

# Savage Unit: Pick-Sloan Missouri Basin Program

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## **Savage Unit**

### **Pick Sloan Missouri Basin Program**

The Savage Unit of the Pick Sloan Missouri Basin Program is a little-known, small-scale bureau of Reclamation project. The Savage Unit delivers water to 2,200 irrigable acres on a bench lands above the lower Yellowstone River in eastern Montana. The physical aspects of the project include a feeder canal, a pumping plant, and a distribution system, which took about a year to construct. Indeed, while a small project, it appears to be a success for farmers in the local irrigation districts. Construction activities proceeded without a hitch, no major problems required costly repairs, and water users benefitted. The Savage Project is a small piece of a large-scale program to develop the Missouri River and its tributaries.

### **Project Location**

The Savage Unit is just mile west of Savage, a small town in the heart of Montana's Richland County. The 2,065 square miles of the county are open, sparsely populated, and economically valued principally as cropland, pasture, and range. Rolling high lands and flat benches spread out across the county, and the rocks and the Yellowstone River reflect a yellowish hue due to the Fort Union Formation. The soil in the project area consists mostly of fine sandy loam and light silt loam, making it good for agriculture. At an elevation of 1,800 feet above sea level yet with only 13.67 inches of annual precipitation, the area has only a 128-day growing season.<sup>1</sup> The Yellowstone

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<sup>1</sup> U.S. Department of Agriculture, Soil Conservation Service, in cooperation with Montana Agricultural Experiment Station, *Soil Survey of Richland County, Montana*, [1980?]; U.S. Department of the Interior, Bureau of Reclamation, "PSMBP – Savage Unit, Water Data," <http://www.usbr.gov/dataweb/html/gpsavwatdata.html>.

River cuts through the center of the county before dumping into the Missouri River near the Montana-North Dakota state line.

### **Historic Setting**

The first white explorers to traverse a portion of the Yellowstone River in Montana left detailed descriptions of the land and river previously unrecorded. Upstream from present Savage, Montana, William Clark wrote,

brooks have all Some water in them from the rains which has fallen. this water is excessively muddy. Several of those brooks have Some trees on their borders as far as I can See up them. I observe Some low pine an cedar on the Sides of the rugid hills on the Stard. [starboard] Side [of the Yellowstone River], and Some ash timber in the high bottoms. the river has more Sand bars today than usial, and more Soft mud.<sup>2</sup>

He described the river bottom rich with timber “Such as Cotton wood ash willow &c.” To the west of the river the land “rises to a low plain and extends leavel for great extent. Some high rugid hills in the forepart of this day on the S E. Side.”<sup>3</sup> Numerous wildlife sightings included buffalo, big horn sheep, elk, wolfs, deer, and bear. At the site of present Savage, Clark noted the river was “less rapid[,] crouded with Isl[an]ds and muddy bars.”<sup>4</sup>

Clark’s are some of the earliest descriptions of the lower Yellowstone River and surroundings. He describes the flow of the river, vegetation, wildlife, “The Country on the N W. Side [that] rises to a low plain and extends leavel for great extent.” According to historian Robert Schneiders, the geography north of the Platte River was exotic and

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<sup>2</sup> William Clark, August 1, 1806, entry in *The Journals of the Lewis and Clark Expedition*, ed. Gary Moulton (Lincoln: University of Nebraska Press / University of Nebraska-Lincoln Libraries-Electronic Text Center, 2005), <http://lewisandclarkjournals.unl.edu/journals.php?id=1806-08-01>.

<sup>3</sup> Clark, August 2, 1806, entry in *The Journals of the Lewis and Clark Expedition*.

<sup>4</sup> Clark, August 3, 1806, entry in *The Journals of the Lewis and Clark Expedition*.

unlike anything the early Americas had known.<sup>5</sup> Whether Clark believed or even considered the notion that the region could sustain settlement is not known. The area would not support agriculture for a century.

