

Michaud Flats Project

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Michaud Flats Project

In 1954, Congress authorized the Michaud Flats Project, designed to irrigate 11,240 acres of land along the Snake River, just south and east of American Falls Dam in south central Idaho. Michaud Flats Project is a feature of the Minidoka Project, which as one of Reclamation's oldest projects consists of seven dams, 1,600 miles of canals and nearly 4,000 miles of laterals sprawled across the length of the Snake River Plain. With its 126 c.f.s., 3,700 h.p. pumping plant, twenty-one miles of canals, thirty-one miles of laterals, eight miles of drains, and twenty-five wells, the Michaud Flats Project distributes water to farmers from the American Falls and Palisades Reservoirs.¹

Project Location

Located within Reclamation's Pacific Northwest Region, Michaud Flats lies adjacent to the Snake River, where it carves its course through the Snake River Plain in southern Idaho. The tenth longest river in the United States at 1,056 miles, dropping 9,500 feet in elevation, the Snake delivers an average of 37 million acre-feet annually, three times that of the Colorado River and one-fifth of the Columbia River, into which it flows. South central Idaho is a place of varying seasonal temperatures ranging from 20 degrees below zero during the winter to above 100 degrees in the summer. This region receives minimal rainfall—about 13 inches annually—and the irrigated lands in the Snake River basin are semiarid and wholly dependent on deliveries of water from the river. Beginning in the nineteenth century, water has transformed much of the Snake River Plain from a place of sagebrush and volcanic soil to one of verdant pastures and

1. U.S. Department of the Interior, Water and Power Resources Service, *Project Data* (Washington, D.C.: Government Printing Office, 1961), 330-3.

productive agricultural fields.²

Michaud Flats, named after Michaud LaClaire, a French scout for the Hudson Bay Company who traded with the Indians in the area, is a strip of land south of the Snake River, about eighteen miles long and three to four miles wide. The land between the Snake and the foothills of the Deep Creek Mountains lies within Power County, Idaho, and is mostly flat with some rolling hills. To the east in Bingham County is Fort Hall Indian Reservation, a 359-square mile home to Shoshone and Bannock Indians. To the north is American Falls Dam and its accompanying reservoir, features of the Minidoka project which supply full or supplemental service water to over one million acres of Idaho land.³

Historic Setting

Two Native American groups inhabited southeastern Idaho prior to immigration by Europeans in the nineteenth century. The Bannocks, a Northern Paiute speaking people, migrated from Oregon to the area of the Snake River Plain. They differed from other Northern Paiute by their acquisition of horses and organized buffalo hunts. The Bannocks generally co-existed peacefully in Idaho with Northern Shoshones. Native grasses supported buffalo in the upper Snake River Plain until about 1840. Fish also contributed largely to both Native American groups' subsistence.⁴

Before 1850, almost no white man made southern Idaho a permanent home. Most passed through as quickly as possible on their way to either Oregon or California. The Reverend Henry

2. See Robert W. Durrenberger, "Snake River," in *The New Encyclopedia of the American West*, ed. Howard R. Lamar (New Haven, Connecticut: Yale University Press, 1998), 1062-3; also Tim Palmer, *The Snake River: Window to the West* (Washington, D.C.: Island Press, 1991).

3. "Annual Project History, Minidoka Project," Volume 52, 1958, p. 222, 8NN-115-90-011, Records of the Bureau of Reclamation, Record Group 115 (RG 115), National Archives and Records Administration-Rocky Mountain Region, Denver, Colorado (NARA).

4. Robert F. Murphy and Yolanda Murphy, "Northern Shoshone and Bannock," in *Handbook of North American Indians* (Washington: Smithsonian Institution, 1986), ed. by William Sturtevant, vol. 11 *Great Basin*, vol ed. Warren L D'Azevedo, 284, 285.

