

Fort Clark Unit Pick-Sloan Missouri Basin Program

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Fort Clark Unit: Pick-Sloan Missouri Basin Program

The Flood Control Act of 1944 authorized construction of literally dozens of irrigation projects, large and small, in the Missouri River basin. Some, like the Garrison Diversion Unit and the Oahe Unit, are large in scale and subjects of much controversy; others are much smaller and little known. North Dakota's Fort Clark Unit fits squarely in the latter category. The unit features four pumping plants, two canals, and a modest lateral system extending along the west bench and bottomland of the Missouri River and serves a total irrigable area of less than 2,000 acres, but actual irrigation is less than half that. The Fort Clark Unit was one of fifteen proposed pumping units in North Dakota, a small piece in a patchwork of developments in the Missouri River basin.

Project Location

Located south of the 49th parallel on the United States-Canadian border, North Dakota forms the northern border of the Great Plains, a distinct bioregion known for its wide, expansive grasslands and arid climate. Farm lands dominate the eastern part of the state, particularly the fertile Red River Valley. To the west the land uplifts forming the Missouri Plateau and only 15.4 inches of rain falls in any given year. Climate and environment dictate what crops are grown and where; while the soil and slightly increased rainfall in the east lend themselves to crops such as sugar beets and potatoes, in the west winter wheat is more adaptable to the climate and topography.¹

The Fort Clark Unit is located in west-central North Dakota on the west bank of the Missouri River and lies 45 miles northwest of Mandan, North Dakota between the Fort Clark Historic Site and the town of Stanton. Project lands consist of river bottoms

¹ Robert P. Wilkins and Wynona Huchette Wilkins, *North Dakota: A Bicentennial History* (New York: Norton, 1977), 7, 10.

and benchlands along the Missouri River. A short distance north of Fort Clark is the Army Corps of Engineer's Garrison Dam and Lake Sakakawea.

Historic Setting

The first peoples to occupy what is now the Great Plains were paleoindians, hunters of large mammals. In the Woodland Period, about 1000 BCE, they began to congregate in larger groups after becoming more efficient at hunting big game, and beginning around 200 BCE they began making pottery and building pottery mounds.² These peoples predated the Plains Indians of the modern era by thousands of years.

The descendents of these prehistoric peoples planted crops and built villages along the Missouri River. By the time of European contact, the Mandan, Arikara, and Hidatsa occupied the Missouri River basin in present North Dakota. The Hidatsa claim to have always resided on the Missouri, but the oldest historical sources date them from the late eighteenth century. The Mandan and Arikara, or Rees, closely related to the Mandan, allegedly migrated to the Missouri River basin in the seventeenth century.³

William Clark recorded the Mandan's own account of their history:

The interpreter Says that the Mandan nation as they old men Say Came out of a Small lake where they had Gardins, maney years ago they lived in Several Villages on the Missouri low down, the Smallpox destroyed the greater part of the nation and reduced them to one large Village and Some Small ones, all the nations before this maladey was affrd. [afraid] of them after they were reduced the Sioux and other Indians waged war, and killed a great maney, and they moved up the Missouri, those Indians Still continued to wage war, and they moved Still higher, untill they got in the Countrey of the Panias, whith this ntn. [nation] they lived in friendship maney years, inhabiting the Same neighbourhood untill that people waged war, They moved up near the watersoons & winataree where they now live in peace with those nations[.]⁴

² South Dakota State Historical Society, "Chronology of South Dakota History," Online http://www.sdhistory.org/soc/soc_hist.htm.

³ Elwyn B. Robinson, *History of North Dakota* (Lincoln: University of Nebraska Press, 1966), 23-5.

⁴ Clark, Diary, November 12, 1804, 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=1804-11-12>.

Even before Euro Americans made direct contact with the Plains Indians, their influence spread through intermediaries resulting in three major changes: the migration and displacement of eastern tribes onto the plains, the arrival of European trade goods and horses, and the spread of smallpox and other diseases.⁵ In 1782 a smallpox epidemic struck the native tribes living on the Plains, killing an estimated three-fourths of the Mandan and one-half of the Hidatsa. The effects of this epidemic and coinciding Dakota raids forced the Mandan to abandon their villages near the Heart River and regroup with the survivors of the villages near the Knife River, only a short distance from the present Fort Clark Unit. There the Mandan rebounded and for a time lived in relative stability.