Lewis and Clark initially recognized the strategic location of the confluence of the Yellowstone and Missouri rivers, and they even recommended building a fort there. With the construction of Fort Union in 1829—owned by the American Fur Company then sold to the United States Government and used as a military fort—trappers, explorers, and later settlers fanned out across Montana. Rivers provided the arteries of transportation, but people and goods also moved along well-worn roads like the Northern Overland or Montana-Minnesota Road, the Bozeman Trail, and the Virginia City-Corinne Road. Later railroads replaced rivers and roads as the easiest mode of transportation: the Utah Northern from Salt Lake City to Butte completed in 1881, the Northern Pacific in 1883, and the Great Northern in 1893.<sup>6</sup>

Still, for many years the lower Yellowstone River remained sparsely developed, nearly as primitive as Clark found it in 1806, save for a few scattered trappers and traders in the valley. The discovery of gold in the Deer Lodge Valley and other camps lured people to the territory and generated millions of dollars in annual revenue. As was often the case in the West, permanent settlement arrived in the 1870s as cattlemen brought their large cattle outfits to graze the land above the river. This was (and still is) its dominant use—grazing lands for cattle and, later, sheep.

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<sup>5</sup> Robert Kelly Schneiders, *Big Sky Rivers: The Yellowstone and Upper Missouri* (Lawrence: University Press of Kansas, 2003), 12-13.

<sup>6</sup> Howard R. Lamar, ed., *The New Encyclopedia of the American West* (New Haven, Connecticut: Yale University Press, 1998), 730.

But it was not the exclusive use. Homesteaders steadily moved into the area and took up dry grain farming in the bench and rolling uplands after 1900. Settlers also took steps to irrigate. Small ditches delivered water to meadowlands and plots of land. There were some attempts to irrigate along Four-Mile Creek. A dam was constructed across the river at Intake, in Dawson County, to service lands on the west side of the river. The failure of these enterprises was not due to poor soil or lack of water supply. Irrigation on a large scale required resources local communities simply did not have.

The newly formed U.S. Reclamation Service began conducting surveys of the lower Yellowstone in 1903. Favorable soil and water surveys led to authorization of the Lower Yellowstone Project in 1904. Engineers settled on a plan that consisted of a diversion dam eighteen miles below Glendive, Montana, a main canal and distribution system stretching over seventy-one miles to the Missouri River, and several pumping plants diverting water to high lands not reached by the gravity canal.<sup>7</sup>

Settlement on the Lower Yellowstone Project did not occur as rapidly as Reclamation had hoped. Periodically during the project's early period, the valley received adequate rainfall dissuading many farmers from purchasing water-rights; enough rain fell during four of the first eight project operating years to make irrigation unnecessary. Subsequently, many farmers waited for rain and delayed applying for irrigation water until too late to benefit their crops. In 1909 water for 424 farms comprising 40,535 acres was made available for irrigation, yet only sixty-seven farms totaling 7,113 acres used the new water system. For the farmers who did use project

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<sup>7</sup> See U.S. Department of the Interior, Bureau of Reclamation, "The Lower Yellowstone Project," by Timothy A. Dick (Denver: Bureau of Reclamation History Program, 1993), 3-5.

water, the value of cultivated crops barely covered water costs, along with operation and maintenance charges.

The formation of two irrigation districts in early 1920 held the key to alleviating financial concerns. The Lower Yellowstone Irrigation District No. 1 contained project lands in Montana, and the Lower Yellowstone Irrigation District No. 2 included land in North Dakota. Under the contract with the Lower Yellowstone Irrigation District No. 1, a contractor extended the Main Canal five miles and constructed an additional fifty miles of laterals in 1921. The formation of irrigation districts and subsequent contracts with Reclamation encouraged farmers to use Reclamation water and led to growth and economic stabilization.<sup>8</sup>

For a time the Corps of Engineers worked feverishly to stabilize navigation along the Yellowstone, then later focused on flood control and providing a reliable water supply in the wake of a severe flood in June 1918 and drought in Montana in 1919. The drought reduced the Yellowstone River and its tributaries to a trickle; farmers in the Sidney area had very little water with which to irrigate their crops. In the aftermath of the serious events of 1918 and 1919 and drought and depression of the 1930s, the Corps attempted to receive authorization to construct dams on the Yellowstone River, particularly along its upper reach, but nothing came of these proposals.<sup>9</sup>

Landowners in eastern Montana had been interested in irrigation for many years. Partly in response to the drought of 1919, as well as the increasing success of the Lower

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<sup>8</sup> U.S. Department of the Interior, Bureau of Reclamation, "Annual Project History, Lower Yellowstone Project," Volume VI, 1913, 29; Volume VI, 1916, 29, in Record Group 115, Records of the Bureau of Reclamation, Accession 8NN-115-90-011, Box 69, National Archives and Records Administration, Denver, Colorado.

