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# Water Resources Survey



Part I:

HISTORY OF LAND AND WATER  
USE ON IRRIGATED AREAS

Big Horn County, Montana

Published by

STATE ENGINEER AND STATE  
WATER CONSERVATION BOARD

Helena, Montana, May, 1947



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and

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May, 1947



### STATE ENGINEER'S OFFICE

State Engineer.....Fred E. Buck  
Assistant.....Gerald J. Oravetz

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### MONTANA STATE AGRICULTURAL EXPERIMENT STATION

O. W. Monson.....Irrigation Engineer and Consultant



May, 1947

Hon. Sam C. Ford  
Capitol Building  
Helena, Montana

Dear Governor Ford:

Submitted herewith is a consolidated report on the water resources survey of Big Horn County, Montana. This work is being carried on by funds made available to the State Engineer and the State Water Conservation Board by the 29th Legislative Session, 1945.

The report is divided into two booklets—part one consisting of the history of land and water use, irrigated lands, water rights, etc., while part two contains all of the township maps showing in color the lands irrigated from each canal.

The office files contain minute descriptions and details of each individual water right, water and land use, etc., which are too voluminous to be included herein. These office files are available for inspection to those who are interested.

Mr. Gerald J. Oravetz, Assistant State Engineer, has directed the detail office and field work of this project and is entitled to much credit for the excellent accomplishment.

Respectfully submitted,

FRED E. BUCK, State Engineer



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## Acknowledgments

A survey and study of water resources involves many phases of work in order to gather the necessary data to make the work both complete and comprehensive. As the major portion of the irrigated lands in Big Horn County are located on what is known as the Crow Irrigation Project, the resources of the Office of Indian Affairs have been called upon to an unusual degree in making this report. The listing presented here will acknowledge the contributions of those most actively connected with this survey.

### Irrigation Division

W. S. Hanna, District Engineer      W. H. Farmer and E. L. Decker, Engineers

### Crow Indian Agency

Warren L. O'Hara, Superintendent      Clyde E. Lewis, Project Engineer (Retired)  
L. C. Rennick, Clerk

Appreciation of the splendid cooperation of various other agencies and individuals who gave their time and assistance in gathering data for the preparation of this report is hereby acknowledged.

### Yellowstone County Officials

Charles Wicks, Commissioner      Carl Yerrington, Commissioner  
Bill Fenton, Commissioner

### Big Horn County Officials

Harry E. Cox, Clerk & Recorder      Sam Cunningham, Assessor

### Big Horn County Agricultural Conservation Association

George Miller, Chairman      Carey Mabe, Vice-Chairman  
A. G. Westwood, Member

### Bureau of Reclamation—Office of Region 6

H. D. Comstock, Director      W. G. Sloan, Asst. Director

Ditch Companies, Water Users Association Secretaries, and others cooperating and the names of the Ditch Company or Association they represent:

Antler Land Ditch Company.....	Tom Burke, Attorney
Big Horn Low Line Ditch Company.....	H. A. Williams, Secretary
Bozeman Trail Ditch Company.....	Mrs. D. H. Moss, Clerk
Crow Irrigation Project.....	Office of Indian Affairs
Farmers Ditch Company.....	Tom Burke, Secretary
Lateral Water Users Association.....	Bert Kronmiller, Secretary
Two Leggins Water Users Association.....	Bert Kronmiller, Secretary
Wagonbox Ditch Company.....	George Mehling, President



## Foreword

In nearly all of the 17 Western Reclamation States a water right is obtained by first making a filing with some legally designated central state agency—usually the State Engineer's Office—setting forth the amount of water desired and the area proposed to be irrigated. A study is then made of the sufficiency of the water supply and, if found adequate, a permit for use of the water is issued and recorded. If studies show that the stream is depleted, the application is denied. The procedure in Montana, however, is vastly different.

In Montana a right to the use of water from a stream not adjudicated by the courts is acquired by posting a notice on the stream and filing a copy of same in the office of the county clerk of the county wherein the appropriation is located, and by proceeding to divert and use the water. Where a person diverts and uses water from a stream without posting or filing a notice, a water right based thereon has been recognized as valid by the courts. Whenever it becomes necessary to adjudicate the stream, both methods of acquiring rights have been recognized by the courts, and the amount of water finally decreed and dates of priority in either case are determined by the evidences and proofs.

Under Montana law there is no restriction as to the amount of water one may designate in his notice of appropriation. As a consequence, the amount set forth in the filing in no way indicates the amount being diverted and used, nor does it show whether or not the water was ever used at all to perfect the right. Nor is there any relation whatsoever between the amount filed on and the normal flow of the stream. To further complicate this matter, our courts have made it almost impossible to prove the abandonment of a water right.

There is no central office in the State where recordings are filed, or any supervision over the distribution of water from unadjudicated streams. One wishing to study the validity of a water right must make a search of the county records wherein the stream is located and perhaps two, three, or more counties if the stream courses through them. About the only result one will accomplish by such a research will be a tabulation of the dates of filing. The amounts of water filed on will be of no consequence; there is no conclusive evidence that the recorded appropriations have been perfected, and there is no record of the rights which are being used but never recorded. Therefore, a purchaser of ranch property, where he has to depend upon irrigation from a stream that is not adjudicated, has no way of determining the validity or priority of his water right. He has no assurance of the value of the right until the stream is adjudicated by the court, when each claimant must prove his claim by material witnesses.

The pioneers who are able to offer direct testimony in adjudication suits are rapidly passing on. One phase of this water resources survey is to obtain all of the first-hand information possible on water and land use from the "old-timers" who are left, before it is too late. These data will include every known water right up to the time of completing the work in the respective counties, and the information will be on file for inspection in the State Engineer's Office. A prospective land purchaser, after studying the record, may have a good idea of the sufficiency and priority of the right appurtenant to the land in question.



In this and succeeding volumes of the data compiled by this water resources survey, it is the intention to provide as much information as is possible relative to the water right records of the various counties, as well as to assemble such other information as may be available from all sources having knowledge of these various water rights. Every precaution is being taken to avoid errors in the compilation of these data.

The value of this work has been well substantiated in negotiating the Yellowstone River Compact between the states of Wyoming, North Dakota and Montana. In arriving at an equitable division of the waters between the states, it was necessary for Montana to have a catalog of its irrigated land and water use. This same question may arise in other river basins. Again, it is highly important that Montana gather such data, and thereby be able to defend its water rights in the development of the great river basins of the Missouri and Columbia Rivers.



## Project History

As the result of a proposal made by the Montana State College and the State Engineer on August 9, 1939, to the Works Project Administration, an authorization for the expenditure of \$176,195 of Federal funds was secured for the purpose of making a comprehensive study of Montana's water resources. The two state agencies, acting as co-sponsors with WPA, pledged additional funds in the amount of \$41,930, making a total of \$218,125.

Work began on the study in February, 1940, after formal approval by the Washington office of the Works Project Administration, but before approval could be secured the sponsors were required to submit satisfactory evidence of the usefulness of the study and proof that it would not duplicate work already being done by other agencies.

Statements were obtained from all Federal Departments that were likely to be interested in the study in answer to inquiries as to: (1) Whether the proposed study would duplicate or overlap studies already in progress; and (2) Whether the study when completed would be useful to these agencies.

Excerpts from the replies received from several agencies are given below:

### **U. S. Army Engineers**

The following is from a letter dated September 11, 1939, signed by Col. C. L. Sturdevant, Corps of Engineers:

"The scope of the proposed project appears to be quite comprehensive, and the results of a study such as you have outlined would be of value to this office. The proposed studies would be of particular value to this office and also to the Missouri Headwaters and Yellowstone Drainage Basin Committees of the National Resources Planning Board, if they were to include estimates, for both existing potential individual projects of water shortage, available water supply, gross duty and ultimate return flow (for determining consumptive use and stream flow depletion)."

### **U. S. Geological Survey**

From a letter dated August 16, 1939, signed by A. H. Tuttle, District Engineer:

"Receipt is acknowledged of your letter of August 10 in regard to compilations of factual data concerning water supply and irrigable lands of Montana. I believe the purposes as presented in your letter cover the field very adequately.

"Your attention is called to the first of these purposes, which has to deal with summaries of stream flow records for the principal watersheds of Montana. The Geological Survey is compiling summaries for all stations, and this information may be of considerable assistance to you in making up your report."



### **U. S. Bureau of Reclamation**

The following paragraph is from a letter dated November 21, 1939, signed by then acting Commissioner, H. W. Bashore:

"It appears to this office that the data you propose to obtain will be of considerable value, particularly in the preliminary planning of our investigations of potential irrigation projects. The value, of course, will be measured by both the authenticity and the completeness of the basic data and the accuracy of the proposed study. It is not believed that this survey will duplicate any activity of this agency."

### **U. S. Forest Service**

From a letter by Evan Kelly, Regional Forester:

"Though unable to make detailed evaluation of the project in our work, we have recognized an increasing need for complete, readily available data on water resources, water use and water needs in our lines of endeavor. Such information, compiled in usable form, is essential for adequate multi-use resource planning and management on national forest lands from which comes a large part of Montana's usable water. In more specific fields, such as flood control studies, the granting of permits for the occupancy of national forest lands involving water use, the redemption of responsibility vested in us in cooperation with the Federal Power Commission, etc., the need for such data is apparent to us. I have only commendation for the project and again express hope that it can be successfully consummated."

### **Farm Security Administration:**

From a letter by C. H. Willson, Regional Director:

"The comprehensive study of Montana's water resources to be conducted by the Montana Agricultural Experiment Station, State Water Conservation Board, and WPA, as indicated in your letter, will in no way duplicate work done by Farm Security. I sincerely hope that this project may be expedited to the greatest extent possible, as no doubt Farm Security will be one of the principal agencies making use of the information you contemplate obtaining and cataloging. Lack of such information has been a severe handicap to Farm Security Administration in the rehabilitation and water facilities program in Montana."

### **U. S. Indian Service**

Statement by W. S. Hanna, Supervising Engineer:

"I am of the opinion that studies such as you describe would be useful to this service. As you are aware, there are a number of Indian Irrigation Service Projects in Montana, and we have more or less complete data regarding the greater number of such projects and a considerable volume of information has already been submitted to the National Resources Committee."

"For the purpose of study, it would be advantageous to us to have rather complete information as to the use already being made of the available waters in any particular watershed in which we might contemplate further development."

The statements received from all Federal Agencies showed not only that the work proposed under this project was not a duplication of something already being done, but that the work when completed would be useful in various development programs.



As soon as authorization was received from the Washington Office of WPA, the co-sponsors activated the project as a "Study of Water Rights and Water Use in Montana." The broad scope of this study made it advisable to divide the study in four phases as follows:

- (1) Summary and tabulation of stream flow data.
- (2) Ownership, use of water and cataloging of water rights.
- (3) Mapping of lands now under irrigation and use of water on these lands.
- (4) Potential irrigable lands, under existing facilities.

The first phase of the study was quickly accomplished by assigning several WPA workers to the District Office of the U. S. Geological Survey at Helena, where all the stream flow measurements were summarized in preparation for publication. Pending its official publication as a water supply paper by the U. S. Government Printing Office, these data were made available in mimeograph form as Special Reports:

Special Report No. 10—Water Resources of Montana—Yellowstone and Little Missouri Rivers.  
Special Report No. 11—Water Resources of Montana—Missouri River above Fort Benton.  
Special Report No. 12—Water Resources of Montana—Missouri River below Fort Benton.  
Special Report No. 13—Water Resources of Montana—Clarks Fork, Kootenai and St. Mary's Rivers.

The data contained in these reports have since been published by the U. S. Printing Office and are available as Water Supply Paper No. 917, "Summary of Records of Surface Waters of Missouri and St. Mary River Basins in Montana, 1881-1938."

The second, third, and fourth phases of the study, which cover the ownership and use of water, recording of water rights, and the preparation of maps, are well under way, but it will require several years to complete the work for all counties in the state. Transcribing existing records of appropriations and decrees was the first step and is now complete in all counties as of 1939. The cataloging and indexing of these water rights is a highly technical procedure requiring constant and professional supervision. It involves a careful examination and verification of each recorded appropriation, and a field survey to determine location and extent of use.

As the work is completed in each county, a report will be prepared which will become a permanent record for the benefit of all persons concerned with the use of water. This report is being prepared in two parts, the first of which consists of a history of each ditch, company, association, irrigation district, etc., beginning with the original filing of the water right, the construction of the diversion dam and canal system, the names of persons connected with the organization, and a county summary. Part two consists of a set of township maps showing the location of all canals and ditches, and the boundaries of irrigated land. Lands now irrigated under the several canals are shown on the maps in different colors.

Records of appropriations, together with a plat of each irrigated farm, are cross-indexed for easy accessibility and kept as a permanent record in the State Engineer's Office.



## Method of Survey

Data incorporated in this report were largely obtained by the field survey method. Each water user was contacted and asked specific questions about his respective irrigated and irrigable land. Data for the individual project reports were obtained from project managers or secretaries, water users, and "old-timers" in the area. Data for land ownership and recorded water rights were obtained from county records. Aerial photographs, ditch company records, plane table maps, county land classification maps and Office of Indian Affairs maps were used in conjunction with a field check to obtain the location of irrigated lands, irrigation ditches, streams, and other data. This information was then mapped by farm units, showing the farm boundary, the location of ditches and irrigated land, and sent to each water user for his verification.

Information was also asked as to source of water, present acreage irrigated, potential irrigable acreage under existing works, seeped acreage, condition of irrigating systems, water supply, dates of priority, and the amount of water appropriated or decreed. Upon return of these forms, copies of the original water filings decreed and appropriated rights were attached, thus tying the water rights to the land.

This procedure, however, was not successful on the Indian owned lands, and information pertaining to them was secured from the Crow Irrigation Project Office in Crow Agency. Information was also secured from the Office of Indian Affairs, Irrigation Division, in Billings, Montana. This information, combined with a field survey was the basis for the information pertaining to Indian owned lands.

Two sets of township maps were made on 2-inch-to-the-mile scale. The first set shows land ownership, location of irrigated land, irrigation ditches, pumping plants, etc. Each tract or farm has been given a code number which, when referred to the county summary, gives the name of the water user, section, township and range in which the land is located, source of water, acres irrigated from each source, potential irrigable acres, maximum irrigable acres, and seeped acres per farm unit. The second set of maps shows by colors the location of all the land irrigated under the various ditch companies, private users, and pumping plants, so that land under each system or water right is distinguished from the other systems. In addition, location of all main canals, pumping plants, main highways, railroads, towns, rivers and streams are shown.

Each township also has a summary, which shows the name of the water user, code number (code numbers when referred to the ownership maps show the location of the irrigated land and the farm boundary), section, township and range, source of water, whether a user has a private irrigation system or is under a ditch company or irrigation district, number of shares held in ditch company, acres irrigated from each source, present irrigated acres, potential irrigable acres under existing facilities and maximum irrigable acres. The summary given in this report was tabulated from these township summaries to show the totals for the county.

New lands to be developed by State and Federal constructing agencies are not within the scope of this report. No effort has been made to analyze economic possibilities or the problems of the irrigated projects, or to make recommendations as to their future development. The facts presented are as found and provide the items and figures from which a detailed analysis can be made.



# General Information About Big Horn County

## Early History

The first record of white entry into what is now known as Big Horn County was made in 1743 when Chevalier de la Verendrye, seeking a route to the Pacific, passed through this section of then Indian territory. The next white men to enter this territory came in 1804 in search of furs and gold. Except for these early venturesome visitors, the area was seen by very few white men until the opening of the Bozeman Trail in 1864, which was a short cut for miners and settlers on their way west between the North Platte River and Three Forks on the Missouri River. The Bozeman Trail crossed the Big Horn River at Fort C. F. Smith, which was located near the mouth of the Big Horn Canyon. From this point the trail went on through Indian territory to the Yellowstone River.

The Siouxs, Crows and Shoshones were resentful of the ever-lengthening white-topped wagon trains rolling west, and bitter about the killing and scattering of the buffalo herds. A peace treaty was signed in 1851 on Horse Creek, but the history of the West was destined to be written in blood. The Siouxs were content with occasional isolated forays until 1863, when they went with demoniac fury back on the war path. This continued until the Government, forced to call a halt to the whole business, drew up the Fort Laramie treaty of 1868, relinquishing all claims to the lands east of the Big Horns and north of the North Platte. The Siouxs soon moved north and the stage was set for the crushing climax. The fight between the Sioux tribes and Custer's troops on June 25 and 26, 1876, was the climax of a series of battles fought earlier that year. The expedition under Generals Terry, Crook and Gibbon, to force the Siouxs back on the reservation, moved in on the Indians from three directions. The Siouxs, joined by the Northern Cheyennes, resented this. General Terry's campaign was spearheaded by Custer as head of the Seventh Cavalry. On June 27, his frightful fate was discovered. This was the end of the Sioux Indian warfare. The Government then took effective action against the Indians and Fort Custer was established at the junction of the Big Horn and Little Horn Rivers in 1877.

## Treaty with the Crows, 1868

Articles of a treaty made and concluded at Fort Laramie, Dakota Territory, on the seventh day of May, in the year of our Lord one thousand eight hundred and sixty-eight, by and between the undersigned commissioners on the part of the United States, and the undersigned chiefs and head-men of and representing the Crow Indians, they being duly authorized to act in the premises.

Article 1. From this day forward peace between the parties to this treaty shall forever continue. The Government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace, and they hereby pledge their honor to maintain it. If bad men among the whites or among other people, subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will, upon proof made to the agent and forwarded to the Commissioner of Indian Affairs at Washington City, proceed at once to cause the offender to be arrested and pun-



ished according to the laws of the United States, and also reimburse the injured person for the loss sustained.

If bad men among the Indians shall commit a wrong or depredation upon the person or property of anyone, white, black, or Indian, subject to the authority of the United States and at peace therewith, the Indians herein named solemnly agree that they will, on proof made to their agent and notice by him, deliver up the wrong-doer to the United States, to be tried and punished according to its laws; and in case they refuse willfully so to do the person injured shall be reimbursed for his loss from the annuities or other moneys due or to become due to them under this or other treaties made with the United States. And the President, on advising with the Commissioner of Indian Affairs, shall prescribe such rules and regulations for ascertaining damages under the provisions of this article as in his judgment may be proper. But no such damages shall be adjusted and paid until thoroughly examined and passed upon by the Commissioner of Indian Affairs, and no one sustaining loss while violating, or because of his violating, the provisions of this treaty or the laws of the United States shall be reimbursed therefore.

Article 2. The United States agrees that the following district of county, to-wit: commencing where the 107th degree of longitude west of Greenwich crosses the south boundary of Montana Territory; thence north along the said 107th meridian to the mid-channel of the Yellowstone River; thence up said mid-channel of the Yellowstone to the point where it crosses the said southern boundary of Montana, being the 45th degree of north latitude; and thence east along said parallel of latitude to the place of beginning, shall be, and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do, and except such officers, agents, and employees of the Government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, shall ever be permitted to pass over, settle upon, or reside in the territory described in this article for the use of said Indians, and henceforth they will, and do hereby, relinquish all title, claims, or rights in and to any portion of the territory of the United States, except such as is embraced within the limits aforesaid.

Article 3. The United States agrees, at its own proper expense, to construct on the south side of the Yellowstone, near Otter Creek, a warehouse or store-room for the use of the agent in storing goods belonging to the Indians, to cost not exceeding twenty-five hundred dollars; an agency-building for the residence of the agent, to cost not exceeding three thousand dollars; a residence for the physician, to cost not more than three thousand dollars; and five other buildings, for a carpenter, farmer, blacksmith, miller, and engineer, each to cost not exceeding two thousand dollars; also a school-house or mission building, so soon as a sufficient number of children can be induced by the agent to attend school, which shall not cost exceeding twenty-five hundred dollars.

The United States agrees further to cause to be erected on said reservation, near the other buildings herein authorized, a good steam circular sawmill, with a grist-mill and shingle machine attached, the same to cost not exceeding eight thousand dollars.



Article 4. The Indians herein named agree, when the agency-house and other buildings shall be constructed on the reservation named, they will make said reservation their permanent home, and they will make no permanent settlement elsewhere, but they shall have the right to hunt on the unoccupied lands of the United States so long as game may be found thereon, and as long as peace subsists among the whites and Indians on the borders of the hunting districts.

Article 5. The United States agrees that the agent for said Indians shall in the future make his home at the agency-building; that he shall reside among them, and keep an office open at all times for the purpose of prompt and diligent inquiry into such matters of complaint, by and against the Indians, as may be presented for investigation under the provisions of their treaty stipulations, as also for the faithful discharge of other duties enjoined on him by law. In all cases of depredation on person or property, he shall cause the evidence to be taken in writing and forwarded, together with his finding, to the Commissioner of Indian Affairs, whose decision shall be binding on the parties to this treaty.

Article 6. If any individual belonging to said tribes of Indians, or legally incorporated with them, being the head of a family, shall desire to commence farming, he shall have the privilege to select, in the presence and with the assistance of the agent then in charge, a tract of land within said reservation, not exceeding three hundred and twenty acres in extent, which tract, when so selected, certified, and recorded in the "land book," as herein directed, shall cease to be held in common, but the same may be occupied and held in the exclusive possession of the person selecting it, and of his family, so long as he or they may continue to cultivate it.

Any person over eighteen years of age, not being the head of a family, may in like manner select and cause to be certified to him or her, for purposes of cultivation, a quantity of land not exceeding eighty acres in extent, and thereupon be entitled to the exclusive possession of the same as above directed.

For each tract of land so selected a certificate, containing a description thereof and the name of the person selecting it, with a certificate endorsed thereon that the same has been recorded, shall be delivered to the party entitled to it by the agent, after the same shall have been recorded by him in a book to be kept in his office, subject to inspection, which said book shall be known as the "Crow land book."

The President may at any time order a survey of the reservation, and, when so surveyed, Congress shall provide for protecting the rights of settlers in their improvements, and may fix the character of the title held by each. The United States may pass such laws on the subject of alienation and descent of property as between Indians, and on all subjects connected with the government of the Indians on said reservations and the internal police thereof, as may be thought proper.

Article 7. In order to insure the civilization of the tribe entering into this treaty, the necessity of education is admitted, especially by such of them as are, or may be, settled on said agricultural reservation; and they therefore pledge themselves to compel their children, male and female, between the ages of six and sixteen years, to attend school; and it is hereby made the duty of the agent for said Indians to see that this stipulation is strictly complied with; and the United States agrees that for every thirty children, between said ages, who can



be induced or compelled to attend school, a house shall be provided, and a teacher, competent to teach the elementary branches of an English education, shall be furnished, who will reside among said Indians, and faithfully discharge his or her duties as a teacher. The provisions of this article to continue for twenty years.

Article 8. When the head of a family or lodge shall have selected lands and received his certificate as above directed, and the agent shall be satisfied that he intends in good faith to commence cultivating the soil for a living, he shall be entitled to receive seed and agricultural implements for the first year in value one hundred dollars, and for each succeeding year he shall continue to farm, for a period of three years more, he shall be entitled to receive seed and implements as aforesaid in value twenty-five dollars per annum.

And it is further stipulated that such persons as commence farming shall receive instructions from the farmer herein provided for, and whenever more than one hundred persons shall enter upon the cultivation of the soil, a second blacksmith shall be provided with such iron, steel, and other material as may be required.

Article 9. In lieu of all sums of money or other annuities provided to be paid to the Indians herein named, under any and all treaties heretofore made with them, the United States agrees to deliver at the agency house, on the reservation herein provided for, on the first day of September of each year for thirty years, the following articles, to-wit:

For each male person, over fourteen years of age, a suit of good substantial woolen clothing, consisting of coat, hat, pantaloons, flannel shirt, and a pair of woolen socks.

For each female, over twelve years of age, a flannel skirt, or the goods necessary to make it, a pair of woolen hose, twelve yards of calico, and twelve yards of cotton domestics.

