RECORD OF SPRINGS.
HOPI RESERVATION,
ARIZONA.

Supplement to
Annual Report,
Fiscal Year
1917.

H. F. Robinson,
Sup't of Irrigatio.

In a desert region such as is the entire Hopi Reservation, a spring, if of good water is a most valued possession, and even if the water is indifferent in character, it is yet used by stock and at times by human beings and is still of great value and imporatnce.

For several years this service has been engaged in locating all of the springs and doing such work as might be done to improve their flow, make them accessible to stock and at the same time prptect them to keep the water unpolluted for the use of the Indians, and conserving and storing the water.

The following pages form a record of all of the springs known to the service, and a statement of the work done on the various ones and of the condition and flow of the others when known.

This is the most complete list made to date. In Water Supply Paper 380 of the U. S. Geological Survey is a p partial list of thessprings in this country prepared by Prof. H. E. Gregory, and was the most complete one up to the time of its publication. He lists 59 springs in the Hopi Reservation. Some of the springs were visited by him and his party, some were reported to him by government officials and other white men, and some by the Indians. He states, "the list is, however, incomplete and doubtless contains errors due to misinterpretation of the statements of Indians and other causes."

Taking this list as a basis, and using the consecutive numbers of the list, it has been added to and now comprises the name and description of 81 springs, or 22 aeditional ones, and what is somewhat peculiar, many of these added are among the largest and best known springs on the reservation. These additional springs are listed on pages 30 to 41 inclusive.

It is thought that this list is not at all complete, as it contains very few springs on the northern half of the reservation, which is occupied exclusively by the Navajos. The list will be added to from time to time as other springs are found and visited, and it will be the base for further information relative to the development of springs.

June 30, 1917.

INDEX TO SPRINGS.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 133 Name Comar as given in W. S. Paper 380.

Other names:

Location: On Winslow-Keams Canon road 5 1/2 miles S. of Egloffstein Butte.

Flow in gals. per min. Before Development 12 After _____

Development (or remarks): This spring has a large flow of water without any development.

Reported. Photograph Drawing

No. 134 Name Cottonwood as given in W. S. Paper 380.

Other names:

Location: 8 miles N. of Indian Wells.

Flow in gals per min. Before development 60 After ____

Development (or remarks). Has been visited and will be developped in the near future. Serves for stock and domestic use and has been developed by the Indians in their crude way. Can be improved.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 135 Name White Cone as given in W. S. Paper 380.

Other names:

Location: 1½ mile north east of White Cone.

Flow in gals. per min. Before Development 2½ After _____

Development (or remarks): Has a good flow and will be developed. An Indian by the name of "Deoka" has located a trading store at this spring and has done some development work of a temporary nature.

Reported. Photograph Drawing

No. 160 Name Burro as given in W. S. Paper 380.

Other names:

Location: Oraibi Wash, 13 miles west of south of Oraibi.

Flow in gals per min. Before development ½ After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S.

HOPI INDIAN RESERVATION. ARIZONA.

No. 161, Name Coyote as given in W. S. Paper 380.

Other names:

Location: 5 miles south of Giants Chair, as reported by Gregory Womack says: 2 miles south east of Burro Springs.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Is in the bottom of wash and would be very expensive development.

Reported. Photograph Drawing

No. 162 Name Honani as given in W. S. Paper 380.

Other names:

Location: 4 miles west of Burro Springs.

Flow in gals per min. Before development ____ After ____

Development (or remarks). This is not the spring known to this service as Honana Spring, for which see page 36.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 163 Name ~~Dinnebito~~ as given in W. S. Paper 380.

Other names:

Location: 5 miles S. W. of Padilla Mesa Sec. 20, 27-13

Flow in gals. per min. Before Development 0.4 After _____

Development (or remarks): Too small a flow to be worth developing.

Reported. Photograph Drawing

No. 164 Name Moencovi as given in W. S. Paper 380.

Other names:

Location: 2½ mi. S. of Dinnebito Spring (163)

Flow in gals per min. Before development ____ After ____

Development (or remarks). Only a seep. Formation does not indicate any chance for improving the flow.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 165 Name Tishopi as given in W. S. Paper 380.

Other names:

Location: 5 mi. S. of Dinnebito Spring (163)

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): A small seep occuring in clay. No Water bearing material indicated above.