H. Spalding, a Protestant missionary, settled at Lapwai in the 1840s. He is said to have been the first white man to irrigate in Idaho when he dug a ditch from the Clearwater River to deliver water to his thirsty garden. This changed in the 1850s when Mormon settlers established the Fort Lemhi mission in southeastern Idaho. By the end of the decade, escalating conflicts with the indigenous peoples convinced Brigham Young, Utah's territorial governor and president of the Mormon church, to recall the settlers to Utah, but settlers returned in the 1860s. Early Mormons in Idaho, mostly of English and Scandinavian origin, constructed numerous dams, canals, and small-scale reservoirs along the Snake and its tributaries.⁵

In the ensuing decades, the native peoples lost much of their homelands to the encroachment of white settlers and to the aggression of the United States military. The Bannocks and the various groups of the Shoshone were placed on reservations starting in the late 1860s. The Federal government created the Fort Hall Reservation in 1867, for the Boise and Bruneau Shoshone, and introduced the Bannock and other Shoshones to the reservation after the Fort Bridger Treaty of 1868. The government established the Lemhi Reservation in 1875 for the Lemhi and the Sheepeater Shoshone. The swelling of the white population increased friction between the newcomers and the native inhabitants, and the reservation system did not prevent conflicts. Two conflicts spelled the defeat of Native Americans in Idaho: the Bannock War of 1878 and the Sheepeater War of 1878-79. By 1880 the government had subdued the Indians and created six reservations.⁶

Settlers in the upper valley settlements of Fremont and Bingham Counties came in the last two decades of the nineteenth century. Idaho developed a water allocation system based on

5. F. Ross Peterson, *Idaho: A Centennial History* (New York: Norton, 1976), 44-5, 51, 52, 124; Murphy and Murphy, "Northern Shoshone and Bannock," 302.

6. Peterson, *Idaho*, 71, 72, 83-7; Murphy and Murphy, "Northern Shoshone and Bannock," 302.

prior appropriation similar to that used in other western states, but the earliest methods of recording water rights were crude. In the first decades of settlement, farmers took all the water they needed, sometimes without regard of prior right. Already by the early twentieth century they had put a heavy demand on the water of the Snake River. In 1905, for instance, farmers in Blackfoot had no water for their crops as it had been used upstream by farmers near Idaho Falls. Contests over water were common between farmers in Minidoka and Twin Falls and people in Blackfoot and Rigby. Situations like these—which often resulted in conflicts—paved the way for government involvement.⁷

In fact, the Snake River Valley was an ideal location for Federal development given the abundance of unclaimed water and public domain. The U.S. Geological Survey investigated potential irrigation projects in 1889-1890 during its irrigation survey, and the Idaho state engineer ordered further surveys five years later. In the meantime, private interests organized to develop land under the 1894 Carey Act, which gave up to one million acres of public land to each western state with the energy to irrigate it. In 1903, for instance, the state of Idaho and the Twin Falls Land and Water Company combined to develop more than a quarter million acres of arid land and to build Milner Dam. Eventually, state, local, and private interests reclaimed hundreds of thousands of acres under the Carey Act in Idaho, with varying degrees of success. Idahoans were still eager to get the Federal government involved to ensure the delivery of water.⁸ The Minidoka Project, which established the groundwork for later government developments at Michaud Flats, was the largest government project designed to reclaim the arid lands in the Snake River Valley. It was intended to control flooding, store water from runoff

7. See Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999), 89-116.

8. Peterson, *Idaho*, 129-31.

during the winter, and generate electric power, but its primary purpose was to provide irrigation water to a large stretch of land in the south central Idaho.⁹

Minidoka farmers overcame a lot of obstacles to delivery water to their thirsty crops. For one, the land had to be cleared of sagebrush and volcanic rock before planting could begin. Timber to construct fences or shelters was not easy to come by. Some farmers had to take on additional jobs just to make ends meet. To make matters more difficult, in 1906 the Reclamation Service delayed plans to build a pumping plant, leaving farmers south of the river without water. Even when Reclamation did deliver water, thanks to financial cutbacks, the delivery canals did not make it all the way to their destination; farmers were expected to extend the canals themselves.¹⁰

The Minidoka Project eventually constructed and oversaw a series of dams along the Snake River, including Jackson Lake, Minidoka, American Falls, and Palisades Dams. In April 1927, the dam at American Falls, constructed by the Utah Construction Company, stood 103.5 feet high with a crest length of 5,277 feet. The reservoir stretched a full twenty-five miles in length and 3½ miles in width, with a storage capacity of 1,700,000 acre-feet. It was a major undertaking for its time—the second largest storage reservoir for irrigation in the United States. It also transformed the surrounding landscape of that stretch of the Snake River. Engineers and city planners oversaw the relocation of the entire town of American Falls and the railway. Most owners agreed to sell their land at the price Reclamation offered them, but some landowners went to court over the right to the land. Indians at Fort Hall lost some of their land to the waters of the reservoir. The dam and its reservoir also insured that local farmers would receive water

