



March 23, 1920.

Mr. Walter Runke, Superintendent,  
T U B A. Arizona.

My dear Mr. Runke:

I have your letter of the 16th inst. relative to the proposed well drilling on the Western Navajo Reservation, and in this you state that the point where water is most needed is in the vicinity of the coal mine some fifteen miles from Tuba on the Oraibi road.

I concur with you fully, that water is badly needed on this mesa for I know from personal examination that there is good feed on this mesa and no water.

However, I am afraid that it will prove impossible to develop water by drilling any place on this mesa, and for the following reasons.

Throughout all of the western part of the entire Navajo country, which will include most of the Western Navajo and the Hopi reservations, the entire geologic formation is tilted to the south and all water that is found in springs will almost invariably be found on the NORTH side of canyons which cut the country from the east to the west, and practically never on the south walls.

In the section in question, we have a mesa about 5750 to 6000 feet in height. Just to the north of this is the Moencopi wash, the bottom of which is about 4250 to 4500 feet, or an average of 1600 feet below the mesa. All water from the north has been cut off and will drain into this wash, which is the secret of its flow during the dry season. Any water which falls on the mesa in question, if too near the north edge will be leached out through the canyon walls but in too small quantities to form springs. The only chance for water from the rains to be held on this mesa would be in great sand drifts such as may be found in the vicinity of the Hopi mesas, where the slow percolation of the water would make small seeps at the foot of such dunes. Any water that sinks into the ground would be carried to the south (or southwest), and would be encountered far in that direction, but the small rain fall and the absence of springs to the south and west would indicate that this mesa is almost absolutely barren of any water supply that could be found

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*for*

By drilling or otherwise making a hole in the ground.

It might be possible to find some place where there was a natural depression of considerable area, where water, in very small quantities might be found, and in such cases it would only be recovered by a dug well, to allow as large a surface for the water to seep in as possible.

Mr. Womack was in the office when your letter came yesterday, and we talked the matter over and were both fully agreed on the matter.

I have directed him to go over to Tuba as soon as he may have time and go over the matter with you, and together you may plan out where it is possible to secure water, and an examination of the mesa in question might disclose some place it would be worth while to try. We will do all we can to cooperate with you in the securing of water here or elsewhere.

Regarding the remains of the well rig at Kayenta. This rig is, as you say, unsuited to further work in that country and is practically worn out. If you can use the boiler and engine I should be glad to have it transferred to you. You might go over the details with Mr. Womack, and if you can come to some arrangement with him for the transfer of parts, or perhaps the entire outfit I will be pleased to help you in having such transfer made.

Our new well rig was received at Holbrook a week or more ago, and should be enroute to the Hopi country by now. If we can decide on a section where there is a possibility of getting water and where there is any feed, will be glad to see it over there as soon as possible developing the much needed water for your Indians.

Very truly yours,

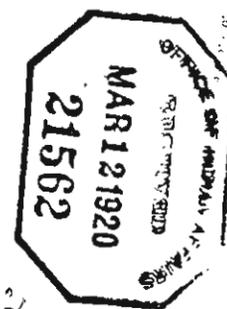


Supervising Engineer.

*cc for  
The Commissioners*

DEPARTMENT OF THE INTERIOR  
UNITED STATES INDIAN SERVICE

SUPERVISING ENGINEER  
ALBUQUERQUE, N. M.



Irrigation 1919-20  
F L S

March 8, 1920

Commissioner of Indian Affairs,  
Washington, D. C.

Sir:

I have your letter of March 1st, file number as above, relative to well drilling on the Western Navajo Reservation during the coming season.

I believe that we can transfer the new rig when it arrives to the southern part of Mr. Runke's jurisdiction and put in some wells for the Indians there located.

I have just written Mr. Runke, carbon copy herewith enclosed, for his view in the matter and will make the necessary arrangements to commence operations on the Western Navajo Reservation at as early a date as practicable.

Yours very truly,

*H. J. Robinson*  
Supervising Engineer

HFR:L  
Encls.



March 8, 1920/

Mr. Walter Runke, Superintendent,

Tuba, Arizona.

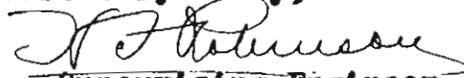
My dear Mr. Runke:

At the present time we have a well rig working in the southern part of the Hopi Reservation and it is probable that before the end of the present fiscal year we may be able to move it over under your jurisdiction.

I would be very much obliged if you would let me know where you think drilling would do the most good on your reservation but believe that anything that we would do at an early date had best be done in the southern part so it will not be necessary to move the well drilling rig and outfit over too great a distance before commencing drilling.