This was the condition of the Mandan when Meriwether Lewis and William Clark encountered them in late fall 1804. Lewis and Clarks' Corps of Discovery had been organized for the purposes of finding water passage to the Pacific and making a record of the land and people. Now in need of place to spend the winter, the company settled on a site on the north side of the river "well Supld. with wood" only a few miles from Mandan villages.⁶ The men worked feverishly constructing the huts before winter set in—applying "Some mortar then a thick coat of earth over all, which will make it verry warm"—and camped there until spring before continuing on their transcontinental trek.⁷

The site where the Corps of Discovery hunkered down for the winter would undergo several significant permutations over the next fifty years. So, too, would the condition and well-being of the Indian tribes living in the area. John Jacob Astor's

⁵ Robinson, *History of North Dakota*, 20-2; Raymond J. DeMallie, ed., *Handbook of North American Indians: Plains*, Vol 13, Part 2 of 2, William C. Sturtevant, general editor (Washington, D.C.: Smithsonian Institution, 2001).

⁶ Clark, November 2, 1804.

⁷ Ordway, November 7, 1805, 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=1805-11-7>.

American Fur Company monopolized the Indian trade on the Upper Missouri, and his agents established several trading posts near the confluence of the Missouri and Knife rivers in the Dakotas. In 1830 the company built Fort Clark Trading Post just south of the Mandan villages. For decades the Mandan had generally benefited, even thrived, from the trade. But the development of forts, the influx of white people, and especially the spread of deadly diseases eventually devastated the Mandan and other tribes in the area. In 1837 one of the steamboats carrying men and supplies to the fort and beyond (the company steamship *Yellow Stone* had brought men such as George Catlin, Karl Bodmer, and the German Prince Maximilian of Wied-Neuwied to the fort) brought smallpox to the Indian villages, wiping out an astonishing 90 percent of the inhabitants of the Mandan village and approximately 50 percent of the Arikara living nearby. Moreover, outbreaks of cholera in 1851 and smallpox in 1856 proved disastrous for the native populations. For a time the surviving Arikara occupied the site abandoned by the Mandan. In the meantime, in 1850 a fur company constructed a competing trading post, Primeau's Post, on the south side of the Arikara village. Fort Clark partially burned down in 1860, and the owners subsequently purchased Primeau's Post before an attack on the fort in 1861 forced its abandonment.⁸

For many years the federal government did not have a permanent presence in the area, but this changed after 1860 with the arrival of soldiers, an Indian agent, a school teacher, and a missionary. That settlers trickled slowly into the Dakotas is hardly surprising given dominant perceptions of the land and potential for development.

Whereas Meriwether Lewis described the land drained by the Missouri River to be "one

⁸ Robinson, 32-3, 86-7; DeMallie, *The Handbook of North American Indians*, 329, 331; State Historical Society of North Dakota, "Fort Clark Trading Post," <http://www.nd.gov/hist/ftClark/index.html>.

of the fairest portions of the globe,” Zebulon Pike considered it “barren” and George Catlin opined it to be useless for anything. Brevet Major General William Hazen, in command of Fort Buford near the mouth of the Yellowstone River, wrote a letter flatly stating that “this country [the land west of the hundredth meridian] will not produce the fruits and cereals of the East for want of moisture, and can in no way be artificially irrigated, and will not, in our day and generation, sell for one penny an acre, except through fraud or ignorance.”⁹

Of course, the coming of the railroad and boosters convinced some that the Dakotas could sustain populations. The Northern Pacific Railroad, the first northern transcontinental line, ran to the North Dakota state line by 1872 and soon fanned out in a straight line across the state, sparking the Great Dakota Boom. Settlers did not stray far from the east-west main railway lines. At the turn of the century towns sprung up along the railroad’s route (an exception is the town of Deapolis not far from Stanton in Mercer County which was abandoned as a river barge loading site after the coming of the railroad in 1912)¹⁰, and settlers rushed in to fill them. About a quarter of a million people, attracted to what one railroad company referred to as “fertile land at reasonable prices, a mild and healthful climate, crops of excellent quality and markets for them, and transportation facilities,” settled in the Dakotas during the first fifteen years of the twentieth century.¹¹

Agriculture was the mainstay of the economy in the Dakotas. Bonanza farms, or large-scale farms, led the way using the latest machinery and largely dry-farming wheat.