Reported. Photograph Drawing

No. 166 Name _____ as given in W. S. Paper 380.

Other names:

Location: 3½ miles west of Burro Springs (160)

Flow in gals per min. Before development 40 After ____

Development (or remarks). Very small seep appearing in white sand stone on top of a ridge. No chance for more water.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 167 Name ____ as given in W. S. Paper 380.

Other names:

Location: 8½ mi. S. of Dinnebito Spring (165)

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Just a small seep in the Dinnebito wash.

Reported. Photograph Drawing

No. 168 Name _____ as given in W. S. Paper 380.

Other names:

Location: 4 mi. S. W. of Giants Chair

Flow in gals per min. Before development ____ After ____

Development (or remarks). Small seep in white sandstome. It is thought the flow could not be increased.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 172 Name Jadito as given in W. S. Paper 380.

Other names: Jetito-- Jetty to

Location: 6 mi. east of south of Keams Canon

Flow in gals. per min. Before Development 1 After _____

Development (or remarks): This spring was developed by excavating back in the sand, putting in a large gravel filter, an intercepting trench dug, and water piped out to a point when troughs could be set. The entire work was covered over and protected from flood water.

Reported. Photograph Drawing

No. 173 Name Marty's as given in W. S. Paper 380.

Other names:

Location: 5 mi. N. of Jadito Store

Flow in gals per min. Before development 7 After ____

Development (or remarks). Has been developed by excavating back into the sand hill to solid formation where a filter was constructed, the entire spring covered over, and a pipe line 200 feet long placed to carry the water to stock troughs. A stone wall was laid up to deflect storm water from the covered spring.

Reported Photograph Drawing

Mo. Jan. 1917.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 174 Name Kwatobi as given in W. S. Paper 380.

Other names:

Location: Just south of Talahogan Spring

Flow in gals. per min. Before Development 2 After _____

Development (or remarks): This was the principal spring used by a large village of the Hopi Indians, which was destroyed over a hundred years ago. There is considerable volume of water and future developments will be made here.

Reported. Photograph Drawing

No. 175 Name Talahogan Springs as given in W. S. Paper 380.

Other names:

Location: Head of eastward trending Canyon, 6 miles southwest of Keams, 5 miles northwest of Jadito Springs (172)

Flow in gals per min. Before development 2 After ____

Development (or remarks). Gregory estimates that these springs should yield 15 gal. to 20 gal. per min. after development. At present this spring flows more water than is used, but can be developed to flow more when it is needed.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 176 Name ~~Chief~~ Spring as given in W. S. Paper 380.

Other names: Peepsa or Pepsi

Location: 2 miles north of Talahogan Spring. Sec. 2 - 27 - 19 E.

Flow in gals. per min. Before Development 1.5 After _____

Development (or remarks): This spring was developed in rock. Excavation was made to form an accumulation chamber which was then enclosed with a masonary wall. The water was piped a distance of 50 ft. to a small reservoir, where in addition to being used for domestic and stock water, will ~~ittigate~~ a small orchard. From here it was piped over some rough rocky land to a stone tank from which several small garden patches will be irrigated. A trail was also built from the mesa top to allow the stock to reach the water.

Reported. Photograph Drawing
Mo. Nov. 1916. A. 1916, P. 113

No. 177 Name _____ as given in W. S. Paper 380.

Other names: Keams Canyon

Location:

Flow in gals per min. Before development 20 After ____

Development (or remarks). Five springs connected to one pipe-line to supply school. There are other undeveloped springs in the neighborhood, and it is believed that considerable additional water could be developed.

These springs were developed when the school was built by poor method and it is estimated fully 40% of the water is look by seepage that by better methods of development could be saved.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 178 Name ~~First Mesa~~ Spring as given in W. S. Paper 380.

Other names:

Location: Base of First Mesa in Sec. 14 - 28 - 18

Flow in gals. per min. Before Development 1 After _____

Development (or remarks): This water is unfit for domestic use, is in a deep open hole near the day school.

Reported. Photograph . Drawing .

No. 179 Name Walpi as given in W. S. Paper 380.

Other names: Todeski or Toveski

Location: On the west side of the First Mesa.