I have not discussed the matter with Foreman Womack who knows the country very thoroughly and whose judgment I place great dependence upon, but as soon as I get your view I will go over the matter with him and see whether the necessities of a certain district may be supplied by drilling there after we take into consideration the geological conditions.

Yours very truly,

  
Supervising Engineer

HFR:L  
c/c to Indian Office,  
Washington.

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Mr. Herbert F. Robinson,  
Supervising Engineer.

My dear Mr. Robinson:

The Office has your letter of February 11 with reference to the matter of well drilling on the Western Navajo Reservation during the coming season. Upon further consideration it is believed that funds from the appropriation of \$50,000, for developing water for Indian stock, would not be available for use on the Western Navajo Reservation in view of the fact that there is a specific appropriation for work of this character on this Reservation.

In view of the situation as outlined by Superintendent Runke in his letter of December 31, a copy of which has heretofore been forwarded to you, you may, without seriously disturbing your plans for the balance of the fiscal year, arrange to use some of the funds which you have for the development of a water supply for the Navajo and Hopi Indians in drilling a well on the Western Navajo Reservation. If impracticable to undertake this work out of the current year's funds, it is suggested that you arrange to take up work to some extent on the aforesaid Reservation after July 1, when the appropriation of \$35,000, for developing a water supply for the Navajo and Hopi Indians during the fiscal year 1921, will become available.

Very truly yours,



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Assistant Commissioner.

Copy to Western Navajo.

INITIALING COPY - FOR FILE.

DEPARTMENT OF THE INTERIOR  
UNITED STATES INDIAN SERVICE

Irrigation

SUPERVISING ENGINEER  
ALBUQUERQUE, N. M.



Irrigation 1919-1920  
F L S.

February 11, 1920

The Commissioner of Indian Affairs,  
Washington, D. C.

Sir:

I have your letter of February 7th relative to well drilling on the Western Navajo Reservation during the coming season. In this letter you mention the item of \$50,000 in the Indian Bill for the current year for developing water for Indian stock.

I had noted this appropriation but as the Indian Bill also makes appropriation for the development of a water supply for the Navajo and Hopi Indians, specifically naming the Western Navajo reservation, I was under the impression that no part of the \$50,000 would be applicable under the general rule that when a specific appropriation is made for a purpose, funds from a general appropriation could not be used.

If the Office considers, however, that this money is applicable for this purpose, I will be very glad to start the well rig that is now stored at Keyenta, as soon as I can secure a driller, and will take the matter up with Superintendent Runke. I am sending him a copy of this letter and as soon as I am advised by you that the money is applicable, I will immediately commence to make the necessary arrangements for putting the rig in operation.

It is probable that certain tools will have to be purchased for it as some of the equipment was transferred to the well rig now operating in the Hopi country to replace worn out equipment there and by placing an order for this additional equipment at an early date we should be ready to commence operation with the rig by the time the bad weather is over and the condition of the roads be such that we could move the rig and haul in the necessary supplies.

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It will be remembered that Keyenta is one hundred and seventy-five miles from the railroad and at present most of this distance is impassable for a loaded team.

As soon as I hear from you again in the matter, if favorable for the use of these funds, I will submit a request for authority in the proper sum to operate the rig during the balance of the fiscal year.

Yours very truly,



Supervising Engineer

HFR\*L  
C/C to Supt. Walter Runke.  
Tuba, Ariz.

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Mr. Herbert F. Robinson,  
Supervising Engineer,

My dear Mr. Robinson:

The Office has your letter dated January 23 in response to Superintendent Runke's letter which the Office transmitted to you under date of January 17 relative to well drilling on the Western Navajo Reservation during the coming season. It is noted that you agree that drilling should have been done on that Reservation sooner but that it was necessarily postponed for the want of funds. It is noted further that you have a well rig stored at the farmer's quarters at Kayenta which you are unable to use because of insufficient funds.

The Indian Bill for the current year carries an item of \$50,000.00 for developing water for Indian stock. Very little of this fund has been used up to date and it appears that it would be applicable for such work as is needed on the Western Navajo Reservation. The Office probably will be able to provide such an amount as you could use during the remainder of the fiscal year; therefore, you are requested to consider the practicability of beginning immediate operations on the aforesaid Reservation. If you find that it would be practicable to commence these operations promptly the matter should be taken up by you with Superintendent Runke with a view to ascertaining his view-point as to the location of the well or wells which you may be able to drill. A report in the premises, with a request for authority in the proper sum, should be submitted as early as practicable.

Very truly yours,



Assistant Commissioner.

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Copy to Western Navajo.

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DEPARTMENT OF THE INTERIOR  
UNITED STATES INDIAN SERVICE

Irrigation

SUPERVISING ENGINEER  
ALBUQUERQUE, N. M.