9. Peterson, *Idaho*, 133-4.

10. Donald J. Pisani, *Water and American Government: The Reclamation Bureau, National Water Policy, and the West, 1902-1935* (Berkeley: University of California Press, 2002), 77-83.

for their spring crops. Seen in this light, it is not surprising that most Idahoans would praise it for “impounding flood waters which heretofore have run inutile to the sea.”¹¹

Minidoka serviced water to existing farms but it also prompted energetic individuals to take up farming. In the interwar years, thousands of veterans in Idaho bought up homesteads from the Federal government. In the Minidoka Project, as many as 60 percent of them obtained title to their land. The demand for homesteads in the post-World War II era was not as high as it had been in the 1920s and 1930s, but even then Reclamation could not come close to assisting all those who wanted to make a living on a farm. Reclamation officials singled out people with experience and capital, knowing full well that these factors would play an important role in determining their success as farmers. Reclamation also offered assistance to these homesteaders in the form of information, technical assistance, and loans.¹²

Farmers in this region grew mostly wheat, hay, alfalfa, sugar beats, peas, and potatoes. At first, farmers cultivated primarily wheat and alfalfa, but this changed in the early twentieth century when new varieties of crops were introduced to Idaho agriculture. The Utah Sugar, Utah-Idaho Sugar, and Amalgamated Sugar companies introduced sugar beets in Idaho. Growing potatoes—particularly the Russet Burbank variety—became especially popular. These new crops altered patterns of cultivation and water use. Sugar beets, unlike wheat or hay, for instance, required constant care and water through early fall.

The farmers at Michaud Flats did not get their start from the government. In some cases they had been there for a few generations, making a living from hard work and ingenuity. They

11. E. B. Darlington, “Dedication of American Falls Dam, Idaho,” *New Reclamation Era* 18, No. 11 (1927), 168-9; “The New Townsite of American Falls, Idaho,” *New Reclamation Era* 19, No. 2 (1928), 22-3; Eric A. Stene, “The Minidoka Project,” Bureau of Reclamation History Program, Denver, Colorado, 1993, 10-2; Peterson, *Idaho*, 135-6.

12. Brian Cannon, “Farms for Veterans: Reclamation Settlement Policies and Results Following the World Wars,” *Bureau of Reclamation History Symposium Papers* (Denver: Bureau of Reclamation, 2003), CD publication.

confronted all the problems familiar to farmers in the Snake River Plain: erratic flow of the Snake, water shortages, seepage drainage, poor drainage, and weeds were among some of the problems confronting farmers in Idaho. The persistence of water shortage among those who did not benefit from earlier Reclamation efforts made Federal development of Michaud Flats not only desirable but essential if farmers were to get the water they needed.¹³

Project Authorization

Given their proximity to the Snake, the availability of federal resources, and the need for a reliable water supply, farmers in the Michaud Flats area had long expressed interest in irrigation delivered to their lands by the Federal government. As early as the 1890s, when the Bureau of Indian Affairs first investigated the possibility of diverting water to the sizable Indian population at the reservation at Fort Hall, plans were devised to channel water to the Michaud Flats area.¹⁴ But the scarcity of water consistently tabled these proposals. The years 1924 and 1926, for instance, were dry. This meant that farmers who had anticipated a steady supply of water through the Fort Hall Indian project and canal had to wait. Reclamation also tabled the Neeley Project, which was to service about 2,700 acres in a six-mile-long strip along the Snake River below American Falls. After the dedication of American Falls Dam in 1927, talk resumed of irrigating the Michaud Flats area and, in fact, Congress authorized the Greater Fort Hall Project to be headed by the Bureau of Indian Affairs and to irrigate some 47,000 acres in the Michaud Flats area. But again the flow of the Snake was light in the early 1930s and construction on the project never began. Instead of providing water to farmers on Michaud Flats, Reclamation set their sights on building yet another storage unit.

Preliminary design studies of the Palisades Dam and Reservoir began in 1935, but the

13. Fiege, *Irrigated Eden*, 89, 92, 103, 135.

14. *Project Data*, 331.

project itself was not completed and dedicated until 1959. Not until after the Palisades project guaranteed additional water storage was the Michaud Flats project feasible. A portion of the water from American Falls and Palisades reservoirs was also to be allocated to the Michaud Flats Extension of Fort Hall Indian Irrigation District.¹⁵

In the 1940s, as the Palisades project neared authorization, Reclamation conducted a review of water use along the Upper Snake River Valley and in its report recommended the construction of the Michaud Flats Project. Investigative work on the project included field mapping, design and estimates, land classification, economic studies, and water supply. Community initiative also played a role in the eventual authorization of the project; in 1949, landowners of some 22,000 acres in the area organized and asked the government for irrigation aid.

