 85616

May 1, 2013

ANSAC-Navigable Streams
1700 W. Washington Rm B-54
Phoenix, AZ 85007

Dear Sir

Attached is the following documentation supporting the Lack of Navigability of San Pedro River.

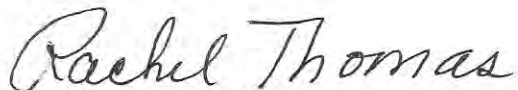
Statement by Rachel Thomas (Notarized), 5 pages and the following supporting statements.

Notarized statement of Clea Curtis Brown
Notarized statement of Bessie M. Shugart
Notarized statement of Jack Ladd
Notarized statement of Dr. Charles Behney, DVM

Also included

5 pages from the 1921 USDA Bureau of Soils Soil Survey of the Benson Area, Arizona
2 pages of the 1956 Boquillas Company, Boquillas Grant Ranch authorization for expenditure for installation of new watering with the justification "This area is watered by the by the San Pedro River, which goes dry before summer rains start."

Sincerely



Rachel Thomas

Rachel Thomas
2136 N. Truman Road
Huachuca City, Arizona 85616

To; Whom it may concern

Lack of Navigability of San Pedro River

Reference: US Department of Agriculture, Bureau of Soils in Cooperation with the University of Arizona Department of Irrigation's Soil Survey of the Benson Area, Arizona by E. J. Carpenter, of the US Department of Agriculture in charge and W.S. Bransford, of the University of Arizona, Department of Irrigation, Advance Sheet – Field Operations of the Bureau of Soils 1921. Copies of the pages referred to in this report are attached.

The pamphlet is mainly about the soils but also describes the San Pedro valley and provides the history of the area with absolutely no mention of any use of the San Pedro River for travel even though there is evidence of a lot of produce being shipped from the area.

From Page 249

"In 1877 a small settlement consisting of eight families was established near the site of the old town of St David, about 2 miles south of the present town of that name. At that time the country was largely overrun by the Apache Indians, though they were held somewhat under control by US Troops. Down river, a few miles below the present town of Benson, a small Mexican settlement call Tres Alamos was located on the mail route between El Paso and Tucson. The nearest settlement of any size was Tucson, from which all supplies for this region was freighted.

The growth of the settlement was consequently slow until in 1880, the year the Southern Pacific Railroad was built, giving more ready access to the region. Tombstone was the Cochise County seat and a rapidly growing mining town and the largest in the region.

The most thickly populated sections of the area are those bordering the San Pedro River north and south of Benson. Here water is available for irrigation, and the soil is largely under cultivation in small tracts of 40 acres or less.

The area is well supplied with transportation facilities with the main San Francisco-New Orleans line of the Southern Pacific Railroad crosses the north-central part of the area, and a branch line of the same road operating between Benson and Nogales, traverses the area from Benson south. The El Paso & Southwestern Railroad also operates a branch line from Fairbank to Benson, paralleling the Southern Pacific Branch at a distance of a quarter of a mile or less. A well graded highway traverses the area from Benson south. Another road upon which some work has been done crosses the area east and west, passing through Benson. In the more thickly settled communities the roads are in fair shape, but elsewhere they are few and poor. "

From Page 250

“Rural social life is developed to a high degree, especially in the Mormon settlements of St David and Pomerene. Good schools and churches are numerous throughout the area. Telephones are in general use. Electricity for lighting and power is obtainable from private plants.

Good markets are available for all surplus agricultural products of the area, though at the present time few commodities are produced in excess of home needs. The products shipped are mostly of the non-perishable nature, and, with the exception of cattle, none are shipped to any distance. Tucson, Bisbee, and Douglas receive practically all the Fresh fruit, grain, hay, dairy and poultry products shipped from this area.”

From Page 276

“Riverwash consists of bars and beaches and the dry beds of the streams of the area. It is confined principally to the channel of the San Pedro River and the larger drainage ways which enter it. The soil in the San Pedro River channel, 6 feet or more, consists chiefly of poorly assorted coarse, medium, and fine sand. Riverwash supports no native vegetation except occasional willows or mesquite along the banks of the streams.”