<sup>9</sup> Schneiders, *Big Sky Rivers*, 250-52.

Yellowstone Project, farmers in the Savage area agitated for a project to pump water to the bench lands above the river. During the 1930s in particular farming became a losing proposition. A water project would be needed to aid farmers in the area, and only the federal government had the requisite funding to finance such an enterprise. Fortunately, in the 1930s and 1940s the Bureau of Reclamation had extensively investigated the large-scale development of the Missouri River basin. In the 1940s another piece of the puzzle fell into place: the completion of Fort Peck Dam on the Missouri River opened the door to a possible power source that would enable farmers to pump water from the Yellowstone River to higher agricultural lands.<sup>10</sup>

### **Investigations**

In part due to the devastating floods on the Mississippi River in 1927, the War Department intensified its interest in the navigation, flood control, and development of the Missouri River and its tributaries. The massive tome, over 1200 pages (excluding maps), contained “a general plan for the improvement of Missouri River.” In addition to flood control, power, and navigation, the report suggested building eighty projects for a total irrigable area of 2,843,826 acres in the Missouri River basin.<sup>11</sup> Not to be outdone by the War Department, the Bureau of Reclamation also began detailed studies of potential irrigation projects in the Missouri River basin. Passage of the Flood Control Act of 1944 authorizing the Missouri River Basin Project (later Pick-Sloan Missouri Basin Program)

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<sup>10</sup> U.S. Department of the Interior, Bureau of Reclamation, “Annual Project History, Savage Unit,” Volume V, 1952, Exhibit D-2, in Record Group 115, Records of the Bureau of Reclamation, Entry 10, Box 378, National Archives and Records Administration, Denver, Colorado; hereafter “Project History” followed by the appropriate volume and page numbers.

<sup>11</sup> U.S. Congress, House of Representatives, *Missouri River: Letter from the Secretary of War Transmitting a Report, Together with Accompanying Papers and Illustrations, Containing a General Plan for the Improvement of Missouri River*, H Doc. 238, 73<sup>rd</sup> Cong., 2<sup>nd</sup> sess. (Washington D.C.: United States Government Printing Office, 1935), 40.

grew out of the report headed by Glenn Sloan of Reclamation and separate report from General Lewis A. Pick of the Corps of Engineers.

In January 1942 Reclamation produced a report on the “Savage Pumping Project” in Montana. The proposed project called for the irrigation of 2,390 acres of bench land about forty miles above the lower Yellowstone’s confluence with the Missouri River. The plan was to pump water from the Lower Yellowstone Project Main Canal into Indian Coulee, similar to what Intake Pumping Project had been designed to do, also on the Yellowstone River. The plan for the Savage Unit was to tap into the Lower Yellowstone Project’s 71.6-mile main canal via a feeder canal, and from there divert water through the pumping plant located 3.5 miles south of Savage to the distribution system. The pumping plant would consist of two electric pumps run by a 12.5-kv line and discharge 42 cubic feet per second of water through a 42-inch diameter pipeline. From there, the water would proceed to the main canal running 7.8 miles in length and 6.2 total miles of laterals.<sup>12</sup> Referring to the successful 57,000-acre Lower Yellowstone Project, the report predicted that “all the advantages arising from the continuous 30-year development of the Lower Yellowstone Project, will become available to the settlers on the new project.”<sup>13</sup>

Reclamation proposed a dam at the Mission Site near Livingston, Montana, as a storage reservoir in the case of heavy water consumption or drought, but this was never built.

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<sup>12</sup> U.S. Department of the Interior, Water and Power Resources Service, *Project Data* (Denver: United States Government Printing Office, 1981), 591-92; “Project History, Savage Unit,” Volume I, 1948, 6-7, Box 358; “Project History Savage Unit,” Volume II, 1949, 6-7, Box 378.

<sup>13</sup> U.S. Department of the Interior, Bureau of Reclamation, *Report on Savage Pumping Project, Montana*, Project Investigations Report No. 68, January 1942, 1-4, in RG 115, Records of the Bureau of Reclamation, Project Reports, 1910-1955, Accession 8NN-115-85-019, Box 771.