Studies found surface and groundwater supplies to be adequate. The report submitted to the Boise, Idaho, office in August 1952 estimated that about two-thirds of the approximately 11,000 acres to benefit from this project would be given surface water, while the rest would receive irrigation from groundwater sources. Groundwater would be tapped using “small-sized semi-experimental units” on sixteen proposed well sites. There was no lack for groundwater, and frequently there was too much, especially in the low-lying valleys that had no natural drainage system. Farmers found it necessary to create drainage in order to save their crops from over saturation of ground water seepage. The other problem was that since groundwater in the Snake River Plain moved northwesterly over a foundation of mostly gravel and basalt, much of the water was lost to percolation. But this was less of a concern because runoff from surface

15. *Project Data*, 331; Water Supply and Requirements Appendix, Central Snake River District Planning Office, Boise, Idaho, August 1952, p. 2, Project Reports, 1903-55 (PR 1903-55), 8NN-115-85-019, Records of the Bureau of Reclamation, Record Group 115 (RG 115), National Archives and Records Administration–Rocky Mountain Region (NARA).

water would more than replenish whatever was lost.¹⁶

Tapping available groundwater and channeling it through a sprinkling system had been done before, but it was still a relatively new method of irrigation. The North Side Pumping Division of the Minidoka Project, located in central Idaho just downstream of American Falls Dam, was one of the first to do it. The North Side Pumping Division irrigated the fields of hundreds of returning veterans using water from the thousands of “lost” rivers and streams between Henry’s Fork of the Snake and Boise River to the west.¹⁷

By 1952, locals, Reclamation officials, and the political base had been convinced that a project at Michaud Flats was both feasible and beneficial. In his report to the commissioner of Reclamation, the regional manager of the Boise District claimed the ratio of annual benefits to costs would be “2.83 to 1.00.” He also said that farmers would repay 63 percent of construction costs within fifty years, and that power revenue generated from the Palisades project would cover the rest.¹⁸

Only minor revisions were made to the legislation proposed by officials in the Boise District. In early 1953, the Fish and Wildlife Service completed a report on the impact of the project on the habitat and suggested a few revisions. But these were minor and, in fact, the Fish and Wildlife Service concluded that “fishery resources would not be affected significantly.” Reclamation initially considered lumping irrigation of lands in the Fort Hall Indian Reservation into the Michaud Flats project, but officials decided to drop this idea and pursue a separate proposal for the Indian reservation to be paid with power revenue from the Palisades project.¹⁹

16. Water Supply and Requirements Appendix; Fiege, *Irrigated Eden*, 29-40.

17. Hu Blonk, “Tapping Lost River,” *Reclamation Era* 37, No. 4 (1951), 66-7, 80.

18. Regional Director to Commissioner of Reclamation, October 22, 1953, in Report of the Regional Director and Substantiating Materials, Boise, Idaho, October 1953, PR 1903-1955, RG 115, NARA.

19. Commissioner of Reclamation to Secretary of the Interior, February 19, 1954; Fish and Wildlife Service report, in Report of the Regional Director and Substantiating Materials, PR 1903-55, RG 115, NARA.

Only weeks before the project was to come before Congress for authorization, the Bureau of the Budget questioned the source of the revenue to pay for the project. The director of the Budget expressed concern that there would be no revenue from electric power, since at that point there was no guarantee that the American Falls powerplant would be built. He also questioned the farmers' willingness to pay the \$12 per acre of water, or a total of \$132,700 annually. He suggested securing legislation to assure power revenue, but "if sufficient power revenues are not expected to be available . . . the Michaud Flats project should be deferred accordingly."²⁰