⁹ Wilkins and Wilkins, *North Dakota*, 19-21.

¹⁰ “Brunsdale Officially Opens Ft. Clark Irrigation District,” *Fargo Forum & Daily Republican*, August 15, 1953, 6, available online at <http://digitalhorizonsonline.org>.

¹¹ Howard R. Lamar, ed., *The New Encyclopedia of the American West* (New Haven, Connecticut: Yale University Press, 1998), 801; Wilkins and Wilkins, *North Dakota*, 55.

North Dakota farmers also enjoyed a healthy livestock industry that required many acres turned out for pasturage or the production of forage crops. Likely, the attention to wheat discouraged diversification, a risky proposition given fluctuations of wheat prices. For a brief time farmers enjoyed high crop prices during the Great War, but the prosperity did not long last. Severe drought on the Plains in the 1930s exacerbated the already dire economic situation of many farmers who had struggled since the end of the war in a depressed agricultural economy. Despite cyclical prices, wheat farmers may have felt they had no choice because of the long distance to markets and the limited local agricultural economy required the production of wheat to eke out any sort of a living. By the end of the Second World War, at the time of authorization of the Fort Clark Unit, prosperity returned to North Dakota. With the end of the drought, crop prices rose, and farmers began to recover from hard economic times, enjoying greater production and a higher standard of living as a result of improvements to technology and infrastructure.¹²

These economic cycles impacted farmers in the Fort Clark area, as elsewhere on the Plains. Since 1882, when homesteaders first bought up quarter-section farms in the Fort Clark area, farmers adjusted to fluctuations in water supply and crop prices. This meant some diversification of crops and increasing the size of the average farm unit, which by mid-century was 700 acres. It also led to renewed interest in irrigation for protection during times of drought.¹³

Project Authorization

¹² Wilkins and Wilkins, *North Dakota*, 75-100; Lamar, *The New Encyclopedia of the American West*, 800-1.

¹³ U.S. Department of the Interior, Bureau of Reclamation, "Annual Project History, Missouri River Basin Project, North Dakota Pumping Division, Fort Clark Unit," Volume I, 1949, 7-8, in Record Group 115, Records of the Bureau of Reclamation, Accession 8NN-115-92-130, Box 164, National Archives and Records Administration, Denver, Colorado. Hereafter cited "Project History" followed by appropriate volume and page numbers.

The first land surveys and investigations for irrigation development in the Fort Clark area of the Missouri River had been made in the late nineteenth century. In 1880 and 1881 the U.S. Surveyor General made public land surveys, and in 1889-1891, the Army Corps of Engineers directed the Missouri River Commission's surveys of the Missouri River from Fort Benton, Montana, to Sioux City, Iowa.¹⁴

In the 1930s the Corps of Engineers and the Bureau of Reclamation separately conducted surveys and investigations into development of the Missouri River basin. Authorized by an act of Congress, in 1939 Reclamation began studies for a project in the Fort Clark area that would irrigate with pumps using power generated at Fort Peck Dam in Montana. The investigations in the Missouri River basin led to the "Missouri River Investigations Report No. 66" and congressional authorization of the Missouri River Basin Project on the basis of Senate Document 191.¹⁵ Congress authorized the project in the Flood Control Act of December 22, 1944, Public Law 534, which accepted the merged comprehensive plans of Reclamation and the Corps of Engineers for development of the Missouri River basin.

Reclamation initiated detailed surveys in November 1944, after the project had been authorized, but essentially adopted the original design as outlined in Senate Document 191 to pump water on the west side of the river into a main canal and outreaching laterals. Reclamation designed the unit to serve just over 2,000 acres of bench lands and some river bottom lands in Mercer County and the southern tip of Oliver

¹⁴ 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, 73rd Cong., 2nd sess. (Washington D.C.: United States Government Printing Office, 1935), 40.