A table, page 253, compiled from information furnished by the Southern Pacific Railroad, shows agricultural products shipped from Benson in carload lots 1918 to 1920.

Cattle was 105 cars in 1918, 175 cars in 1919 and 152 cars in 1920.
Hay 31, 23, and 22 cars.
Watermelons, 2, 6 and 2 cars.
Wheat 1 car in 1920
Potatoes 1 car in 1920
Cabbage 1 car in 1919.

Other crops mentioned are corn, milo, kefir, strawberries and vegetables.

Railroads played an important part in the settlement with the Southern Pacific Railroad completed through Benson in 1884 and from Bisbee to Benson in 1903. The 2nd Railroad from Benson to Fairbank which then went west to Nogales, Arizona and on to Guaymas, Mexico was completed in 1882. A spur track was layed from Lewis Springs to Fort Huachuca in 1913.

Information from people and other sources who have lived along the San Pedro and whose families were here before them.

Mrs. Brown, 94 years young has lived in the St David area nearly all her life. She has seen the river dry, carry a small trickling stream, or in rain season, run a full flow of fast moving muddy water. Her granddad settled there in 1881 and her dad was born in St David in 1884. The family ranched and farmed south of St David. There ranch had cattle on both sides of the San Pedro requiring Mr. Curtis to regularly ride across the river to care for his cattle. They also sold alfafa hay to Fort Huachuca and hauled it by wagon and team and crossed the San Pedro and return with supplies. Mrs. Brown states that each time Mr. Brown made the trip across the San

Pedro River it was either dry or had a shallow stream that was easily crossed with his team and wagon. Mrs. Brown never heard her parents talk about nor has she observed at any time where boats were navigated on the San Pedro River. (Copy of Mrs. Brown's notarized statement is attached.)

Jim Shugart worked for the Boquillas from the 1940s to the 1980s. The Shugarts lived at all the different ranch camps along the San Pedro which included Hereford, the Wolf Place (now San Pedro House), Fairbank, and the Stone House at St David. Mrs. Shugart remembers that except when there were children at home, she rode with Jim being the extra cowhand. The work was always busy filled with days of riding fences, gathering strays, roundups, branding and shipping cattle. In those days, cattle were actually shipped out of Hereford on the railroad. There work took us across the river many times with the riverbed being dry or a small stream, usually less than ankle deep to the horses. There were exceptions such as after a large rain, when the water would be from bank to bank and running fast and dangerous. When the Shugarts first lived at the Wolf Place, there was no bridge across the river. Cars drove across the river bed to Bisbee from the west side of the river except when it was raining and the river flooded. Then people had to go to either Hereford or Fairbank to cross the river on a bridge. (Copy of Mrs. Shugart's notarized statement attached.)

There is documentation, copies attached, that the Boquillas Ranch had to install well systems along the San Pedro in 1956 because the San Pedro was dry before the rains started. (Copy of the documents attached)

Marie Ladd's family moves to the area of the San Jose Ranch in 1896 where they homesteaded much of what is the San Jose Ranch. Jack Ladd remembers the family going to the river in the 1960s to picnic. Mrs. Ladd had a special location which was very close to the Mexican Border. Jack accompanied them on several occasions. They quit going before the flood season because the river would not be flowing. If there was any water at all it would be in pools and my wife would not allow the children to play in stagnant water. Mr. Ladd has revisited the same area many times since about 2005 to check on cattle. Mr. Ladd has observed that the Border Patrol routinely drives along the border back and forth across the river bed when the river is not in a flood stage. In 1949 Mr. Ladd with some friends went Bass fishing on Apache Lake. Prior to leaving Bisbee they went to the San Pedro river and caught minnows to use for bait. They did this just north of the Palominas bridge. The river was not flowing and we walked all over the river bed using a net to catch the minnows in pools. (Copy of Jack Ladd's notarized statement attached)

