Twin CK 26.3 5,100 Front CK 26,3 5,500 Sunset Saskfut 5,250 28.6 Roland 5,200 38.4 marks Px. 6,200 43.2 Cedar Crossing 6,900 45.9 Huckleberry Mt. 5,000 18,5 Burns Summit 3,100 Sherwin 3,000 7.6 10.2

FORM - 311 THE WASHINGTON WATER POWER COMPANY EDISON ELECTRIC LIGHT & POWER SYSTEM. SPOKANE STREET RAILWAY SYSTEM ADDRESS ALL COMMUNICATIONS TO THE COMPANY SPOKANE, WASH. September 7, 1921. JOHN B. FISKEN, CONSULTING ENGINEER Dr. J. E. Church, Jr., University of Nevada, Reno, Nevada. Dear Mr. Church: I have your letter of August 30th with reference to the working up of some data sent you last autumn by Mr. Stevens. I have discussed this matter with Mr. Huntington and would state that owing to business conditions he is unwilling at the present time to incur any additional expense. I am sending you a copy of my report of the snow survey for last winter, which I have had on my desk to send you for some I would state that Mr. Huntington has approved my recommen_ time. dation that course at Cedar Crossing be abandoned. If you desire to offer any criticisms on this report I should be very glad to receive them.

Yours very truly,

Consulting Engineer.

JBF_LC Enclo:

10 6 REPORT OF SNOW SURVEY FOR YEAR 1920-21 TO-GETHER WITH NOTES OF OTHER WORK CONNECTED THEREWITH SNOW COURSES. In Mr. J. C. Stevens' report dated September 18th 1920, it was recommended that eight snow courses be established as follows: 1. Cabinet 5. Cedar Crossing 2. Prout Creek 6. Sherwin 3. Lolo Pass 7. Medimont 4. Ward's Peak 8. Mica. I spent a considerable amount of time during the winter interviewing various persons who were acquainted with the conditions at these various locations, and as a result suggested certain changes to Mr. Stevens which he approved. I ascertained that the summit of the Bitter Root Range which could be reached both from Cabinet and from Trout Creek was bare as a result of the 1910 fire but that there was a considerable body of standing green timber in the range at the head of Twin Creek at an elevation of about 5000 feet which could be reached from Clark's Fork. and that the only other body of green timber near there was several miles south west at a lower elevation and harder to get at. It was decided to substitute Twin Creek Pass for Cabinet. As a substitute for Trout Creek, suggested a course near Sunset Peak and after a personal examination Mr. Stevens approved the change. Owing to the great advantage of accessibility of a snow course near Lookout Station over one at Lolo Pass (Coeur D'Alene Pass) I investigated the situation when there was a snow depth of two to three feet and found a suitable location on Lookout Mountain within about half a mile of Lookout Station and my recommendation that this substitution be made was approved. From inquiries made of Forest Service Men I concluded that suitable locations could be found at or near Ward's Peak and Cedar Crossing and these original locations were retained. On a visit to Sherwin prior to any snow accumulation a suitable course was laid out by Mr. Stevens. Owing to the fact that a snow course north of Medimont would have been rather difficult to reach whereas an equally good one was available at Burns Summit, this change was approved. The preliminary investigation developed the fact that the high point designated "Mica Peak" on the U. S. G. S. map is "Signal Point," that Mica Feak is the high point about 62 miles southwest, and that between the two is Huckleberry Mountain, all three being about the same elevation As Huckleberry Mountain is the easiest to reach I decided to try and find a suitable location on it and was successful. On our way home from Cedar Crossing we decided to investigate the possibilities of a good location above Roland and were successful.

In all nine courses were surveyed as follows:

1. Twin Creek

2. Sunset

3. Lookout

4. Ward's Feak

5. Cedar Crossing

6. Sherwin

7. Burns Summit

8. Huckleberry Mountain

9. Roland.

The attached map shows the locations of the courses proposed by Mr. Stevens and those finally adopted.