For the boys and girls under the ages named, such flannel and cotton goods as may be needed to make a suit as aforesaid, together with a pair of woolen hose for each.

And in order that the Commissioner of Indian Affairs may be able to estimate properly for the articles herein named, it shall be the duty of the agent, each year, to forward to him a full and exact census of the Indians, on which the estimate from year to year can be based.

And, in addition to the clothing herein named, the sum of ten dollars shall be annually appropriated for each Indian roaming, and twenty dollars for each Indian engaged in agriculture, for a period of ten years, to be used by the Secretary of the Interior in the purchase of such articles as, from time to time, the condition and necessities of the Indians may indicate to be proper. And if, at any time within the ten years, it shall appear that the amount of money needed for clothing under this article, can be appropriated to better uses for the tribe herein named, Congress may, by law, change the appropriation to other purposes; but in no event shall the amount of this appropriation be withdrawn or discontinued for the period named. And the President shall annually detail an officer of the Army to be present and attest the delivery of all the goods herein named to the Indians, and he shall inspect and report on the quantity and quality of the goods and the manner of their delivery; and it is expressly stipulated that each Indian over the age of four years, who shall have removed to and settled permanently upon said reservation, and complied with the stipulations of this treaty shall be entitled to receive from the United States, for the period of four years after he shall have settled upon said reservation, one pound of meat and one pound of flour per day, provided



the Indians cannot furnish their own subsistence at an earlier date. And it is further stipulated that the United States will furnish and deliver to each lodge of Indians, or family of persons legally incorporated with them, who shall remove to the reservation herein described, and commence farming, one good American cow and one good well-broken pair of American oxen, within sixty days after such lodge or family shall have so settled upon said reservation.

Article 10. The United States hereby agrees to furnish annually to the Indians the physician, teachers, carpenter, miller, engineer, farmer, and blacksmiths as herein contemplated, and that such appropriations shall be made from time to time, on the estimates of the Secretary of the Interior as will be sufficient to employ such persons.

Article 11. No treaty for the cession of any portion of the reservation herein described, which may be held in common, shall be of any force or validity as against the said Indians unless executed and signed by, at least a majority of all the adult male Indians occupying or interested in the same, and no cession by the tribe shall be understood or construed in such a manner as to deprive, without his consent, any individual member of the tribe of his right to any tract of land selected by him as provided in Article 6 of this treaty.

Article 12. It is agreed that the sum of five hundred dollars annually, for three years from the date when they commence to cultivate a farm, shall be expended in presents to the ten persons of said tribe, who, in the judgment of the agent, may grow the most valuable crops for the respective year.

Signed by: W. T. Sherman, Lieutenant-General  
Wm. S. Harney, Brevet Major-General and Peace Commissioner  
Alfred H. Terry, Brevet Major-General  
C. C. Augur, Brevet Major-General  
John B. Sanborn  
S. F. Tappan  
Ashton S. H. White, Secretary

Che-ra-pee-ish-ka-te, Pretty Bull  
Chat-sta-he, Wolf Bow  
Ah-be-che-se, Mountain Tail  
Kam-ne-but-sa, Black Foot  
De-sal-ze-cho-se, White Horse  
Chin-ka-she-arache, Poor Elk  
E-sa-woor, Shot in the Jaw  
E-sha-chose, White Forehead  
\_\_\_\_\_, Rooka, Pounded Meat  
De-ma-ke-up-se, Bird in the Neck  
Me-na-che, The Swan

Attest:  
George B. Willis,  
Phonographer  
John D. Howland  
Alex Gardner  
David Knox  
Chas. Freeman  
Jas. C. O'Connor

### Early Agriculture

From 1880-1890, soon after the danger of Indian raids had passed, came the first permanent white settlers who were cattlemen. They established ranch headquarters adjacent to the Wolf and Big Horn Mountains. These early ranches were operated by companies with herds including as many as 30,000 head. In 1901 sheep raising had its beginning when large



company-owned flocks were brought into the area to graze. In 1904 Indian lands adjacent to the Yellowstone River and the land in the lower Big Horn Valley were ceded to the Federal Government and opened to homesteading in 1906. Within a few years a large acreage was placed in cultivation and most of the land was taken up by settlers. Dry land farming prospered from 1906 to about 1917 under conditions of abnormal rainfall and high prices. During the later years drought caused repeated failures and dry land farming methods declined. During this period the development of irrigation farming started.

In 1885 the Reno Unit of the Crow Indian Project was constructed and was the earliest irrigation development in this area. The Crow Indian Reservation was established by an Act of Congress in 1868. Roughly, it embraced the triangular area lying between the 107th Meridian, the Yellowstone River and the southern boundary of Montana, and included all the area now comprising Big Horn County. The reservation was successively reduced in 1880, 1890 and 1904 to approximately 2,119,503 acres.

### **Crow Irrigation Project**

The Crow Irrigation Project was authorized by the Act of March 3, 1891. This project comprises the eleven separate units constructed by the Government, namely: The Agency, Reno, Forty-Mile and Upper Little Horn No. 2, the diversions of which are from the Little Big Horn River; Lodge Grass No. 1 and Lodge Grass No. 2, the diversions of which are from Lodge Grass Creek; Soap Creek, diversion of which is from Soap Creek; the Big Horn, diversion of which is from the Big Horn River; Lost Creek, the diversion of which is from Lost Creek; and Pryor and Coburn, the diversions of which are from Pryor Creek (the Coburn Unit is located in Yellowstone County). The Government also acquired water from the Two Leggings Land and Improvement Company, predecessor of the Two Leggings Water Users Association, for the irrigation of 5,642.46 acres of Indian lands under the Two Leggings Unit, and water from the Bozeman Trail Ditch Company for 1,961.34 acres of Indian owned lands under the Bozeman Trail Ditch Unit.

Clyde E. Lewis, now retired, who was Project Engineer for a number of years, said he came to the reservation in 1896 and his father arrived in the early spring of 1893, and was employed by the Government in connection with the construction of the several units then in progress. At that time the Agency, Forty-Mile, Lodge Grass Ditch No. 1, Soap Creek, Pryor and Lost Creek Units were under construction. By 1895 the Agency, Pryor and Lost Creek Units were completed. The Soap Creek Unit was completed in 1894 and the Lodge Grass No. 1 and Forty-Mile units were completed in 1896. Work was begun on the Big Horn Canal in 1896 and the main ditch was completed in 1905. The first mile of the Lodge Grass No. 2 was completed in 1904, but the remainder of the ditch was not completed until 1924. In 1910 the Government completed a lateral system for the delivery of water to part of the Indian lands under the Two Leggings Ditch. Preliminary surveys for the Upper Little Horn Ditch No. 2 were made in 1907. Construction work was begun in 1910 and the main ditch was completed in 1914.

While the major portion of the construction has been completed on these units, in providing the necessary canal and lateral system for delivery of water to the individual land tracts, there still remain several major items of construction on which little or nothing has been accomplished to date. These items consist principally of suitable regulating and diversion struc-



tures, adequate drainage of areas susceptible of seeping or water-logging, and control of surface runoff. There is also required a major item of expense to rehabilitate the existing facilities. This condition has been brought about by the use of timber in the initial construction and deferment of maintenance in the interests of economical operation. To date, a total of \$2,029,-273.31 has been expended for construction, exclusive of the storage development. It is estimated that an additional \$865,769.81 will be required to complete all necessary construction and rehabilitation. It is estimated that the ultimate construction cost of the present canal and lateral system development is approximately 70 per cent complete from a cost basis.

In 1938 authority was issued and construction started on the Willow Creek Reservoir. The construction was completed in the spring of 1942. The Willow Creek Dam and diversion canal provide for the storage of 23,000 acre feet of water in the Willow Creek Reservoir located on Willow Creek, a tributary of Lodge Grass Creek. The water for storage in the reservoir is secured from Lodge Grass Creek by means of a two-mile diversion canal and dam. This reservoir was constructed for the purpose of providing a supplemental water supply for all land served from the Little Big Horn River watershed, to which the stored water could be delivered directly or by substitution for the natural flow of the Little Big Horn River. The project is located in the northeast corner of Township 8 South, Range 33 East, or about ten miles south and eleven miles west of the town of Lodge Grass, Montana.

The cost of this reservoir to date is \$927,184.04, and it is estimated that an additional \$15,300 will be required to complete the installation of a metal liner pipe in that portion of the outlet box below the control gate structure, and the removal of several slides in the diversion canal.

In the estimated cost for completion, there was added an item of \$50,000 to provide a supplemental water supply for the Soap Creek Unit. There are two feasible ways of providing this supply—by storing the surplus runoff of Soap Creek or pumping from the Big Horn Canal. Should the pumping method be adopted, the unit would be extended to include an additional 200 acres, which could be served by the pump canal.

A conspicuous feature among these projects is the large amount of land not farmed. There are many reasons for this situation—the greatest is that there has been only limited competition for the land. Approximately 75 per cent of the area under construction is Indian owned. The Indians in general are disinclined to operate an irrigated farm because of the restriction against alienation of Indian land. Non-Indians who want to buy land, and renters who hope eventually to own farms, must look elsewhere. This limits the field of competition to two groups—the resident non-Indian owner who leases Indian land adjacent to his holdings to supplement the operation of his land, and the renters who are satisfied to operate the land without the chance of ever owning it. The renters for the most part, particularly the latter group, are not interested, and cannot afford to be, in the marginal land and the general improvement of farms therein. The result is that only the select and best places are properly farmed. While the non-Indian owned land, on the average, exhibits a far higher grade of farm management than does non-Indian operated leased land, there is here again a tendency to actually use only the best and easiest part of such land, largely because there is so much Indian land available for rent from which the best parts can be selected for use.

While the foregoing seems to be the basic reason for the idle land situation, other factors contribute to the picture. There is some land which is in need of adequate drainage. This



condition varies from small, mildly wet or alkaline areas to larger bodies of land covered with standing water and results from causes inherent in the conveyance and application of irrigation water where no means have been provided for the disposal of waste water and the relief of underground seepage. While some of this land can be and is used for pasture, it cannot be farmed, and even its pasture value is far less than it would be if it were reclaimed. There is also a considerable amount of land that is not farmed because no facilities have yet been provided to deliver water to it, and in some cases the original construction has been so depleted that reconstruction would be necessary before it could be restored to use. The shortage of water is another factor contributing to the lack of irrigation.





# Digest of Treaties, Executive Orders and Legislation Governing the Lands and Waters of the Crow Indian Reservation

## Laws

Crow agreement, March 3, 1891 (26 Stat. 1040): That, in consideration of the cession of territory herein made by us as individual Indians and heads of families of the Crow Tribe to the Government of the United States, the said Government of the United States, in addition to the annuities and sums for provisions and clothing stipulated and provided for in existing treaties and laws, hereby agrees to pay the sum of \$946,000, lawful money of the United States, in the manner hereinafter described:

First. That of the above-named sum there is hereby appropriated and set apart \$200,000 to be expended under the direction of the Secretary of the Interior in the building of dams, canals, ditches, and laterals for the purpose of irrigation in the valleys of the Big Horn and Little Big Horn Rivers, and on Pryor Creek, and such other streams as the Secretary of the Interior may deem proper: *Provided*, That not to exceed \$50,000 shall be expended annually in performing this work: *And provided further*, That the superintendent in charge of said works shall, in the employment of laborers, be required to give preference to such Indians of the Crow Tribe as are competent and willing to work at the average wages paid to common laborers for the same kind of work, and the labor so employed shall be paid in cash.

That the sum of \$75,000 is hereby appropriated and set apart as an irrigating fund, to be expended under the direction of the Secretary of the Interior for the maintenance and management of the system of irrigation provided for in this agreement.

### Act of March 1, 1899 (30 Stat. 947)

Provided, That, with the consent of the Crow Indians in Montana, to be obtained in the usual way, the Secretary of the Interior, in his discretion, may use the annuity money due, or to become due, the said Indians to complete the irrigation system heretofore commenced on said Crow Indian Reservation.

### Act of May 31, 1900 (31 Stat. 247)

Provided, That, with the consent of the Crow Indians in Montana, to be obtained in the usual way, the Secretary of the Interior, in his discretion, may use the annuity money due, or to become due, said Indians to complete the irrigation system heretofore commenced on said Crow Indian Reservation.

### Crow Agreement—Act April 27, 1904 (33 Stat. 367):

Art. II. Ninety thousand dollars, or so much thereof as may be necessary, shall be expended, under the direction of the Secretary of the Interior, in the extension and completion, including the necessary laterals, of the system of irrigation now being constructed on said reservation.



One hundred thousand dollars shall be placed in the Treasury of the United States to the credit of the Crow Indians as a trust fund, the same to remain in the Treasury for 15 years and shall draw interest at the rate of 4 per cent per annum—said interest to be expended by the Secretary of the Interior in maintaining and managing said irrigation system: *Provided further*, That at the expiration of the 15 years above mentioned such disposition shall be made of said fund as the Indians, with the consent of the Secretary of the Interior, may determine.

It is further agreed that in the construction of ditches, dams, canals, and fences no contract shall be awarded nor employment given to other than Crow Indians or whites intermarried with them, except that any Indian employed in construction may hire white men to work for him if he so desired: *Provided further*, That nothing herein contained shall be construed to prevent the employment of such engineers or other skilled employees, or to prevent the employment of white labor where it is impracticable for the Crows to perform the same.

Art. V. The water from streams on that portion of the reservation now sold which is necessary for irrigating land actually cultivated and in use shall be reserved for the Indians now using the same so long as said Indians remain where they now live.

Art. VIII. The right to take out water upon the diminished reservation subject to any prior claim of the Indians thereto by reason of previous appropriation, and the right to construct, maintain, and operate dams, flumes, and canals upon and across the said diminished reservation for the purpose of irrigating lands within any portion of the ceded tract are hereby granted, such rights to be exercised by persons, companies, or corporations under such rules, regulations, and requirements as may be prescribed by the Secretary of the Interior.

Sec. 5.—The residue of such ceded lands except Sections 16 and 36, or lands in lieu thereof which shall be reserved for common-school purposes, and are hereby granted to the State of Montana for such purpose, shall be subject to withdrawal and disposition under the reclamation act of June 17, 1902, so far as feasible irrigation projects may be found therein. The charges provided for by said reclamation act shall be in addition to the charge of \$4.00 per acre for the land, and shall be paid in annual installments as required under the reclamation act; and the amounts to be paid for the land shall be credited to the funds herein established for the benefit of the Crow Indians. If any lands in Sections 16 and 36 are included in an irrigation project under the reclamation act, the State of Montana may select in lieu thereof, as herein provided, other lands not included in any such project, in accordance with the provisions of existing law concerning school-land sections. In any construction work upon the ceded lands performed directly by the United States under the reclamation act, preference shall be given to the employment of Crow Indians, or whites intermarried with them, as far as may be practicable: *Provided, however*, That if the lands withdrawn under the reclamation act are not disposed of within five years after the passage of this act, then all of said lands so withdrawn shall be disposed of as other lands provided for in this act. That the lands not withdrawn for irrigation under said reclamation act, which lands shall be determined under the direction of the Secretary of the Interior at the earliest practicable date, shall be disposed of under the homestead, town site, and mineral-land laws of the United States, and shall be opened to settlement and entry by proclamation of the President, which proclamation shall prescribe the manner in which these lands may be settled upon, occupied, and entered by persons entitled to make entry thereof; and no person shall be permitted to settle upon, occupy,



or enter any of said lands, except as prescribed in such proclamation, until after the expiration of 60 days from the time when the same are opened to settlement and entry.

**Act March 3, 1909 (35 Stat. 797):**

That any of the lands withdrawn under the reclamation act in pursuance of the provisions of Section 5 of the Act of Congress approved April 27, 1904, entitled, "An Act to ratify and amend an agreement with the Indians of the Crow Reservation, in Montana, and make appropriations to carry the same into effect," which are not disposed of within five years from the date of the passage of said act shall remain subject to disposal under the provisions of the reclamation act until otherwise directed by the Secretary of the Interior.

**Act May 25, 1918 (40 Stat. 574):**

That the Secretary of the Interior be, and he is hereby, authorized to withdraw from the Treasury of the United States the sum of \$200,000 of any tribal funds on deposit to the credit of the Crow Indians in the State of Montana, and to expend the same for making necessary improvements to the irrigation systems in the Big Horn Valley on the Crow Reservation in Montana, said sum, or such part thereof as may be used for the purpose indicated, to be reimbursed to the tribe under such rules and regulations as may be prescribed by the Secretary of the Interior.

**Act June 30, 1919 (41 Stat. 16):**

That the Secretary of the Interior be, and he is hereby, authorized to withdraw from the Treasury of the United States the sum of \$150,000 of any tribal funds on deposit to the credit of the Crow Indians, in the State of Montana, and to expend the same for making necessary improvements to the irrigation systems in the Big Horn Valley on the Crow Reservation in Montana, said sum, or such part thereof as may be used for the purpose indicated, to be reimbursed to the tribe under such rules and regulations as may be prescribed by the Secretary of the Interior.

**Act July 19, 1919 (41 Stat. 196):**

Of the sum of \$150,000, which the Secretary of the Interior is authorized by the Indian appropriation act for the fiscal year 1920 to withdraw from the tribal funds of the Crow Indians in the State of Montana to be expended for making necessary improvements to the irrigation systems in the Big Horn Valley on the Crow Reservation, in Montana, said sum, or such part thereof as may be used for the purpose indicated, to be reimbursed to the tribe under such rules and regulations as may be prescribed by the Secretary of the Interior, not to exceed \$25,000 of this amount shall be available for expenses incurred during the fiscal year ending June 30, 1919.

**Act February 14, 1920 (41 Stat. 408):**

Authorizes expenditure of \$100,000 of Crow tribal moneys for improvements, maintenance, and operation of the Crow Reservation, including assessments payable to Two Leggins Water Users Association.



**Act March 3, 1921 (41 Stat. 1225):**

Authorizes expenditure of \$200,000 for improvements, maintenance, and operation, including maintenance on Two Leggins Canal for the Crow Reservation, providing that \$150,000 of this shall be available for construction of a diversion dam on the Big Horn River and \$50,000 for maintenance and operation.

**Act May 24, 1922 (42 Stat. 559-580):**

Authorized expenditures of \$125,000 for improvements, maintenance, and operation of irrigation systems on the Crow Reservation, including the Two Leggins Canal.

**Act January 24, 1924 (42 Stat. 1174):**

Appropriated \$175,000 from Treasury funds for improvement, maintenance, and operation of reservation project, including Two Leggins and Bozeman Trail canals.

**Act June 5, 1924 (43 Stat. 390):**

Appropriated \$150,000 for improvements, maintenance, and operation of Crow Reservation projects, including Two Leggins and Bozeman Trail canals.

**Act March 3, 1925 (44 Stat. 1141):**

Appropriated \$16,000 for maintenance of projects on the Crow Reservation.

**Act May 10, 1926 (44 Stat. 458):**

Appropriated \$5,000 for maintenance and operation of the various projects on Crow Reservation.

**Act May 26, 1926 (44 Stat. 658):**

*Be it enacted, etc.,* That the first, fifth, sixth, eighth, and eighteenth sections of an act providing for the allotment of lands of the Crow tribe for the distribution of tribal funds, and for other purposes, approved June 4, 1920 (Forty-first Statutes at Large, pages 751-757), be amended to read as follows:

"Sec. 8 (See quotation in Public Notice of June 8, 1928, below.)

**Act January 12, 1927 (44 Stat. 934):**

Appropriated \$1,000 for maintenance and operation of the various projects on the Crow Reservation.

**Act March 7, 1928 (45 Stat. 200):**

For maintenance and operation of the irrigation systems on the Crow Reservation, Montana, including maintenance assessments payable to the Two Leggins Water Users Association and Bozeman Trail Ditch Company, Montana, properly assessable against lands allotted to the Indians irrigable thereunder, \$1,000 to be reimbursed under such rules and regulations as may be prescribed by the Secretary of the Interior.



## Public Notice Fixing Construction Charges

June 8, 1928

Section 8 of the Act of Congress, dated May 26, 1926 (44 Stat. 658-661), which amended Section 8 of the act of June 4, 1920, reads as follows:

"Sec. 8. That any allotment or part of allotment provided for under this act, irrigable from any irrigation system now existing or hereafter constructed by the Government on the said reservation, shall bear its pro rata share, computed on a per acre basis, of the expenditures made from tribal funds that were used in constructing such systems where Indians in council and not specifically approved such expenditures, and all moneys except gratuities expended on the construction of such irrigation systems out of the appropriations from the Treasury of the United States, the amount so in the aggregate to be borne to be ascertained and proclaimed by the Secretary of the Interior: *Provided*, That no additional irrigation system shall be established or constructed by the Government for the irrigation of Indian lands on the Crow Reservation unless and until the consent of the tribal council thereto has been duly obtained. All such charges against allotments authorized by this section shall be reimbursed in not less than twenty annual payments. The Secretary of the Interior may fix such operation and maintenance charges against such allotments as may be reasonable and just, to be paid as provided in rules and regulations to be prescribed by him. Unless otherwise paid, these latter charges accruing subsequent to August 1, 1914, may be paid from or made a charge upon the allottee's individual share of the tribal fund when said fund is available for distribution, and if any allottee shall receive patent in fee to his allotment before the amount so charged against his land has been paid, such unpaid amount shall become and be a lien upon his allotment, of which a record shall be kept in the office of the superintendent of the reservation at the agency; and should any Indian sell any part of his allotment with the approval of the Secretary of the Interior, the amount of such unpaid charges against the land so sold shall remain a first lien thereon and may be enforced by the Secretary of the Interior by foreclosure as a mortgage. The expenditures for irrigation work on the Crow Reservation, Montana, heretofore or hereafter made, as hereinbefore provided, are hereby declared to be reimbursable under such rules and regulations as the Secretary of the Interior may prescribe and shall constitute a lien against the land benefited, regardless of ownership, including all lands which have heretofore been sold or patented. All patents or other instruments of conveyance hereafter issued for lands upon any irrigation project on the said Crow Indian Reservation, whether to individual Indians or to purchasers of Indian land, shall recite a lien for repayment of such irrigation charges hereinbefore provided for, if any, remaining unpaid at the time of issuance of such patent or other instrument of conveyance, and such lien may be enforced or upon payment of all such irrigation charges assessed against such land may be released by the Secretary of the Interior. Delivery of water to such land may be refused, within the discretion of the Secretary of the Interior until all dues are paid: *Provided*, That no right to water or to the use of any irrigation ditch or other structure on said reservation shall vest until the owner of the land to be irrigated shall comply with such rules and regulations as the Secretary of the Interior may prescribe, and he is hereby authorized to prescribe such rules and regulations as may be deemed reasonable and proper for making effective the foregoing provisions: *Provided, however*, That in no case shall any allottee be required to pay either construction, operation, or maintenance charges for such irrigation privileges, or any of them, until water can be actually delivered to his allotment:



*Provided further*, That the Secretary of the Interior shall cause to be made immediately, if not already made, an itemized statement showing in detail the cost of the construction of the several irrigation systems now existing on the Crow Indian Reservation separately, the same to be placed at the Crow Agency, and with the Government farmers of each of the districts of the reservation, for the information of the Indians affected by this section."

The total expenditures of moneys from all sources for the construction of the irrigation system on the Crow Reservation on June 30, 1926, amounted to \$1,977,879.10. Of this amount, \$1,565,235.31 was expended from tribal funds, \$139,049.02 from gratuity appropriations, and \$273,594.77 from reimbursable appropriations. Of these moneys the amount of \$273,594.77, expended from reimbursable appropriations in accordance with Section 8 of the act above quoted, is to be reimbursed by the owners of irrigable land under the Crow Irrigation Project.

The records show that the estimated irrigable area within the project is 63,228 acres. The total amount of reimbursable expenditures are \$273,594.77, prorated over this acreage gives a per acre reimbursable charge of \$4.33.