January 23, 1920.

The Commissioner of Indian Affairs,  
Washington.

Sir:

I have your letter of January 17, file number as above, enclosing a letter from Superintendent Runke, relative to the possibilities of drilling for stock water on the Western Navajo Reservation.

Mr. Runke's point is well taken. Drilling should have been done on that reservation ere this, and would have, but for lack of funds.

He refers to a well we drilled in the extreme north-eastern part of this reservation. This was a well at Kayenta, and we would have continued in that section, but were unable to do so for the reason above stated. The rig which drilled that well was laid up, and is now stored at the Farmers quarters at Kayenta.

The only other rig we have in the western part of the Navajo country is just now in the southern part of the Moqui reservation, and the immediate program is as set forth in my report to the Commissioner of a few days ago, is to put down enough wells to cover this territory.

From there it should be moved on into the Western Navajo country, and I would be pleased to have Mr. Runke indicate the part of his reservation, in his opinion, where the water is needed the most, and where he thinks it possible to develop water.

This latter mentioned rig should finish in this section this summer, and will then be free to move west.

Should we get additional money it may be possible to start the rig in the north, but the increased cost of all material, pipe and casing having increased in price until it costs about double for all such material. This will handicap us in spreading out much.

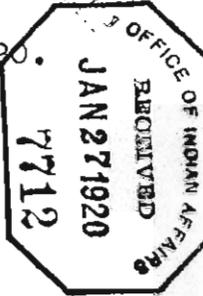
The only way to get wells on Western Navajo during the coming summer would be to abandon our program as outlined and move over there, and later return to the Hopi reservation.

Very respectfully

*N. H. Robinson*  
Supervising Engineer.

Carbon to Mr Runke

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Mr. Herbert F. Robinson,  
Supervising Engineer.

My dear Mr. Robinson:

There is enclosed herewith a copy of a letter from Superintendent Runke, of the Western Navajo Reservation, wherein he requests that well drilling operations be undertaken on his Reservation at an early date. You will also find a copy of Office letter of this date in reply to him. Please advise the Office as to the practicability of providing one or more wells on the Western Navajo Reservation during the coming season.

Very truly yours,



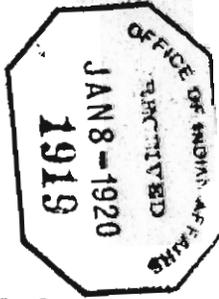
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Assistant Commissioner.

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## DEPARTMENT OF THE INTERIOR

Well drilling  
on Western Navajo. UNITED STATES INDIAN SERVICE



Western Navajo Indian Agency,  
Tuba City, Arizona, December 31, 1919.

The Commissioner of Indian Affairs,  
Washington, D. C.

Sir:-

For some years now, I have been informed that considerable well-drilling has been done in the Hopi and Navajo jurisdictions east of this one, but <sup>to date</sup> we have ~~been~~ on this jurisdiction had but one well so supplied by the Irrigation branch of the service and that is located on the extreme north-eastern end of Western Navajo. From to time I have in past years made request verbally to the men at work on this work on the east end to begin operations here also and have usually received the reply that they were working westward and could not come here until the work on the east end was finished. They have been so long coming, however, that I am at this time requesting the attention of the Office in the matter.

There is much territory on this jurisdiction which now is unavailable for Indian grazing because of lack of water supply within ranging distance, and which would sustain many more sheep and cattle to the great benefit of the Indians if wells were drilled in suitable places.

Is there anything which can be done for the Navajos here in order that they too may share in the benefits of the appropriations made by Congress for developing water among the Navajos?

Very respectfully,

*Harry R. ...*  
Superintendent.

*SR*

Irrigation  
1919-20  
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JAN 17 1920  
*J. K. Smith*

Mr. Walter Runke,

Supt. Western Navajo School.

My dear Mr. Runke:

The Office has your letter dated December 31 with reference to well drilling in the Hopi and Navajo country and notes your request that development of this character be undertaken at an early date on your Reservation.

Well drilling for the benefit of the Navajo and Hopi Indians is proceeding westward. It is quite a tedious and expensive operation to remove the well rigs over great distances; therefore, it has been the practice not to move them past locations where wells are contemplated, thus necessitating covering a given territory twice, but to construct the wells as the proposed locations are approached; however, the practicability of undertaking operations on your Reservation at an early date will be taken up with the Supervising Engineer in charge. You will be advised further as early as practicable.

Very truly yours,



1-ELM-15

Assistant Commissioner.

Copy to  
Supervising Engineer Robinson.

INITIALING COPY - FOR FILE.

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