Dr. Charles Behney, DVM, moved to Bisbee, AZ and opened his large animal veterinary practice 50 years ago making many ranch calls on ranches on the San Pedro River. This included the Kern County Cattle Co with land holding from the US/Mexican Border to the St David, Benson area. He treated my horses while I lived at the Stone House Camp in 1965. He also worked for Green Cattle Company testing cattle coming across the border from Mexico. A crossing which was located right on the river at the border. Dr. Behney often ate lunch with the cowboys where they would joke about a boat on the river since they felt the river was not capable of even floating a two by four all the way to Benson. From the time Dr. Behney opened his practice in Bisbee to today, his travels took him across the San Pedro many times and he always observed

the river's habits. It floods when it rains and ebbs in the dry season. He has seen it dry as a bone and high as the bridges it flows under. Dr. Behney states the river has not changed in all his 50 years of practice. (Copy of Dr. Behney's notarized statement attached)

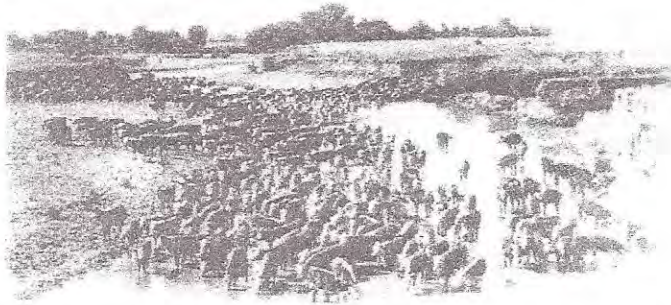
I first came to Arizona for visits in 1949-1950 when my granddad, Jim Gaines was station agent for the Railroad at Hereford, Arizona. Then in the spring and summer of 1964 I visited and worked on the Boquillas Ranch at the headquarters at Fairbank on weekends, before moving there in the fall of 1964. Most of the work was riding the river to check on cattle and after rains replacing water gaps in the fence. I lived at the ranch headquarters at Fairbank, then at the Stone House Camp southwest of St David. While at the Stone House I attended a team roping in St David almost every Friday or Saturday night, except when there were big rains to the south, I and would drive across the dry or almost dry San Pedro at the Escalante Crossing most of the time pulling a horse trailer.

After I married Cliff Thomas we lived in the Hereford area where we spent a lot of weekends helping work cattle on the Boquillas at the Hereford camp and rode back and forth across the river many times. We helped with gathering and loading the last shipment of cattle by rail from the Hereford Stockyards. We moved back to Fairbank by the ranch house in Fairbank for a couple of years then to the Whetstone area. While at Fairbank, Cliff and I spent many weekends helping on the ranch, a lot of the time riding on the San Pedro River from Fairbank to Charleston or from Fairbank to St David to check on or gather cattle or after big rains, repairing water gaps.. The river was mostly dry to a small ankle deep stream with the big concern being quicksand, even if the top of the ground looked dry. And I remember at least one time when Boze Haver (ranch foreman), Cliff and I went to a couple of different places on the river and hand-dug large holes in the dry river bed down several inches for water for the cattle. After we moved to the Whetstone area, we still spent several days a year helping work cattle on the Boquillas, mostly on the river.

The Bisbee Mining and Historical Museum has a historical photo in the Bradshaw collection which shows a herd of cattle in the river at the Hereford Bridge. The water is no more than ankle deep to the cattle. The same can be noted in the BLM photo of cattle in the San Pedro River provided below. The photo of the horse standing in the dry river bed was taken in the San Pedro River about a mile north of Fairbank.



San Pedro River, AZ; U.S. Bureau of Land Management photo



Cattle at the San Pedro River at the Hereford bridge, Unknown date. Bradshaw collection, Courtesy of the Bisbee Mining and Historical Museum



San Pedro River about 1 mile north of Fairbank 1967. Rachel Thomas photo

In summary, since the first settlers arrived in the area which was in the St David area in 1877, the San Pedro River from St David south to Mexico is one of two types of river all depending on the rains. When there are big rains to the south, the river floods from bank to bank. When there is no rain the river is dry or a small stream ankle deep or less. This is documented by the 1921 USDA documents, the 1956 Boquillas purchase orders for wells along the San Pedro, the two photos of cattle and one photo of horse in the river and the statements of people who have lived and worked on or near the San Pedro for many years. The San Pedro River is not and has not been navigable since the settlers arrived about 1900.