¹⁵ U.S. Congress, Senate, *Missouri River Basin: Conservation, Control, and Use of Water Resources of the Missouri River Basin in Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri*, S. Doc. 191, 78th Cong., 2nd sess. (Washington D.C.: United States Government Printing Office, 1944), 62-63; "Project History," Volume I, 1949, 9.

County. A main pumping plant would pump water to the head of canals A and B, and two relift plants located on Canal B would deliver the water a few feet higher in elevation. Fort Peck Powerplant initially supplied power to project pumps until power from Garrison Dam became available. Reclamation arranged to receive power from a REA (Rural Electrification Administration) line, which required construction of a substation from a point on the Montana-Dakota Utilities Co. line south of Stanton. The detailed report of the Fort Clark Unit outlined the proposed water project, and the commissioner approved the report in lieu of a definite plan report on November 7, 1950.¹⁶

Meanwhile, local land owners organized the Fort Clark Irrigation District in late 1948 and worked out a repayment contract with the United States. Following preliminary discussions in the summer of 1950, the district held a special election on October 3, 1950 and voted 61 to 16 in favor of the contract. Trouble arose when the Sixth Judicial District Court refused to validate the contract, claiming that Fort Clark District was comparable to the Heart River Irrigation District, which had lost a suit, *Donald Ingalls, et al vs. Heart River Irrigation District*, in which the court determined the irrigation district was not created legally. The district filed an appeal with the North Dakota Supreme Court on January 23, 1951, and in April the court ruled that the district had been legally formed. The district court validated the contract on May 22—“the first of its kind under the Missouri River Basin Project in North Dakota.”¹⁷

Construction History

¹⁶ U.S. Department of the Interior, Bureau of Reclamation, “Project History,” Volume I, 1949, 3; Volume 2, 1952, 4; USDOJ, BR, “Missouri River Basin Project, Fort Clark Unit, North Dakota, Detailed Report,” May 1949, Revised June 1950, Billings, Montana, in Record Group 115, Records of the Bureau of Reclamation, Accession 8NS-115-95-076, Box 15.

¹⁷ “Project History,” Volume I, 1949, 5; Volume 2, 1952, 4.

With the project authorized and a contract in place, Reclamation established a construction office in Bismarck and a small field office in Stanton, North Dakota. The regional office in Billings drew up the design and plan for the pumping station at the Deapolis town site near Stanton, and the engineers in Bismarck's District Engineering Division worked on the design of canals, laterals, and drains.¹⁸ Reclamation originally projected beginning construction activities in 1950 or 1951 at the latest and anticipated completing construction in "one season" with initial projected water delivery scheduled for April 1, 1951.¹⁹

Several factors played a role in delaying construction for some time. Planning and design activities, such as getting approval of the detailed report, completing construction specifications, and validating the repayment contract pushed the start time back. Moreover, Reclamation did not acquire rights-of-way for canals, drains, and laterals until 1952. The more immediate delay, however, was awarding the main construction contract on the Fort Clark Unit. Reclamation opened bids for construction of the river pumping plant, relift pumping plants Nos. 1 and 2, canals, laterals, and drains on December 18, 1951, and awarded the contract to Paul G. VanSickle Corp. of Denver, Colorado. When VanSickle was unable to get a "performance bond," the contract was instead awarded to Korshoj Construction Co., Inc., on March 26, 1952. Reclamation also signed contracts with five different contractors for supplying "pumps, motors, and switchgear and other equipment for the pumping plants and distribution substation." The substation in question was for the Fort Clark Substation constructed independently of the Fort Clark Unit by Reclamation's Transmission Division of the Missouri River Basin

¹⁸ "Project History," Volume II, 1952, 5.

¹⁹ "Project History," Volume I, 1949, 4.