SMOW SURVEY TRIPS.

A schedule of Snow Survey Trips was prepared (see Appendix A) and was very closely adhered to.

BURNS SUNNIT. The party consisted of E. Logan and myself with some assistance from Lee Bergman and E. R. Wright.

We left Spokane by automobile Feb. 21st, 1921 at 7:45 A. M. and arrived at Thomson's 11:15 A. M. A considerable portion of the afternoon was spent exploring the mountains to the north east of Burns Summit but no suitable location was found in that direction. The rest of that day and the forenoon of the next was spent surveying a course along the old Mullan Road which was quite satisfactory. We left Thomson's at 2:45 P. M. Feb. 22nd, 1921 and arrived at the office at 6:25 P. M.

SHERWIN. The party consisted of Grant D. Godfrey and myself.

We left Spokane on C. M. & St. P. at 7:20 A. M. Feb. 24th 1921 and arrived at Sherwin Station 12:50 P. M. As this course had already been decided upon there was no delay in getting the survey started. There was only sufficient time between trains to survey 31 stations and as there was no place to spend the night and the 31 measurements showed very close uniformity I decided to accept them as the average for the course. We left Sherwin at 4:20 F. M. and arrived at Spokane about midnight.

HUCKLEBERRY MOUNTAIN. The party consisted of Grant D. Godfrey. Lee Bergman and myself.

We left Spokane by automobile at 7:15 A. H. Feb. 26th 1921 and arrived at Johnston's Ranch near mile post 82 Washington-Idano State line, at 8:30 A. M. After a walk of about a mile and a half we reached the snow line at elevation about 4000 ft. and from there snow should to the summit. Returning we left Johnston's at 5:50 P.M. and reached the office at 7:30 P. M.

SUNSET. The party consisted of J. C. Stevens, G. L. Richardson (who joined us at Wallace) and myself.

We left Spokane Feb. 28th 1921 for Wallace. We left Wallace March 1st 1921 at 7:30 A. M. by wagon, transferred to a sleigh at Rex Mill, and arrived at Tamarack Custer Store at 10 A. M. From there we snow shoed about two miles to the Guelph Cabin near the summit of the divide between Nine Mile and Cedar Creeks and near the beginning of the Course. We finished the work and started for Wallace 4:40 P. M. arriving there about 8 P. M.

LOOKOUT. The party was the same as at Sunset.

We left Wallace March 2nd 1921 by N. P. Train at 9:10 A. M. arriving at Lookout Station at 10:05 A. M. and on the course at 10:35 A. M. We finsihed the survey with plenty of time to catch the N. P. train from Lookout at 4:31 P. M. and arrived at Wallace 5:30 P. M. Mr. Stevens and I returned to Spokane the next day.

y g.

and myself. The party consisted of J. C. Stevens, Harold Knapp

Mr. Stevens and I left Spokane March 4th 1921 by N. P. train at 7 A. M. Arrived at Clark's Fork 10 A. M. and were met there by Mr. Knapp. After Tunch we started by wagon for the Knapp Ranch on Twin Creek where we arrived at 3 P. M. March 5th we left the Knapp ranch by sleigh at 6:30 A. M. and arrived at Burkes Camp a distance of about 2 miles at 7:45 A. M. We left the horses here and started for the summit on snow shoes. After a very stiff climb of about a mile we reached the summit at 10:25 A. M. and went west about one mile to the Course. After lunch we surveyed the course and started for home at 5:20 P. M. reaching Burkes Camp at 6:30 P. M. and Knapps ranch 7:45 P. M. We left Knapps ranch the next morning at 8:30 A. M. arriving at Durite, a siding on the N. P. at 9:40 A. M. and Spokane at 1:55 P. M.

Clyde Smith and myself.