Flow in gals per min. Before development .8 After ____

Development (or remarks). This spring was in a draw and it was necessary to build a wall to prevent surface flow from entering. The spring was excavated and cleaned, walled up with stone, and a long flight of stone steps built down to the water. Troughs were set on the surface of the ground for watering stock.

Reported Photograph A. R. 1912, P. 18 Drawing A. R. 1916, P. 111

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 180 Name ~~Spring~~ Tewa as given in W. S. Paper 380.

Other names: Ishpi

Location: Base of First Mesa, near Hano 1 - 28 - 18

Flow in gals. per min. Before Development 1 After _____

Development (or remarks): This is the main spring of the first Mesa and lies on the east side. This spring was cleaned out, walled up and the flow increased fully 100%. A flight of stone stairs were built to reach the water which were entirely inclosed.

Reported. Photograph A. R. 1912, P. 19 Drawing A. R. 1916. P. 108.

No. 181 Name Shongopovi as given in W. S. Paper 380.

Other names: Macepi

Location: Day- school.

Flow in gals per min. Before development 1 After ____

Development (or remarks) This spring was walled up and covered over making it available for both domestic and stock water. It was excavated back to the hill to solid formation, piped out to a stonec cement tank of 5 bbls. capacity. A valve was fitted to draw domestic water and the overflow piped 100 feet to stock troughs.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 182 Name ~~Wepo~~ as given in W. S. Paper 380.
Spring.

Other names:

Location: Wepo Wash Sec. 25 - 29 - 18.

Spr. No.	1	14.96
"	2	2.24
"	3	7.48
After		24.68

Flow in gals. per min. Before Development _____
Report of Womack Jan. 29-16

Development (or remarks): Some development has been done by the Agency forces for use of sheep dip. The Irrigation Service has done some developing by building a stone-cement reservoir, with a pipe-line leading to 40 ft. of troughs for stock use.

Reported. Photograph Drawing

No. 183 Name Onion Spring as given in W. S. Paper 380.

Other names:

Location: In Oraibi, 11 miles north of Oraibi Sec. 22 - 30 - 17.

Flow in gals per min. Before development 2 After ____

Development (or remarks). This is a small seep and has not been developed.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 184 Name ~~Hotevila~~ as given in W. S. Paper 380.

Other names: Hotavilla

Location: 4½ miles northwest of Oraibi, near village of Hotavilla.

Flow in gals. per min. Before Development 1 After _____

Development (or remarks): This spring has a large flow and no work has been done on it as the Indians have objected to our doing anything there. The inhabitants of this village are the so-called hostiles.

Reported. Photograph Drawing

No. 185 Name Kydestea as given in W. S. Paper 380.

Other names:

Location: Black Mesa in canyon tributary to Moenkopi.

Flow in gals per min. Before development ~~3~~ After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 186 Name Chilchinbito as given in W. S. Paper 380.

Other names: Chilchinvito

Location Northeast base of Black Mesa

Flow in gals. per min. Before Development .2 After _____

Development (or remarks): This group includes a large number of seeps in the bottom of a wash which would be almost impossible to develop. The Indians utilize the water by building earthen dikes across the canyon which holds pools of water until they are washed out by the next rain, when they are re-built.

Reported. Photograph Drawing
A. R. 1916, P. 115.

No. 187 Name _____ as given in W. S. Paper 380.

Other names: Wacatova

Location: Base of First Mesa in Sec. 30 - 29 - 18

Flow in gals per min. Before development Seep After 1/10

Development (or remarks). This seep was developed by excavating back in the shale where a filter was made and the water piped out 100 feet to a small stone-cement reservoir.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 188 Name ~~Canella~~ as given in W. S. Paper 380.

Other names:

Location: West side of First Mesa, 2½ miles north of Hano, Sec. 25 - 29 - 18

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): This spring has been visited and it is planned to do some development work in the near future.

Reported. Photograph Drawing

No. 189 Name Antelope Spring as given in W. S. Paper 380.

Other names:

Location: 5 miles notth of Hano in Sec. 14 - 29 - 18

Flow in gals per min. Before development ____ After ____

Development (or remarks). Is only a wet weather seep and would not justify development.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 190 Name Goat as given in W. S. Paper 380.
Spring.