Project. Even then, difficulties obtaining steel reinforcing rod and a skilled labor forced additional delays on proceeding with construction.²⁰

Despite initial delays, Korshoj Construction Co., Inc., made steady progress in 1952. On Schedule 1, the Bohrer Construction Co., a subcontractor, worked on the river pumping plant access road. Using materials excavated from the access road and the pumping plant, the subcontractor constructed a dike in the river to protect the pumping plant site from water. Because the sandy material could not by itself hold back the swift river current, lumber and rocks were used to stabilize the dike. Despite periodic leaking and pump failure at the construction site, the contractor placed concrete on the cutoffs, floor, and walls by early November. In 1952 the Hagen Construction Co., another subcontractor, excavated Canal A using a Gradall-brand excavator. By December all earthwork for Canals A and B and most of the earthwork for laterals and drains was completed.²¹

The three pump units for the river pumping plant, manufactured by Fairbanks-Morse & Co., arrived on site in May 1953. The contractor assembled and installed the pumps, transformer, motor controls, and cable in May, June, and July. The only problem was keeping the parts clean during assembly. Also that spring and summer, the contractor excavated and placed the pipeline running from the river pumping plant to the inlet of Canal B, and installed the concrete pipeline to the inlet of Canal A. Finally, using a sand pump then a dragline, the contractor removed the dike on the river.²²

Construction on Schedule 2 consisted of excavation of laterals and drains and construction of relift plants, siphons, wasteways, distribution boxes, and other small

²⁰ "Project History," Volume II, 1952, 2, 4, 8.

²¹ "Project History," Volume II, 1952, 8-10.

²² "Project History," Volume III, 1953, 6-8.

structures. The contractor completed Relift 1 and 2 in July 1953. Unfortunately, leaks developed at several siphons on Canal B—the product of faulty gaskets—requiring extra labor excavating the backfill, caulking the joints, and pouring reinforced concrete on the problem areas.²³

Although essentially completed, construction on the Fort Clark Unit continued for several years even after the unit transferred to O&M status. Several minor additions were made to the river pumping plant, relift plants, and canals. In 1956 Reclamation extended the pump columns in the Missouri River because the river had fallen below the minimum level for pumping. It also replaced relift pumps that did not meet the requirements of the specifications. Having been ordered from the Fairbanks-Morse Pomona plant, two new pumps and motors for Relift Pumping Plant 1 and 2 were installed on May 10.

Unfortunately, subsequent performance tests revealed that pump 2 still did not meet standards.²⁴

Another contract was for construction of a 12,470 volt transmission line from Fort Clark Substation to the river pumping plant and the relift pump No. 1, and a 7,200 volt line to relift pump No. 2. The Oliver-Mercer Electric Cooperative, Inc., of Hazen, North Dakota, constructed the substation.²⁵

Post-Construction History

Fort Clark Unit was a rescue project, designed to save farmers on the plains from periodic droughts and to stabilize the local economy. The predominating thought was that irrigation water would increase crop production, which would bolster the livestock industry and result in a more efficient use of the pasture and range lands. Locals and

²³ “Project History,” Volume III, 1953, 8.

²⁴ “Project History,” Volume IV, 1954, 1; Volume VI, 1956, 1.

²⁵ “Project History,” Volume II, 1952, 4.

boosters expected irrigation at Fort Clark to ripple out beyond the agricultural community. With these expectations, in August 1953 well over a hundred local residents and farmers congregated on the banks of the Missouri River at the Deapolis town site for the dedication of the irrigation project.²⁶

The Fort Clark Irrigation District signed an interim contract on April 13, 1954. The federal government agreed to deliver water to the district at the rock bottom price of \$1 per acre per year for the next two irrigation seasons. Two years later federal, state, and district representatives met to discuss repayment and operation of the unit. The district agreed to pay outstanding balance of \$4,700, establish a settler assistance group to help solve financial problems, and put more land into production.²⁷

Expectations for agricultural expansion in the Fort Clark area because of the project were high. Project lands were well connected to transportation centers with the Mandan-Killdeer branch of the Northern Pacific Railway near Stanton and Fort Clark, North Dakota, while highway connected Stanton and Mandan with New Salem. In addition the Soil Conservation Service of the U.S. Department of Agriculture worked on surveys for preparing land for irrigation. Nevertheless, land purchases for agricultural purposes remained light partly because oil development was more profitable. These factors led to little agricultural growth on the Fort Clark project, and Reclamation reported in 1954 that only 434 acres were irrigated. By 1957 little had changed and only had another 87 acres had been added to irrigated project lands. There was some hope that

²⁶ "Project History," Volume I, 1949, 4.