State of Arizona

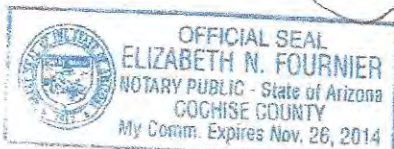
County of Cochise

On this 23 day of April, 2013, before me personally appeared Rachel A. Thomas (name of signer), whose identity was proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the document, and who acknowledged that he/she signed the above/attached document.

Rachel A Thomas

(seal) E. N. Fournier
Notary Public

total pages 5
(5)



Clea Curtis Brown
951 E Summers Lane
St. David, AZ. 85630
(520) 720-4389

March 20, 2013

To: Whom It May Concern

Fr: Clea Curtis Brown

Re: San Pedro River History

My people came to St. David in 1881 to make their home. My father was born in the St. David Fort in 1884. The family settled about 3 miles south of St. David. They raised hay and sold it to Fort Huachuca, crossing the river by team and wagon. My father was a rancher, having cattle on both sides of the river. He rode back and forth across the river on horse back. He would take a load of hay by team and wagon to in Ft. Huachuca and bring back supplies. Each time he would make the trip across the San Pedro River which was either dry or had a shallow stream that was easily crossed with his team and wagon.

I am 94 years old and have lived along the San Pedro for nearly all of those years. I have seen the river dry, carry a small trickling stream, or in rainy season, run a full flow of fast moving muddy water, but never have I heard my parents talk about, nor observed for myself any time in which boats were navigated on the San Pedro River.

Clea Curtis Brown

Clea Curtis Brown

The forgoing statement was acknowledged before me this 20 day of March, 2013

My Commission will expire:

08-05-2014

Manuel R. Rocha

Notary Public



April 23, 2013

From the 1940s to the 1970s, with my husband Jim Shugart, we lived and raised our family in the rugged ranching country known as the Little Boquillas Cattle Co. We made our home in different ranch camps of the Little Boquillas Ranch including Hereford, the Wolf Place (now San Pedro House), Fairbank and the Stone House. The ranch from Mexico, ran through Hereford and went down as far as St. David, along both sides of the San Pedro River, with the exception of the Escapule Ranch in the Charleston area.

The work was always busy filled with days of riding fences, gathering strays, roundups, branding and shipping cattle. In those days, cattle were actually shipped out of Hereford on the railroad. Except when there were children at home, I rode with Jim being the extra cowhand. Our work took us across the river many times. Usually the riverbed was dry or a small stream, usually less than ankle deep on our horses. The exception was after a large rain, when the water would be from bank to bank and running fast and dangerous.

When we first lived at the Wolf Place, there was no bridge across the river. Cars drove across the river bed to get the Bisbee from the west side of the river except when it was raining and the river flooded. Then people had to go to either Hereford or Fairbank to cross the river on a bridge.

After we left the Little Boquillas, Jim worked as a brand inspector and a deputy sheriff where he was involved in searches along the San Pedro.

I am now ⁸⁶84 and have lived in the San Pedro Valley since the 1940s. The river has not changed. It floods when it rains and is a small stream to dry when there is no rain.

Elizabeth N. Fournier

State of Arizona

County of Cochise

On this 23 day of April, 2013 before me personally appeared Elizabeth N. Shugart (name of signer), whose identity was proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the document, and who acknowledged that he/she signed the above attached document.