Mr. Stevens and I left Spokane March 7th 1921 at 7:20 A. M. on C. M. & St. P. and arrived at Haugen 3:10 P. H. We were joined at Haugen by A. M. Donally and Clyde Smith and went with them to Savanac Ranger Station where we spent the night. Donally and Smith reported that as had been arranged they had made a trip to the ranger's cabin at Ward's Poak, had packed in some supplies, had dug the snow away from the cabin sufficiently for an entrance and found wood and other supplies sufficient for a stay of several days. They reported having had a very hard and dangerous trip as they were caught in a blizzard when returning from the Peak. Notwithstanding the blizzard they felt sure that the trail which they had broken would be found to be good, as it was. We laid in a few additional supplies and prepared for an early start the next day. We left Savanac March 8th 1921, by sleigh at 7:55 A. M., drove to the Gold Crome Mine about 4 miles and snow shoed to the Placer Camp, an old deserted camp, 25 miles further arriving there at 10 A. M. From here to the Ranger's Cabin on Ward's Peak a distance of 62 miles was all covered on snow shoes except a short distance before reaching the summit of the range where the side hill was so steep that snow shoeing was hardly safe and about a mile along the range where the snow was packed and walking without snow shoes was easier than with them. After leaving the Placer Camp we reached the Compresser about 12 miles at 11 A. M., the summit at 3:15 P.M. and the Ranger's Cabin at 4:30 P. M. On arriving at the Cabin we discovered that someone had been there after Donally and Smith had left and had stolen a considerable quantity of our supplies, and had it been necessary for us to spend several days there which fortunately it was not we would have been compelled to go on short rations. We made no attempt to trace the thieves although their snow shoe tracks were visible leading off to the south east.

Next day March 9th 1921 we started the survey at 7:40 A. M. and were finished by 11:30 A. M. We left the cabin on our return at 1:05 P. M., arrived at the Placer Camp at 4:50 P. M. and spent the night there. We were fortunate in having good weather, unusual at that time of the year, as otherwise it would have been impossible to have made the trip in the short time it took us. Our original plan was to follow the range from Ward's Peak to Cedar Crossing but the snow drifts and other conditions caused us to abandon the plan as involving too much risk.

The next day March 10th 1921, we left the Placer Camp at 7:45 A. M., were met by the sleigh at the Gold Crome Mine and arrived at Savanac at 10:55 A. M. We left Haugen C. M. & St. P. Ry. at 3:13 P. M. and arrived at Superior at 4:20 P. M. We purchased our supplies and arranged for a sleigh for the next day to take us to the Amador Mine.

During the night it started to snow and this condition continued all day March 12th. Contrary to the advice of several old timers, miners and trappers, who assured us we could never get over the summit till the storm had ceased and the snow settled, we decided to start out and go as far as we could.

CEDAR CROSSING. The party was the same as at Ward's Peak except as hereafter noted.

We left Superior by sleigh March 13th at 8 A. M. and reached the Amador Mine about 13 miles at noon. After dinner as the storm had ceased and the snow conditions were not as bad as we anticipated we decided to take the sleigh as far as we could. We left the Amador Mine at 1:20 P. M. Arrived at the Power House, about 3 miles, at 2:35 P. M. and at Mayville, (an old Placer Camp) about 25 miles further, at 4:30 P. M. For the last mile or there abouts the horses had all they could do to pull the sleigh with our packs, but as we were able to travel light, that was great help. On arriving at Mayville we met a miner, John Geronine who had just come down from the Fuller Cabin. He told us that he was familiar with the conditions along the range, and that on account of the excessive combing it would be impossible for us to get over Cedar Crossing, and that there was only one short stretch of several hundred feet where we could cross the range. I arranged with him to go with us as a guide. We spent the night at Mayville and started the next morning March 14th at 8:30 A. M. and arrived at the Fuller Cabin about 25 miles at 11:20 A. M. As we had climbed about 1400 ft. the last quarter mile being very steep and the snow shoeing had been heavy we decided not to attempt crossing the range till the next day. We left the Fuller Cabin March 15th at 8 A. M. The weather was clear and we had no difficulty in getting over the summit, elevation about 7200 feet We arrived at the snow course about 2 miles at 9:20 A. M. worked for one hour and ten minutes, during which time we took eleven measurements, and then started back as .storm could be seen approaching and we were in a rather dangerous situation. The storm struck us while we were on our way but by staying close to-gether and following our guide, our outgoing tracks were all obliterated, we arrived safely at Fuller Cabin at noon.