After Congress authorized the unit, Reclamation conducted surveys on the bench lands to locate construction sites for the canal and laterals. Moreover, the surveyors forwarded to the chief engineer the design data for the canal siphons and the pumping plant. The project office in Terry, Montana (later moved to Miles City), began to draft the construction drawings on the minor structures. The responsibility for design and specifications on the major features fell to the regional director. The only major design change was to move the pumping plant from Indian Coulee to the bank of the Lower Yellowstone Canal.<sup>14</sup>

### **Project Authorization**

Congress authorized the Savage Unit in Section 9 of the Flood Control Act approved December 22, 1944 (58 Stat. 887). The act set forth the general comprehensive plan in Senate Document 191 and House Document 475, as revised and coordinated by Senate Document 247, 78<sup>th</sup> Congress, 2<sup>nd</sup> session.

### **Construction History**

The Bureau of Reclamation began awarding contracts for construction of the Savage Unit in late 1948. These included a contract for the installation of the pump motors and other miscellaneous items for the pumping plant and for furnishing materials for the bus structure at Savage.<sup>15</sup> On March 18, 1949, Reclamation opened to bid the construction of the pumping plant, canal, and laterals. Malcolm G. Long of Billings, Montana, received the contract but had to delay the construction start nearly two months pending completion of the construction plans. Even then, construction began slowly due to the delayed delivery of pipe line materials. At the siphons the contractor encountered

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<sup>14</sup> "Project History, Savage Unit," Volume V, 1952, Exhibit D-3-4, Box 378.

<sup>15</sup> "Project History, Savage Unit," Volume I, 1948, 9, Box 358.

considerable difficulty due to water seepage in the excavations but overcame it by pumping and raising the pipeline grade. The contractor also excavated the pumping plant and discharge line, laid the pipeline, and placed the concrete in the main canal. All work on the contract had been completed two months ahead of the December completion deadline.<sup>16</sup>

In addition, Reclamation awarded several contracts to furnish materials, primarily used for the pumping plant. In 1950 government forces installed electrical equipment in the plant and switchyard and put the plant in operation by late May. The same forces also built a home and dug a domestic well for the plant operator. The drainage system remained to be constructed but was postponed until fiscal year 1954 because the Bureau of the Budget refused to appropriate money for this purpose in Fiscal Year 1952. Runoff from irrigation raised the groundwater level and damaged crops in the area and caused damage to the river bank. However, there is no evidence that the drains were ever constructed.<sup>17</sup>

### **Post Construction History**

In July 1948 the United States entered into a repayment contract with the Savage Irrigation District. A second contract dated February 1, 1949, signed by the United States, the Lower Yellowstone Irrigation Districts Nos. 1 and 2, and the Savage Irrigation District stipulated that the project would be operated and maintained by the joint committee of the irrigation districts called a “board of control.” The Savage Irrigation

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<sup>16</sup> “Project History, Savage Unit,” Volume II, 1949, 7, 10-11, Box 378.

<sup>17</sup> “Project History, Savage Unit,” Volume III, 1950, 4-5; “Project History Savage Unit,” Volume V, 1952, 4, 6-7, 11, Box 378; U.S. Department of the Interior, Bureau of Reclamation, *Report on Preliminary Drainage Survey, Savage Project, Montana*, by J. R. Iakisch, Denver, Colorado, May 1947, 3, in Project Reports, 1910-1955, Accession 8NN-115-85-019, Box 771.

District would make O&M payments to the board of control as well as to the United States under the repayment contract of 1948.<sup>18</sup>

All lands in the project area were privately owned, and farmers had dry-farmed there for many years. In 1948 dry farmers cultivated 2,029 acres for a total gross value of \$24,195. Land values reportedly increased in the project area as a result of the water project, but in 1950, the first year of operation, “there have been no land sales and therefore no means of determining this increase in value.” The situation of Savage along a branch line of the Northern Pacific Railway no doubt made the project attractive to some.<sup>19</sup>

The unit delivered water to irrigable lands in late May 1950. Officials celebrated the occasion with a ceremony on June 26. Operation of the project appears to have run smoothly by one man in the first year and a two-man operation in the second year. In 1951 the unit pumped 4,054 acre feet of water during the irrigation season at an O&M cost of \$6,144. During the first year several minor problems confronted the irrigation district. The ground settled along a stretch of the main canal, two 18-inch gate valves on the discharge line had to be replaced, the Lower Yellowstone Project Main Canal broke at one spot and disrupted water deliveries for three days, and seepage on upland caused