(seal)

Elizabeth N. Fournier
Notary Public

Ex 11/26/14

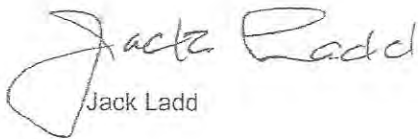


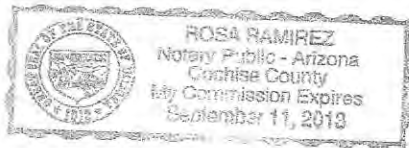
April 17, 2013

To Whom It May Concern:

My name is Jack Ladd and I state the following: during the 1960's my wife often took children to the San Pedro river to play in the water. She had a special location which very close to the Mexican Border. I accompanied them on several occasions. They quit going before the flood season because the river would not be flowing. If there was any water at all it would be in pools and my wife would not allow the children to play in stagnant water. I have revisited the same area many times since about 2005 to check on cattle. I have observed that the Border Patrol routinely drives along the border back and forth across the river bed when the river is not in a flood stage. In 1949 some friends and I went Bass fishing on Apache Lake. Prior to leaving Bisbee we went to the San Pedro River and caught minnows to use for bait.

We did this just north of the Palominas bridge. The river was not flowing and we walked all over the river bed using a net to catch the minnows in pools.


Jack Ladd



Signed and Acknowledged
before me on this 17 day
of April, 2013
by Jack Ladd
Notary Public Rosa Ramirez

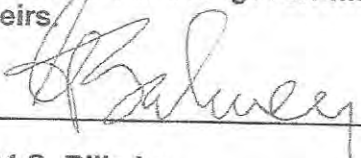
April 18, 2013

My name is Dr. Charles Behney and I have been a practicing large animal veterinarian in Cochise County, Az. for 50 years. My practice was located in Bisbee, Az. since 1961. During that time. I have made many ranch calls around the San Pedro river. I was the veterinarian for the Kern County Cattle Co. during the 60's whose holdings included the old Boquillas Land Grant which ran along the river from Mexico to Benson, AZ. During that time, I had countless opportunities to observe the flow of the river since much of my work was right on the edge.

I also did much of my work at the Green cattle crossing testing cattle coming across the border from Mexico. This crossing was located right on the river at the border. At lunch with the cowboys, we would joke about taking the steamboat to Benson and the train back as the force of the flow would be too much for a boat to endure on return. Little did we ever think that this would be no joke today! The river was not capable of ever floating a two by four all the way to Benson.

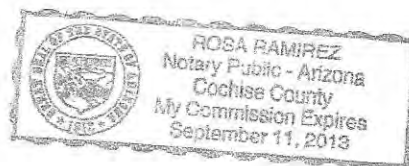
In my 50 years of practice, I have crossed that river so many times that I always observed its habits. It floods in the rainy season and ebbs in the dry seasons. I have seen it dry as a bone and high as the bridges it flows under.

This river has never changed in my 50 years of practice. It is up and down year in and year out. For the government to call it navigatable is not our joke anymore but theirs.



884 S. Bills Ln.
Bisbee, AZ. 85603

Signed and Acknowledged
before me on this 18 day
of April, 2013
by Charles Behney
Notary Public Rosa Ramirez



U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.

IN COOPERATION WITH THE UNIVERSITY OF ARIZONA
DEPARTMENT OF IRRIGATION.

SOIL SURVEY OF THE BENSON AREA,
ARIZONA.

BY

E. J. CARPENTER, OF THE U. S. DEPARTMENT OF AGRICULTURE,
IN CHARGE, AND W. S. BRANSFORD, OF THE UNIVERSITY
OF ARIZONA DEPARTMENT OF IRRIGATION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1921.]



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1924.

AGRICULTURE
WITH THE
ARIZONA
IRRIGATION

ground water is reached at a depth of 10 to 20 feet, and numerous springs contribute to a poorly drained condition of a small flat area bordering the river. The channel of the San Pedro River is gradually being cut lower into the valley floor, and this will probably tend to improve drainage in this locality.