²⁷ "Project History," Volume IV, 1954, 3; Volume VI, 1956, 3.

the USDA might extend its Great Plains Program to Oliver and Mercer counties, which granted federal subsidies to the costs of land leveling.²⁸

Farmers irrigated modest acreage in the unit's first years. In 1953 the irrigation project served 158 acres, and in 1954 it delivered water to 434 acres. In 1956 a good rain fall made it necessary to irrigate only 127 acres. These modest figures reflect the incipient state of the irrigation project, but the early reports noted the good quality of the crops—for instance, multiple cuttings of alfalfa and potatoes capturing winning prizes at the local fair. Still, making a living on irrigated agriculture on the high plains was no sure or profitable business. Although at mid century local farmers did not have the debt that once saddled them in the 1930s, one bad crop could be disastrous.²⁹

In 1953, the first year of irrigation, the ditchrider spent much of his time puddling ditches and testing the system. He ran into no serious problems save for a section of Lateral 5 where gopher and prairie dog holes caused a break. Reclamation repaired the lateral and continued bringing the system into working order. Another serious threat to efficient management of the project was weeds that heavily lined the canal banks. Reclamation found that canals were so steep that eradicating the weeds by mechanized means was not possible. Workers had to go in and remove weeds by hand, and it was not until November 1953 that Reclamation brought in a grader to flatten a section of canal in preparation for brome grass seeding. Reclamation personnel conducted a weed survey and discovered “several small areas of noxious weeds” and applied soil sterilant to the problem areas.³⁰

²⁸ “Project History,” Volume II, 1952, 13; Volume IV, 1954, appendix A; Volume VII, 1957, 3.

²⁹ “Project History,” Volume I, 1949, 8; Volume III, 1953, 11, Volume IV, 1954, 3; Volume VI, 1956, 2.

³⁰ “Project History,” Volume III, 1953, 11-12; Volume IV, 2.

It was quickly realized that water not weeds proved most threatening at Fort Clark. On one front, the irrigation system encountered seepage at several stretches of canal between the Gustafson siphon and the Fort Clark road crossing and at the Einar Alderin farmstead. Reclamation addressed the seepage problem with compacted clay repairs. Not only was water being lost to the canal system but the seepage raised the ground water levels that were injurious to crops. Consequently, Reclamation installed observation wells to track ground water levels.³¹ Low flows on the Missouri River also presented a problem because the pump columns in the river were too shallow. Reclamation proposed to extend the pump columns deeper into the river and asked the Corps of Engineers to increase the discharge from Garrison Dam, a mammoth embankment dam upstream from Fort Clark.³²

No one anticipated that Garrison Dam, completed in 1953, would exacerbate the Fort Clark Unit's water woes, but the impact was clearly evident. "The suddenness of the appearance of seepage is explained by the fact that the closure of Garrison Dam in April 1953 cleared the Missouri River of its silt load," noted the annual project history. Prior to closure of the dam, the silt load blanketed the canals with an impermeable layer of sediment. After the dam captured the Missouri River's silt, the blanket began to erode, exposing "permeable sections of the canal." It is ironic that while the Garrison Dam allows the regimented flow of the river and gives Fort Clark Unit the capability to draw water during otherwise low flows, it also reduces the silt load in the canals and

³¹ "Project History," Volume VI, 1956, 2.