Other names:

Location: 9 miles north of Shipalovi Sec. 2 - 29 - 17

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Only a seep --Development not justified.

Reported. Photograph Drawing

No. 191 Name Solomy as given in W. S. Paper 380.

Other names: Lolomi

Location: 2½ miles southwest of Hotavila Sec. 26 - 29 - 15

Flow in gals per min. Before development ____ After ____

Development (or remarks). A group of two springs both of which were cleaned out, walled up so domestic water could be drawn with a bucket and the overflow piped out to stock troughs.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 192 Name White Cave as given in W. S. Paper 380.

Other names:

Location: 9½ miles southeast of Blue Canyon.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Has only a small flow which nature seems to have developed to its full capacity.

Reported. Photograph Drawing

No. 193 Name Togoholtsoa as given in W. S. Paper 380.

Other names:

Location: 3½ miles south of Zillesa Mesa

Flow in gals per min. Before development ____ After ____.

Development (or remarks). Only a seep and the formation does not indicate that developement would improve it.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 194 Name Nottchadolit as given in W. S. Paper 380.

Other names:

Location: 27 miles south of Chilchinbito (186)

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Is only a seep. The formation is tight and the Indians say there is only a small drip at any time.

Reported. Photograph Drawing

No. 195 Name Lokasakal as given in W. S. Paper 380.

Other names: Lukasakas.

Location: 27 miles south of Chilchinbito (186)

Flow in gals per min. Before development .5 After ____

Development (or remarks). Nature has developed this spring to probably its full flow, but the water can be conserved by building an accumulation reservoir, piping it out to troughs for stock.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 196 Name Tohadistoa as given in W. S. Paper 380.

Other names: Owl Spring

Location: 23 miles south of Chilchinbito (186)

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): This spring has been developed and the water piped out to troughs for stock and domestic use. This water if of good quality.

Reported. Photograph Drawing

No. 197 Name Kaadespahto as given in W. S. Paper 380.

Other names:

Location: 18½ miles south of Chilchinbito (186)

Flow in gals per min. Before development ____ Af[illegible] ____

Development (or remarks). In head of Oraibi wash.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 200 Name ____ as given in W. S. Paper 380.

Other names:

Location: **In Jadito Wash, 2 miles above Marty's**

Flow in gals. per min. Before Development 2 After _____

Development (or remarks): **There is a group of springs at this point.**

Reported. Photograph Drawing

No. 201 Name _____ as given in W. S. Paper 380.

Other names:

Location: **Head of East fork of Jadito Creek.**

Flow in gals per min. Before development .5 After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 207 Name ____ as given in W. S. Paper 380.

Other names:

Location: In Moencopi Canyon 6½ miles northwest of Zilthlajihi.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): There are many small springs issuing from the walls of this canyon and its tributaries. No examination has been made of them yet.

Reported. Photograph Drawing

No. 208 Name Tolacon as given in W. S. Paper 380.

Other names:

Location: About 1 3/4 miles north of Chilchinbito (186)

Flow in gals per min. Before development ____ After ____

Development (or remarks). This spring has been examined but no work has been done upon it. It is said to be the only spring free from alkali within a wide area. Some development will be undertaken in the future. At present the water is held by an earth dam for watering sheep.

Reported Photograph Drawing

A. R. 1916, P. 118.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 209 Name ____ as given in W. S. Paper 380.

Other names: **Bradley's**

Location: **Bradley's store 1 mile south of Chilchinbito.**

Flow in gals. per min. Before Development ? After 1/3

Development (or remarks): **Has been developed for domestic use Bradley's trading store. Has only small flow.**

Reported. Photograph Drawing

No. 213 Name _____ as given in W. S. Paper 380.

Other names: **Grove Spring**

Location: **9 miles northeast of Keam's Canyon School.**

Flow in gals per min. Before development ____ After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 214 Name Todetsi as given in W. S. Paper 380.

Other names:

Location: 9 miles north of Keam's Canyon School and 3 miles east of Well No. 204.

Flow in gals. per min. Before Development ____ After ____

Development (or remarks): This spring has had a little work done on it, and a small earthen reservoir constructed and a line of stock troughs set in 1913. Further and permanent development will be done in the future.

Reported. Photograph Drawing

No. 215 Name _____ as given in W. S. Paper 380.