In 1853 the region now known as San Pedro Valley, together with the rest of Arizona that lies south of the Gila River, was ceded to the United States by Mexico through the Gadsden purchase. Following this, several exploring parties passed through this region while surveying boundary lines or railway routes. In 1877 a small settlement consisting of eight families was established near the site of the old town of St. David, about 2 miles south of the present town of that name. At this time the country was largely overrun by the Apache Indians, though they were held somewhat under control by United States troops. Down the river, a few miles below the present town of Benson, a small Mexican settlement called Tres Alamos was located on the mail route between El Paso and Tucson. The nearest settlement of any size was Tucson, from which all supplies for this region were freighted. The growth of the settlement was consequently slow until in 1880, in which year the Southern Pacific Railroad was built, giving more ready access to the region. The county of Cochise was formed from part of Pima County in 1879, and Tombstone, which was then a rapidly growing mining town and the largest in this region, was made the county seat.

No estimate can be given as to the total population of the area surveyed, since census figures directly applicable are not available. The white settlers are mainly of English descent and largely American born. A large percentage of the people, who are of Mormon faith, came to this country from Utah. The Central and Eastern States also contributed to the present population. The foreign-born population consists principally of Mexicans and a few Chinese, and most of these reside in the town of Benson. The most thickly populated sections of the area are those bordering the San Pedro River north and south of Benson. Here water is available for irrigation, and the soil is largely under cultivation in small tracts of 40 acres or less.

There are no incorporated towns in the area. Benson, situated in the north-central part of the area on the Southern Pacific Railroad, is the largest town. St. David, a small Mormon settlement in the south-central part of the area, is next in importance, and Pomerene is another Mormon settlement in the northern part of the area. Land, Fenner, and Curvo are railway points within the survey.

The area is well supplied with transportation facilities: the main San Francisco-New Orleans line of the Southern Pacific Railroad crosses the north-central part of the area, and a branch line of the same road, operating between Benson and Nogales, traverses the area from Benson south. The El Paso & Southwestern Railroad also operates a branch line from Fairbanks to Benson, paralleling the Southern Pacific branch at a distance of a quarter of a mile or less. A well-graded highway traverses the area from Benson south. Another road upon which some work has been done crosses the area east and west, passing through Benson. In the more thickly settled communities the roads are in fair shape, but elsewhere they are few and poor.

Rural social life is developed to a high degree, especially in the Mormon settlements of St. David and Pomerene. Good schools and churches are numerous throughout the area. Telephones are in general use. Electricity for lighting and power is obtainable from private plants.

Good markets are available for all surplus agricultural products of the area, though at the present time few commodities are produced in excess of home needs. The products shipped are mostly of a non-perishable nature, and, with the exception of cattle, none are shipped to any distance. Tucson, Bisbee, and Douglas receive practically all the fresh fruit, grain, hay, dairy, and poultry products shipped from the area. Range cattle are generally marketed in Omaha or Kansas City; local markets absorb most of the fat stock.

CLIMATE.

The climate of this section of Arizona is distinctly arid. Owing to the scanty rainfall and hot summer weather, crops can not be matured successfully without irrigation. The rainfall in the mountains and on the desert slopes adjacent to the survey is variable, though in the valley it is fairly uniform. The mean annual rainfall of 8.6 inches at Benson is fairly representative of the area as a whole. However, owing to the occurrence of local thunderstorms, small local areas may receive considerable rainfall, while other sections receive none at all. The rains occur as local thunderstorms of considerable intensity, largely during July, August, and September, when over 50 per cent of the total annual rainfall occurs. April, May, and June, on the other hand, are normally extremely dry, only slightly more than one-half inch of rain falling during this period. During the remainder of the year the rainfall is rather uniform, with an average of about 0.6 inch per month. The rainfall for the wettest year on record at the Weather Bureau station at Benson was 22.58 inches in 1905, and for the driest year, 4.24 inches in 1885.

The summers are hot, though not oppressive. High maximum temperatures are recorded during May, June, July, August, and September, though the hot spells generally are not of long duration. The nights are usually cool, and during the hottest days the air is cool and pleasant in the shade. The mean annual temperature at Benson is 62.8° F., and for June, July, and August, 78.7° F. The highest recorded temperature is 110° F. and the lowest, 5° F. Though hail is not unknown in this region, it usually comes during the fall and seldom does any damage to crops. Snow falls every year in the mountains, where it remains for several weeks at a time. In the valley a light snowfall is often experienced during November, December, January, and February, though it rarely exceeds one-half inch in depth and lasts only a few hours. Lack of protection of winter grains sometimes causes slight losses from freezing.