³² "Project History," Volume VII, 1957, 1-2.

contributes to water loss. Such is the complicated and often frustrating nature of irrigation.³³

The problem with seepage was not easily remedied. In 1964 the Nalco Chemical Company approached Reclamation with a chemical that could be applied to earth canals and laterals that they claimed would reduce water loss. The chemicals worked by interacting with naturally occurring sodium in the soil and causing the clay minerals to expand and fill in the porous holes in the soil. Reclamation tested the chemicals in its earth laboratory and decided to allow the company to test their product at Fort Clark. The chemical Nalseal-1,000 reportedly reduced seepage rates by about half.³⁴

Erosion was another serious threat to operations of the Fort Clark Project. In 1965 Reclamation found that stabilize severe erosion of the banks of the Missouri River threatened Canal A. Reclamation engineers placed old cars—56 in all—by running a cable through the car bodies and anchored to large poles on the river bank. Although innovative this was purely a stop gap measure until the Corps had the opportunity to more permanently stabilize the banks. Also that year, construction began on subsurface drains adjacent to Canal B by Bill Rippley Construction Company of Bismarck. The new drains lowered the water table in some areas by as much as two feet.³⁵

On January 1, 1968, the Fort Clark Irrigation District assumed responsibility for operating the unit. In spite of all the work done to make the unit productive and profitable, production on irrigated acreage continued to lag. Mother Nature hampered production when severe hailstorms in 1968 and again in 1971 caused extensive crop

³³ “Project History,” Volume VII, 1957, 45.

³⁴ E. J. Carlson, Engineer, to Chief Engineer of Reclamation, July 6, 1965, in “Project History,” Volume XV, 1965, 40-14, 46-47.

³⁵ “Project History,” Volume VII, 1957, 1-2; Volume XV, 1965, 1, 2.

damage. The hail storm in 1971 was particularly harmful by inflicting damage to all crops in western part of the district, reducing the value per acre to \$58.48. By 1981 the Fort Clark Unit had only 396 acres under irrigation. Notwithstanding the small acreage, the district was still under contract to make annual payments and to maintain a reserve fund for O&M expenses.³⁶

Operation and maintenance issue and some irritating issues continued to confront the Fort Clark Unit. For example, in 1969 a motor on pump No. 1 failed and had to be repaired in Bismarck at a cost of \$5,000. In 1973 Reclamation tried to protect canals A & B from construction activities Basin Electric Power Cooperative that “interfere with proper ditch O&M” and United Power Association. Also in 1973, unit reports complained of the close proximity of UPA tracts to Canal A and the inadvertent spilling of coal into the canal. Inspectors proposed that extending “the culvert another 10-20 feet would help eliminate this problem.” Again, in 1981, a second pump motor burned out and the district took out an emergency loan of \$10,000 and an additional \$11,651.32 from the emergency reserve fund to cover the expenses. Reclamation also awarded contracts for the erection and operation of electric transmission lines across the unit and miscellaneous project improvements and expansions.³⁷

Settlement of Project Lands

Reclamation estimated that in the Fort Clark Project area, where there is little excess land holdings, probably only one or two new farms would be settled. However, Reclamation had no immediate plans to open this land for settlement or to use public funds for roads and schools in the project area. It was originally thought that some dry

³⁶ “Project History,” Volume XVIII, 1968, 1-2; Volume XXI, 1971, 1, 3, 4; Volume XXXIII, 1983, 1.

³⁷ “Project History,” Volume XIX, 1969, 2; Volume XXIII, 1973, 11-12, Appendix E; Volumes XXIX-XXXIII, 1979-1983, 2, 4.

land might be carved into 140-acre farms and opened for feed crops or even intensive crops, but these plans never materialized. By the 1980s there was still little need or desire to expand irrigation acreage. The Fort Clark Unit never came close to serving its designed capacity of almost 2,000 acres. It did, however, achieve some success in stabilizing the agricultural economy of western North Dakota.³⁸

Conclusion

The Fort Clark Unit is among the smallest irrigation projects ever constructed by the Bureau of Reclamation. Situated on a site rich in history, it took less than a year to construct and delivers water to fewer than 1,000 acres. As small as the irrigation project is, farmers in the Fort Clark Irrigation District have faced their share of difficulties and problems, not least the unforeseen reduced silt flow as a result of Garrison Dam. Nevertheless, the Fort Clark Unit helps farmers living in the area to make a living in irrigated agriculture.

³⁸ “Detailed Report,” 5, 8.

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