As the readings taken seemed to give a consistent average we decided that it was unnecessary to return for additional readings, accordingly on March 16th at 8:15 A. M. we left the Filler Cabin, arriving at Mayville 10:20 A. M., the Power House at noon and the Amador Mine at 1:35 P. M. As we were able to telephone from Mayville the team met us there and we arrived at Superior 4:40 P. M. We just had time to transfer our effects to the C. M. & St. P. train which left at 4:53 P. M., and by which we arrived at Roland the same evening.

ROLAND. The party consisted of J. C. Stevens, A. M. Donally and myself.

We started from Roland the next morning March 17th about 8 A. M. and had to snow shoe about two miles to reach the summit. Owing to considerable fresh snow the going was very heavy and we did not reach the course until 12:15 P.W. We finished at 3:05 P. M. and returned to Roland, We left Roland that evening C. M. &. St. P. at 6:39 P. M., got as far as Avery, where, on account of a wreck below Avery, we were sent back as far as Missoula and detoured into Spokane over the N. P. track, arriving about 4 P. M. March 18th.

This ended the regular survey, but a few extra measurements were taken at later dates at the Sunset and Sherwin Courses. These measurements showed a very considerable increase both in snow and in water content but as these added increments are included in the mass curves of precipitation starting March 15th, no correction is made in the estimate of water content of the snow blanket.

RESULTS OF SHOW SURVEYS

The results of the snow surveys as compiled are shown in Appendix B. which includes the details of the survey of each course and a Summary.

Inquiries made of various parties who are in position to judge lead me to believe that the snow conditions of the past winter are very nearly normal.

FUTURE WORK

In the OFFICE the following graphs have been or shortly will be started and are to be kept as nearly as possible up to date.

8. Mass curves beginning Mar. 15, 1921, in second foot days of. (a) the measured inflow, (b) the measured out-flow at Post Palls, (c) the out-flow minus the inflow, (d) the storage in Cocur D'Alene Lake.

9. Mass curves beginning Mar. 15, 1921, in second foot days of, (a) the sum of the measured out-flow at Spokane, plus evaporation from Cocur D'Alene lake, plus water pumped by the city of Spokane, (b) the sum of the measured inflow and lake storage.

10. To be decided upon later.

In the FIELD the clearing and permanent marking of the courses except Cedar Crossing will be taken up in the latter part of the summer.

I would recommend that the course of Cedar Crossing be abandoned for the following reasons: - It is a particularly hard location to reach in winter; with considerable risk involved; and it is at an elevation of almost 7000 ft. and is indicative of a very small area, the total area of the watershed above 7000 ft. being only 0,02 square miles. (see Appendix C) If however it is considered advisable to make another survey of this course next winter or to continue it permanently, the course should be cleared and marked this summer.

The courses of Burns Summit and Sherwin are in my opinion of little value, my only reasons for hesitating to recommend their abandonment are that they are easily reached and the expense of the survey is not great. I consider that it would be advisable to survey these courses next winter and to be guided as to their future retention or abandonment by the results obtained.

I have no recommendation at this time as to the abandonment of any other of the courses although we will undoubtedly decide to abandon some of them at a later date.