The average date of the last killing frost in the spring at Benson is March 15, and the average date of the first in the fall is November 14, giving an average growing season of 243 days. The latest recorded killing frost in the spring occurred on April 19, and the earliest in fall on October 20. The growing season is long enough to mature most varieties of deciduous fruits, but owing to variable

Range cattle are marketed largely in the Central States, being shipped as feeder cattle to locations near markets. The range is entirely fenced and is controlled largely by the Boquillas Cattle Co. Many of the ranchers pasture a few head on their own land or privately owned homestead land under fence. A few dairy cattle are kept on nearly every ranch to supply home needs. However, the dairy industry is not developed, owing to insufficient local demand and the cost of transporting dairy products to outside markets. Hogs are raised in small numbers.

Some field corn is grown and utilized locally as stock feed. Kafir and milo have been grown to some extent, but have not been found profitable because of the destructiveness of birds. Poultry is kept on many farms and in some cases is the principal source of income, cultivated crops being grown mainly to supply feed for the flocks. Local markets consume most of the poultry and eggs, though any surplus is sure of ready sale either in Tucson or the mining towns of Bisbee and Douglas. Beekeeping is developed to a considerable extent and has proved highly profitable in the last few years. An abundance of mesquite furnishes an excellent supply of honey for several weeks, which is supplemented by alfalfa and numerous wild flowers and shrubs. During the last three years 182 tons of honey were marketed from Benson.

Vegetables of excellent quality are produced on every farm for home use. In a few instances onions have been grown for market and have produced good yields of excellent quality. Potatoes have been grown, largely for home use, with excellent yields. Strawberries also produce well in home gardens.

Agricultural statistics directly applicable to the area surveyed are not available, so that no estimate of total production can be given. However, the following table, compiled from information furnished by the Southern Pacific Railroad and the El Paso & Southwestern Railroad, shows the quantities of the products shipped from Benson in carload lots in 1918, 1919, and 1920:

Agricultural products shipped from Benson in carload lots.

Commodity.	1918	1919	1920
	Cars.	Cars.	Cars.
Cattle.....	105	175	152
Hay.....	51	23	22
Watermelons.....	2	6	2
Wheat.....			1
Potatoes.....			1
Cabbage.....		1	

Because of the low annual rainfall and the high summer temperatures, dry farming can not be practiced successfully in this region. The agricultural development of the valley has therefore of necessity been confined to the area in which artesian water or water diverted from the San Pedro River is available for irrigation. Under irrigation the farmers utilize the light-textured soils largely in the production of such crops as potatoes, alfalfa, and vegetables, and the heavier soils principally for grain production.

by steep escarpments or bluffs. These steep, dissected, and eroded areas have been classified as Rough broken land. Most of this land is too steep and broken to be of any agricultural value. Small buttes and isolated areas of similar material occurring within the valley are also included.

The Rough broken land is composed of materials of mixed origin which since deposition have been considerably altered through a long period of weathering. The eroded bluffs in places show cemented hardpan formations 1 foot to 3 feet or more in thickness. The arable soils of the valley are derived largely from material eroded from these deposits.

Occasional areas, usually not over 10 to 20 acres in extent, might be utilized for dry farming in seasons of unusually heavy rainfall, but are unsuited to irrigation owing to lack of water and the excessive cost of leveling.

The drainage is excessive, and only the more hardy desert plants survive the long seasons of drought. The land is utilized to some extent for grazing, for which it has little value.

RIVERWASH.

Riverwash consists of bars and beaches and the dry beds of the streams of the area. It is confined principally to the channel of the San Pedro River and the larger drainage ways which enter it. The soil in the San Pedro River channel, to a depth of 6 feet or more, consists chiefly of poorly assorted coarse, medium, and fine sand. Along the small drainage ways the deposits are coarser, consisting of coarse sand, gravel, and cobblestones.