Apparently, Congress did not take these financial concerns seriously and on August 31, 1954, after the legislation made its way through the Committee on Interior and Insular Affairs, approved the project with no reservations. Congress authorized the Secretary of the Interior "to construct, maintain, and operate the Michaud Flats project for irrigation in the State of Idaho." Construction costs would be recouped from payments from farmers and the sale of electric power from the Palisades project. The act reserved 83,900 acre-feet in Palisades Reservoir and 47,700 acre-feet in American Falls Reservoir for lands in the Michaud Flats area. It also came with \$11,000,000 in appropriated funding—half for the Michaud Flats project and half for the Michaud division of the Fort Hall irrigation project—"plus such additional amount, if any, as may be required by reason of changes in the costs of construction." Nine years later in 1963, Congress added a subsection to the 1954 act by providing for the authorization to accept contracts for the delivery of water to Indian lands at Fort Hall Reservation.²¹

20. Director of Bureau of the Budget to Secretary of the Interior, July 23, 1954, in Report of the Regional Director and Substantiating Materials, PR 1903-55, RG 115, NARA.

21. U.S. Department of the Interior, *Federal Reclamation and Related Laws Annotated*, 83th Cong., Pub. L. 741, August 31, 1954 (Washington, D.C.: Government Printing Office, 1972), 1205-8.

Construction History

Before many of the work projects could begin, contracts had to be awarded and existing wells, pumping substations, lateral systems, and other distribution facilities had to be purchased from their owners. Most of these tasks were completed in 1955, the year construction began at Michaud Flats. At first the project engineer of the Minidoka Project put twenty-four of his 193 employees to work on the newly authorized Michaud Flats Project. By the end of 1956, the work force jumped to forty with a range of pay grades, from Supervising Construction Engineer Boyd H. Walter to two typists, a janitor, and two common laborers. Management and construction set up temporary headquarters until a permanent office and maintenance facility was completed in June 1956.²²

The work for the motor driven units of the pumping plant fell to Worthington Pump Company of Harrison, New Jersey. W. R. Cahoon Construction Company received the contract for the American Falls Pumping Plant and Discharge Line. The company prepared the foundation in July and August 1956; in September, work crews used 225 cubic yards of concrete, 17,026 pounds of reinforcement bars, 2,030 lineal feet of electrical conduit, and 294 barrels of cement. They completed the foundation in October and progressed on work on the cofferdam.²³

Most of the steel for the intake structure and discharge lines were delivered to the site in January 1957. That year, crews began and completed construction on the pumping plant operator's house, raised the walls and completed the roof of the pump house, received and installed motor control equipment and steel for the switchyard tower, and installed the steel intake and discharge line and 12-inch city water main. During the summer, W. R. Cahoon

22. "Annual Project History, Minidoka Project," Vol. 48, 1955; "Annual Project History, Minidoka Project," Vol. 49, 1956, pp. 10-1, 200-2, RG 115, NARA.

23. "Annual Project History, Minidoka Project," Vol. 49, 1956, pp. 198, 212-3, 217-9, RG 115, NARA.

Construction laid the main discharge line—in August alone, “2,030 linear feet of 60-inch cylinder and 460 feet of 60-inch non-cylinder concrete pipe.” It also laid the electrical conductors and Parkway Cable in the pumping plant and the discharge pipe trench. By October, the 126 c.f.s. pumping plant stood 98 percent complete.²⁴

The North Side Construction Company received the contract to do the earthwork and structures on the Main Canal West at the siphon at Warm Creek. By November 1956, crews had excavated 2,500 cubic yards of the canal, but digging slowed in the winter due to low temperatures and frozen conditions. Cherf Brothers Inc. and Sandkay Contractors, Inc., won the bid for the Main Canal East and began construction in May 1957. They also received the contract to dig laterals from the Main Canal East, Main Canal West, and the wells in Area 6 for \$334,968. By August the west canal was 81 percent complete, while by October the east canal was nearly finished. When the Main Canal West opened for use, it delivered 3,458.8 acre-feet of water, of which 2,161 acre-feet, or 62 percent, reached farmers. By contrast, the East Canal supplied 5,173.3 acre-feet but farmers used only 2,229.1, or 43 percent, of it.²⁵

Work on the wells did not begin until 1956. Wells would serve a vital function by tapping into the latent groundwater supply and providing as much as one-third of the irrigated water. R. J. Strasser Drilling Company began work on four wells in Area one, while William J. Mason began drilling 4-6 wells in the same area. In May 1956, Strasser Drilling found water 406 feet below the surface but continued drilling down to the 443-foot level. The next step was to install casing and well screens, and to pack pea gravel and gravel pack about the well casing and well screens. Project supervisors decided to move well No. 8 365 feet to the north, so they

24. “Annual Project History, Minidoka Project,” Vol. 50, 1957, pp. 147-69, 182-5, RG 115, NARA.