Other names:

Location: West side of First Mesa Wash, $3\frac{1}{2}$ miles northeast of Wepo Springs.

Flow in gals per min. Before development ____ After ____

Development (or remarks). Cannot be developed profitably.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 216 Name ____ as given in W. S. Paper 380.

Other names:

Location: Second Mesa Wash, 5⅕ miles northeast of Shipolovi.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): This is only a wet weather seep.

Reported. Photograph Drawing

No. 217 Name _____ as given in W. S. Paper 380.

Other names:

Location: Northwest of the store at Otaibi.

Flow in gals per min. Before development ____ After ____

Development (or remarks). This spring has been developed for domestic use by the trader, is a small flow and its quality is poor.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 218 Name ____ as given in W. S. Paper 380.

Other names:

Location: **Oraibi, at base of cliff in sandstone.**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): **This is only a seep.**

Reported. Photograph Drawing

No. 219 Name _____ as given in W. S. Paper 380.

Other names:

Location: **2½ miles south of Onion Spring.**

Flow in gals per min. Before development ____ After ____

Development (or remarks). **This is only a seep.**

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 220 Name ____ as given in W. S. Paper 380.

Other names:

Location: 3 miles southeast of Zillesa Mesa.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Only a seep.

Reported. Photograph Drawing

No. 221 Name _____ as given in W. S. Paper 380.

Other names:

Location: 14 miles northeast of Keams Canyon School.

Flow in gals per min. Before development ____ After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 222 Name ____ as given in W. S. Paper 380.

Other names:

Location: 2½ miles northeast of Taadepahto Spring (197)

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): A small seep.

Reported. Photograph Drawing

No. 223 Name _____ as given in W. S. Paper 380.

Other names:

Location: In South Canyon, tributary to Moencopi Canyon, 2 miles east of Blue Canyon.

Flow in gals per min. Before development ____ After ____

Development (or remarks). There is running water in the main canyon at the point and nothing has been done to the springs.

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 224 Name ____ as given in W. S. Paper 380.

Other names:

Location: **Moencopi, 3/4 miles below Blue Canyon.**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): **Water flows in Canyon the entire year and nothing has been done to springs.**

Reported. Photograph Drawing

No. 225 Name _____ as given in W. S. Paper 380.

Other names:

Location: **Northwest base of the Black Mesa, south of the lake.**

Flow in gals per min. Before development ____ After ____

Development (or remarks). **There are two springs here about two miles apart.**

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 226 Name ____ as given in W. S. Paper 380.

Other names:

Location: **West base of Howell Mesa (This is known as Cedar Ridge.)**

Flow in gals. per min. Before Development ~~8~~ After _____

Development (or remarks):

Reported. Photograph Drawing

No. 227 Name _____ as given in W. S. Paper 380.

Other names:

Location: **5 miles west ofHowell Mesa (Cedar Ridge.)**

Flow in gals per min. Before development 1 After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. 228 Name ____ as given in W. S. Paper 380.

Other names:

Location: **In canyon tributary to Moencopi, 8 miles west of Blue Canyon.**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks) **Flowing water all the year in the canyon.**

Reported. Photograph Drawing

No. _____ Name _____ as given in W. S. Paper 380.

Other names:

Location:

Flow in gals per min. Before development ____ After ____

Development (or remarks).

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: **Denebito**

Location: **Head of Denebito**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks) **Located at the foot of a sand hill in a flat and was developed by opening up a large seepage area and constructing a coarse gravel filter for a considerable distance where it would intercept seepage water. In order to get the water to troughs by gravity 300' of ditch 2' to 7', 300' Pipe was laid to troughs and filter covered and trench backfilled.**

Reported. , Photograph Drawing
Mo. Nov. 1916.

No. _____ Name _____ as given in W. S. Paper 380.

Other names: **Bacoba**

Location: **Near village of same name.**

Flow in gals per min. Before development ____ After ____

Development (or remarks) **This spring was developed by excavating into the side of the cliff, and after the water was developed it was walled up and covered over completely. A pipe-line was laid down the valley a distance of 1500 ft. to reservoir, for domestic use for the day school, and the overflow was conducted to troughs for stock.**

Reported Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Secota

Location: S. E. side of Zillesa Mesa

Flow in gals. per min. Before Development _____ After 30 gals. per hr

Development (or remarks): This spring was in a wash at the foot of a sand hill and almost useless as the water was lost by seepage in the sand. It was developed by the construction of a filter. The water was piped through 200 feet of 1½ in. pipe and delivered into 24 ft. troughs for stock purposes. The Spring was covered and wing walls built to protect it from storm waters.