Owing to the fact that the acreage shown is not based on a careful survey, it is deemed impracticable to definitely fix the total per acre charge until a complete resurvey is made. Pending such definite survey the annual per acre assessment is hereby fixed at 25 cents per acre, the first assessment to be due and payable November 15, 1928, and a similar sum to be due and payable on the same date annually thereafter until the entire amount of reimbursable expenditures shall have been assessed against the land. Any adjustments that may be required owing to a change in the acreage under the project, as shown by the resurvey of the project, will be taken care of prior to the final assessment.

No further construction work will be done on the project unless authorized by Congress. In that event the owners of lands to be benefited thereunder will be required to execute an agreement to repay their proper share of the total cost of the project assessable against such lands benefited.

This public notice fixing the per acre assessment does not affect any existing agreements obligating purchasers of Indian allotments to pay the construction cost as estimated at the date of the approval of the sale, as such sum was part of the consideration to be paid for the land. All payments made by purchasers in excess of the per acre amount fixed by this Public Notice shall be placed to the credit of the Indian allottee or his heirs as the case may be, as the price the purchaser agreed to pay for the land was fixed on the basis of the value of the land itself added to the estimated construction cost as of that date.

No water for irrigation purposes shall be delivered to any land for which assessments are unpaid one year or more after the due date, except trust patented land irrigated by Indian allottees and only then upon written authorization of the Superintendent of the reservation to the Supervising Engineer. A copy of each such authorities should be forwarded to the Commissioner of Indian Affairs and they shall contain a full statement of the reasons why such payments can not be made.

Approved: John H. Edwards  
Assistant Secretary.  
JJR:EOP

Chas. H. Burke,  
Commissioner,  
EBM.



## **Rules and Regulations Supplementary to Public Notice Fixing Construction Charges**

Effective April 17, 1931.

The Public Notice fixing construction charges for the Crow Irrigation Project in Montana, approved by the Secretary of the Interior on June 8, 1928, is the rule of the project except as herein amended. Certain portions of this notice are quoted and republished in order to combine all rules in one document. This Public Notice is preceded by a letter to the Secretary dated June 8, making a finding of facts as to expenditures for the entire project and for the irrigable acres of particular units of the project and a total for the project "subject to change - - - at such time as an irrigable survey shall be made." The Public Notice recites Section 8 of the Act of Congress dated May 26, 1926 (44 Stat. pp. 658-661). The second, third, and fourth paragraphs are findings of fact as to total cost, acreage and a preliminary construction cost per acre. The fifth paragraph is amended as shown in paragraph three (3) of these rules and regulations. The sixth paragraph is republished as Rule one (1) of these rules and regulations and the seventh and last paragraph is republished as Rule two (2) of these regulations.

### **Rules and Regulations**

1. "This Public Notice fixing the per acre assessment does not affect any existing agreements obligating purchasers of Indian allotments to pay the construction cost as estimated at the date of the approval of the sale, as such sum was part of the consideration to be paid for the land. All payments made by purchasers in excess of the per acre amount fixed by this Public Notice shall be placed to the credit of the Indian allottee or his heirs as the case may be, as the price the purchaser agreed to pay for the land was fixed on the basis of the value of the land itself added to the estimated construction cost as of that date." (Public Notice of June 8, 1928.)

2. "No water for irrigation purposes shall be delivered to any land for which assessments are unpaid one year or more after the due date, except trust patented land irrigated by Indian allottees and only then upon written authorization of the superintendent of the reservation to the Supervising Engineer. A copy of each such authorities should be forwarded to the Commissioner of Indian Affairs and they shall contain a full statement of the reasons why such payments can not be made." (Public Notice of June 8, 1928.)

3. The paragraph in the Public Notice of June 8, 1928, reading as follows:

"No further construction work will be done on this project unless authorized by Congress. In that event the owners of the land benefited thereunder will be required to execute an agreement to repay their proper share of the total cost of the project assessable against such lands benefited." is canceled and the following substituted, the first sentence being quoted from the Act of Congress approved May 26, 1926:

"No additional irrigation system shall be established or constructed by the Government for the irrigation of Indian lands on the Crow Reservation unless and until the consent of the tribal council thereto has been duly obtained." In the event additional construction work is authorized the cost thereof shall be charged against the particular unit of the project in which the work is done, and will become part of the total construction cost to be accounted for



under these rules and regulations and be subject to the final ascertainment of the total unit or project construction costs."

4. Construction assessments which have been held in abeyance pending decisions by the Commissioner or by reason of court action, will be initiated and become due and payable on November 15, 1931, for the season preceding, and on November 15 of each succeeding year.

5. For patented land without purchaser's agreement and for trust patent land, the annual construction assessment shall be 25 cents per acre as provided in the Public Notice of June 8, 1928, except as provided in paragraph six.

6. For land that was fee patented or sold prior to the beginning of construction of the irrigation unit that now serves such land, the entire per acre construction cost of such unit divided by the number of acres in that unit shall determine the per acre construction cost. Five per cent of this figure shall be the annual assessment.

7. For lands on which purchaser's agreement is recorded or where such an agreement was required in the advertisement of sale or by legislation, assessments will be determined as follows:

(a) For lands with purchaser's agreement under Form B, the total construction cost of the unit in which the land is situated divided by the number of acres in that unit shall determine the per acre construction cost. Five per cent of this figure shall be the annual assessment.

(b) For lands with purchaser's agreement under Form C, the total construction cost of the unit in which the land is situated for the period between July 1, 1918 and June 30, 1931, divided by the number of acres in the unit shall determine the per acre construction cost. Five per cent of this figure shall be the annual assessment.

(c) For land with purchaser's agreement Form 5-462a, which agreement was executed prior to June 8, 1929, the total construction cost of the unit in which the land is situated divided by the number of acres in that unit shall determine the per acre construction cost. Five per cent of this figure shall be the annual assessment.

For land with purchaser's agreement Form 5-462a, which agreement was executed subsequent to June 8, 1928, Rule 5, as to lands without purchaser's agreement, shall apply.

(d) For land with miscellaneous agreements or subject to conditions established by law or by terms of sale advertisement, the assessment will be computed in a manner similar to that of paragraphs a, b, and c.

8. The Supervising Engineer of the United States Indian Service shall make examination of the records and perform the computations required. Upon his certification of the correct amounts to be assessed, the assessments so ascertained shall be effective. Accounting officers will reconcile their records to conform to these rules.



All regulations or parts of regulations in conflict with the foregoing are hereby canceled, particularly referring to Commissioner's letter of July 1, 1920, approved by the Secretary on July 8, 1920.

C. J. RHOADS,  
Commissioner.

Approved: April 17, 1931.  
JOS. M. DIXON,  
First Assistant Secretary.

**Act March 4, 1929 (45 Stat. 1562):**

For maintenance and operation of the irrigation systems on the Crow Reservation, Montana, including maintenance assessments payable to the Two Leggings Water Users Association and Bozeman Trail Ditch Company, Montana, properly assessable against lands allotted to the Indians irrigable thereunder, \$1,000, to be reimbursed under such rules and regulations as may be prescribed by the Secretary of the Interior.

**Act May 14, 1930 (46 Stat. 279):**

For maintenance and operation of the irrigation systems on the Crow Reservation, Montana, including maintenance assessments payable to the Two Leggings Water Users Association and Bozeman Trail Ditch Company, Montana, properly assessable against lands allotted to the Indians irrigable thereunder, \$1,000, to be reimbursed under such rules and regulations as may be prescribed by the Secretary of the Interior in accordance with the Act of May 26, 1926 (44 Stat., pp. 658-660).

**Water Rights**

Water was first diverted into some of the Government constructed ditches in 1885. Water filings in compliance with State laws have been made on the various streams and for the various canals beginning with 1905. On the Big Horn River there is a filing for 788 second feet for the Big Horn Canal and 600 second feet for the Two Leggings Canal. On the Little Big Horn River there are filings of 72 second feet for the Upper Little Horn Canal; 28 second feet for the Forty Mile; 112 second feet for the Reno; and 167 second feet for the Agency Canal. On Lodge Grass Canal there is a filing of 135 second feet for Lodge Grass No. 1 and 46 second feet for Lodge Grass No. 2. On Soap Creek the filing is for 46 second feet, on Pryor Creek 87, on Lost Creek 60 and Coburn Canal 17 second feet.



# Big Horn County Organization

Big Horn County was created January 13, 1913, from parts of Rosebud and Yellowstone counties. It comprises an area extended approximately 100 miles east and west and 75 miles north and south. It embraces 5,025 square miles and has 3,216,000 acres within its borders. The southern portion of the county embraces part of the Big Horn Mountains, Wolf Mountains and the Pryor Mountains. Big Horn county is located in south-central Montana and is bounded on the east by Rosebud and Powder River counties; on the north and east by Treasure county; on the north and west by Yellowstone county; on the south by Carbon county and the State of Wyoming. Hardin, the principal town in the area and the county seat of Big Horn County, was first settled in 1907. Hardin now has a population of approximately 2,000 citizens and is the principal trading center of the area.

## Transportation

The area is served by the Lincoln-Billings line of the Chicago-Burlington and Quincy Railroad and U. S. Highway No. 87, which provides convenient marketing outlets for agricultural products and livestock. Aside from these transportation facilities, the area is well supplied with graded county roads which make the main highway and railroad shipping point accessible the year around. Billings, the principal trading center of this area, is located 50 miles west of Hardin.

## Climate

The county has a climate typical of the semi-arid Great Plains Region, marked by abundant sunshine, low relative humidity, moderate winds, low precipitation and wide daily and seasonal variations of temperature. The growing season is relatively short. The summer season has hot days with abundant sunshine which is tempered by cool nights. The winters are moderately cold, but as a rule they are not prolonged and are broken frequently by comparatively long periods of mild weather. Occasionally, late spring and early fall frosts cause damage, as do hail and flash summer rains, which at times attain cloudburst intensity. The record of weather conditions has been kept at Crow Agency, which is located near the center of the county in the Little Big Horn Valley, and at Foster, which is located in the northern part of the county in the Big Horn Valley. The months of highest rainfall are May and June. In the southern part of the county, on the high benches and in the mountainous area, the precipitation is greater than in the northern part of the county because of the rise in elevation. The average frost-free season at Foster is 122 days and at Crow Agency it is 135 days. The average date of the last killing frost is May 18 and the average of the first killing frost is September 17 and September 25, respectively. The records also show that killing frosts have occurred in late June and early August. The average annual mean precipitation at Foster, with an elevation of 2,800 feet, is 11.58 inches; at Crow Agency, with an elevation of 3,030 feet, it is 16.20 inches.

## Soils

Preliminary examination of the soils of the Yellowstone River Basin, in which Big Horn County is located, has resulted in their classification, on the basis of physiographic features, into four groups as follows: (1) Soils of the valley bottoms; (2) Soils of the valley benches



and terraces; (3) Soils of the bordering slopes and uplands; and (4) Miscellaneous soils and land types. The valley bottom soils, deposited by flowing water, are highly irregular, varying in texture from clay to sandy loam. They are generally fertile and well-drained. Much of the present irrigated land in the Yellowstone River Basin includes this soil group.

The second soil group occupies the terraces and benches bordering the stream valleys, rising 25 to 200 feet above the valley floors. They also are alluvial soils but more mature and uniform than those of the valley bottoms. They are fertile, medium textured, and commonly friable and free-working. Under proper management, with an adequate water supply, they are capable of sustaining production of all of the crops grown in this region.

The last two soil groups named above are not generally irrigable. Because of rough topography, thin soil, or isolated positions with respect to an adequate water supply, their agricultural usefulness is limited to dry land farming or grazing.

The soils of the Yellowstone River Basin have developed under semi-arid climatic conditions, which results in the formation of little organic material and the retention of a large proportion of soluble mineral salts. The successful irrigation of such soils, therefore, requires adequate drainage, natural or artificial, to assure removal of excess water that might otherwise be evaporated from the soil surface and leave a concentration of salts. Needed fertilization is generally limited to supplemental nitrogen and phosphate, in both of which crops grow. Deficiency of phosphorus in Yellowstone Basin soils causes the so-called phosphorus disease in range livestock. It is successfully controlled by feeding bonemeal, or salt containing phosphates.

In a detailed soil survey conducted by F. K. Nunns, Montana Agricultural Experiment Station, the soils of all the Big Horn Valley and the Little Big Horn Valley from Hardin north to Garryowen have been described as follows:

The Big Horn Valley area comprises the alluvial lands of the Big Horn and Little Big Horn River Valleys, the adjacent valley slopes, and some of the uplands, high gravelly benches, steep slopes, and escarpments that border the valleys. The soils have developed or are developing chiefly under the influence of a short-grass vegetation from limy, clayey, silty, and sandy alluvial sediments on the bottom lands and low terraces; from gravelly mountain outwash or valley-filling material on the high benches; and from silty shales and sandstone on the uplands. On the valley slopes the soils are forming from colluvium and local alluvium washed from the adjacent uplands and high benches. The soils range in color from brownish gray to dark grayish brown, but they are dominantly brownish gray. Their light color is due to the type of soil formation associated with a semi-arid climate and a sparse vegetation. The annual return of organic matter to the land under these conditions is not sufficient to darken the soils appreciably, except in places where they receive supplemental moisture from seepage or runoff from higher levels.

The Beaverton soils are on the small areas of high benches included in the Big Horn Valley area. These soils are friable and loamy or only slightly sandy in their surface layers. They contain considerable gravel through the entire profile, are underlain by thick beds of loose gravel, and have a well-developed zone of lime accumulation in their subsoil. The valley slopes immediately below the high benches are commonly steep, and in some places precipitous. Little or no soil has accumulated on the steep slopes, and the bedrock is exposed on the steeper parts. Moderately dark soils belonging to the Cushman series have developed from soft shales



on the high slopes of mild gradient. The Cushman soils are silty and friable in all layers and contain an abundance of accumulated lime in the lower part of the subsoil.

The Glendive, Manvel, Neville, and Cherry soils on the lower valley slopes are commonly silty or only slightly sandy, and as a rule friable. They occupy positions favorable for the continued accumulation of local alluvium washed from the higher lands. This renewal of the surface soil accounts in a large measure for their lack of profile development, the presence of lime at or near and beneath the surface, and the absence of a marked zone of lime accumulation in their subsoil.

A rather large proportion of the soils of the bottom lands and terraces are developing in comparatively deep deposits of heavy, rather clayey alluvium. The surface soils are dominantly brownish gray. Both surface drainage and internal drainage are slow or imperfect. These conditions are especially prevalent in the general region of occurrence of the Billings soils in the Big Horn Valley south of Hardin. North of Hardin the deep clayey soils are interspersed with larger areas of better drained soils that have a friable, silty, or slightly sandy subsoil. In the Little Big Horn Valley the soils are commonly more silty and sandy and have more friable subsoils and better internal drainage than in the rest of the area. Most of the soils on the bottom lands and the lower lying parts of the terraces over the entire area have a gravel or sand substratum at a depth of 1 to 4 feet below the surface. All the soils in the valley proper are imperfectly developed or show no development of a profile, except the Fort Collins soils, which occupy the better drained positions and have friable subsoil layers, in which there is a definite zone of lime accumulation.

The heavy soils and the more poorly drained areas commonly have poor tilth and contain different quantities of alkali salts. The salts in places are sufficiently concentrated to injure growing vegetation, the concentration depending on the quantity of salts originally present in the soil, the extent to which leaching has taken place, the quantity of salt carried in seepage water that affects some of the land, and the condition of drainage that would tend to remove or concentrate the excess of soluble salts.

All the soils, except those on the uplands, high benches, and higher valley slopes, occupy positions below the irrigation ditches. Most of those below the ditches are suited to irrigation farming, except the Banks and Laurel soils. The Billings soils are generally acceptable for irrigation farming but have difficult problems of production and management during the initial years of reclamation. The Banks soils are adjacent to the larger streams, and have uneven relief, excessive internal drainage, and a comparatively low content of available plant nutrients. The Laurel soil generally occurs in depressed situations, is imperfectly too poorly drained, and contains an excess of soluble salts.

Prior to the development of irrigation, the agricultural use of the heavy soils of the area was restricted chiefly to grazing, and those soils having friable, silty, or loamy profiles were used largely in the production of wild hay and small grains under dry-farming methods. Under irrigation the friable soils are adapted to a wide variety of grain and forage crops, fruits, vegetables and root crops. The tilth of the heavy soils, provided the content of salts is not excessive, gradually improves under irrigation and management practices that include the use of manures and fertilizers and the incorporation of crop residues into the soil. Under similar practices the soils of lighter texture are productive for nearly all of the crops adapted to the area. Sugar



beets and alfalfa, with adequate irrigation, have proved to be better adapted to the moderately salty, heavy soils than are most of the other crops produced.

### Crops

Native hay and alfalfa were the first crops grown under irrigation in this area. They were produced for winter feed for livestock which ranged on the adjacent hills and mountains. Since the earliest settlement, livestock raising has been a major industry in the county, with beef cattle leading all other livestock. As more land was put under irrigation, and the population of the valleys increased, the farm units became smaller and a larger acreage was planted to alfalfa and crops that could be used for feed—such as wheat, oats and barley. Later, wheat became the principal cash crop. At present alfalfa occupies the largest acreage of any single crop. It is produced as a hay crop and also serves as an important source of farm income, with a good local market to near at hand range men. It is also used as a soil improvement crop. As a rule, two cuttings of alfalfa hay are obtained, but in some years a second cutting is left to mature for its seed crop.

In 1915 the first sugar beets were grown in the area, and from that time on the acreage planted each year has been increased. Of all the crops grown on irrigated land, the value of the sugar beet crop far exceeds the other crop values. Oats, barley and corn are minor crops, even though they occupy a considerable acreage and are raised primarily for a farm supply of grain and forage. Edible beans are planted to a considerable acreage, which varies from year to year depending on the prices and the market demand.

In addition to the irrigation along the river valleys, considerable dry land farming is practiced in Big Horn County, which consists principally of fall wheat and the raising of alfalfa seed. On the bench land west of Hardin is located one of the world's largest single wheat producing corporations. The wheat yields on dry land range from 15 to 40 bushels per acre. The alfalfa seed is considered to be of excellent quality.

### Livestock

About 30 per cent of the farms have small herds of beef cattle which are kept on lands that are slightly seeped, or river bottom, and not suitable for irrigation, and by this practice the farmer markets his surplus hay through the sale of beef cattle. Horses average about six head to the farm and are used chiefly for draft purposes—with the greater part of this type of work being done by tractors. Dairy cattle are kept on most farms—some with sufficient numbers only to supply home needs and others with larger herds from which the sale of milk or cream is used to supplement the farm income. No large numbers of dairy cattle are kept on any one farm. A few farms have small flocks of sheep. Hogs are raised to supply the home demand for meat and the local market. Flocks of poultry are kept on most farms to supply the home needs, with the surplus of eggs or fowl sold locally or bartered for groceries. A small number of farms have colonies of bees for honey production.

### WATER SUPPLY

The principal streams in Big Horn County from which water for irrigation is diverted are the Big Horn and Little Big Horn Rivers and their tributaries. The Big Horn River is formed by the Wind and Popo Agie Rivers near Riverton, Wyoming. From this point it flows



north about 150 miles to the Montana-Wyoming State Line where it turns northeastward for 100 miles to its confluence with the Yellowstone River near Big Horn, Montana. Its two largest tributaries, the Shoshone and the Greybull, enter from the west in Wyoming, while the Little Big Horn River, Shell and Nowood Creeks, which rise in the Big Horn mountains, enter from the east. The chain gage, near Hardin, is located in the northwest quarter of Section 19, Township 1 South, Range 34 East at highway bridge on the Crow Indian Reservation half a mile upstream from the Little Big Horn River and two miles northeast of Hardin. The drainage area is 20,700 square miles at an average elevation of about 5,000 feet. For this station, records are available from June, 1904 to May, 1925 and August 28, 1928 to June, 1933. Maximum discharge observed, 45,900 second-feet March 11, 1929 (gage height 11.1 feet); minimum 353 second feet February 14, 1933. The three principal diversions from the Big Horn River in Big Horn County are the Big Horn, Two Leggins and Big Horn Low Line canals. The Big Horn Low Line canal diverts water below the gauging station.

### **Little Big Horn River**

The Little Big Horn River, a tributary of the Big Horn River, is a small stream rising in the Big Horn mountains in northern Wyoming which flows northward across Big Horn County to its confluence with the Big Horn River near Hardin. Several of its tributaries also rise in Wyoming. The Little Big Horn River is about 125 miles long with the greater portion in Montana. Its largest tributary, Lodge Grass Creek, lies almost entirely within Montana. The wire-weight gage is located in the northeast quarter of Section 13, Township 3 South, Range 34 East at Chicago, Burlington and Quincy Railway bridge two miles south of Crow Agency and fourteen miles upstream from mouth. The Little Big Horn River has a drainage area of 1,190 square miles at an average elevation of about 4,000 feet. Records are available from April, 1912 to September, 1924, August 1928 to December, 1932, April to September, 1938. The maximum discharge observed was about 8,200 second-feet July 23, 1923 (gage height 14.0 feet); no flow July 28 to August 6, 1921. The principal diversions are Forty-Mile, Bozeman Trail, Antler Land Company ditches, Reno, Agency and Upper Little Horn No. 2 canals.

### **Lodge Grass Creek**

Lodge Grass Creek is a small tributary of the Little Big Horn River about 35 miles long heading in Wyoming near the Montana-Wyoming State Line and joining the Little Big Horn River near the town of Lodge Grass. Records from March 1916 to September 1920 for a wire-weight gage located in the south half of Section 12, Township 6 South, Range 35 East, 600 feet upstream from the Chicago, Burlington and Quincy Railway bridge and one-quarter mile south of Lodge Grass show a maximum gage height record of 5.05 feet March 31, 1917 (ice present, discharge not determined) no flow July 12 to September 30, 1919. The principal diversions are Lodge Grass No. 1 and Lodge Grass No. 2 canals. Besides these, there are several small private ditches.

### **Soap Creek**

Soap Creek is a small stream about 25 miles long heading on the east side of the Black Canyon in Big Horn County and is a tributary to the Big Horn River, joining said stream near St. Xavier. The Soap Creek chain gage is located in Section 20, Township 5 South,



Range 32 East at Henry Reed's ranch one mile upstream from mouth and nine miles south of St. Xavier. Records are available from June, 1915 to September, 1924, April, 1914 to June, 1915 about one-half mile upstream. September, 1911 to November, 1913 at location about three miles upstream and one-quarter of a mile above headworks of Soap Creek Ditch (fragmentary in 1911, 1912). The maximum discharge observed was 438 second-feet May 11, 1914 (gage height 12.8 feet from floodmarks), from extension of rating curve; no flow August 29, 30, September 18, 25, 1920 and September 8, 1923. The principal diversion from this stream is the Soap Creek canal, which is a government unit. There are also several private ditches. The water supply is very erratic.

### **Pryor Creek**

Pryor Creek, a tributary to the Yellowstone River, heads in the Pryor mountains in the southwestern part of Big Horn County and flows northward through Big Horn and Yellowstone counties to its confluence with the Yellowstone River near Huntley. The chain gage is located in the southwest quarter of Section 25, Township 2 North, Range 27 East, at steel highway bridge one-half mile south of railway station at Huntley. The drainage area is 800 square miles with an average elevation of about 4,000 feet. The maximum discharge observed was 1,560 second feet July 3, 1912 (gage height 7.2 feet); no flow July 26, 28, 1908. Records are available from August, 1904 to December, 1916. The principal diversions are the Pryor Creek and Coburn units. In addition to these, there are several private diversions.