25. “Annual Project History, Minidoka Project,” Vol. 49, 1956, pp. 196, 214-6; “Annual Project History, Minidoka Project,” Vol. 50, 1957, pp. 147-9, 157-60, 165-9, 175-7, 182-5; “Annual Project History, Minidoka Project,” Vol. 52, 1958, pp. 103-4, RG 115, NARA.

moved the equipment and began work anew.²⁶

R. J. Strasser won another bid to drill the wells in Area 1, and Mel Brown received the contract to do the pipe laterals in Areas 1 and 3. In July well No. 7 was finished, and in September No. 4. William Mason completed his wells in Area 1 by the end of the year, while the Strasser Drilling Company finished their work in June 1957. The year 1957 also saw the completion of the developing wells and pipe laterals.

Most work was done in ten-hour shifts, six days a week, though some men worked eight-hour days. Temperatures dropped precipitously beginning in November and for three months work slowed considerably—especially on the wells and canals where digging was involved. In addition to the unavoidable setbacks in the weather, a few relatively minor problems confronted the supervising construction engineer. First, when the pumps arrived in March 1957, the four motors had been damaged during the shipping. Mr. McCollough of Ideal Electric Company and Mr. Kelley of the Worthington Corporation supervised repair of the damages, which were completed in late 1957. Also, on May 20, 1958, a portion of the Main Canal East washed out but was quickly repaired by Cherf Bros. Inc. and Sandkay Contractors, Inc.²⁷

But in general work proceeded as scheduled, and all of the major construction projects were completed before or during 1958. Electric Pump and Equipment Company completed 13 wells in Areas 1 and 6 on April 5; the earthworks and structures on the Main Canal East were completed on June 10. In the summer of 1958, the only construction was a 48-inch pipe drop structure on Blind Springs. In all, the project boasted a 126 c.f.s main pumping plant, 21 miles of canals, 15 miles of open laterals, 16.5 miles of pressure laterals buried underground, and 25

26. "Annual Project History, Minidoka Project," Vol. 49, 1956, pp. 203; "Annual Project History, Minidoka Project," Vol. 50, 1957, pp. 198-9, RG 115, NARA.

27. "Annual Project History, Minidoka Project," Vol. 50, 1957, p. 186; "Annual Project History, Minidoka Project," Vol. 52, 1958, pp. 102-3, RG 115, NARA.

deep wells. On June 14 and 15, 1958, during the Jubilee Days of American Falls, Reclamation officials and project personnel and a few visiting dignitaries participated in the project's dedication.²⁸

Project Benefits and Uses of Project Water

For two and a half years after completion of the project, Reclamation assumed operation of the pumping plant, canals, lateral ditches, and other project structures and equipment after the project took on O&M status on July 1, 1959. During this period, construction crews made only a few final touches to the construction. Most maintenance on the project was routine and rather uneventful, including one canal break on the Main Canal East, blockage in the canals from dry weeds, and some repairs on Well D and on the four pumps and motors at the pumping plant. At the pumping plant, personnel decided to "keep heaters on at all times during the non-irrigation season" so water would not build up in the equipment. It was also decided to deliver sprinkler irrigation only to those lands originally intended for it. Apparently, the demand for pressure irrigation over gravity irrigation was much greater than originally anticipated.²⁹

Reclamation's plan was never to retain oversight of Michaud Flats. On October 3, 1960, a meeting was held at American Falls to discuss the Falls Irrigation District's takeover of the project, which it did on the first day of 1961. Back in December 1955 the district had signed a contract with Reclamation agreeing to repay \$2,875,000 of the \$5.5 million construction costs. The contract could be revised should the irrigable area of the district fall below 11,000 acres. But the district seemed to have no problem making the annual payments. When the project ran a deficit, as in 1969, Reclamation simply tacked on the balance to the following year's bill.³⁰

28. "Annual Project History, Minidoka Project," Vol. 52, 1958, pp. 102-3, 117, RG 115, NARA.

29. "Annual Project History, Minidoka Project," Vol. 53, 1959, pp. 157-8, 202, 215, 251, RG 115, NARA.

30. "Annual Project History, Minidoka Project," Vol. 48, 1955; "Annual Project History, Minidoka Project," Vol. 54, 1960, p. 180, RG 115, NARA; Norman H. Moore, Acting Regional Director of Reclamation, to Vard W.