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<sup>18</sup> See copy of the contract in “Project History, Savage Unit,” Volume III, 1950, no pages, Box 378; see also “The Golden Year of Golden Water,” Speech by Commissioner Floyd Dominy at the 11<sup>th</sup> Annual Upper Missouri Basin Irrigators Conference at Sidney, Montana, July 23, 1959, in 105 *Congressional Record* 14187 (1959).

<sup>19</sup> “Project History, Savage Unit,” Volume I, 1948; “Project History Savage Unit,” Volume II, 1949, 12-13, Box 378.

bank slides into the main canal. Reclamation's role after construction was as technical assistance to the farmers who requested it.<sup>20</sup>

In recent years Congress has considered legislation to convey title to the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the pertinent irrigation districts. Under the legislation, the Savage Irrigation District would pay the remaining water supply payment obligation of \$68,280. Additionally, the Pick-Sloan Missouri Basin Program power beneficiaries would pay the current value of the aid-to-irrigation payment obligation of \$667,702 as full payment of aid-to-irrigation associated with the construction of the Savage Unit.

On September 29, 1999, Congressman Rick Hill introduced the Lower Yellowstone Irrigation Project Facilities Conveyance Act of 1999 (H.R. 2974). Congressman Dennis R. Rehberg introduced H. R. 2202 in the House on June 14, 2001, and Senator Conrad Burns introduced S. 1148 in the Senate on June 29, 2001, with no success. On April 11, 2003, Senator Burns again introduced the Lower Yellowstone Reclamation Projects Conveyance Act on April 11, 2003 (S. 900), and Rehberg introduced the same bill in the House on May 22, 2003 (H. R. 2257). However, the bills never became law.<sup>21</sup>

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<sup>20</sup> "Project History, Savage Unit," Volume II, 1949, 14; "Project History Savage Unit," Volume III, 1950, ii, 9; "Project History Savage Unit," Volume IV, 1951, 1, 4; "Project History Savage Unit," Volume V, 1952, ii, 3, Box 378.

<sup>21</sup> Rehberg introduced the bill, "To convey the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the pertinent irrigation districts," 107<sup>th</sup> Cong., 1<sup>st</sup> sess., June 14, 2001, <http://bulk.resource.org/gpo.gov/bills/107/h2202ih.txt>

## **Project Benefits**

When Floyd Dominy spoke before the 11th Annual Upper Missouri Basin Irrigators Conference in Sidney, Montana, on the virtues of the Lower Yellowstone Project, he might have spoken for the Savage Unit of the Missouri Basin Program. He spoke of “golden water”—“the wand whose touch brings golden harvests . . . the creator of homes, farms, and industries”—and its transformative impact in eastern Montana and western North Dakota, as elsewhere in the West. It grew crops, provided water to livestock, generated employment, and fueled growth.<sup>22</sup> Although the Savage Unit was merely a subset of larger development of the lower Yellowstone River, it did all this. It provided water services to 2,178 acres of irrigated land and to eight acres of residential, commercial, and industrial lands. It serviced water to farm land growing sugar beets, small grains, alfalfa and other hay crops, pasture, silage, and dry beans.

## **Conclusion**

In a report dated May 1948, Reclamation predicted that the Savage Unit would be one of many federal water projects that “will form an almost continuous chain along the Yellowstone River from the mountain valleys to its junction with the Missouri.”<sup>23</sup> Indeed, the Savage Unit contributed in its own small way to the program to create an irrigation empire in the Missouri River basin. Designed to provide water to little over 2,000 acres, serving a small constituency in eastern Montana, the Savage Unit became a part of the patchwork of water projects authorized as the Pick Sloan Missouri Basin Program.

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<sup>22</sup> *Congressional Record* 14186-7 (1959).

<sup>23</sup> U.S. Department of the Interior, Bureau of Reclamation, “Missouri River Basin Project, Savage Unit, Montana, Summarized Report, Preliminary Draft,” May 1948, 4, in Project Reports, 1910-1955, Accession 8NN-115-85-019, Box 771,.

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