### **Tongue River**

The Tongue River rises in the northeastern portion of the Big Horn mountains, in Wyoming, in a number of small streams that flow through gently rolling country before they unite just south of the Montana-Wyoming boundary line to form a single stream. From the Montana-Wyoming State line, the stream flows northeastward through Montana for about 125 miles to Miles City where it empties into the main stem of the Yellowstone River. Throughout the lower area in Wyoming water for irrigation is diverted from the tributary streams. Because of the large acreage under irrigation many of the streams are completely depleted. In Big Horn County there are several small diversions and pumping units. The main feature on the Tongue River in Big Horn County is the Tongue River dam and reservoir. The water-stage recorder is located in Section 23, Township 9 South, Range 40 East, one and one-half miles east of Decker and two miles north of Wyoming State line. The drainage area is 1,610 square miles. Records are available from April, 1928 to September, 1938. Maximum discharge observed, 7,220 second-feet June 2, 1929 (gage height, 9.25 feet), from rating curve extended above 3,500 second-feet; minimum daily discharge, 2.9 second-feet August 20-21, 1934.

*(Data as to stream discharge, water records available, location of gages, etc., obtained from Water-Supply Paper 917, A. H. Tuttle and T. R. Newell, U. S. Geological Survey.)*



## BIG HORN COUNTY

### Irrigation Summary of Big Horn County by River Basins

#### Big Horn River Basin

Name of Ditch	Source	Present Irrigated Acres	Potential Irrigable Acres	Maximum Irrigable Acres
Big Horn Canal	Big Horn River	20,372.55	4,331.85	24,704.40
Big Horn Low Line Canal	Big Horn River	4,362.40	1,845.70	6,208.10
Farmers Canal	Big Horn River	942.36	184.70	1,127.06
Lateral Water Users Assn.	Big Horn River	198.00	15.00	213.00
Soap Creek Ditch	Soap Creek	764.30	855.90	1,620.20
Two Leggins Canal	Big Horn River	14,130.65	2,651.00	16,781.65
Wagonbox Canal	Big Horn River	226.70	46.00	272.70

#### Private Ditches

Private	Beauvais Creek	93.00	50.00	143.00
"	Big Horn River	320.50	76.70	397.20
"	Buster Creek	226.00	.00	226.00
"	Dryhead Creek	.00	80.00	80.00
"	Grapevine Creek	650.00	245.00	895.00
"	Mott & Muddy Creeks	153.00	.00	153.00
"	Nine Mile Coulee	.00	10.00	10.00
"	Rotten Grass Creek	35.00	1,587.20	1,622.20
"	Sage Creek	84.00	.00	84.00
"	Sandroek Springs	19.00	31.00	50.00
"	Soap Creek	289.40	139.60	429.00
"	Tullock Creek	215.00	210.00	425.00
"	Two Leggins Creek	15.00	40.00	55.00
"	War Man Creek	92.30	.00	92.30
Totals for Big Horn River Basin		43,189.16	12,399.65	55,588.81



## Little Big Horn River Basin

Name of Ditch	Source	Present Irrigated Acres	Potential Irrigable Acres	Maximum Irrigable Acres
Agency Canal	Little Big Horn River	3,431.40	1,811.80	5,243.20
Bozeman Trail Canal	Little Big Horn River	1,630.95	521.92	2,152.87
Forty Mile Canal	Little Big Horn River	597.20	147.40	744.60
Lodge Grass Canal No. 1	Lodge Grass Creek	1,978.50	1,343.80	3,322.30
Lodge Grass Canal No. 2	Lodge Grass Creek	417.80	791.40	1,209.20
Reno Canal	Little Big Horn River	2,098.10	682.10	2,780.20
Upper Little Big Horn Canal No. 2	Little Big Horn River	2,285.50	461.40	2,746.90

### Private Ditches

Private	Alligator Creek	25.00	17.50	42.50
"	Dry Beaver Creek	156.30	.00	156.30
"	Kidd Creek	57.00	.00	57.00
"	Little Big Horn River	3,090.81	951.70	4,042.51
"	Little Owl Creek	.00	40.00	40.00
"	Lodge Grass Creek	411.70	1,117.20	1,528.90
"	Owl Creek	2.00	258.90	260.90
"	Owl Creek (Tributary)	218.30	76.80	295.10
"	Pass Creek	12.00	741.20	753.20
"	Pass Creek, East Fork	130.90	298.00	428.90
"	Pass Creek, West Fork	565.40	216.70	782.10
"	Percheron Creek	25.40	22.60	48.00
"	Twin Creek	.00	343.10	343.10

Totals for Little Big Horn River Basin	17,134.26	9,843.52	26,977.78
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## Rosebud River Basin

U. S. I. D. Ditch

(Cheyenne)	Rosebud River	112.00	74.00	186.00
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### Private Ditches

Private	Cache Creek	3.00	28.00	31.00
"	Corral Creek	100.00	98.00	198.00
"	Indian Creek	75.00	10.00	85.00
"	Muddy Creek	.00	100.00	100.00
"	Muddy Creek, West Fork	.00	4.00	4.00
"	Rosebud River	134.00	478.50	612.50
"	Rosebud River, North Fork	20.00	.00	20.00
"	Rosebud River, South Fork	140.00	36.50	176.50
"	Spring Creek	6.50	46.00	52.50

Totals for Rosebud River Basin	590.50	875.00	1,465.50
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## Tongue River Basin

Name of Ditch	Source	Present Irrigated Acres	Potential Irrigable Acres	Maximum Irrigable Acres
Interstate Ditch	Tongue River	131.20	45.00	176.20

### Private Ditches

Private	Badger Creek	73.40	.00	73.40
"	Hanging Woman Creek	793.00	.00	793.00
"	Little Young's Creek	106.00	.00	106.00
"	Spring Creek	200.00	.00	200.00
"	Spring Creek, branch of	97.00	.00	97.00
"	Squirrel Creek	689.70	49.20	738.90
"	Tanner Creek	65.00	.00	65.00
"	Tongue River	253.00	251.30	504.30
"	Trail Creek	175.00	.00	175.00
"	Trail Creek, East Fork	224.00	.00	224.00
"	Waddle Creek	25.00	.00	25.00
"	Young's Creek	469.90	224.00	693.90

Totals for Tongue River Basin		3,302.20	569.50	3,871.70
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## Yellowstone River Basin

Huntley Canal	Yellowstone River	.00	4.60	4.60
Lost Creek Ditch	Lost Creek	.00	602.00	602.00
Pryor Creek Ditch	Pryor Creek	694.70	1,767.40	2,462.10

### Private Ditches

Private	Bird Creek	11.25	.00	11.25
"	Pryor Creek	540.00	145.60	685.60
"	Pryor Creek, East Fork	66.00	.00	66.00
"	Sarpy Creek, East Fork	.00	141.00	141.00
"	Ten Mile Creek	41.50	40.00	81.50

Totals for Yellowstone River Basin		1,353.45	2,700.60	4,054.05
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### Summary

Big Horn River Basin	43,189.16	12,399.65	55,588.81
Little Big Horn River Basin	17,134.26	9,843.52	26,977.78
Rosebud River Basin	590.50	875.00	1,465.50
Tongue River Basin	3,302.20	569.50	3,871.70
Yellowstone River Basin	1,353.45	2,700.60	4,054.05
Total All Basins	65,569.57	26,388.27	91,957.84



## AGENCY UNIT (Crow Irrigation Project)

For the Agency Unit water is diverted by gravity from the Little Big Horn River in the northeast quarter of the southwest quarter in Section 1, Township 3 South, Range 34 East, on the west bank a short distance south of Crow Agency. The main canal has a bottom width of 12 feet and is 10.9 miles long, with a capacity at the headgate of 210 second feet. The headgate is of reinforced concrete with three screw type gates. A dam about 95 feet long has been built across the Little Big Horn River near the headgate. From the point of diversion, the main canal runs in a northwesterly direction to near the vicinity of Hardin. The present water supply is considered adequate to irrigate the area under constructed works, since the construction of the Lodge Grass storage reservoir. The gross area of the unit is 6,130.41 acres, with 5,426.1 acres classified as assessable, which is served by 32.5 miles of laterals. Of this amount 1,314.7 acres is non-Indian land and 4,111.4 acres is Indian land. On the unit there are 24 metal flumes, 290 wood bridges and 44 concrete culverts.

The construction cost to date, April 22, 1946, is \$162,764.16, making a cost of \$30.00 per acre. This represents 92 per cent of the project completed. The estimated cost to complete the unit is \$90,935.84, making a total completed cost of \$253,700.00, or a total cost of \$46.76 per acre. The estimated amount to complete the project is for the replacement of a number of timber structures in the main canal by concrete, to reconstruct some of the laterals built in 1896 and 1897 which were not located on subdivision lines, to construct laterals to allotments to which no water has been delivered, and for drainage and rehabilitation. Most of the allotments to which no laterals have been constructed are adjacent to or near the river and the work will be comparatively expensive on account of the rough topography. There are several timber structures in the laterals, such as drops, that will have to be replaced by concrete. The unit is located west of the Little Big Horn River between Crow Agency and Hardin and consists of river bottom land. For the most part the soil and topography are good. Drainage is a real problem. Although some has been accomplished, a great deal more is required. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are alfalfa, wheat, sugar beets, barley and oats.

On August 25, 1915, Evan W. Estep, Superintendent and Special Disbursing Officer for the Crow Reservation, appropriated 166.6 cubic feet per second of water to be diverted from the Little Big Horn River in behalf of the Crow Indians. The notice of appropriation was filed August 26, 1915, in Book 1, Page 231 of Misc. Records in the Big Horn County Courthouse. The point of diversion was described as south 23 degrees 41 minutes west, 5,558 feet from the northeast corner of Section 1, Township 3 South, Range 34 East, running thence north through Sections 36, 25 and 23, Township 2 South, Range 34 East, thence northwest through Sections 14, 10, 9 and 4, Township 2 South, Range 34 East, thence through Sections 33, 32 and 29, Township 1 South, Range 34 East. The purpose was for irrigation and domestic uses. The system was described as a ditch 12 feet on the bottom. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made in June, 1893.

In 1946 there were 3,431.40 acres being irrigated under the Agency Unit with a potential acreage under existing facilities of 1,811.80 acres, or a maximum irrigable acreage of 5,243.20.



(Note: All figures for Crow Irrigation Projects as to construction cost to date, estimated completed cost, cost per acre, gross area of units, assessable acres, per cent of project completed, etc., were obtained from a preliminary report made by E. L. Decker, Engineer U. S. Department of Interior, Office of Indian Affairs Irrigation Division, Billings, Montana, dated April 22, 1946. In this unit write-up and the others to follow, the cost of surveys and engineering was omitted. The other costs were named so as to be indicative of the needs of the project.)

### **Antler Land Ditch Company**

The Antler Land Ditch Company diverts water by gravity from the Little Big Horn River in the southwest quarter of the southwest quarter of Section 17, Township 9 South, Range 34 East. The main canal is about six miles long. In addition, the Company also diverts water by pumping from the main canal in the northeast quarter of the northwest quarter in Section 10, Township 9 South, Range 34 East. Under the Antler Land Ditch Company the ultimate irrigable area is 2,274.7 acres with 1,415.7 acres white-owned and 959 acres Indian owned. In addition to this, there are approximately 147.7 acres irrigated from the Antler Land Company ditch by the Tschirgi Pump ditch. The project is located north of the Little Big Horn River about three miles south and seven miles west of Wyola. The ditch was first constructed as the Farmers Alliance Ditch in 1917 by Matt Tschirgi, Henry Small and Edward Schroeder. At present, Tschirgi is the only user of the ditch, as he either owns or controls all the lands under the system. As he is a large livestock operator, the principal crop is alfalfa hay with some small grains being raised. The water supply is not considered adequate in dry years. The topography is favorable for irrigation.

The first appropriation for what is now known as the Antler Land Company canal was made June 11, 1914, by Edward Schroeder, Cora Williams Schroeder, Elmer Edward Schroeder and Leslie Schroeder. The filing was made on the same day. Together they appropriated 102 miner's inches of water to be diverted from the Little Big Horn River in Section 17, Township 9 South, Range 34 East. The intended place of use was in Sections 17, 16 and 9, Township 9 South, Range 34 East. Also, on June 11, 1914, Mattie William Small appropriated 82 miner's inches to irrigate lands in Sections 9, 16 and 17, Township 9 South, Range 34 East.

On December 29, 1915, Mathew H. Tschirgi appropriated 400 miner's inches to be diverted from the Little Big Horn River in Section 17, Township 9 South, Range 34 East. The filing was made on January 4, 1916.

On March 5, 1917, Mathew H. Tschirgi, Henry Small and Edward Schroeder appropriated 760 miner's inches of water to be diverted from the Little Big Horn River. The notice of appropriation was filed on the same day in Book 1, Page 324 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point on the west bank of the stream north 10 degrees east, 422 feet from the southwest corner of Section 17, Township 9 South, Range 34 East. The purpose was for irrigation, stock water and domestic uses. The system is described as lands in Sections 17, 16, 9, 10, 3 and 15, Township 9 South, Range 34 East.

On June 30, 1919, Mathew H. Tschirgi appropriated 456 miner's inches to be diverted from the Little Big Horn River at a point north 10 degrees east, 422 feet from the southwest corner in the southwest quarter of the southwest quarter in Section 17, Township 9 South,



Range 34 East. The filing was made on July 3, 1919 and recorded in Book 1, Page 575 of Misc. Records in the Big Horn County Courthouse. The purpose was for irrigation and domestic uses. The system was described as a ditch 42 inches by 108 inches running northeast 4.4 miles. The land description of intended place of use was described as lands in Sections 35 and 36, Township 8 South, Range 34 East, and Sections 1, 2 and 11, Township 9 South, Range 34 East. As this appropriation called for the extension of the Schroeder, Small, Tschirgi ditch, this filing was made.

On October 1, 1919, S. G. Reynolds filed an identical appropriation to the one above for 456 miner's inches, except under the description of intended place of use only Sections 35 and 36, Township 8 South, Range 34 East were given. This notice of appropriation was recorded in Book 1, Page 639 of Misc. Records in the Big Horn County Courthouse.

In 1946 there were 2234.71 acres being irrigated under the Antler Land Company ditch, with a potential acreage under existing works of 180.70 acres, or a maximum irrigable acreage of 2415.41 acres.

In 1935 the United States brought suit against the Antler Land Company, and others, to enjoin defendants from diverting any of the water of Lodge Grass Creek or the Little Big Horn River and their tributaries. The defendants maintained that the Crow Treaty contained no definite provision concerning appropriations or use of water. Also, that they can find nothing in the statute after 1868 adequate to show congressional intent to permit allottees to be denied participation in the use of water essential to farming and home making.

The first case was heard by Judge Charles N. Pray. As Thomas R. Powers was the first defendant, the case is known as the "Powers Case."

### Judgment and Decree

This cause came on to be heard April ----, 1935. Evidence was introduced on behalf of plaintiff and the answering defendants M. H. Tschirgi, Bertha Tschirgi, Antler Land Company, B. B. Belken, Edith G. Belken, Judy Walsh, H. G. Campbell, Jay L. Henman, Ruth Henman, F. L. Yates, Emma F. Yates, Nickels Dethlefsen, Mary Dethlefsen, Billie Miller and Robert J. Miller. The cause was then submitted to the court. Thereafter and on October 13, 1936, the court made and filed herein its findings of fact and conclusions of law to the effect that plaintiff had failed to make out a cause of action against said defendants or any one of them, and was entitled to no relief herein, and that each and all answering defendants herein had established their respective claims as set forth in their answers and were entitled to the relief prayed for.

WHEREFORE, by reason of the law and the premises aforesaid and based upon the evidence and the aforesaid findings of fact and conclusions of law, it is ordered, adjudged and decreed that plaintiff is entitled to no relief herein; that the Crow Indians in their treaty with plaintiff of May 7, 1868, reserved the right to the use of the waters of Little Big Horn River, Lodge Grass Creek, and their tributaries, to the extent necessary to irrigate all lands on the Crow Indian Reservation which are irrigable from said streams or any of them that the rights so reserved have continued to exist against the United States and in favor of individual Indians and their grantees and successors in interest and the grantees who acquired any of said lands at government sales of allotments to deceased Indians and the successors in interest of



such grantees; that each member of the Crow tribe of Indians owning land on the Crow Indian Reservation irrigable from the waters of said streams, or any of them, secured a vested right to sufficient water therefrom to irrigate his said land to the extent of at least forty acres in each allotment; that such vested right has a priority as of date of May 7, 1868; that subject to limitation of acreage, each irrigable acre is entitled to the same amount of water as any other acre irrigable from said streams, or any of them; that in case of shortage of water, each acre irrigable from said stream, or any of them, is entitled to its pro-rata share of the available water therefrom, whether such land is under a government ditch or not; that such right is vested in each and every grantee of any of such irrigable lands; that said answering defendants, as owners and lessors of such lands, have the same vested right to the use of the waters of said river, creek and their tributaries in the irrigation of their said lands as their or their lessors' Indian predecessors in interest had before the alienation of such land; that the purchaser of such lands, either from the Indian allottee or at such government sales, and his grantees, acquired the title and water rights held by the Indian allottee and is entitled to the same character of water right with equal priority as was held by his Indian grantor; that the attempt of plaintiff, when there has been a shortage of water in said creek, river or tributaries, to divert all of the waters therefrom to certain members of the Crow tribe of Indians and to certain grantees of Crow Indians and to exclude other members of the Crow tribe of Indians and their grantees from the use of any of said waters was an usurpation of power and illegal; that one-half miner's inch of water per acre delivered upon lands irrigable from said river, creek and their tributaries is required and is sufficient for the irrigation thereof, and that each of said answering defendants is entitled to that amount of water for the irrigation of his lands, whether owned or leased by him, which are irrigable from said river, creek or tributaries, and which were under irrigation when he, or his predecessor in interest, acquired title thereto, or were placed under irrigation with reasonable diligence after he, or his predecessor in interest, acquired title to such land, and that each party pay his own costs and disbursements herein.

CHARLES N. PRAY  
Judge, District Court of the  
United States for District of  
Montana, Billings Division

### Supreme Court Decision

#### United States v. Powers (D. C. Mont. 1936), 16 F. Supp. 155

Suit by the United States to enjoin diversion by defendants of the waters of Lodge Grass Creek and the Little Big Horn River within the Crow Indian Reservation. Defendants are successors to Indian allottees.

The Crow Indian Reservation was created by a treaty of May 7, 1868. Steps toward the allotment of lands in severalty were taken in 1890 pursuant to the Act of February 8, 1887. The quantity of irrigable land to be given to each Indian was fixed at 40 acres. Preceding the allotments, all of the lands on the reservation were classified by the resident agent. One unit of 40 acres of irrigable land on the Crow Irrigation Project was made equivalent to 80 acres of non-irrigable agricultural land or to 160 acres of grazing land. With slight exceptions, all of the lands of defendants were classified as grazing or non-irrigable agricultural land.



The Government expended approximately \$2,000,000 in the construction of irrigation works between 1885 and 1910. With one exception, the private ditches which serve defendants' lands were all constructed subsequent to 1910. No consent was ever given by the Government to the construction of these ditches. It is admitted that from 1931 to 1934 there was insufficient water to supply the lands within the Indian projects; however, defendants claim that each allotment which is susceptible of irrigation is entitled to its pro-rata share of the waters of the stream flowing through the reservation, and upon this theory defendants have diverted water from the streams in question. The United States claims the right to control the streams for the use of the Crow Indian Irrigation Project. The United States contends that prior to the establishment of the Crow Reservation it was the owner of the usufruct of the stream involved, and that it continues to retain such ownership unless such has been granted away by Act of Congress.

Holding for defendants, the court said:

"The parties to the suit seem to agree that under the Treaty of May 7, 1868, the lands on the reservation were recognized as the common property of the Crow Tribe. Under the interpretation of a like treaty in the Winters' case (*Winters v. U. S.*, 207 U. S. 564, 28 S. Ct. 207, 52 L. ed. 340, Id. (C. C. A.) 143 F. 740), the use of the waters of the streams on the reservation were reserved to the Indians. They were to be instructed in agricultural pursuits and the waters were to be used to irrigate their lands. They were to become farmers and water for irrigation was necessary to mature their crops. The era of dry land farming had not then dawned. Under the Crow Treaty the Indian could select his own land. After that came the survey followed by the allotment of land selected. A twenty-five year trust patent was issued to the Indian which finally resulted in a patent in fee; thus he became the owner of the land and the use of water to irrigate it to the extent of forty acres. It seems to be plain that each Indian thereby secured a vested right to the use of sufficient water to irrigate his irrigable land; at any rate, that he would be entitled to his pro rata share of the available water supply for that purpose. Not all of the Indians who had irrigable land were served with water under the government projects, but they possessed the right to use. Some constructed their own ditches, while others joined in building a common ditch. One Indian was entitled to just as much water as another measured by his needs and the available supply.

"It seems to be understood by the parties to the suit that the treaty of May 7, 1868, determines the rights of the government and the Indians in respect to the lands and waters here involved, and that it does not appear from any subsequent treaty or act of Congress that such rights have ever been impaired or destroyed. This treaty was in effect a grant by the Indians, but certain rights were reserved under the treaty. When the Indians made the treaty with the government, they reserved rights to the use of the waters at least to an extent necessary to irrigate their lands, and the rights so reserved continue to exist against the United States and its grantees as well as against the state and its grantees. \* \* \* p. 159.

"Does the water belong to the tribe or the Indians, and if to the latter does it go to the purchaser as something appurtenant to the land? Tribal lands were held in common prior to the general allotment act of February 18, 1887. There was no ownership in severalty, and upon the death of an Indian such rights as he possessed in the use of land and water ceased. Section 7 of the above allotment act provided as follows: 'That in cases where the use of water for irrigation is necessary to render the lands within any Indian reservation available for agri-



cultural purposes, the Secretary of the Interior be, and he is hereby authorized to prescribe such rules and regulations as he may deem necessary to secure a just and equal distribution thereof among the Indians residing upon any such reservation.' 24 Stat. 388, 1 Kappler 35 (25 U. S. C. A. Sec. 381). Clearly the purpose of this statute is to provide for the distribution of water to the individual Indian. A just and equal distribution must be made, and the duty devolving upon the Secretary is to provide the rules and regulations therefor.

"The government's theory is that the waters are reserved for the tribe, rather than for the individual Indians, but authorities cited by both sides do not seem to support that theory. \* \* \* (citing numerous cases) p. 160.

"Article 6 of the Crow Treaty of 1868, 15 Stat. 650, hereinbefore referred to, is strongly relied upon as authority for the claim on the part of the government that the Indian did not have a right in perpetuity nor in fee simple absolute to the water right used in connection with the lands allotted to and occupied by him; that 'a right to a life estate of a limited kind' is all that he received; that he and his family could use the water upon the allotment only so long as he or they may continue to cultivate it; that upon the death of the Indian or his heirs the right as user returned to the government. To this contention counsel for the defendants Dethlefsen make the following pertinent reply: 'If that be so, then the white farmers under the Bozeman Trail Ditch, as well as under all government ditches, have no water rights. Under their theory the Indian would have the land and a water right for it only so long as he or his heirs possessed and continued to cultivate it. No conveyance from an Indian of any land and water right owned by him to a white person would entitle the white owner to use any water for irrigation. The proof shows very few acres of land in the Little Big Horn and Lodge Grass Valleys were cultivated by Indians in 1934. Under their theory of the case and interpretation of Article 6, no white men owning land on the reservation and under a government ditch had any more right to the use of water from the river or creek, or their tributaries, than had any of the defendants in this case. We are also of the opinion that the rule would extend to white men leasing Indian lands. If the contention of counsel is correct, then the Indians in possession and actually cultivating their land have the only prior rights to the waters of the Little Big Horn River, Lodge Grass Creek, and their tributaries. If white men acquired no water rights by purchase of Indian land, whether irrigated or not before sale, then the water rights as between the white men must be determined under the water right laws of Montana. In that case these defendants would have the first right after the Indians actually cultivating their own lands are supplied with sufficient water'." p. 161

"The plaintiff complains that to allow the defendants the same water right the court has held his Indian predecessor in interest was entitled to will result in a deplorable situation respecting the various irrigation systems on the Crow Indian Reservation and practically defeat the purposes for which they were constructed, but has not made it clear just how it will occur. The white man can acquire no greater or better right than the Indian himself possessed, and if the Indian has not conveyed his interests the right would have remained in him, and such water as he needed for irrigation might have been used by him, depending upon the available supply and the needs of others who possessed rights of equal standing. What difference does it make so far as the actual taking of the water is concerned whether the Indian retained it, turned it over to a lessee, as many have done, or sold it to the white man? Here was a small piece of land that could be irrigated with an appurtenant water right for that purpose. How



can it wreck the systems on the reservation if the white man is permitted to stand in the shoes of his Indian grantor, or acquires the right at sales of deceased Indian allotments?" pp. 163-164

It was also held that conveyance of lands by the Indian allottees conveyed all appurtenances to said lands, including water rights.