(continued...)

A board of directors, four full-time employees, and a canal maintenance-man oversaw operations at Michaud Flats. As expected, the main pumping plant at American Falls Dam delivered about 60 percent of the water, while the twenty-five wells supplied the rest. Most farmers used power to sprinkle their crops rather than use gravity and ditches for that purpose. Although the new project expected to irrigate some 11,240 acres, the total area serviced was less than that at below 10,000 acres. The district tried to expand the acreage affected by the project but this number remained about the same for several decades.³¹

In its first year of management, the district charged local farmers \$8.75 per acre for surface water and \$11.05 for groundwater. In 1970 the price per acre had dropped to \$7.50 plus \$2.30 for power where sprinklers were used, but ten years later it had shot up to \$24.60 and \$3.00 respectively.³² Whatever the price, farmers usually stayed afloat financially. Depending on the water supply and the price of farm products, the total annual crop value through the 1980s stood somewhere between three and five million dollars—not enough to make the farmers wealthy but enough to make their enterprise profitable. With the water, they grew and sent to the market potatoes, alfalfa, sugar beets, and grain.

The amount of water the project could provide and the length of time water continued to flow before it was cut off depended on the snow pack in the winter and the rainfall in the spring. High runoff in the early years of the 1960s saved the district on power costs—an estimated \$2,500 compared to previous years. In 1964 delivery of the water began in May because there had been

30. (...continued)

Meadows, Secretary of Falls Irrigation District, February 1970, in “Annual Project History, Michaud Flats Project,” Volume 5, 1969, Records of the Bureau of Reclamation, Record Group 115 (RG 115), National Archives and Records Administration—Rocky Mountain Region (NARA).

31. “Annual Project History, Michaud Flats Project,” Vol. 1, 1962-3; “Annual Project History, Michaud Flats Project,” Vol. 2, 1964-5, RG 115, NARA.

32. “Annual Project History, Michaud Flats Project,” Vol. 3, 1962-3; “Annual Project History, Michaud Flats Project,” Vol. 5, 1969; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, pp. 9-11, RG 115, NARA.

heavy rainfall in the early part of the year. In 1976 extra water came from a very unlikely source—the Teton Dam, which when it broke made additional water available in American Falls Reservoir.³³

Just as common as seasons of high snow pack and rainfall were ones of water scarcity and drought. In 1966, during the months when farmers planted, irrigated, and harvested their crops, only 3.24 inches of rain fell compared to 6.84 the year previous. Good water years were followed by a prolonged drought throughout the West in the late-seventies, which lowered water levels in the reservoir but did not severely affect the flow of water to lands in the Michaud Flats area. The district reported in 1977 that it had “adequate water to mature crops even with the severe drought.”³⁴

In part because of the unpredictability of the weather, the district implemented some improvements to make water delivery more efficient. One water-saving effort involved elimination of a pond near the end of the West Canal. The other much more common “improvement” was to eliminate the bends in the canals by shortening and straightening them. This had several desired purposes: it saved water, permitted the construction of operating roads, and made sprinkler irrigation easier. As project personnel recorded:

Throughout the past nine irrigation seasons requests have been made by landowners, who own land above the canals, wanting to join the project to receive water for irrigation, provided however, that certain canal changes be made so that switchbacks would be removed and replaced by siphons, etc. in order to make the farm units of the lands involved more rectangular for a more economic sprinkler irrigation operation.

Whereas in earlier times farmers dug their canals according to the natural contours of the land,

33. “Annual Project History, Michaud Flats Project,” Vol. 1, 1962-3; “Annual Project History, Michaud Flats Project,” Vol. 2, 1964-5; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, p. 1, RG 115, NARA.

34. “Annual Project History, Michaud Flats Project,” Vol. 3, 1966; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, p. 1, RG 115, NARA.

now they aimed to make them perfectly “rectangular” to facilitate sprinkler irrigation.³⁵

Another perennial problem was the proliferation of weeds, mostly of the Canadian Thistle variety. In dry seasons they were not so much a problem, but the district yearly spent several thousands of dollars to eliminate them from the banks of the canals. Apparently, weed control was not a priority given the limited resources at the district’s disposal. An inspection conducted in 1968 recommended management “reactivate a strong weed control program,” though it also noted that it was not of “immediate nature.”³⁶