Reported. Mo. Nov. 1916. | Photograph | Drawing Mo. Jan. 1917.

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Chos-keza

Location: 4 miles North East of Comar Spring.

Flow in gals per min. Before development 1/8 After 1/2

Development (or remarks). This spring was excavated back to solid formation and walled up with stone-cement to form a reservoir for domestic use and the overflow piped out to 24 ft. of stock trough.

Reported | Photograph | Drawing

RECORD OF SPRINGS.

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Bacoba Spring No. 2

Location: Near rim-rock at head of canyon at Bacoba village.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Walled up with stone for domestic use.

Reported. Photograph Drawing

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Tommy's Spring

Location: Near mouth of Keams Canyon.

Flow in gals per min. Before development ____ After ____

Development (or remarks). This spring was developed, inclosed by wall and the water piped out to troughs.

Reported Photograph Drawing

R E C O R D O F S P R I N G S.

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Toreva Spring.

Location: At Toreva day-school.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): This is a large spring and furnishes almost the entire supply for the villages of Michongnavi and Shipaluvi, and was in a very filthy condition. The water was developed in quick-sand, and the work of walling up the spring was very difficult. The spring-proper is entirely closed with the exception of a small doorway, and the overflow goes into a large pool which may be used for watering stock direct, and in certain ceremonies of the people the Priest can go down to the water without preluding the spring.

Reported. Photograph A. R. 1913,P, 16-17-18-19-20 Drawing A. R. '16 P. 114.

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Taylor's Spring.

Location: East side of First Mesa, seven or eight miles from Polacca.

Flow in gals per min. Before development ____ After ____

Development (or remarks). This spring was developed by excavating and piping water down the hill to a reservoir for domestic use; the overflow going to troughs for stock. In the summer of 1916 a large section of the mesa caved in, demolishing the troughs and storage tank, and left several hundred tons of rock over the spring. The spring was re-developed by excavating under the mesa and a trough formed of stone laid in cement was made to confine the water. From this a pipe-line was carried a distance of 200 ft. to a small reservoir with a capacity of 300 gallons. From this reservoir the overflow runs to troughs.

Reported Photograph Mo. Sept. 1916. Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names:

Location:

Flow in gals. per min. Before Development _____ After _____.

Development (or remarks):

Reported. Photograph Drawing

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Burro Spring

Location: 8 miles south of Second Mesa, near Giant's Chair.

Flow in gals per min. Before development ____ After ____

Development (or remarks). There is considerable area of ground that that was wet the year around, was very boggy, and a vertiable death-trap for animals. At a point where there was always standing water, an excavation was made about 6 ft. deep, which was walled with rock. In the bottom, 7 pieces of 8-inch casing were sunk to a greater depth, the water rising through the casing into the reservoir. The water was piped a distance of 400 feet to troughs, and the spring and bog hole fenced to prevent animals from getting into the soft ground prelucing the spring.

Reported Photograph Drawing

A. R. 1913, P. 17.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Honana

Location: 17 miles south of Oraibi.

Flow in gals. per min. Before Development _____ After 18 gal. per hour.

Development (or remarks): Is located in a sand hill. The sand was drifting over the spring and it had almost become lost. In developing it was reached. The water did not come out at one point but was a seep along the edge of the solid rock for some distance. A collection box was put in where the trickling water could be collected, made of stone laid in cement, with tight cover. A pipe line was laid from this box about 200 feet, or out of the sand dunes where it emptied into a covered stone tank 6 x 6 feet. The overflow was carried to 24 feet of troughs for stock use. There is another pipe from the reservoir, drawing water from the bottom, which leads for a distance of about 50 feet; equipped with gate valve so that domestic water can be drawn from the spring to the amount of several hundred gallons without waiting for the slow acclumation in the spring as the Indians haul water from this spring a considerable distance to their camps and they are enabled to fill their barrels without delay.