The Government appealed from the decision of the District Court (*U. S. v. Powers* (C. C. A. 9, 1938) 94 F. (2d) 783). Affirming the decision of the lower court, the circuit court said:

"The Crow Indian Reservation was established by a treaty between appellant and the Crow Indians dated May 7, 1868, 15 Stat. 649. There was in the treaty no express reservation of water for irrigation or other purposes. There was, however, an implied reservation. *Winters v. United States*, 207 U. S. 564, 575, 28 S. Ct. 207, 52 L. ed. 340. The implied reservation was to the Indians, not to appellant. *Skeem v. United States*, 9 Cir., 273 F. 93, 95; *Conrad Investment Co. v. United States*, 9 Cir., 161 F. 829, 831; *Winters v. United States*, 9 Cir., 143 F. 740, 745, affirmed in 207 U. S. 564, 28 S. Ct. 207, 52 L. ed. 340." p. 785 of 94 F. (2d)

"To render all or any of the lands within the Crow Reservation available for agricultural purposes, the use of water for irrigation was necessary. For such irrigation, the waters of Lodge Grass Creek, Little Big Horn River, and their tributaries, were available. Therefore, by Section 7, *supra*, the Secretary of the Interior was authorized to prescribe rules and regulations to secure the just and equal distribution of said water among the Crow Indians, but he was not authorized, by rule, regulation, or otherwise, to deprive any allottee or patentee of lands in the Crow Reservation, or the successor in title of any such allottee or patentee, of his just and equal right to the use of said waters. \* \* \*

"Appellant contends that, prior to the Treaty of May 7, 1868, all rights in and to the waters of Lodge Grass Creek, Little Big Horn River, and their tributaries, were the property of appellant; that all such rights were by said treaty reserved to appellant and have never been relinquished; that no one else—Indian or white—has ever had the right to divert or use any of said waters without appellant's consent; that no such right was conveyed to or acquired by any patentee of allotted lands in the Crow Reservation; and that, in diverting and using said waters for the irrigation of their lands, appellees are trespassers, and should be enjoined. Appellants' contention is unsupported by authority and is contrary to holdings of this court in *Skeem v. United States*; *Conrad Investment Co. v. United States*; and *Winters v. United States*, *supra*." p. 786 of 94 F. (2d).

### **United States v. Powers (1938), 305 U. S. 527, 83 L. ed. 330**

Suit by the United States to enjoin the further taking of water by defendants from certain streams in the Crow Indian Reservation.

By a treaty of 1868, the United States set aside a large tract of land now within the State of Montana as a reservation for the "absolute and undisturbed use and occupation" of Crow Indians. It was provided that each Indian might select a tract of land to be held in exclusive possession by said Indian. An Indian so selecting lands was entitled to receive seeds and agricultural implements. In 1882, Congress passed an act providing for the sale of a portion of the reservation and for the settlement in severalty of the remainder. The Secretary of the Interior was authorized to survey sufficient lands for the settlement of the Indians, and it was



provided that patents would subsequently be issued. By Act of February 8, 1887, it was provided that patents should be issued to the Indians, said patents declaring the land to be held in trust by the United States for a period of 25 years at which time the Indian would receive an unqualified patent. The Act further provided that "where the use of water for irrigation is necessary to render the lands within any reservation available for agricultural purposes, the Secretary of the Interior . . . is . . . authorized to prescribe such rules and regulations as he may deem necessary to secure a just and equal distribution thereof among the Indians . . . and no other appropriation or grant of water by any riparian proprietor shall be authorized or permitted to the damage of any other riparian proprietor." The Act of May 8, 1906, authorized the Secretary to issue patents to the Indians removing all restrictions as to sale, etc.

The patents issued to the Indians pursuant to the Act of 1906 undertook to convey the land "together with all the rights, privileges, immunities and appurtenances . . . thereunto belonging."

The government has constructed a number of irrigation projects on said reservation, and the government contends that the Act of 1887 quoted above gives the Secretary of the Interior control over waters within the reservation, and that the authorization of an Indian irrigation project by the Secretary constitutes a dedication by the Secretary of sufficient water for said project.

Defendants are white successors to Indians who were allotted lands pursuant to the Act of 1906. Defendants have developed irrigation projects at points along the streams above the Indian irrigation projects, and assert that they are entitled to rights equal to those of the Indians on project lands. On the basis of priority, substantially all of defendants' developments were made after the construction of the Indian projects.

Prior to the allotments, the reservation lands were classified by the Indian Agent as irrigable lands, non-irrigable agricultural lands, and grazing lands. Forty acres of irrigable land was considered equivalent to 80 acres of non-irrigable agricultural land and to 160 acres of grazing land. With a very small exception, none of defendants' lands were classified as irrigable lands.

Holding that defendants possessed rights which were equal in all respects to those of the Indian projects, the court said at p. 334:

"Respondents maintain that under the Treaty of 1868 waters within the Reservation were reserved for the equal benefit of tribal members (*Winters v. United States*, 207 U. S. 564, 52 L. ed. 340, 28 S. Ct. 207) and that when allotments of land were duly made for exclusive use and thereafter conveyed in fee, the right to use some portion of tribal waters essential for cultivation passed to the owners.

"The respondents' claim to the extent stated is well founded.

"Manifestly the Treaty of 1868 contemplated ultimate settlement by individual Indians upon designated tracts where they could make homes with exclusive right of cultivation for their support and with expectation of ultimate complete ownership. Without water productive cultivation has always been impossible.

"We can find nothing in the statutes after 1868 adequate to show Congressional intent to permit allottees to be denied participation in the use of waters essential to farming and



home making. If possible, legislation subsequent to the Treaty must be interpreted in harmony with its plain purposes.

"The Secretary of the Interior had authority (Act 1887) to prescribe rules and regulations deemed necessary to secure just and equal distribution of waters. It does not appear that he ever undertook so to do. Certainly he could not affirmatively authorize unjust and unequal distribution. The statute itself clearly indicates Congressional recognition of equal rights among resident Indians.

"Adoption by the Secretary of plans for irrigation projects to serve certain lands was not enough to indicate a purpose to exclude all other land from participation in essential water and thereby destroy the equal interest guaranteed by the Treaty. Subsequent allotments for farming followed by patents negative any such notion. The patented lands had no value for agriculture without water; they were selected for homes and individual farming.

"The petitioners have shown no right to the injunction asked. ("The prayer of the bill is for a permanent injunction against 'maintaining or using said dams and ditches, as aforesaid, and from diverting by means of said dams and ditches or in any other manner any of the waters from Lodge Grass Creek or Little Big Horn River and their tributaries: . . .'" p. 332) *We do not consider the extent or precise nature of respondents' rights in the waters. The present proceeding is not properly framed to that end.*" (emphasis supplied)

### BIG HORN LOW LINE DITCH COMPANY

The Big Horn Low Line Ditch Company was incorporated on July 29, 1907, for forty years with a capital stock of \$48,000 divided into 8,000 shares of a par value of \$6 each. Stock actually subscribed to was \$11,850. The Company was incorporated for the purpose of forming a Water Users Association in conformity with the requirements of the laws of the United States and of the State of Montana under the Reclamation Act of June 17, 1902. It was also stated that water shall only be furnished to stockholders of this Company. The first directors were F. D. McCormick, T. E. Gay, E. K. Bowman, J. F. Bacon and James C. Foster.

On October 28, 1907, A. L. Mitchell, on behalf of the Big Horn Low Line Ditch Company, appropriated 10,000 miner's inches of water from the Big Horn River. The filing was made on November 2, 1907, and recorded in Book A, Page 27 of Misc. Records in the Big Horn County Courthouse. The purpose was for irrigation and other uses, and the system was described as a headgate and canal—the canal being 12 feet across the bottom and 4½ feet deep. The land description of intended place of use was described as lands in Townships 1 North, 2 North, 3 North, Range 33 East, and Township 3 North, Range 34 East.

In addition to the above appropriation, a filing was made by Elmer K. Bowman on May 27, 1907, for 250 cubic feet per second of water from the Big Horn River. This notice of appropriation was filed June 11, 1907, in Book A, Page 22 of Misc. Records. The purpose and description is identical to the above appropriation. The first use of the canal was in 1908.

Water is diverted by gravity from the Big Horn River on the west bank in lot 7 of Section 34, Township 1 North, Range 33 East. The capacity of the canal is estimated to be 6,600 miner's inches. The water supply in the Big Horn River ordinarily has been adequate, although almost yearly it becomes necessary to construct over-flow check dams in the Big Horn River channel, during the period of low water, to supply the system. In the dry summer of 1931 a



temporary dam had to be built to divert the necessary water. From the point of diversion the canal extends in a northerly direction for about 14 miles. As of December 27, 1945, the Company had an indebtedness of \$3,500. The cost of water averages about \$0.60 a share per year. This charge is for operation and maintenance. At present, 4875 shares are issued. This number represents 44 water users. The system is entirely gravity with no large works of any consequence. The project of the Big Horn Low Line Canal Company begins about five miles north of Hardin and extends north along the west side of the Big Horn River for about twelve miles. Soils toward the upper end of the project are mostly a moderately heavy clay loam. Toward the lower end they are lighter, varying from a silty loam to a loam. There is considerable seepage, but since drainage has been installed a large part of this land has been reclaimed.

Sugar beets and beans are the principal cash crops with alfalfa and small grains being grown rather extensively for feed. Dairy farming is practiced throughout the project, with considerable other livestock kept on most farms. Winter feeding of livestock is carried on rather extensively due to the nearness of the sugar beet factory located in Hardin from which by-products are available.

In 1946 there were 4362.40 acres being irrigated under the Big Horn Low Line Ditch Company, with a potential acreage under existing facilities of 1845.70 acres, or a maximum irrigable acreage of 6208.10 acres.

### **BIG HORN UNIT (Crow Irrigation Project)**

The main canal of the Big Horn Unit diverts water by gravity from the Big Horn River in the northeast quarter of the northeast quarter of Section 18, Township 6 South, Range 31 East on the east bank at the mouth of the Big Horn Canyon about two miles west of the old Fort C. F. Smith. From the point of diversion, the main canal runs in a northeasterly direction for 33.1 miles, having a capacity at the headgate of 720 second feet. A dam has been constructed across the Big Horn River one-quarter of a mile below the headgate. Since the construction of this dam the water supply has been entirely adequate. The gross area of the unit is 28,174.20 acres, with 24,914.4 acres classified as assessable, which is served by 92.8 miles of laterals. Of this amount, 6,969.6 acres is non-Indian land and 17,944.8 acres is Indian land. On the unit there are 19 steel flumes, 1030 wood bridges and 342 concrete culverts. The principal structures on the main canal are of concrete. Because of the excessive fall, numerous concrete drops are necessary. In the laterals the drops are constructed of concrete, with the farm turn-outs made of wood.

The construction cost to date, April 22, 1946, is \$1,198,644.91, making a cost of \$48.11 per acre. This represents 76 per cent of the project completed. The estimated cost to complete the unit is \$378,355.09, making a total completed cost of \$1,577,000.00, or a total cost of \$63.30 per acre. Included in this figure is the cost of the proposed Big Horn High-Line Unit. The area to be covered by this proposed Big Horn High-Line Canal lies on the upper side of the Big Horn Canal, and due to the excessive grade can be served by gravity. The point of diversion from existing Big Horn Canal would be in Section 21, Township 3 South, Range 33 East. The canal would have a capacity of 7 second feet and would serve 300 acres. The development cost would be moderate—estimated at \$18,000. The water supply is considered adequate. The soil is only fair. The present water assessments are \$1.25 per irrigated acre. The unit is located on the east side of the Big Horn River, extending from the mouth of the Big



Horn Canyon to within five miles of Hardin. The topography is very favorable for irrigation. Extensive drainage will be required before the unit will attain maximum production. At present, no effort has been made to install effective drainage. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are alfalfa, wheat, sugar beets, oats and barley.

On September 1, 1905, S. G. Reynolds, then Indian Agent, appropriated 31,535 miner's inches of water to be diverted from the Big Horn River in behalf of the Crow Indians. The notice of appropriation was filed September 7, 1905, and recorded in Book A, Page 426 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point on its right bank, thence northeast through Sections 18, 17, 16, 10, 11, 2 and 1 in Township 6 South, Range 31 East, Section 6, Township 6 South, Range 32 East, Section 36, Township 5 South, Range 31 East, Sections 31, 32, 29, 20, 21, 16, 15, 11 and 1, Township 5 South, Range 32 East, Sections 36, 25 and 24 in Township 4 South, Range 32 East, Sections 19, 18, 7 and 6 in Township 4 South, Range 33 East, Sections 31, 32, 29, 20, 21, 16, 9 and 3 in Township 3 South, Range 33 East, Sections 34 and 27 in Township 2 South, Range 33 East. The purpose was for irrigation. The system was described as a canal 108 inches by 42 inches. The main canal was completed in 1905. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made September 10, 1895.

In 1946 there were 20,372.55 acres being irrigated under the Big Horn Unit, with a potential acreage under existing facilities of 4,331.85 acres, or a maximum irrigable acreage of 24,704.40 acres.

### **BOZEMAN TRAIL DITCH COMPANY**

The main canal of the Bozeman Trail Ditch Company diverts water by gravity from the Little Big Horn River in the southwest quarter of the northeast quarter of Section 11, Township 9 South, Range 34 East, on the north bank. From the point of diversion, the main canal runs in a northeasterly direction for 9.79 miles, having a bottom width of 8 feet, with an initial capacity of 65.25 second feet, and was completed in 1922.

The Bozeman Trail Ditch Company was incorporated on the 6th day of March, 1920, for forty years with a capital stock of \$35,000 divided into 3500 shares of a par value of \$10.00 each. The purpose for which the corporation was formed was to acquire, own, sell and dispose of water and water rights; to construct, acquire, operate, maintain or dispose of canals, ditches, laterals and the rights-of-way therefor, and all necessary appliances and appurtenances of an irrigation system or systems; to acquire, buy, sell and own real estate; to do any and all things incidental to or necessary in the construction, operation and maintenance of an irrigation system or systems.

Under the terms of the original incorporation it was stated that the water used by this corporation is to be taken from the Little Big Horn River in Big Horn County, Montana; that the point on said stream where said water is to be taken out is a point which bears south 12 degrees 42 minutes east, 1552 feet from the north quarter corner of Section 11, Township 9 South, Range 34 East; that the line of said ditch extends thence in a northeasterly direction for a distance of 9.79 miles; that said water is to be used for irrigation.



The Company has always operated under its present name and as of December 6, 1945, had no indebtedness. The entire system is gravity, which helps make it comparatively inexpensive to operate. The cost of water per irrigated acre averages about \$0.65. Of the 3500 shares in the Company, 2736.91 had been issued.

As of June 30, 1924, the system was valued at \$22,658.87. The Bozeman Trail Ditch is a system constructed and operated by private organization in which the United States has contracted to pay costs of irrigation in proportion to the Indian land served. Within the Crow Irrigation Project there are two such systems—the Bozeman Trail and the Two Leggings. Both contracts contain about the same provisions—there being only minor points of difference in respect to the collection of operation and maintenance costs. Under these contracts the United States paid to the organization the total cost of the construction of the main canals apportioned to a specific acreage of land in trust Indian ownership at the date of the contract, and agreed to pay thereafter the pro rata share of the cost of maintenance of the canal apportioned to Indian lands remaining in such ownership status; except that, under the Bozeman Trail the operating Company was to collect such charges from the lessee of Indian owned land, which is not the case as to the lands under the Two Leggings where such payment is made by the United States, which in turn assesses the lessee for repayment. These Companies built and operated only the main canals—construction of the distribution system being left to land owners. Many of the tracts of Indian land for which interests in the main canal were purchased have not, as yet, been provided with works to deliver water to the land.

On July 24, 1922, the following agreement was entered into between the United States Government and the Bozeman Trail Ditch Company:

THIS AGREEMENT made and entered into this 24th day of July, 1922, by and between the United States of America, acting in this behalf by W. S. Hanna, Supervising Engineer, thereunto duly authorized, party of the first part, hereinafter referred to as the Government, and the Bozeman Trail Ditch Company, a corporation organized and existing under the laws of the State of Montana, with its principal office at Wyola, Big Horn County, Montana, party of the second part, hereinafter referred to as the company.

Witnesseth, Whereas an Act approved March 3, 1921, making appropriations for the current and contingent expenses of the Bureau of Indian Affairs and for other purposes for the fiscal year ending June 30, 1922, contains an item authorizing payment of the proportionate part of the cost of constructing the Bozeman Trail Ditch on the Crow Reservation, Montana, properly assessable against lands allotted to the Indians irrigable thereunder, and

WHEREAS, the Company has constructed an irrigation ditch beginning at a point of diversion which bears south twelve degrees and forty-two minutes east, fifteen hundred and fifty-two feet from the north quarter corner of Section eleven, township nine south, range thirty-four east; thence in a northeasterly direction through sections eleven and one, township nine south, range thirty-four east, section six, township nine south, range thirty-five east and sections thirty-one, thirty, twenty-nine, twenty, seventeen, twenty-one, sixteen, and fifteen, township eight south, range thirty-five east to a point thirteen hundred and twenty feet east of the west quarter corner of section fifteen, township eight south, range thirty-five east, a total distance of 9.79 miles; said canal at cross-sections having a bottom width of five feet and a top width of fourteen feet and a water depth of one and one-half feet, with



a carrying capacity of 65.25 second feet of water, affording a supply of water for irrigation purposes to all irrigable land, being 2819.39 acres, lying under it at the rate of one second-foot for each eighty acres of land, and

WHEREAS, the Government hereby grants the Company the right to go upon Crow Indian allotments within the limits of the right-of-way granted said Company on May 27, 1922, for the purpose of rebuilding, altering, repairing and maintaining said canal; also the right to divert water therefor from the Little Big Horn River, and

WHEREAS, for the rights and privileges herein granted by the Government to the Company, the Company for itself, its successors, transferees and assigns, hereby sells, transfers, assigns and conveys absolute water rights in said canal for the proper irrigation of 1961.34 acres of allotted Indian lands thereunder, such rights being evidenced by water certificates issued in pursuance to provisions contained in its articles of incorporation. The Company shall be further paid for such water rights upon making proper showing the balance due by the Government of its share of the cost of the construction of the project over and above the amount of \$17,450.52, which sum, on April 15, 1922, was due the Company as evidenced by an itemized statement submitted to and approved by the Government and will be paid immediately after this agreement shall have been properly approved, and

WHEREAS, as a further consideration for the rights herein granted, the Company further stipulates and agrees that the annual maintenance charge assessable against the trust patent lands within the project shall be limited to the actual expense of operating, repairing and maintaining said canal, and that such assessment shall be borne ratably by all water users, and that the Commissioner of Indian Affairs, on the appeal of any Indian water owner, shall have the right to determine whether such charge is or has been made in accordance with actual and necessary reasonable cost, and

WHEREAS, the Company further agrees that no extension of the project shall be undertaken nor any additional water rights sold unless and until such contemplated action shall have been submitted to the Government and received its approval, and

WHEREAS, it is mutually agreed and understood by the parties hereto that the rights of any Indian owner in said canal shall be the same as that of any other owner of like amount of rights therein, and that such rights shall be represented and voted, in accordance with the shares of stock held by the Government, by such person as the Commissioner of Indian Affairs shall designate;

IN WITNESS WHEREOF the Government has caused this agreement to be executed by its duly authorized representative and the Company has caused it to be executed by its President and attested by its Secretary who has caused its corporate seal to be affixed the day and year first above written.

(Seal)  
Attest:  
Fred E. Miller  
Secretary

THE UNITED STATES OF AMERICA  
By W. S. Hanna, Supervising Engineer  
BOZEMAN TRAIL DITCH COMPANY  
By Carl W. Gross, President  
Approved: Aug. 4, 1922  
(Sgd) M. R. Brock  
Assistant to the Secretary  
of the Interior. J T R.



### Resolution

WHEREAS, the Bozeman Trail Ditch Company, a corporation, has constructed an irrigation ditch on the Crow Indian Reservation, and the United States Government, through the Bureau of Indian Affairs, has authorized payment of the proportionate part of the cost of constructing said ditch on the Crow Reservation, Montana, properly assessable against lands allotted to Indians and irrigable thereunder, and

WHEREAS, it is necessary that a contract be entered into by the parties,

NOW, THEREFORE, be it resolved by the Board of Directors of the Bozeman Trail Ditch Company, a corporation, that the president and secretary thereof be, and they are hereby authorized and directed to enter into a contract with W. S. Hanna, engineer in charge, acting for the United States, a copy of which contract is hereunto attached.

Sgd—Carl W. Gross  
President

ATTEST:  
Fred E. Miller  
Secretary

I, Fred E. Miller, Secretary of the Bozeman Trail Ditch Company, a corporation, do hereby certify that the foregoing resolution was duly passed at a regular meeting of the Board of Directors of said Company, held at Wyola, Montana, on the 24th day of July, 1922.

IN WITNES WHEREOF, I have hereunto set my hand and affixed the seal of said Company.

Sgd—Fred E. Miller

(Seal)

The data to follow applies to the area of trust Indian lands under the Bozeman Trail Ditch Company for which the government purchased carriage rights, which is known as the Bozeman Trail Unit. The gross area of the unit is 2,819.39 acres, with 2,173.9 acres classified as assessable. Of this amount, 756.7 acres is non-Indian land and 1,417.2 acres is Indian land.

The construction cost to date (Indian lands only), April 22, 1946, is \$17,958.94, making a cost of \$8.26 per acre. The estimated cost to complete the unit is \$24,741.06, making a total completed cost of \$42,700.00, or a total cost of \$19.64 per acre. Included in this figure is the cost of drainage, river protection, rehabilitation and the construction of canals and laterals to trust Indian lands to which no water has been delivered. The project (this includes the lands under the Bozeman Trail Unit and the Bozeman Trail Ditch Company) is located north of the Little Big Horn River adjacent to the Upper Little Big Horn No. 2 Unit. The present land use is mostly by large livestock operators. Soils and topography are favorable to irrigation. Some drainage is urgently needed. The principal crops are alfalfa hay, small grains, with some sugar beets being raised.

On July 5, 1920, Carl W. Gross, President of the Bozeman Trail Ditch Company, appropriated 3400 miner's inches of water to be diverted from the Little Big Horn River in behalf of said Company. The notice of appropriation was filed July 19, 1920, in Book 10, Page 253 in Deed Records. The point of diversion was described as south 12 degrees east,



1552 feet from the north quarter corner of Section 11, Township 9 South, Range 34 East, on the left bank of the stream. The purpose was for irrigation, domestic use and stock water. The system is described as a canal 36 inches by 87 inches running northeast. The land description of intended place of use is described as lands in Sections 1, 2, and 11, Township 9 South, Range 34 East; Sections 31, 32, 30, 29, 28, 20, 21, 22, 16, 15, 10, 5 and 6, Township 9 South, Range 35 East; and lands in Sections 3 and 11, Township 8 South, Range 35 East. Under remarks pertaining to use the notice of appropriation contains a note stating that the first appropriation was made October 3, 1916.

In 1946 there were 1630.95 acres being irrigated under the Bozeman Trail Ditch Company, with a potential acreage under existing facilities of 521.92 acres, or a maximum irrigable acreage of 2152.87 acres.