Operation of Michaud Flats also required routine maintenance of canals, wells, pipes, siphons, and other operations. Especially costly maintenance was the rehabilitation, or redrilling, of wells. Sometimes the well screens became congested, blocking the flow of water through the well. Rehabilitation was not always successful, as in 1966 when the district attempted to repair three wells to no avail. In 1974, it replaced Well No. 2 with Well No. 2A and connected the new well to the existing lateral system. Continued problems with Wells 3, 4, and 6—“pumping sand and not delivering the required amounts of water”—prompted the district in 1981 to make a close inspection of the well screens using a TV camera. It was reported, however, that “very little corrosion was detected.”³⁷

Other problems were less conspicuous. In 1967, personnel noted that water lying stagnant year-round in some of the underground pipes tended to freeze during the winter and cause “leaks that are not detectible until irrigation season begins.” Between 1972 and 1974, the district replaced steel pipeline for the sprinkler system with asbestos-cement pipe. Periodic

35. “Annual Project History, Michaud Flats Project,” Vol. 3, 1966; Annual Project History, Michaud Flats Project,” Vol. 3, 1967; “Annual Project History, Michaud Flats Project,” Vol. 5, 1969, RG 115, NARA. Mark Fiege in *Irrigated Eden*, 6, 19-22, argues that irrigation systems generally followed the natural contours of the land.

36. U.S. Department of the Interior, Report on Examination of Condition of Irrigation Structures and Facilities, Bureau of Reclamation, Region 1, Boise, Idaho, 1968, 3-4. Copy in library, Federal Center, Denver, Colorado.

37. “Annual Project History, Michaud Flats Project,” Vol. 3, 1966; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, pp. 1-2, RG 115, NARA.

repairs and replacements were made to siphons; one, Kopp #2, costed \$37,000 to repair.³⁸

Perhaps the most serious problem to beset the project was a fire that broke out at the headquarters on September 9, 1966. According to the project reports, the “fire started from a gasoline leak igniting in a vehicle that was parked in the shop,” destroying beyond repair a vehicle and the shop portion of the building. Other areas of the building only suffered smoke and other minor damage, but a new shop came at a price tag of \$10,850, not including \$3,050 damage done to the tools and the other parts of the building.³⁹

Inspectors rarely, if ever, complained about the maintenance of the equipment and facilities. Personnel reportedly kept “excellent housekeeping”—a kempt pumping station and well-maintained equipment, which in 1964 included three pickups, a flatbed truck, a four-wheel-drive truck for spraying, and a D-4 track-type tractor. The employees at the project sometimes received help from the North Side Pumping Division nearby to maintain the pumps. It was also sometimes necessary to rent equipment when what the district owned was not sufficient, and to take electric motors at local commercial shops for routine maintenance.⁴⁰

A review of maintenance in 1983 suggested that the district install a “control switch” on the discharge valve of the pump enclosures. The idea was to ensure that the owner of the water and not a “transient laborer” operated the pump valve. The same review also recommended the district “do a better job of monitoring the static and pumping water levels of their wells.”⁴¹

Conclusion

The historian F. Ross Peterson calls irrigation in Idaho “one of the most remarkable

38. “Annual Project History, Michaud Flats Project,” Vol. 3, 1967; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, p. 1; “Annual Project History, Michaud Flats Project,” Vol. 6, 1972-82, RG 115, NARA.

39. “Annual Project History, Michaud Flats Project,” Vol. 3, 1966, RG 115, NARA.

40. “Annual Project History, Michaud Flats Project,” Vol. 2, 1964-65, RG 115, NARA; see Report on Examination of Condition of Irrigation Structures and Facilities, 1968, p. 3.

41. “Annual Project History, Michaud Flats Project,” Vol. 7, 1983, p. 1, RG 115, NARA.

stories of land reclamation in American history.”⁴² The Michaud Flats Project is a notable footnote to this larger history of irrigation in Idaho and along the Snake River. Its story illustrates nicely the continued demand of irrigation into the postwar era, when it became clear to farmers and agriculturalists that irrigation projects then in existence were not sufficient to service the needs of the agricultural community. In the Michaud Flats area, farmers used government-sponsored water to grow a range of market products including potatoes, sugar beets, dry beans, sweet corn, field grains, and alfalfa hay. Given its relatively smooth construction and operation, and the prosperity of the farmers working under its auspices, the Michaud Flats Projects should rightfully be considered a success.

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42. Peterson, *Idaho*, 123.

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