Reported
A. R. 1916, P 104

Photograph

Drawing
A. R. 1916 P 112

R E C O R D O F S P R I N G S.

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: **Tz-ho-mot-a**

Location: **11 miles N. E. 1st Mesa.**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): **Is very weak and can scarcely be called a spring. Spring walled up and water piped out to 24 feet of stock troughs.**

Reported. Photograph Drawing
A. R. 1913, P. 19

No. _____ Name _____ as given in W. S. Paper 380.

Other names: **Pevait**

Location: **6 miles east of 1st Mesa**

Flow in gals per min. Before development ____ After ____

Development (or remarks). **Has been developed.** Is only a seep, good **for small amount of domestic use but insufficient for stock.**

Reported Photograph Drawing
A. R. 1913, P. 19.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Cheskeza Spring

Location: Near head of Pepsa Canyon 3 miles west of Keams Canyon.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): Developed and trail built leading to water. This is one of several springs forming a flow in the canyon.

Reported. Photograph Drawing

A. R. 1913, P 19

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Chendeeto

Location: 15 miles N. E. of First Mesa.

Flow in gals per min. Before development ____ After ____

Development (or remarks). Has been developed.

Reported Photograph Drawing

A. R. 1913 P 19

RECORD OF SPRINGS.

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: **Seven Mile Spring**

Location: **25 miles S. E. of First Mesa.**

Flow in gals. per min. Before Development _____ After _____

Development (or remarks): **Excavated, walled up and protected with stone wall. Water piped to troughs.**

Reported. **A. R. 1913, P 18** Photograph Drawing

No. _____ Name _____ as given in W. S. Paper 380.

Other names: **East Side Spring**

Location:

Flow in gals per min. Before development ____ After ____

Development (or remarks). **Developed and trail to water built. Piped out of sand hills a distance of 100 feet to a concrete reservoir 5 ft. x 5 ft. x 4 ft. The over flow is piped to troughs for stock.**

Reported **A. R. 1913, P 19.** Photograph Drawing

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: **Wacatova**

Location: **1½ mile north of Polacca.**

Flow in gals. per min. Before Development **Seep** After _____

Development (or remarks) **Developed by excavating into solid material of hill and water piped to large stone tank and troughs. Located in an old ruin.**

Reported. Photograph Drawing

A. R. 1912 P 20

No. _____ Name _____ as given in W. S. Paper 380.

Other names: **Cornfields Spring - - Tacoplapa.**

Location: **15 miles S. E. of First Mesa.**

Flow in gals per min. Before development ____ After ____

Development (or remarks). **Excavated, walled up and protected with a stone wall. Water piped to troughs. Is only a small spring and will not water much stock.**

Reported Photograph Drawing

A. R. 1913, P. 18.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Corner Spring.

Location: ¾ mile West of Honana Spring.

Flow in gals. per min. Before Development _____ After 16 gal per hour.

Development (or remarks) A seep about half way up a stony mesa. The Indians had tried to develop this by digging a reservoit in the sandy formation but it would not hold water.

The flow was traced back to solid rock which was blasted into, the water concentrated and directed to a pipe by masonry work. The pipe was led down the hill about 100 feet to a level place and 24 feet of troughs set and an earth reservoir built below this to store the overflow.

Reported. Photograph Drawing

A. R. 1916, P 110.

No. _____ Name _____ as given in W. S. Paper 380.

Other names: Shimopovi

Location: At village of that name.

Flow in gals per min. Before development ____ After ____

Development (or remarks). 6 small springs near the top of the mesa. These were cleaned out in 1912, but it was impossible to develop additional water.

Reported Photograph Drawing

A. R. 1912, P 19.

R E C O R D O F S P R I N G S .

HOPI INDIAN RESERVATION. ARIZONA.

No. ____ Name ____ as given in W. S. Paper 380.

Other names: Clay Spring.

Location: 10 miles N. of Walpi.

Flow in gals. per min. Before Development _____ After _____

Development (or remarks) 24 feet of troughs set.

Reported. Photograph Drawing

No. _____ Name _____ as given in W. S. Paper 380.

Other names:

Location:

Flow in gals per min. Before development ____ After ____

Development (or remarks).

Reported Photograph Drawing