### FARMERS DITCH COMPANY

The Farmers Ditch Company was first incorporated on July 25, 1908, under the laws of the State of Montana with a capital stock of \$10,000 which was divided into 2,000 shares of a par value of \$5.00 each. The corporation was formed to acquire, own, sell and dispose of water and water rights; to construct, acquire, operate, maintain, or dispose of canals, ditches, laterals and the right-of-way therefor, and all necessary appliances and appurtenances of an irrigation system or systems. At a special meeting of the stockholders on September 24, 1921, it was suggested that the capital stock be increased from \$10,000 to \$50,000 and also that the par value of the shares of stock be increased from \$5.00 to \$25.00. On October 24, 1921, the resolution was adopted and passed.

On July 30, 1908, the Farmers Ditch Company appropriated 3,000 miner's inches of water to be diverted by gravity from the Big Horn River in lot 2 of Section 1, Township 2 South, Range 33 East on the west bank of the stream. The notice of appropriation was filed August 8, 1908, and was recorded in Book A, Page 37 of Misc. Records in the Big Horn County Courthouse. The purpose was for irrigation and stock water. The system was described as a dam, headgate and ditch—said ditch being 5 feet across the bottom, 11 feet across the top and 2 feet deep. From the headgate to the terminus the ditch extends in a northerly direction following the course of the Big Horn River. The land description of intended place of use was described as lands in the southeast quarter and the southwest quarter of Section 12, the northeast quarter of the southwest quarter, north half of the northeast quarter, south half of the southeast quarter, and the northwest quarter of the southeast quarter of Section 13, the northeast quarter of Section 24, Township 1 South, Range 33 East, and lot 10 in Section 18, Township 1 South, Range 34 East. This appropriation was in use until about 1923, when the Farmers Ditch Company headgate, which was located on the Big Horn River, was washed out by flood waters along with a portion of the main canal.

As the replacement costs were more than could be afforded by the ditch company, they looked for water elsewhere. Seeing an easy way to get water from the Two Leggins Water Users Association canal, negotiations were made with that Company, and an agreement was reached whereby permission was given the Farmers Ditch Company to use a portion of the Two Leggins Water Users Association main canal from their headgate to a point where the canal crosses William's Coulee, where the water is then spilled down the coulee to a point 1,309 feet south 13 degrees 8 minutes west of the northeast corner of Section 25, Township



1 South, Range 33 East over and across Sections 35 and 36, Township 1 South, Range 33 East, to a point 1,205 feet south 25 degrees 34 minutes east of the northeast corner of Section 35, Township 1 South, Range 33 East, where it empties into the original ditch of the Farmers Ditch Company. Because of this change in the point of diversion, the Company, on September 17, 1926, filed a subsequent appropriation for 3,000 miner's inches of water to be diverted from the Big Horn River in the southeast quarter of Section 20, Township 2 South, Range 33 East. The purpose was for irrigation and other uses. The system was described as the canal of the Two Leggins Land and Improvement Company to a point where the canal crosses William's Coulee, thence down the coulee to a point where it empties into the original ditch of the Farmers Ditch Company. The point of diversion is the same as that used by the Two Leggins Land and Improvement Company canal, now known as the Two Leggins Water Users Association. The above appropriation is on file in the Big Horn County Courthouse. For this water that is diverted from the Two Leggins Water Users Association canal, the Farmers Ditch Company holds a water deed. Locally, the Farmers Ditch Company is known as the Holly Sugar Company Ditch because of the capital stock issued the Holly Sugar Company, and its designated agents represent 1,049 shares with 75 shares being held by private individuals.

In 1946 there were 942.36 acres being irrigated under the Farmers Ditch Company, with a potential acreage under existing facilities of 184.70 acres, or a maximum irrigable acreage of 1,127.06 acres.

#### **FORTY-MILE UNIT (Crow Irrigation Project)**

The main canal of the Forty-Mile Unit diverts water by gravity from the Little Big Horn River in the southeast quarter of the southeast quarter in Section 11, Township 7 South, Range 35 East, on the east bank approximately six miles south of Lodge Grass. The main canal was completed in 1896 and has a bottom width of 8 feet, with an initial capacity of 30 second feet and a total length of 4.1 miles. The water supply is inadequate to furnish enough water for the irrigation of all lands under the ditch; however, the Irrigation Division believes that if water can be supplied to the Agency Unit and the Reno Unit from the Lodge Grass storage reservoir, enough water can be had from the Little Big Horn River for the Forty-Mile Unit to make the supply adequate. The gross area of the unit is 1,060.42 acres, with 766.7 acres classified as assessable, which is served by 4.2 miles of laterals. Of this amount, 177.3 acres is non-Indian and 589.4 acres is Indian land. On the unit there are 4 metal flumes, 42 timber bridges and 1 concrete culvert.

The construction cost to date, April 22, 1946, is \$12,563.10, making a cost of \$16.39 per acre. The estimated cost to complete the unit is \$8,836.90, making a total completed cost of \$21,400.00, or a total cost of \$27.91 per acre. The amount to complete the project includes the replacement of the timber structures in the main canal, reconstruction of the lateral system, drainage, river protection and rehabilitation. The unit consists of bottom lands lying on the east side of the Little Big Horn River three miles south of Lodge Grass. The soils and topography are favorable for irrigation. Land use is at a maximum for the Crow Irrigation Project. The area is about 100 per cent farmed with diversified irrigated crops—the principal crops being sugar beets, wheat, alfalfa, oats and barley.



On November 8, 1905, S. G. Reynolds, then Indian Agent, appropriated 1100 miner's inches of water to be diverted from the Little Big Horn River in behalf of the Crow Indians. The notice of appropriation was filed November 16, 1905, and recorded in Book A, Page 431 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point upon its right bank, thence northeasterly through Sections 14, 11, 12 and 1, Township 7 South, Range 35 East, Sections 36 and 25, Township 6 South, Range 35 East, Sections 30 and 19, Township 6 South, Range 36 East. The purpose was for irrigation. The system was described as a canal 48 inches by 11 feet. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made May 1, 1893.

In 1946 there were 597.20 acres being irrigated under the Forty-Mile Unit, with a potential acreage under existing facilities of 147.40 acres, or a maximum irrigable acreage of 744.60 acres.

### **HARDIN UNIT—PROPOSED (Bureau of Reclamation Project)**

The Hardin Unit, for the greater part, is located on the west side of the Big Horn River on what is locally known as the Hardin Bench. It comprises a strip of land from two to three miles wide, extending from about six miles north of Hardin to near the mouth of the Big Horn Canyon. Included in this plan is also a small tract of land on the east side of the Big Horn River in the vicinity of the Old Fort Smith, lying immediately above the Big Horn Unit from near the mouth of the canyon to Soap Creek. Detailed surveys and designs for this project are now in progress. The project is designed to irrigate 45,000 acres of new land. As this project is now in its initial stages there is no reliable data available for the irrigation project.

The contemplated Yellowtail Dam, which will be located at the mouth of the Big Horn Canyon in Township 6 South, Range 30 East, is to have a height of 475 feet and a crest length of 1,100 feet. The entire structure is to be made of concrete. The estimated storage capacity of the Yellowtail reservoir is 1,116,000 acre feet with approximately 750,000 acre feet of dead storage. The Yellowtail power plant is to have an installed capacity of about 125,000 kilowatts, with an estimated annual firm power production of 490,000,000 kilowatt hours annually. According to the Bureau of Reclamation Engineers, complete data for the unit will not be available until late in 1947.

### **INTERSTATE DITCH COMPANY**

The Interstate Ditch Company diverts water by gravity from the Tongue River in the southeast quarter of the southwest quarter in Section 2, Township 57 North, Range 84 West in the State of Wyoming. From the point of diversion, the main canal is about six miles in length and is in good condition. The first use of the canal was in 1907. The water supply is considered adequate, and the Company has always operated under its present name. It enters the State of Montana in Section 36, Township 9 South, Range 39 East. Approximately 970 acres are served under this system, with only two farms being served in Montana.

The Company was first incorporated in 1902 with 52 shares of stock of a par value of \$1,000 each—40 shares having been issued. The system is valued at \$40,000 and the Company, as of December 6, 1946, had no indebtedness.



According to E. H. Verley, Assistant Secretary and Treasurer for the Company, the principal crops are alfalfa hay, small grains and sugar beets, with some cattle being kept on most farms.

The first appropriators in Wyoming were W. E. Wagner, Mrs. M. M. Boyle, E. C. Foss, W. S. Metz and Henry C. Verley. In Montana, the first appropriators were Dennis H. Willey and Samuel Ellison.

In 1946, in Montana, there were 131.20 acres being irrigated under the Interstate Ditch Company, with a potential acreage under existing facilities of 45.00 acres, or a maximum irrigable acreage of 176.20 acres.

### LATERAL WATER USERS ASSOCIATION

The Lateral Water Users Association is organized to carry water from the main canal of the Two Leggins Water Users Association to its stockholders only. Assessments to the water users under this system are only made by the Two Leggin Water Users Association. Water is diverted from the Two Leggins Canal in lot 1, Section 22, Township 1 South, Range 33 East. The main canal is about two miles long and is located immediately north of Hardin. The system serves 37 water users who have small holdings, which are mostly about one acre in size, adjacent to the town of Hardin. These users represent 210.5 shares of stock. The Company has no indebtedness and the water supply is considered adequate.

The Lateral Water Users Association was incorporated on September 26, 1928, for forty years with a capital stock of \$10,000 divided into 1,000 shares of a par value of \$10.00 each. In the terms of the incorporation it was stipulated that only one acre of land may be irrigated, with water conveyed through said lateral, for each share of stock owned in said corporation, and that said association is formed for the purpose of furnishing water to its stockholders for the irrigation of their lands and for other useful and domestic purposes on their said lands and to no one else. Also, that shares of stock in said association, and the water represented thereby, are inseparably appurtenant to the land for which they are subscribed. Said stock is divided into four classes and assessments are made as follows:

Class A stock shall be issued to the owners of all land who take water out of said main lateral at any point west of dyke in Section fourteen, said township and range.

Class B stock shall be issued to the owners of all lands lying west of Crow Avenue extended to the town of Hardin, who take water out of said lateral at any point east of the west end of dyke in said Section fourteen.

Class C stock shall be issued to the owners of all land irrigated through lateral ditch tapping said main lateral at its intersection with said Crow Avenue extended.

Class D stock shall be issued to the owners of all lands lying east of said Crow Avenue extended and irrigated through said main lateral at points east of said Crow Avenue extended.

All shares of stock shall be assessed on a pro rata basis on the costs of maintenance and operation of said main lateral from its intake to the west end of said dyke in said Section fourteen.

Class B, C, and D stock shall be assessed on a pro rata basis for the cost of maintenance and operation of said main lateral from the west end of said dyke in said Section fourteen to the intersection of said main lateral by Crow Avenue extended of the town of Hardin.



Class C stock shall be assessed on a pro rata basis for the cost of maintenance and operation of lateral tapping said main lateral at its intersection with said Crow Avenue extended.

Class D stock shall be assessed on a pro rata basis for the cost of maintenance and operation of said main lateral east of said Crow Avenue extended.

No water filing was made and the canal is considered as a lateral of the Two Leggins Water Users Association system with a date of priority as of the original incorporation.

In 1946 there were 198.00 acres being irrigated under the Lateral Water Users Association, with a potential acreage under existing facilities of 15.00 acres, or a maximum irrigable acreage of 213.00 acres.

### **LODGE GRASS NO. 1 UNIT (Crow Irrigation Project)**

Water for Lodge Grass No. 1 is diverted by gravity from the northeast quarter of the southwest quarter of Section 29, Township 6 South, Range 35 East on the north bank of Lodge Grass Creek about two miles south and five miles west of Lodge Grass. The main canal has a bottom width of 12 feet and an initial capacity of 200 second feet, with a total length of 13 miles, and was completed in 1896. From the point of diversion, the canal runs in a northeasterly direction to the vicinity of Ionia. To insure an ample supply of water, a diversion dam is urgently needed. Since the construction of the Lodge Grass storage reservoir, the water supply is considered adequate. The gross area of the unit is 4,874.01 acres, with 3,524.4 acres classified as assessable, which is served by 25 miles of laterals. Of this amount, 763.6 acres is non-Indian land and 2,760.8 acres is Indian land. On the unit there are 7 steel flumes, 218 wood bridges and 11 concrete culverts.

The construction cost to date, April 22, 1946, is \$110,062.19, making a cost of \$31.23 per acre. This represents 79 per cent of the project completed. The estimated cost to complete the unit is \$51,037.81, making a total completed cost of \$161,100.00, or a total cost of \$45.71 per acre. The estimated additional amount to complete the project covers the expense of replacing several timber structures in the main canal by concrete, the construction of laterals to allotments to which no water has been delivered, a new diversion dam, rehabilitation and drainage. As there are practically no concrete structures in the laterals that are now built, the proposed lateral construction will be comparatively high in cost on account of the rough condition of portions of the land through which they will have to be constructed. The unit is located in the vicinity of Lodge Grass and includes land in both the Lodge Grass and Little Big Horn valleys. The soil is good and the topography is from rolling to rough. Considerable dry land farming is carried on at present, being devoted to alfalfa hay, alfalfa seed and small grains. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are alfalfa, wheat, sugar beets, oats and barley. The sugar beet acreage is located immediately north of Lodge Grass on the bench and in the Little Big Horn River valley.

On February 18, 1908, S. G. Reynolds, then Indian Agent, appropriated 5,380 miner's inches of water to be diverted from Lodge Grass Creek in behalf of the Crow Indians. The notice of appropriation was filed February 24, 1908, and recorded in Book A, Page 476 of Misc. Records in Big Horn County Courthouse. The point of diversion is described as south 34 degrees 20 minutes east from the northwest corner of Section 29, Township 6 South, Range 35 East on the left bank of the stream, thence northeast through Sections 29, 20, 21, 16, 15,



10, 11 and 2, Township 6 South, Range 35 East, Sections 34, 27, 28, 21 and 22 Township 5 South, Range 35 East. The purpose was for irrigation and mining claims. The system is described as a canal 60 inches by 12 feet. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made March 1, 1893.

In 1946 there were 1978.50 acres being irrigated under the Lodge Grass No. 1 Unit, with a potential acreage under existing facilities of 1343.80 acres, or a maximum irrigable acreage of 3322.30 acres.

### **LODGE GRASS NO. 2 UNIT (Crow Irrigation Project)**

The first mile of the Lodge Grass Ditch No. 2 was completed in 1904, but the remainder was not completed until 1924. Water is diverted by gravity from Lodge Grass Creek in the southwest quarter of the southeast quarter in Section 11, Township 7 South, Range 34 East on the north bank about six miles south and six and one-half miles west of Lodge Grass. The main canal has a bottom width of 8 feet and an initial capacity of 37 second feet, being 4.4 miles in length. Since the construction of the Lodge Grass storage reservoir, the water supply is considered adequate for the area under constructed works, but to insure an adequate supply of water in the main canal a diversion dam is urgently needed. The gross area of the unit is 1,828.52 acres, with 1,219.6 acres classified as assessable. Of this amount, 223.4 acres is non-Indian land and 996.2 acres is Indian land. On the unit there are 4 metal flumes, 32 wood bridges, and 39 concrete culverts. All drops and chutes were built of concrete. The material for these had to be hauled an average of eight miles, and most of the ditch work was side-hill construction, making the cost rather high.

The construction cost, to date, April 22, 1946, is \$52,936.51, making a cost of \$43.40 per acre. The estimated cost to complete the unit is \$32,563.49, making a total completed cost of \$85,500.00, or a total cost of \$70.10 per acre. The estimated additional amount to complete the unit includes the cost of building laterals to the allotments to which water cannot be delivered at the present time. As there is a considerable amount of fall to the land, it will be necessary to construct a number of drops in the laterals. Rehabilitation, drainage and a new diversion dam are also figured in this cost. The unit is located just above Lodge Grass No. 1, west and south of Lodge Grass. The area for the most part is creek bottom and the soils are considered to be very productive. The topography is rolling, river bottom land. At present, the land use is mostly dry land farming of small grains and alfalfa for seed and hay. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are alfalfa, wheat, oats and barley.

On August 1, 1912, W. W. Scott, U. S. Superintendent, Crow Agency, Montana, appropriated 1,838 miner's inches of water to be diverted from Lodge Grass Creek in behalf of the Crow Indians. The notice of appropriation was filed August 17, 1912 and recorded in Book A, Page 562 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as north 51 degrees 30 minutes west, 2,360 feet from the southeast corner of Section 11, Township 7 South, Range 34 East. The purpose was described as irrigation and other uses. The system was described as a ditch 48 inches by 36 inches running through Sections 11, 12 and 1, Township 7 South, Range 34 East, Section 36, Township 6 South, Range 34 East, Sections 29 and 30, terminating in Section 29, Township 6 South, Range 35 East. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made in June, 1905.



In 1946 there were 417.80 acres being irrigated under the Lodge Grass No. 2 Unit, with a potential acreage under existing facilities of 791.40 acres, or a maximum irrigable acreage of 1209.20 acres.

### NORTHERN CHEYENNE INDIAN RESERVATION

The Northern Cheyenne Indian Reservation, sometimes called Tongue River Indian Reservation, is located in Big Horn and Rosebud Counties and lies east and adjacent to the Crow Indian Reservation. It was established by executive order in 1884. In 1910 the boundaries were modified and more definitely described to include 444,277 acres. The Indians are of the northern band of the Cheyenne tribe and are estimated to number about 1600. The reservation lands are almost wholly Indian owned and agricultural operations are limited to the production of feed for livestock, which is the principal industry. The mountainous areas generally produce sufficient grass for forage purposes and permit production of small quantities of hay necessary to carry the stock through the winter. In Big Horn County, on the reservation, irrigation is very limited and is mostly of the intermittent flood type.

In 1905 the United States began construction of the Tongue River Irrigation Project, which is located in Rosebud County, to divert water from the Tongue River to irrigate 7,000 acres of land, with a canal about 25 miles long which follows close to the west bank. Only 6.8 miles of the canal, covering 1200 acres, were completed. The original plan to cover the larger area was abandoned because of difficulty in costly construction. It is estimated that not more than 600 acres have ever been irrigated in any one year under this project. At present, the Indian Service has purchased water in the Tongue River Reservoir to irrigate this land. A number of attempts have been made by individuals to develop small irrigation tracts along reservation streams, but in general these have not been successful, principally because of the inadequacy of the water supply during the irrigation season. The Indian Service has made a complete survey and contemplate a storage reservoir on Rosebud Creek, with an estimated capacity of 8500 acre feet. They believe that if this reservoir can be completed much of the bottom land on Rosebud Creek can be put to irrigation. The Ridge Walker Ditch, Thompson Ditch, Lone Elk Ditch and Bixby Ditch on Lane Deer Creek were repaired in about 1914. On Rosebud Creek, the Upper O. D. Ditch, Lower O. D. Ditch, Charles Teeth Ditch and the Busby School Ditch were repaired in about 1915. In 1935 the Busby School Ditch was rebuilt.

The reservation was established by executive order. State Court gave the Indians 24th right on the Tongue River. In the Winters case, *Winters v. United States*, 207 U. S. 564, the rule was extended to executive order reservations by *United States v. Walker River Irrigation District*, 104 Fed. 2d, 334. Consequently, there was an implied reservation of water as of the date of the executive order of November 26, 1884, establishing the Northern Cheyenne Indian Reservation. As this report covers only lands in Big Horn County the contract between the Northern Cheyenne Indians and the State Water Conservation Board for stored water in the Tongue River Reservoir has been deleted.



## Pass Creek Decree — Case No. 676

Daniel Sullivan, Plaintiff

vs

O. T. Souder, W. H. Spear, Daisy Spear, W. M. Spear, V. Belle Spear, Don Hardy, Sylvester Hardy, Andrew Hoaglen, Caroline Hoaglen, Thomas R. Powers, Irma Powers, Claude V. Reed, J. P. Reed, D. S. Shannon, E. L. Dana, Fra Dana and "A Two Bars" Cattle Company, a corporation  
—Defendants.

WHEREFORE, by reason of the law and the premises aforesaid, it is ordered, adjudged and decreed, that the plaintiff and the said answering defendants are entitled to the use of the waters of Pass Creek and its tributaries at and as of the dates herein mentioned, and to the number of inches or to the equivalent number of cubic feet per second as hereinafter set forth, which appropriations and dates of appropriations are as follows, to-wit:

Daniel Sullivan—145.5 miner's inches appropriated in the year 1905;

Don Hardy—80 miner's inches appropriated September 1, 1906;

Sylvester Hardy—90 miner's inches appropriated September 1, 1906;

"A Two Bars" Cattle Company—85.1 miner's inches appropriated in the year 1910 and 115 miner's inches appropriated in the year 1911;

Daniel Sullivan—8 miner's inches appropriated in the year 1915;

Andrew Hoaglen and Thomas R. Powers—360 miner's inches appropriated in June, 1918;

That any rights to the waters of said Creek or its tributaries belonging to any of the other defendants who have not answered in time and subordinate in right to all of the aforesaid appropriations of said waters by plaintiff and the defendants hereinbefore mentioned.

It is further ordered, adjudged and decreed, that each and every party hereto is hereby enjoined from in any way or manner interfering with the ditches, dams, flumes, headgates, water rights and appurtenances of any party hereto or from using any of the waters of said Pass Creek or any tributary thereof which any other party hereto is entitled by right of prior appropriation as found herein.

It is further ordered, adjudged and decreed, that the parties hereto be and they are hereby enjoined from in any wise wasting the waters of said Creek and its tributaries or from diverting at any time more water from said Creek and its tributaries than is reasonably necessary for the use to which it is applied or to irrigate the lands of said party actually requiring irrigation at the time of diverting same.

It is further ordered, adjudged and decreed that the sheriff's and clerk's fees herein be divided equally among the parties to this suit and that each party pay his or its own witness fees.

This decree does not attempt to fix the rights of the defendant Sylvester Hardy in or to the waters of Pass Creek and its tributaries by reason of his being a member of the Crow Tribe of Indians, the right decreed to him being based solely upon his appropriation of the waters of East Pass Creek. Neither has the Court considered what rights, if any, the parties to this action may have acquired by reason of the purchase or descent and distribution of lands belonging to members of the Crow Tribe of Indians, and all such rights of the defendant Sylvester Hardy as a member of the Crow Tribe of Indians, as well as any rights which may have



been acquired by reason of the purchase or descent and distribution of lands belonging to members of the Crow Tribe of Indians, are expressly reserved. This Court having held at the commencement of the trial of this cause that it was without jurisdiction to pass upon such matters.

Done in open court May 20th, 1921.

ROBERT C. STONG, Judge

**PRYOR UNIT**  
**(Includes Pryor, Lost Creek and Coburn Ditches)**  
**(Crow Irrigation Project)**

The Pryor Creek Unit is somewhat of an isolated unit lying at the foot of the Pryor Mountains and in the Pryor Creek Valley. The topography is favorable for irrigation. The soil is porous and water losses are heavy. The principal crops for the unit are alfalfa, wheat, oats and barley, with alfalfa being raised for hay and seed crops. The present water supply is very inadequate. Because of this, land use for irrigation is at a minimum. In 1922 the Office of Indian Affairs Irrigation Division made a survey of a reservoir site on Pryor Creek, which is located in Section 6, Township 6 South, Range 26 East, which was to have the capacity of 10,000 acre feet. The principal use of this reservoir would be as supplemental supply for the Pryor Unit. The estimated cost was \$1,000,000.

The construction cost of the unit to date, April 22, 1946, is \$51,690.95, making a total cost of \$16.47 per acre. The estimated cost to complete the unit is \$28,809.05, making a total completed cost of \$80,500.00, or a total cost of \$25.63 per acre. Included in this figure is the cost of canals and laterals, diversion dams, rehabilitation and drainage. The gross area of the unit is 4,430.98 acres, with 3,141.3 acres classified as assessable, which is served by 17.3 miles of laterals.

