

November 10, 1908

Office Chief Eng'r.
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DEPARTMENT OF THE INTERIOR,
UNITED STATES INDIAN SERVICE,

U. S. Indian Service

SUPERINTENDENT OF IRRIGATION

Albuquerque, N. M., November 10, 1908.

Mr. W. H. Code,
Chief Engineer,
522 Bumiller Building,
Los Angeles, Cal.

Dear Sir:

I returned this morning from a trip into the Navajo Reservation to look into the Seven Lakes project.

While it is not a large project and will not irrigate much land, neither will it cost very much money. There has been no work done for the Indians on the east side of the mountains, and of all of the money expended for irrigation on the reservation, not one cent has gone to them.

Last summer, in spite of the work that they did for themselves, the water was exhausted before the crop was made. To prevent its entire loss, the trader, Mr. G. U. Manning sent to Gallup and secured for the Indians about fifty empty barrels, and until the crop was made, the Indians hauled water in the barrels from Manning's well a distance of from $\frac{1}{2}$ to $1\frac{1}{2}$ miles and irrigated each hill of corn with a tin can. It seem that when they need the water so badly and are willing to go to such lengths that they should be assisted if possible.

On my return this morning I found your letter of the 6th instant in which you said that if I deem it feasible to go ahead, so I wired Hover to start at once. If it is not done within the next few weeks the snows will come and no work can be done, as the lakes

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are at an elevation of some 8000 feet.

If not fixed this fall, it will then be too late to do anything that will be available for next season, as the entire water supply is from the winter snow fall.

You wired on the 31st of October to have Ritter take instruments to Shiprock and that you would write. As no letter has come to date, I wired you this morning to that effect.

Regarding Tuba work. I had already decided that Ritter was the man to go out there, and told him before he left that he could count on going out there as soon as he returned from Shiprock. I will look into the cost to using wire mesh for the purpose of making bags to hold the rock, and will take it up with you as soon as I get prices and can make some estimates.

Regarding the stone culverts between lakes one and two - I think it very necessary to do this as soon as possible. I am just in receipt of a letter from Supt. Janus in which he says:

"The sand dunes at the point in the canyon where the channel was filled when you were here has moved up several feet closer and have twice closed off the flow. At the middle lake where the reeds grow so profusely, the sand cut the water off there too, and when the water rose above sufficiently to make a channel it took the sand out with a rush, filled the middle lake, and took out the sand dam formed there, and continuing down into the reservoir Mr. Hamilton worked on, it carried several thousand tons of sand into its upper end. This is an automatic flushing system that will in time ruin the lower reservoir, or materially reduce its capacity. The stone culvert spoken of when you were here is absolutely necessary to cure this evil."

I note what you say about the Papago matter. I will leave for there in a few days with Mr. Bush to begin the surveys. I will not leave, however, until I can get some of the office work out of the way, that must be attended to.

Relative to the test well in Chin Lee valley. I will make an

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investigation whether we can get a traction or other engine to use in sinking a test well in the Chin Lee valley. However, as these wells will be only for stock water, it might not be necessary to dig so large a well to furnish water for a small pump and windmill. I had in mind a well about 4 feet in diameter, and possibly curbed with plank. This would be sufficient for a test, and unless the water was very scarce, and a larger accumulation chamber was needed at the water level, would show what might be found underground.

The small rig at Keam's Canyon (not Leupp), Mr. Hover reports that it "is in bad repair, parts being scattered over the country. The boiler is at Oraibi, and other parts at Keam's Canyon. Would take about \$350. to put the same in shape for use". He told me verbally that he considered it valueless, and thought that on the whole that it would be cheaper to get a new rig, and at the same time a heavier one. I have heard the same from other sources.

Regarding the best thing to do on the Navajo and Moki Reservations I fully concur in your views that the Indians are herdsmen and not farmers. It is shown that they are many of them anxious to have a chance to put in a little corn etc. but none of them will put in more than they need for their own immediate uses. Their flocks are of more value than their crops, and to find grazing they must of necessity be nomadic. Stock water is of greater necessity than irrigation water. A large amount of money has been spent for the latter, and the net results are infinitesimal as yet. I had directed Mr. Hover to put the Red Lake ditch in order again, but after thinking all of this over, I directed him to let it go for the present, or until we could be assured that something would

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be done with the water.

I have had a talk with the new Superintendent, Mr. Peter Paquette, and he feel as we do. He has promised to locate a farmer at Red Lake, as this is really the best proposition on the Reservation, and see that something definite is done there. I have, therefore, directed Mr. Hover to put the ditch in shape, in the spring, after the winter storms are past, and in time for spring work, and in the mean time the Lake will be filled with water ready for next season's use.

I note that you say that I have not sent you an estimate of the amount of money necessary to continue the Zuni work to place 3500 acres of land under irrigation.

On October 10 I sent you a detailed estimate for this work. The entire work as planned will only cover this amount of land. When this is in, comparatively inexpensive ditch lines will materially increase the area under the ditch.

The estimated cost as shown in this estimate is \$40,720.00

If you failed to get this estimate, I will make a copy and send it to you.

Regarding the diversion of some of the Navajo-Moki appropriation to Zuni.

So far we have expended not quite \$5000-- the 7 Lakes proposition and incidental connected therewith another \$1000. I estimate, roughly another \$3000 for Tuba and \$500 on Wheatfields and Red Lake-- these estimates to include salary of Mr. Hover and young Douglass who is with him. Until Ritter reports I have no idea what will be necessary to expend at Shiprock for this work.

If anything is to be done at Shiprock on the Hogback ditch we

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certainly will need all of the money that we have allotted, but if that is cut out for this year, then the amount that can be diverted will depend entirely on what is to be spent on other parts of the reservation.

If you think that we should open up at Zuni again, Ritter is the only man we have that I would want to put in charge there, for he knows every detail etc. and is fully competent. If he goes to Tuba, could not send him to Zuni before spring. I would also suggest that unless we put on a very small force at Zuni it would be poor policy to go out there, open up, do some work, and then close down again. Each time of opening and closing makes considerable unavoidable expense. If we are sure that Congress would appropriate sufficient to complete the work, which would be available July 1, it might be well to open up the work late in the spring with what could be spared from Irrigation money, planning to have it just last to the end of the year, and continue with the new funds after the first of July. It seems to me that such a proceeding would be as advantageous as any.

I am sending you a map of the Zuni project showing in detail the Canal and structures needed, which you can use in connection with the estimate referred to. This has just been completed, and does not show the proposed laterals. Will have them added later and send you a copy.

Very truly,



Superintendent of Irrigation.