Riverwash supports no native vegetation except occasional willows or mesquite along the banks of the streams. Owing to its low position and frequent overflow, it has no agriculture value.

ALKALI.

The Benson area is situated in a region of low rainfall, where leaching of the soil is slight, and where, therefore, relatively large accumulations of soluble mineral compounds appear in the soils. Some of these compounds are essential to plant growth, or at least are stimulating when occurring in small quantities, but under the conditions of high concentration found here most of them are injurious. These salts are commonly known as "alkali," though but few of them are chemically of alkaline reaction.

In the Benson area the occurrence of alkali salts was determined by means of the electrolytic bridge, by the use of which the approximate average salt content to a depth of 6 feet was ascertained. The results of these field determinations, with the approximate boundaries of the areas of alkali accumulation, are shown on an accompanying map. The location of each sample taken for alkali determination is indicated on this map by a large dot, with a number showing the average percentage of salts in the air-dry soil to a depth of 6 feet. All areas containing more than 0.2 per cent of alkali are considered to be of questionable value for maximum crop production of the more sensitive crops until reclaimed. Such areas have been inclosed by

COMPANY BOQUILLAS COMPANY

No. 26

AUTHORIZATION FOR EXPENDITURE AND/OR RETIREMENT

RANCH Boquillas Grant

DATE June 5,

19 58

APPROVAL IS REQUESTED FOR THE FOLLOWING PROJECT:

Installation of new watering: well, tank and erection of wood windmill.

EXPLANATION OF NEED:

This area is watered by the San Pedro River, which goes dry before water runs starts.

PROPERTY TO BE RETIRED:

None.

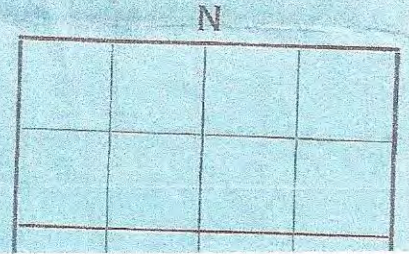
DATE OF COMPLETION: June 30, 1958.

WORK TO BE DONE BY:	ORDER NO.	REQUESTED BY <i>Joe Fitch</i>
<u>George Fitch</u>	<u>Item #53</u>	
<u>Duncan, Arizona</u>		APPROVED BY

SUMMARY OF ESTIMATED COST

MATERIAL	QUANTITY	VALUE
Casing	<u>80 ft.</u>	\$ <u>122.40</u>
Pipe and fittings		<u>130.00</u>
6x8 ft. tank		<u>300.00</u>
Sucker rod		<u>26.13</u>
2 1/2" cylinder		<u>59.00</u>
Drinking tub		<u>23.97</u>
Cement		<u>20.12</u>
LABOR <u>Drilling</u>		<u>200.00</u>

Southwest corner
LOCATION: SEC. 21 TWP. 150 RGE. 21N



BOQUILLAS COMPANY

COMPANY _____

No. 05

AUTHORIZATION FOR EXPENDITURE AND/OR RETIREMENT

RANCH Boquillas Grant

DATE June 5,

1956

APPROVAL IS REQUESTED FOR THE FOLLOWING PROJECT:

Installation of new watering: Well, tank and pumping unit.

EXPLANATION OF NEED:

This area is watered by the San Pedro River, which goes dry before summer rains start.

PROPERTY TO BE RETIRED:

None

DATE OF COMPLETION: June 30, 1956

WORK TO BE DONE BY:

Pardee

ORDER NO.

Item #53

REQUESTED BY

Joe Kitchens

Denson, Arizona

APPROVED BY

SUMMARY OF ESTIMATED COST

MATERIAL	QUANTITY	VALUE
Casing	80 ft.	\$122.40
Pipe and fittings		130.00
6x8 ft. Tank		300.00
Sucker rod		35.13
1/2" cylinder		59.00
Drinking Tub		23.97
Jensen pumping unit		196.07
LABOR Drilling		200.00

Southwest corner

LOCATION: SEC. 32 TWP. 10S RGE. 21E

N