**Coburn Ditch:**

The Coburn Ditch is located on Pryor Creek about 20 miles north of Pryor, Montana. Water is diverted by gravity from Pryor Creek in the southeast quarter of the southeast quarter in Section 35, Township 1 South, Range 27 East. The main canal has an estimated capacity of about 20 cubic feet per second and is about three miles long. The project is operated by the farmers who pay assessments to the United States. As this project is located in Yellowstone County it was included when that County was surveyed in 1942. At that time we found 239.20 acres being irrigated with a potential acreage of 191.40 acres, or a maximum irrigable acreage of 430.90 acres.

On April 26, 1920, C. H. Asbury filed on 17 cubic feet per second to be diverted by gravity from Pryor Creek in behalf of the Crow Indians. The appropriation was filed May 10, 1920, and recorded in Book M, Page 210 of Misc. Records in the Yellowstone County Courthouse. The point of diversion was described as a point in the southeast quarter of the southeast quarter in Section 35, Township 1 South, Range 27 East on the left bank. The purpose was for irrigation and other uses. The system was described as a ditch 5 feet wide on the bottom running north through Sections 25, 35, and 36, Township 1 South, Range 27 East, and Sections 30 and 19, Township 1 South, Range 28 East. Under remarks pertaining to use, the appropriation contains a note stating that the Superintendent of the U. S. Indian



Service, for and in behalf of the Indians of the Crow Indian Reservation, made the first appropriation on April 1, 1900.

### **Lost Creek:**

For the Lost Creek Ditch, water is diverted by gravity in the southwest quarter of the southeast quarter in Section 34, Township 5 South, Range 26 East on the west bank about five miles south and two and one-half miles east of Pryor, Montana. The canal has a bottom width of four feet and an initial capacity of about five second feet, with a total length of 3.8 miles. From 1930 to 1934, inclusive, the average area irrigated per year was about 26 acres. Since 1934 no lands have been irrigated because the water supply is so inadequate. The present constructed works provided for delivery of water to 602 acres. The project was completed in 1895. As no farming is done or has been done for many years, this project is classified as non-assessable by the Indian service. No maintenance work has been accomplished for many years. The land is generally rocky, but the higher ridges appear to have sufficient soil to permit some use of parts of this area.

On February 18, 1908, S. G. Reynolds appropriated 2,360 miner's inches of water to be diverted from Lost Creek in behalf of the Crow Indians. The notice of appropriation was filed February 26, 1908, and recorded in Book A, Page 51 of Misc. Records in the Big Horn County Courthouse. The point of diversion was described as a point south 44 degrees 10 minutes east, 5,300 feet from the southwest corner of Section 27, Township 5 South, Range 26 East on the left bank of the stream. From the point of diversion, the canal was to run northwest through Sections 34, 27, 28, 24 and 20 in Township 5 South, Range 26 East. The purpose was for irrigation. The system was described as a ditch 24 inches by 6 feet. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made June 6, 1893 by Indians.

In 1946 there were no acres being irrigated under Lost Creek, with a potential acreage under existing conditions of 602.00 acres, or a maximum irrigable acreage of 602.00 acres.

### **Pryor Creek:**

The Pryor Creek Ditch diverts water by gravity in the northwest quarter of the southwest quarter in Section 31, Township 5 South, Range 26 East on the east bank of Pryor Creek about five and one-half miles south of Pryor, Montana. The main ditch has an initial capacity of about 20 cubic feet per second and is 6.5 miles in length. The system was constructed to provide delivery of water to 2,761 acres.

On February 18, 1908, S. G. Reynolds appropriated 3,490 miner's inches of water to be diverted from Pryor Creek in behalf of the Crow Indians. The notice of appropriation was filed February 26, 1908, and recorded in Book A, Page 50 of Misc. Records in the Big Horn County Courthouse. The point of diversion was described as a point south 15 degrees 42 minutes east from the northwest corner of Section 31, Township 5 South, Range 26 East on the right bank of the stream. From this point the ditch was to run northeast through Sections 31, 30, 29, 19, 20, 17, 8 and 5 in Township 5 South, Range 26 East. The system was described as a ditch running northeast and was to be 60 inches by 7 feet in size. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made June 1, 1893.



In 1946 there were 694.70 acres being irrigated under Pryor Creek, with a potential acreage under existing facilities of 1767.40 acres, or a maximum irrigable acreage of 2462.10 acres.

### **RENO UNIT (Crow Irrigation Project)**

The earliest development of irrigation on the Crow Indian Reservation was the construction of the Reno Canal by the Federal Government in 1885. The canal was enlarged in 1919. Water is diverted by gravity from the Little Big Horn River in the southeast quarter of the northwest quarter in Section 16, Township 4 South, Range 35 East on the north bank about eight and one-half miles south and three miles east of Crow Agency. The main canal has a bottom width of 8 feet with an initial capacity of 85 second feet and is 9.8 miles in length. The headgate is constructed of concrete with two screw type gates. A diversion dam is also in use, being constructed of bound willows and rock, with a length of approximately 50 feet. Since the construction of the Lodge Grass storage reservoir, the water supply is considered adequate for the area now under constructed works. The gross area of the unit is 3,612.39 acres, with 2,941.6 acres classified as assessable, which is served by 13.1 miles of laterals. Of this amount, 828.5 acres is non-Indian land and 2,113.1 acres is Indian land. On the unit there are 5 steel flumes, 189 wood bridges and 59 concrete culverts. All of the structures in the main canal, with the exception of three turn-outs and the bridges, are constructed of concrete and steel. All drops in the laterals are of concrete.

The construction cost to date, April 22, 1946, is \$118,387.19, making a cost of \$40.25 per acre. This represents 93 per cent of the project completed. The estimated cost to complete the unit is \$67,112.81, making a total completed cost of \$185,500.00, or a total cost of \$63.06 per acre. This cost to complete the project represents the expense of building laterals to allotments to which no water has been delivered, rehabilitation, drainage and a diversion dam.

This is a very excellent small unit located on the west side of the Little Big Horn River south of Crow Agency. The soil and topography are good. The present land use is second highest on the Crow Irrigation Project. The principal crops are alfalfa, sugar beets, wheat, oats and barley.

On November 8, 1905, S. G. Reynolds, then Indian Agent, appropriated 4,480 miner's inches of water to be diverted from the Little Big Horn River in behalf of the Crow Indians. The notice of appropriation was filed November 16, 1905, and recorded in Book A, Page 433 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point on the left bank thence northwest through Sections 16, 9, 4 and 5, Township 4 South, Range 33 East; Sections 32, 21, 20 and 19, Township 3 South, Range 35 East; Sections 24 and 13, Township 3 South, Range 34 East. The purpose was for irrigation. The system is described as a canal 60 inches by 16 feet. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made May 1, 1899.

In 1946 there were 2098.10 acres being irrigated under the Reno Unit with a potential acreage under existing facilities of 682.10 acres, or a maximum irrigable acreage of 2780.20 acres.



### SOAP CREEK UNIT (Crow Irrigation Project)

Water for the Soap Creek Unit is diverted by gravity in the northeast quarter of the northeast quarter of Section 3, Township 6 South, Range 32 East on the east bank of Soap Creek about eight miles south and one mile west of St. Xavier. The main canal has an initial capacity of 50 second feet at the headgate and is 7.5 miles long. Canal structures on constructed works are 5 steel flumes, 13 wood bridges and 7 concrete culverts. The main canal was completed in 1894. The water supply is entirely inadequate to serve all the lands under this system. The gross area of the unit is 1,814.62 acres with 1,626.1 acres classified as assessable. Of this amount, 330.4 acres is non-Indian land and 1,295.7 acres is Indian land.

The construction cost to date, April 22, 1946, is \$37,625.98, making a cost of \$23.14 per acre. This represents 91 per cent of the project completed. The estimated cost to complete the unit is \$82,274.02, making a total completed cost of \$119,900.00, or a total cost of \$73.74 per acre. In the estimated cost for completion there was added an item of \$50,000 to provide a supplemental water supply for the Soap Creek Unit. There are two feasible ways of providing this supply—by storing the surplus run-off water of Soap Creek, or by pumping from the Big Horn Canal. Should the pumping method be adopted, the unit would be extended to include 200 acres which could be served by the pump canal. Under the proposed Soap Creek Reservoir, with an estimated capacity of 9,099 acre feet, 4,331 acres could be served. The reservoir site, located in Section 3, Township 7 South, Range 32 East, was surveyed in 1940 and is covered by a detail report made by the Office of Indian Affairs Irrigation Division. The estimated cost of the proposed reservoir is \$324,045.00. The unit is located immediately east on the up-side of the Big-Horn Canal south of St. Xavier and is a very narrow strip of land varying from one mile to a quarter of a mile in width, extending northeast about seven and one-half miles from Soap Creek to the vicinity of St. Xavier. The topography is very favorable for irrigation, and because of it seepage is not a problem. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are wheat, oats, alfalfa, sugar beets and barley.

On November 8, 1905, S. G. Reynolds, then Indian Agent, appropriated 1,824 miner's inches of water to be diverted from Soap Creek in behalf of the Crow Indians. The notice of appropriation was filed November 16, 1905, and recorded in Book A, Page 429 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point on its right bank, thence north and northeast through Sections 2 and 3, Township 6 South, Range 32 East, Sections 33, 28, 21, 22, 15, 14, 11, 12 and 1 in Township 5 South, Range 32 East. The purpose was for irrigation. The system is described as a canal 48 inches by 12 feet by 6 feet. Under remarks pertaining to use, the original appropriation contains a note stating that the first appropriation was made June 1, 1894.

In 1946 there were 764.30 acres being irrigated under the Soap Creek Unit, with a potential acreage under existing facilities of 855.90 acres, or a maximum irrigable acreage of 1620.20 acres.

### Squirrel Creek Decree (Case No. 620)

In the District Court of the Thirteenth Judicial District of the State of Montana in and for the County of Big Horn.



## Findings of Fact and Conclusions of Law

James A. Powers, George A. Powers, and Frank M. Powers, Plaintiffs

vs.

Archie K. Craig, Katherine Craig, his wife; Edward Fitzgerald, Agnes Fitzgerald, his wife; Ora Darnell; Thomas Hassey, William Hassey; Grace Hassey, Andrew Hassey, Ollie Hassey, his wife; Percy G. Fraser, Hattie Fraser, his wife; John W. Lee, Barbara Lee, his wife; Frank McKinney, Millie McKinney, his wife; Phillip D. Cottons and Alma Cottons, Defendants.

This cause having been heretofore submitted to the Court upon the transcript of testimony taken on the hearing of said cause, and by the Court taken under advisement, and the plaintiffs and answering defendants having submitted and filed their requests for findings, the Court now finds as the facts proven herein:

### Findings of Fact

1. That the Plaintiffs and answering defendants are the owners of the lands described in their respective pleadings filed herein, and that all of said lands are of such a character as to require the application of water for irrigation to produce crops of hay, grain, herbage and vegetables; That all of said lands are watered, to some extent, from Squirrel Creek, which said creek is a natural watercourse.

2. That each of said plaintiffs, and each of the said answering defendants are entitled to the use of the waters of Squirrel Creek and its sources, at the dates hereinafter mentioned as of the number of inches, respectively, of the flow equivalent to the number of cubic feet per second of time, as follows, to-wit:

Name	Inches	Cu. ft. per Sec. of time	Date of App.
George A. Powers .....	80	2	May 1, 1894
James A. Powers .....	100	2½	July 30, 1894
Frank M. Powers .....	25	⅝	July 30, 1894
Frank M. Powers .....	45	1¼	Feb. 17, 1912
Percy G. Fraser & Hattie Fraser, Hus. & Wife .....	20	½	May 1, 1901
Percy & Hattie Fraser .....	30	¾	May 1, 1904
Percy & Hattie Fraser .....	35	⅞	March 1, 1911
Frank & Millie McKinney, Hus. & Wife .....	45	1⅛	June 1, 1900
Frank & Millie McKinney .....	45	1⅛	May 1, 1903
Millie McKinney .....	10	¼	Nov. 19, 1909
Archie K. Craig, Katherine Craig, Hus. & Wife .....	75	1⅞	May 1, 1902
Edward Fitzgerald, Agnes Fitzgerald, Hus. & Wife .....	50	1¼	May 1, 1905
Ora Darnell .....	30	¾	June 1, 1910

### Conclusions of Law

1. As a matter of law, the court finds each of the parties hereto are entitled to be decreed his or their special amounts of water, herein found to have been appropriated by them,



respectively, as of the dates thereof as found by the Court, and that each and every party hereto should be enjoined by the Decree herein, from in any manner interfering with the ditches, dams, flumes or headgates of any party hereto, or from using any of the waters of said Squirrel Creek, which other parties herein are entitled, by right of prior appropriation as found herein.

4. The Court further finds that owing to the great distances between said ditches and farms of the parties to this suit it is necessary to the equitable distribution of the waters of said creek that measuring boxes be placed at the head of each ditch tapping said stream.

5. It is further ordered that measuring boxes be made and placed at the head of said ditches for the purpose of assisting a Commissioner to properly measure said waters; That all of the parties hereto should be enjoined by the Decree herein from in any wise wasting the waters in said Creek, or from diverting at any time, more water than is reasonably necessary for the use to which it is applied, or to irrigate the lands of said parties actually requiring irrigation at the time of diverting the same.

6. The Court further finds that the defendants, Thomas Hassey, William Hassey, Grace Hassey, Andrew Hassey, Ollie Hassey, John W. Lee, Barbara Lee, Philip B. Cottons and Alma Cottons have no rights whatever to any of the waters of said Squirrel Creek.

It is further ordered, that each party pay his or their own costs; That a decree be drawn in accordance herewith, and that the Plaintiffs pay the costs of entering this Decree.

Dated this 30th day of June, 1921.

ROBERT C. STONG, Judge

### **TONGUE RIVER DAM AND RESERVOIR (State Water Conservation Board Project)**

This project consists of a dam and storage reservoir on Tongue River about ten miles north of the Montana-Wyoming State Line. No canal construction was included as a part of the project. The reservoir has a storage capacity of 73,900 acre feet to be used for supplemental irrigation along the 200 miles of the Tongue River Valley to its mouth, and also lands in the Yellowstone Valley north and east of Miles City. A total of approximately 30,000 acres are benefited. This dam is the largest of all those built by the State Water Conservation Board. Drainage area above the reservoir site is 1,700 square miles, situated in the high timbered reaches of the Big Horn mountains and foothills in Wyoming. The Tongue River dam is an earth, sand and gravel fill, having a total crest length of 1,810 feet and top width of 36 feet. The front slope is 3:1 below water line and 10:1 above water line. Downstream slope is  $2\frac{1}{4}$ :1 with a 50 foot berm at elevation 3,090. Elevations are top of dam, 3148 feet; spillway crest, 3130 feet; natural creek bottom, 3095 feet; bottom depth of cutoff trench, 3030 feet; flow line of outlet, 3080 feet. From these elevations, the maximum height of dam above natural creek bed is 53 feet and above the bottom of cutoff trench is 118 feet. The spillway crest is 18 feet below the top of the dam. The dam contains approximately 1,255,000 cubic yards of material. The outlet tunnel was driven through shale at the left abutment, and the spillway is at the left end of the dam. The concrete lined outlet tunnel is 16 feet in diameter inside and equipped with two gates operated through a concrete tower from the top of the dam. The operating and emergency gates are 6 feet by 12 feet Philips & Davies Tractor Type Sluice Gates. The spillway has a crest length of 350 feet and is capable of discharging a flood of



60,000 second feet with a freeboard of 5.5 feet. The flooded area of the reservoir covers 2,400 acres, while the area required to be purchased for right-of-way, including borrow pits, etc., was 5,528.4 acres. The original site of the dam was about seven miles below where the dam was finally built. When the original site was drilled, a thick strata of coal was discovered which made the original site unsafe for a dam.

The State Water Conservation Board received an offer from the Government, dated April 22, 1937, and accepted by the Board on April 28, 1937, which was amended by an offer from the Government dated October 6, 1938, and accepted by the Board October 19, 1938, in which the estimated cost of the project as described above was \$1,200,000, of which \$540,000 was a Grant and \$660,000 a Loan. It required the formation of the Tongue River Water Users Association and the sale of 35,000 acre feet of water on Water Purchase Contracts acceptable to the Finance Division of the PWA.

The Tongue River Water Users Association was incorporated under the Laws of Montana on May 24, 1937. Water Purchase Contracts in the amount of 35,000 acre feet acceptable to the PWA were secured and approved by the Association on December 11, 1937, and by the Board on December 15, 1937. The Bond Transcript was then completed and Bonds sold to the Government on May 5, 1938.

Bids for the construction of the Project were received on June 19, 1937. The low bidder was Jerome C. Boespflug, Miles City (\$752,364.54) and contract was awarded to said contractor on the same day, subject to approval of the PWA. Work was started on June 28, 1937, and accepted as completed by the Board on May 26, 1939.

After the original contract was completed, it was determined that additional work was required, consisting of construction of additional cut-off trench and grouting in and about the dam, which additional work was acceptable to the PWA and accordingly the Board received an Amended Offer, dated May 1, 1940, which was accepted on May 7, 1940, wherein the amount of Grant as set forth in the original Offer of \$540,000 was increased to \$579,420.00. Bids for this additional work were received on June 15, 1940, and contract was awarded to Jerome C. Boespflug in the amount of \$83,889.00. Work was started July 9, 1940.

The Board has had surveys made on 31 possible diversion and pumping units along Tongue River Valley representing a total of 116 miles of laterals, which would serve approximately 10,357 acres of land, owned by water purchasers aggregating 28,011 acre feet of water. These surveys were made to show the potential possibilities under the Tongue Reservoir so that plans of a distribution system could be made.

Under the Water Marketing Contract between the Association and the Board, the Association agrees to pay to the Board the sum of \$45,500 on November 1, 1939, and (on the same date each year) to and including November 1, 1967.

To secure funds to construct the Project the Board issued its Water Conservation Revenue Bonds, Series "L," in the amount of \$660,000, dated May 1, 1938, secured by a Trust Indenture of the same date executed by the Board and The Montana National Bank of Billings, as Trustee. The Indenture provides for the pledge of all of the revenues of the Project for the payment of interest on and principal of the Bonds. These Bonds bear interest at 4% per annum, payable May 1st of each year, commencing with the year 1939, and with first



Bond principal in the amount of \$8,000.00 due May 1, 1941, and increasing annual payments to the sum of \$33,000.00 due May 1, 1977. The security mentioned consists of a Water Marketing Contract between the Board and the Association, and Water Purchase Contracts entered into between each individual water purchaser, the Association and the Board. The original list comprises 270 Water Purchase Contracts totalling 35,000 acre feet of water, at \$1.30 per acre foot per year commencing with the year 1939, to and including the year 1975. The totals due under the contracts are sufficient to pay all interest and principal, and provide a reserve of approximately 33 per cent.

On April 19, 1937, J. S. James, State Engineer, filed on all of the unappropriated waters of the Tongue River. The dam site was to be located in the southeast quarter of the southeast quarter in Section 32, Township 7 South, Range 41 East. This appropriation is on file in Book 7, Page 408 of Misc. Records in the Big Horn County Courthouse.

On January 28, 1938, E. B. Donohue filed a subsequent appropriation on all of the unappropriated waters in the Tongue River in behalf of the State Water Conservation Board of Montana. The notice of appropriation was filed January 31, 1938, and recorded in Book 7, Page 477 of Misc. Records in the Big Horn County Courthouse. The point of diversion was described as a dam in the southeast quarter of Section 13, Township 8 South, Range 40 East. The purpose was for irrigation and other purposes. The system was described as a dam and storage reservoir. The land description of intended place of use was described as lands in and along the entire watershed of the Tongue River and its tributaries and in and along the watershed of the Yellowstone River for 150 miles below the point where the Tongue River flows into the Yellowstone River.

## **TWO LEGGINS DRAINAGE DISTRICT**

The petition for creation and organization was issued September 3, 1931. The proposed drainage district was to cover approximately 2,000 acres of land, of which approximately 1,200 acres is owned by Indians.

"Your petitioners further inform the Court that there are approximately 2,000 acres in this proposed drainage district. Approximately 1,200 acres is owned by Indians under titles other than fee patents, the titles either being shown by trust patent or some other form of title not equal to fee patents.

That the United States Government through an Act of Congress has made an appropriation for the payment of the cost of drainage of this particular land owned by the Indians, and included within the confines of the proposed drainage district. The said appropriation provides sufficient funds for the paying of the cost of drainage of that particular land, and the United States Government is willing and ready to enter into an agreement with the proposed drainage district as soon as it is properly organized for the draining of said land.

That the Department of Indian Affairs, which has charge of the disbursements of this money, does not wish the land taxed with any levy, but will provide for the payment of the cost through a contract; said appropriation being approved February 14, 1931.

That the lands owned by other people in the proposed district will require a levy to be placed thereon in order to provide means for payment of the cost of drainage, and it is their



wish that the bonds be issued for their share of the costs and that levy be made against the land owned by the people other than the Indians above referred."

The district is divided into Drain A, Drain B, Drain C, Drain D, and Drain E, and is located in Township 1 South, Range 33 East and Township 2 South, Range 33 East.

On February 26, 1932, this petition for the creation of said drainage district was heard, evidence was submitted in behalf of the petitioners, and the court, from evidence submitted, overrules the protests and grants said petition.

Construction for open drains, specifications and advertisement notice to bidders was made April 19, 1932. R. H. Fifield was Engineer.

Total cost of the project on April 1, 1933 was \$30,944.35. The district is in generally good repair.

The present indebtedness of the district is \$5,000 and the average annual assessment is \$2.00 per acre.

## **TWO LEGGINS WATER USERS ASSOCIATION**

The Two Leggins Water Users Association diverts water by gravity from the Big Horn River in the southeast quarter of Section 20, Township 2 South, Range 33 East. The headgate is constructed of reinforced concrete, having an over-all size of 34 feet from east to west and 17 feet 10 inches from north to south, with a designed capacity of 400 second feet. A diversion dam, approximately 461 feet long and 30 feet wide, has been constructed across the Big Horn River immediately north of the highway bridge on the road from Hardin to St. Xavier. This dam is constructed of rock, brush and sandbags, with an overlay of concrete. Due to spring floods and ice jams the Company has had considerable trouble keeping this dam in repair. In what is commonly known as Sorrel Horse Bottom, in the southwest quarter of the southeast quarter of Section 30, Township 3 North, Range 34 East, the Big Horn River washed out a portion of the main canal. As a result, a tunnel had to be constructed approximately 800 feet in length. Other than these, there are no large works of any consequence in the canal system. From the point of diversion, the main canal runs in a northeasterly direction nearly parallel with the Big Horn River along the foot of the hills skirting the valley on the west side of the Big Horn River to a point where the valley narrows, which is about 26 miles from the headgate.

The project is located in the northern part of Big Horn County on the west side of the Big Horn River, with most of the irrigated land being north of Hardin. Extensive drainage is required even though a large part of the land has been reclaimed by drainage. A great deal of variation occurs in the size of farms, but there are very few small holdings. Many of these farms have dry land in connection. No established system of farming is followed, although sugar beets constitute the principal cash crop. A large acreage is also devoted to alfalfa hay and small grains for feed production. Beef cattle and dairy cattle have a prominent place and are kept on most farms. Considerable winter feeding of beef cattle and sheep is carried on throughout the project. Because of the nearness to the sugar beet factory in Hardin, beet by-products are used extensively.



