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STANDARD FORM NO. 64

Irrigation

Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files DATE: September 25, 1950

FROM : R. H. Rupkey

SUBJECT: Regarding Lower Moencopi Irrigation Project

The Lower Moencopi irrigation project is on the north bank of Moencopi Wash immediately upstream from U.S.Highway 89 about 12 miles north of Cameron, Arizona. There are 65 acres of land under ditch and the maximum area irrigated during the 1941-46 period was 55 acres. The ultimate acreage irrigable depends on the quantity of water which can be stored for project use.

The diversion dam for the project is in bad condition. Floods have under cut the concrete slabs of the spillway so badly that the dam is near failure. Only the low natural resistance to erosion of the soft ledge on which the dam rests prevents complete failure. It is only a matter of a few large floods before failure does occur. The accompanying photographs show the precarious condition of the structure.

The ditch leading from the diversion dam passes through some sand dunes which cause the Indians to do considerable ditch cleaning.

The distribution system contains many good stone structures and appears in good condition.

The cultivated lands appear well leveled and of good quality.

There appear to be several factors which indicate the possibility of construction of a successful small project at Lower Moencopi.

Foremost is the quite reliable, although relatively small, flow of water in Moencopi Wash during the winter and early spring. The attached tabulation of U.S.G.S. water supply records for flow at the highway bridge, just below the project, shows a quite reliable discharge of approximately 1800 acre feet from October 1 to March 31 each year. Allowing 900 acre feet for evaporation and seepage losses, there would remain approximately 900 acre feet for irrigation of two or three hundred acres of land.

Second is the large area of apparently good soil.

Third is the urgent need of the Navajo Indians for additional resources, especially in the western area of the reservation.

There is a possibility that sufficient capacity for storage of winter flow might be obtained by constructing a reservoir on the flat lands between the north bank of Moencopi Wash and the east bank of the large wash from the north. This is not an ideal site, but

WR 4107

there does not appear to be much choice in sites. The reservoir would have to be off-stream because of the large quantity of sediment carried in the washes.

A diversion dam some distance upstream from the existing structure would be necessary in order to be of sufficient elevation to serve a reservoir for the project. It is hoped that a durable rock ledge for the diversion dam can be found, which will make possible abandonment of the existing structure, and not require a deep foundation in anticipation of future retrogression of the stream bed.

An investigation of the stream and the topography between the Lower Moencopi project and the irrigated area near Tuba City for other possible storage sites was not made during my visit. I doubt that anything more suitable is available, as Moencopi Wash is quite deeply entrenched between high mesas along most of this stretch.

A reconnaissance survey of storage and diversion sites for the Lower Moencopi project would be well worth the moderate outlay of funds which would be required.

In addition, an analysis of the water should be made since a part of the supply is return flow from irrigation in the vicinity of Tuba City and additional salts may be present in the water.

R. H. RUPKEY
Hydraulic Engineer

WR 4108

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WR 4109

MOFNCOPI WASH NEAR TUBA CITY, ARIZONA

RUN-OFF IN ACRE FEET. FROM U.S.G.S. WATER SUPPLY PAPERS

Year	Month Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1931-32	981	361	309	331	2890	194	33	44	14	727	1590	436	7,890
1932-33	535	263	238	229	412	237	105	38	0	5100	2010	1010	10,200
1933-34	5210	453	325	339	240	69	261	338	38	700	8430	136	16,590
1934-35	206	278	339	663	333	289	66	28	0	193	3450	1620	7,360
1935-36	434	388	418	388	469	172	28	0	0	1500	10630	6280	20,710
1936-37	598	473	359	224	1450	386	97	0	158	5560	397	8530	18,230
1937-38	1220	257	326	321	269	1580	32	0	123	39	1820	1790	7,810
1938-39	187	208	318	282	261	159	84	0	0	0	300	4180	5,980
1939-40	187	270	287	242	310	99	32	2	0	5	5310	16980	23,700
1940-41	5100	304	664	591	909	446	857	21	0	232	4830	7200	21,150
1941-42	15230	397	238	403	288	116	56	0	0	67	551	9	17,360
1942-43	192	162	1250	512	357	272	0	0	0	524	5610	793	9,670
1943-44	543	165	208	298	301	383	68	53	0	0	176	222	2,420
1944-45	159	230	300	345	214	167	27	0	0	4460	9600	122	15,620
1945-46	809	179	599	280	169	158	25	0	0	1550	6970	378	11,120
1946-47	132	468	317	222	192	82	0	16	0	0	7050	613	9,090
Average Discharge 1931	[illegible]	304	405	354	566	301	110	34	21	1292	[illegible]	3140	12,806
Average of Discharges up to 500 Ac.Ft.	374	304	341	337	332	233	88	34	21	285	480	397	3,205
Averages of Discharges up to 400 Ac.Ft.	316	291	322	318	308	224	82	34	21	235	380	332	2,863

Total of averages up to 500 Ac. Ft., October to March, incl. - 1921 Ac. Ft.

Total of averages up to 400 Ac. Ft., October to March - 1779 Ac. Ft.

WR 4110

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