No shares of stock are issued but each owner under the system has a deed representing his right to the water which is appurtenant to the land. Water charges under this system average about \$1.25 per acre, which includes operation, maintenance, debt and service charges. As of September 18, 1945, the Company had no indebtedness. The water supply is considered adequate. Under the Two Leggins Water Users Association, for the land that was not Indian owned, the farmers were required to purchase a water right in the canal and to build and maintain their own lateral systems. The land that is Indian owned is supplied water through Government constructed laterals which were paid for by the Indian Service. The Government purchased carriage rights for 5,642.56 acres of trust Indian land in the Two Leggins canal. Of this amount, 4,792.9 acres are classified as assessable, with 1,197.8 acres in white ownership and 3,595.1 acres Indian owned.

The construction cost to date, April 22, 1946, is \$121,228.65, making a total cost of \$25.29 per acre. This represents about 80 per cent of the project completed. The estimated cost to complete the unit is \$60,971.35, making a total completed cost of \$182,200.00, or a total cost of \$38.01 per acre. Included in this figure is the cost of a diversion dam, canals and laterals, drainage and rehabilitation. The cost for the diversion dam will be partly allocated by the Indian Service, with the balance being paid by the Two Leggins Water Users Association. All costs in turn will be assessed to the lands. Payment for water is made by the United States, which in turn assesses the lessee for re-payment. In addition, the Company also supplies water to the Wagonbox Ditch Company, which serves 6 water users representing 179.82 shares, the Lateral Water Users Association, which serves 37 water users representing 210.5 shares, and the Farmers Canal, known as the Holly Sugar Company ditch, which serves 4 water users representing 1,124 shares. Under these systems the water users pay assessments to the Two Leggins Water Users Association in addition to their own ditch company assessments. The first filing to cover the land that is now irrigated by the Two Leggins Water Users Association was made by the Big Horn Water Users Association on March 11, 1907. This Company was incorporated under the laws of the State of Montana in the amount of \$200,000. The amount of stock that had actually been subscribed to was \$70.00. As near as we can find out from old timers in the area, this association never materialized. The filing is in Book A, Page 48 of Misc. Records in the Big Horn County Courthouse in Hardin, Montana.

On the 28th day of March, 1913, the Two Leggins Water Users Association was incorporated for forty years with a capital stock of \$20,000, divided into 20,000 shares of the par value of \$1.00 each, under the laws of the State of Montana. The purpose of said corporation was to acquire, maintain, and operate the irrigation system heretofore built, owned and operated by the Two Leggins Land and Improvement Company. That the water diverted from said Big Horn River through said canal and system shall be used for irrigation and domestic purposes on the lands lying in the vicinity of said canal. The number of directors of said corporation shall be five and at the first meeting of the stockholders they shall divide the land served by said irrigation system into five districts. At each election of directors thereafter, one director shall be elected for each district from among the stockholders owning water rights in such district. The stock shall be apportioned at the rate of one share for one acre of land for which a water right has been or may be acquired from such Two Leggins Land and Improvement Company in said irrigation system in accordance with the terms and conditions subject to the provisions of the contract to be hereafter entered into between the Two Leggins Land and Improvement Company and said corporation. When issued the shares of the



capital stock of this corporation shall not be subject to transfer, except with the transfer of the land and water right which is represented by such stock. The capital stock is assessable under the provisions of the water deed held by each stockholder.

On May 21, 1909, J. E. Edwards, R. E. Shepherd and C. M. Bair, representing the Two Leggins Land and Improvement Company, appropriated 600 cubic feet per second of water from the Big Horn River. The filing was made June 15, 1909. The point of diversion was described as a headgate composed of concrete with five gates with openings therein 6 feet wide and 6 feet deep, located on the southeast quarter of Section 20, Township 2 South, Range 33 East of the Montana Principal Meridian, thence by canal running in a general northeast direction, which said canal is 33 feet wide on the bottom, 51 feet wide on the top, and 6 feet deep, with syphons of sufficient size and capacity to carry the water of said canal hereby appropriated. The purpose was for irrigation, domestic, and water power uses. The land description of intended place of use was described as lands in Township 2 South, Range 33 East, Township 1 South, Range 33 East, Township 1 North, Range 33 East, Township 2 North, Range 33 East, Township 3 North, Range 33 East, and Township 3 North, Range 34 East. In addition to the above, the appropriators stipulated that they would have the right to sell and dispose of surplus water, over and above the amount used by appropriators, to persons owning adjacent lands. This appropriation is on file in Book A, Page 53 of Misc. Records in the Big Horn County Courthouse in Hardin, Montana.

Below is a tabulation showing the present acres, potential irrigable acres under existing works and the maximum acreage under the Two Leggins and the Lateral Ditch Company served by the main Two Leggins Canal.

	Present	Potential	Maximum
Two Leggins Canal .....	14,130.65	2,651.00	16,781.65
Farmers Canal .....	942.36	184.70	1,127.06
Wagonbox Canal .....	226.70	46.00	272.70
Lateral W. U. A. ....	198.00	15.00	213.00
Totals	15,497.71	2,896.70	18,394.41

#### UPPER LITTLE HORN NO. 2 UNIT (Crow Irrigation Project)

Water for the Upper Little Horn Canal is diverted by gravity in the northwest quarter of the northwest quarter in Section 15, Township 9 South, Range 34 East, on the south bank of the Little Big Horn River about five miles south and seven miles west of Wyola. The main canal has an initial capacity of 115 second feet, with a bottom width of 7 feet, and is 8.73 miles in length. Preliminary surveys for the Upper Little Horn Canal were made in 1907. Construction work was begun in 1910 and the canal was completed in 1914. The water supply is considered inadequate to irrigate all of the lands under constructed works. The office of Indian Affairs Irrigation Division believes that if the water users under the Agency Unit, Reno Unit, and Lodge Grass No. 1 Unit are supplied a sufficiency of water from the Lodge Grass storage reservoir this condition can be alleviated. A new headgate is also urgently needed which will allow more water to be diverted into the main canal. The gross area of the unit is 3,286.59 acres, with 2,702.8 acres classified as assessable, which is served by 5.7 miles of laterals. Of this amount, 1,239.8 acres is non-Indian land and 1,463.0 acres is Indian land. On the unit there are 15 steel flumes, 128 timber bridges and 90 concrete culverts.



The construction cost to date, April 22, 1946, is \$136,767.61, making a cost of \$50.60 per acre. The comparatively high cost per acre of this unit is due to the excessive slope of the land, 30 to 40 feet to the mile. To a certain extent this also applies to the main ditch, but conditions are such that concrete chutes, instead of drops, could be installed to take care of the excessive fall. There are also a number of large flumes of considerable length on the main canal and these add materially to the cost. The cost to date represents about 91 per cent of the project completed. The estimated cost to complete the unit is \$40,132.39, making a total completed cost of \$176,900.00, or a total cost of \$64.45 per acre. Included in this figure is the cost to complete construction of laterals to allotments to which water has not been delivered, drainage, river protection and rehabilitation. The unit is located south and east of the Little Big Horn River, with the center of the project being about four miles southwest of Wyola. For the greater part, the project consists of creek bottom lands. The soils and topography are favorable to irrigation. Drainage is needed on some parts of the project. The present land use is principally by large stock operators. According to the records of the Crow Irrigation Project at Crow Agency, the principal crops are alfalfa, wheat, oats, sugar beets and barley.

On February 18, 1908, S. G. Reynolds, then Indian Agent, appropriated 2,880 miner's inches of water to be diverted from the Little Big Horn River in behalf of the Crow Indians. The notice of appropriation was filed February 24, 1908, and recorded in Book A, Page 478 of Misc. Records in the Big Horn County Courthouse. The point of diversion is described as a point north 63 degrees 30 minutes east, 783 feet from the southeast corner of the northeast corner of Section 16, Township 9 South, Range 34 East on the east bank. The purpose was for irrigation. The system was described as a canal 40 inches by 80 inches. Land description of intended place of use was described as lands in Sections 15, 10, 11, 14, 1 and 12 in Township 9 South, Range 34 East, Sections 6, 7, 5, 8 and 4, Township 9 South, Range 35 East, and Sections 32, 33, 28 and 27 in Township 8 South, Range 35 East. Under remarks pertaining to use, the appropriation contains a note stating that the first appropriation was made December 6, 1907.

In 1946 there were 2,285.50 acres being irrigated under the Upper Little Horn No. 2 Unit, with a potential acreage under existing facilities of 461.40 acres, or a maximum irrigable acreage of 2,746.90 acres.

### VALLEY CENTER DRAIN DISTRICT

The Valley Center Drain District was started in September of 1921. This is the date negotiating for a district began. On April 30, 1925, the Winston Brothers Company fully completed the construction of the drainage system, and it was accepted by the Commissioner. The district is located in Township 1 South, Range 33 East and Township 1 North, Range 33 East.

On March 19, 1925, the district was divided into three divisions, with each division as nearly equal in area as possible.

The district is in good financial condition, but in order to pay all costs of operation, maintenance repairs, incidentals, and interest on indebtedness, together with the reduction of the principal, it is necessary that a levy of  $1\frac{1}{2}$  per cent of the cost of construction for maintenance construction, administration and incidental expenses of operation, and other items of



the general fund, and  $2\frac{1}{2}$  per cent of the cost of construction for payment of interest and payment on the principal indebtedness.

The original bond issue of the district was \$210,000.00. The principal bonded indebtedness of the district was on April 30, 1944, the sum of \$41,000.00. During the year, \$4,000.00 has been paid on the bonded indebtedness, as well as the interest thereon, and there now remains a balance due on the principal indebtedness of \$37,000.00. On April 30, 1944, the district had a balance of \$6,508.45, and on April 30, 1945, there was a balance on hand of \$7,512.90.

### WAGONBOX DITCH COMPANY

The Wagonbox Ditch Company canal diverts water by gravity from the Two Leggins Canal in the southeast corner of the northwest quarter of the southwest quarter in Section 33, Township 2 North, Range 33 East. From the headgate to the terminus the main canal is about five miles in length. The project comprises a very narrow strip of land between the Wagonbox Canal and the Two Leggins Canal and is about one-half of a mile wide in its widest point.

On October 12, 1909, the Company was incorporated for twenty years with a capital stock of \$4,500 which was divided into 300 shares of a par value of \$15 each. Under the terms of the original incorporation the Company was to have five directors. The first directors were Samuel Bennett, Frank C. Barta, Joseph P. Potter, W. D. Eder, and U. S. Miller. At present the Company is not incorporated and nothing has been done to reincorporate. According to George Mehling, President of the Wagonbox Ditch Company, an equal amount of shares must be held in the Two Leggins Ditch for each share held in the Wagonbox Ditch. The only assessments that have been made for a number of years have been those issued by the Two Leggins Water Users Association which average from \$1 to \$1.25 per acre or the same as the assessments to the water users under that system. Operation and maintenance under the Wagonbox Ditch in most years have been worked out by the water users. In 1945 the users had the ditch cleaned with a dragline, which necessitated an assessment of \$4.00 per acre to pay for this operational expense. This was the first assessment that has been issued of any consequence for about twelve years.

The Company as of October 4, 1945 had no indebtedness. Six water users are served by the system representing 179.82 shares of stock. The water supply is considered adequate. No water filing was made and the canal is considered as a lateral of the Two Leggins Water Users Association system, with a date of priority as of the original incorporation.

In 1946 there were 226.70 acres being irrigated under the Wagonbox Ditch Company, with a potential acreage under existing facilities of 46.00 acres, or a maximum irrigable acreage of 272.70 acres.

### WILLOW CREEK DAM (Crow Irrigation Project)

The Willow Creek reservoir is located in Sections 6 and 7, Township 8 South, Range 34 East, and Sections 1, 2, 11 and 12, Township 8 South, Range 33 East. The main dam is about one-half mile above the confluence of Willow Creek with Lodge Grass Creek and about sixteen miles upstream from the town of Lodge Grass, which is located at the mouth



of Lodge Grass Creek. The reservoir has a capacity of 23,000 acre feet, which is designed to benefit 30,618 acres.

The principal works constructed consist of a concrete diversion dam in Lodge Grass Creek, two miles of feeder canal, a concrete emergency spillway and waste gate at Stevie Creek crossing, concrete inlet drop into the reservoir basin, concrete outlet works through the dam, concrete reservoir spillway including one-quarter mile of earth spillway channel, earth filled dam and two earthen dikes. The dam and dikes were constructed under contract and the remainder of the work was accomplished by Government forces. The aggregate for concrete was secured from commercial pits at Billings and Edgar, Montana, hauled to Lodge Grass by train and trucked to the site of the work. Extensive investigations failed to discover a local supply of aggregate that was suitable for first-class concrete. The diversion dam is located in Section 13, Township 8 South, Range 33 East and consists of a concrete over-flow type structure with one sluice gate and four canal gates—all having 4 foot by 6 foot openings.

The feeder canal is approximately two miles long and has a maximum capacity of 400 second feet and a minimum free-board of two feet. A concrete chute drop was constructed at the end of the canal to lower the canal water into the reservoir basin and to prevent erosion. The drop terminates in a stilling basin located in the bottom of a small draw 34.5 feet below normal high water reservoir surface. At a point approximately 1780 feet below the diversion dam the feeder canal crosses a small tributary of Lodge Grass Creek, called Stevie Creek. This stream is intermittent, being dry the greater part of the year, but is subject to relatively high floods from heavy rains and spring thaws. To utilize the discharge of this stream for reservoir supply and at the same time protect the canal from emergency floods, an automatic radial gate was placed in the canal. In addition to the major canal constructions described above, four minor structures were required consisting of two metal flumes with timber sub-structures and two public road bridges. Excavation for the outlet and control works was started in August, 1938 and continued until February 1, 1939. An open crested 30 foot spillway with lined channel, stilling basin and 940 feet of earth channel were constructed to provide for over-flow with reservoir levels above elevation 4130, which is 13 feet below the crest of the dam.

Construction work on the Willow Creek dam was started in 1938 and was completed in the spring of 1942. The reservoir was constructed for the purpose of providing supplemental water supply for all land served from the Little Big Horn River watershed to which the stored water could be delivered directly, or by substitution for the natural flow of the Little Big Horn River. The dam is a rolled, earth fill structure 2,250 feet long, 114 feet high, including a 10 foot free-board. The top elevation of the dam is 4,143 feet. The ground level at the dam site is 4,029 feet. The total embankment above natural ground, including downstream toe blanket, upstream toe blanket, total excavated and replaced yardage for toe trenches, keyways and stripping foundation, is 1,809,131 cubic yards. The reservoir does not have any dead storage.

The cost of this reservoir to date, April 22, 1946, is \$927,184.04 and it is estimated that an additional \$15,300 will be required to complete the installation of a metal liner pipe in that portion of the outlet box below the control gate structure and the removal of several slides in the diversion canal.



## Youngs Creek Decree (Case No. 111-2470)

Cora B. Anderson, Plaintiff

vs.

Spear Morgan Livestock Company, a corporation, Soldier Creek Livestock Company, a corporation, Lloyd Cook, Euna P. Cook, Henry Colt, Katherine Colt, William Bowman, Ruth Bowman, C. E. Erbaugh, Margaret Erbaugh, Elsie Milne, Elizabeth Milne, John W. Lee and Barbara Lee, Defendants.

(Filed this 23rd day of December, 1936)

This cause having been heretofore submitted to the Court and taken under advisement and the Court having heretofore and on the 4th day of June, 1936, filed herein its findings of fact and conclusions of law, from which it appears that Youngs Creek and its tributaries have its source in the Crow Indian Reservation in Big Horn County, State of Montana, and involves water rights to land located within said Crow Indian Reservation and lands located outside of said Reservation and also the rights to the flow of water in Youngs Creek and Tanner Creek, the said Tanner Creek being a tributary of Youngs Creek, both of which streams have their source in the Crow Indian Reservation and flow therefrom in a southeasterly direction and out of said Crow Indian Reservation through lands in Big Horn County, Montana, and into the State of Wyoming.

That all of the lands watered by the ditches, which divert water from said Youngs Creek and Tanner Creek, are arid and require one miner's inch of water per acre for proper irrigation thereof and that the plaintiff and each of the answering defendants to whom adjudications are hereinafter made, are entitled to the various amounts of water from Youngs Creek or its tributaries as of the dates set forth in said findings of fact and conclusions of law.

WHEREFORE, by reason of law and of the premises aforesaid it is ordered, adjudged and decreed that the plaintiff and said answering defendants are entitled to the use of the water from Youngs Creek and its tributaries for the respective pieces of land described in the findings herein at and as of the dates herein mentioned and to the number of inches or to the equivalent number of cubic feet per second of time as hereinafter set forth are as follows:

Cora B. Anderson—	1¼ cubic feet per second of time, or 50 miner's inches, as of the date of October 12, 1894.
The Cross-complainants—	Erwin S. Jones and Julia Jones—1½ cubic feet per second of time, or 60 miner's inches, as of the date of May 15, 1895.
“ “ “	—C. E. Erbaugh and Margaret Erbaugh—1⅜ cubic feet per second of time, or 55 miner's inches, as of the date of May 15, 1895.
“ “ “	—Elizabeth Milne—1¼ cubic feet per second of time, or 50 miner's inches, as of the date of May 15, 1896.
“ “ “	—Elsie Milne—1¼ cubic feet per second of time, or 50 miner's inches, as of the date of May 15, 1896.
“ “ “	—John W. Lee and Barbara Lee—2 cubic feet per second of time, or 80 miner's inches, as of the date of September 1, 1907.

That any rights to the water of said Youngs Creek or its tributaries belonging to any of the other defendants who have not answered herein are subsequent in time and subordinate



in right to all of the aforesaid appropriations of any water by plaintiff and the defendants herein above mentioned who have been decreed water as above set forth.

It is further ordered that each and every party to whom water is decreed herein, is hereby enjoined from in any manner or way interfering with the ditches, dams, flumes, headgates, water rights and appurtenances of any other party hereto, or from using any of the water of said Youngs Creek or of any tributary thereof, which any other party thereto is entitled to by right of prior appropriation as found herein.

It is further ordered, adjudged and decreed that the parties hereto be and they are hereby enjoined from in anywise wasting the water of said creeks and its tributaries or from diverting at any time more water from said Youngs Creek or its tributaries than is reasonably necessary for the use to apply or to irrigate the lands of said parties actually requiring irrigation at the time of diverting the same. That the rights herein decreed shall be active during the irrigation season and between the period commencing on March 15th of each year and terminating November 15th of each year. As to the flood waters all of the parties shall have equal rights to impound the same in reservoirs or otherwise for the purpose of irrigation, or for storage for irrigation purposes. Provided, however, that they do not interfere with the flow of water allotted to each party or parties under this decree. That each party to whom water is decreed shall maintain an appropriate headgate or measuring box at the point of diversion from said streams.

It is further ordered, adjudged and decreed that each party pay their own costs and that the plaintiff pay for the costs of entering this decree.

This decree does not attempt to fix the rights of the defendants Spear-Morgan Livestock Company, a corporation, Soldier Creek Livestock Company, a corporation, Lloyd Cook and his wife, Euna P. Cook, and John W. Lee and his wife, Barbara Lee, in or to the waters of Youngs Creek and its tributaries for the reason that they own or are leasees of lands located within the Crow Indian Reservation aforesaid and for that reason the Court has not jurisdiction to adjudicate their rights, except as to the lands owned by the defendants John W. Lee and Barbara Lee which are located outside of said Reservation and as to those lands which are described in the findings, an adjudication is made as above set forth.

Dated December 23, 1936.

ROBERT C. STONG,  
District Judge

#### **Order Modifying Findings and Decree (Case No. 118-2470)**

WHEREAS, the above entitled cause was tried, to the Court sitting without a jury, on October 17, 1935; and, Thereafter, the said Court made its findings a fact on the 4th day of June, 1936, which findings are herein filed on the 4th day of June, 1936; and that among the findings heretofore made and entered by said Court, the said Court found, on page two thereof at lines eighteen and twenty of said findings, that Tanner Creek was a tributary of Youngs Creek; and that the said Court found further on pages five and six of said findings, at lines 26 on page five to line five of page six of said findings, that the Defendants and Cross-complainants, John W. Lee and Barbara Lee are the owners of Lots 4, 5, and 8, of Section 24, Township 9 South, Range 38 East, and that they derive their title to said lands from one William Chalmers who settled upon said lands in 1907, and made a valid appropriation of 80 miner's inches of the flow of the waters of Tanner Creek, by the construction



of a ditch or ditches, as of the date of September 1, 1907; and since said time they and their predecessors in interest have continuously used the said water, when available, for the irrigation of a portion of their said lands, and

WHEREAS, the said Court in said findings on page six at lines 9 to 12 and lines 27 to 29, inclusive thereof, that the cross-complainants, John W. Lee and Barbara Lee, for the purpose of the irrigation of their said lands, shall have a right to the flow of the waters of Youngs Creek and Tanner Creek, subject to the rights of Cora B. Anderson, Erwin S. Jones and Julia Jones, C. E. Erbaugh, and Margaret Erbaugh, Elizabeth Milne and Elsie Milne according to dates of appropriations of said waters therein mentioned in the order named; and thereupon page seven of said findings ordering a decree be entered accordingly, and

WHEREAS, judgment of said Court was made and entered in said cause adopting said findings, and herein filed on the 23rd day of December, 1936, and

WHEREAS, thereafter, within the time required by law, Elsie Milne and Elizabeth Milne made and entered in the Supreme Court of the State of Montana, their appeal from said findings and judgment; and that the said John W. Lee and Barbara Lee, in addition to their brief and argument in said appeal, raised the question in their brief and argument that the said lower Court erred in holding that Tanner Creek is a tributary of Youngs Creek, and that the rights of the said John W. Lee and Barbara Lee were subordinate to the rights of the other persons herein named as to the waters of Tanner Creek, and

WHEREAS, said cause was duly submitted on briefs and arguments to said Supreme Court, and the said Supreme Court thereafter on the 23rd day of May, 1938, duly made, rendered and entered its opinion holding, on page seven thereof, that the said lower Court was in error in holding that Tanner Creek is a tributary of Youngs Creek; and remanded said cause to the District Court of Big Horn County with directions to modify its findings and judgment according to the views expressed therein; and when said decree is modified, the judgment will stand affirmed, and

WHEREAS, on the first day of July, 1938, a Remittitur of said cause was duly made by the Clerk of said Supreme Court, which Remittitur together with the opinion of the said Supreme Court of Montana is hereto attached and hereof made a part.

NOW, THEREFORE, it is ordered, adjudged and decreed that the findings of this court and the decree in this cause heretofore made and entered and filed herein, be and the same are hereby modified and amended to read as follows:

That Tanner Creek is not a tributary of Youngs Creek; and that the appropriation of 80 miner's inches of the flow of the waters of Tanner Creek by William Chalmers, and conveyed by him to John W. Lee and Barbara Lee for use on Lots 4, 5 and 8 of Section 24, Township 9 South of Range 38 East, M.P.M. is a first and prior appropriation of the said waters of the Tanner Creek; and that the said John W. Lee and Barbara Lee shall have, and are hereby granted, the first right and privilege to the use of the waters of Tanner Creek according to their appropriation thereof; and the rights of all other parties in this controversy to the water of Tanner Creek shall be, and are hereby declared, subordinate to the rights of the said John W. Lee and the said Barbara Lee.



It Further appearing to this Court that the Supreme Court of the State of Montana in said cause found that the lower Court was in error in holding that John A. Milne, the predecessor in interest of the appellants, Elsie Milne and Elizabeth Milne made his appropriation by the construction of a ditch as of May 15, 1896; and that the lower Court should have found that the said John A. Milne made his appropriation at the time of the posting of his notice of appropriation, to-wit: the 20th day of November, 1894.

It is, Therefore, ordered and decreed by the Court that the findings and decree of the lower Court in said cause be, and the same are hereby modified and amended, to conform to the holdings of the Supreme Court of the State of Montana, as to the time of the appropriation of the said waters of Youngs Creek by the said John A. Milne; and that the time of his appropriation of the water of Youngs Creek are hereby decreed and entered as of the date of November 20, 1894, otherwise the judgment of the lower Court except as herein modified shall stand affirmed.

Done in Open Court this 7th day of July, 1938.

GUY C. DERRY, Judge