The results of last winters survey indicates that the water content of the snow blanket increases from the north to the south which leads me to believe that a very large part in proportion to the area of the discharge of the St. Joe. The elevation of snow courses surveyed last winter lies between 3100 and 5000 feet and the area between these elevations is a very large part of the whole. (See Appendix C). I would therefore recommend that a course be established at an elevation between 4000 and 4500 feet at the head of Fishhook Creek about nine or ten miles south of Avery. This I expect to investigate this summer. It may later be found advisable to establish another similar course further west; any course east of Avery would be extremely hard to reach in winter.

CABINS OR SHELTERS

It was not considered advisable to build any cabins for last winter's survey, and if equally favorable conditions prevail in the future no cabins would be necessary.

As we can hardly hope for such favorable weather conditions every year it is probable that a cabin near the end of the wagen road and the beginning of the trail on the way to Ward's Peak may be found necessary. This cabin could be reached in severe weather and with a supply of provisions it would be practicable to wait there for favorable conditions

when the ascent to the course, a distance of about five miles, the survey, and the return to the cabin could be made in one day. There is an unused cabin in fair condition at the point above described, formerly used by the attendant at the compressor, which could probably be purchased for a small amount, any communication regarding it should be with W. B. Mencely, c/o Mencely Bell Co., 177 Broadway, New York. I do not however recommend the purchase of this cabin at this time.

It may be necessary in the event of establishing a course on Rish-hook Creek to build a cabin either at the course or on the way to it. this will have to be determined by investigation.

CONTAINERS FOR SUPPLIES

Mountain etiquette forbids the locking up of cabins and any wayfarer coming to a cabin and finding it locked is justified in breaking his way in. Further such a wayfarer may help himself to any food which he may find in a cabin in a quantity sufficient to last him to the next place where food is obtainable. Violations of these unwritten laws are rare but as happened to us at Ward's Peak they do occasionally occur and I believe it is necessary that any supplies which we may put in in autumn should be there when we go in in winter. Protection also is advisable against raids by mice, pack rats or other animals. I am of opinion that containers can be made of iron that will be effective. These should be about 2 ft. x 3 ft. by 1 ft. to 2 ft. deep, made of sheet iron 3/16 in. to 1/4 in. thick, with and le irons at the corners, the fastenings to be stove bolts with counter sunk heads and having the nuts inside, and a lock with its face set back in a recess or countersink. This construction will I believe be proof against any onslaught as no one traveling on snow shoes is likely to have any tool sufficiently heavy to break open such a box.

METEOROLOGICAL STATIONS

Stations have been established at Mullan Junction and Roland (C. M. & St. P. tunnel) and have been in operation since March 15th 1921.

GAGING STATIONS.

The gaging stations recommended in the report of Mr. J. C. Stevens, with a few changes approved by him, have all been established and have been in working order since Earch 15th 1921, through some additional work which had to be postponed until low water period, to-gether with some repairs of damage by high water still remain to be done.

Respectfully submitted,

J.B. Fisken

CONSULTING ENGINEER.

July 1st. 1921.

SNOW COURSES Twin Creek LEGEND PROPOSED ADOPTED Frout Greek. Burns Summit Huckleberry Mt. Donset Luley Pass ST.MARIES Wards Pear anta POWER FOREST 05 herwin PALOUSE

APPENDIX A SCHEDULE FOR SNOW SURVEY TRIPS

	Date	Course	Conveyance	Distination
Feb.	21	Burns Summit & Wolf Lodge	Auto & Sleigh	Thomsons
	22			Spokane
	23	Mica Peak	Auto	?
	24	Sherwin	C.M.& St.P. #18	Sherwin
	25			Spokane
	26	·	O.W.R.& N. #9	Wallace
	27	Sunset Peak	Sleigh	Tamarack C. Mine
	28			Wallace
March	1	Look Out Pass	N.P. #264	Look Out
	2	Coeur d'Alene Pass		Pottsville
	3		0.W.R.& N. #21	Spokane
	4		N.P. #42	Clarks Fork
	5	Twin Creek Pass	Partly wagon or sleigh	Twin Creek Pass
	6		N.P. #305	Spokane
	7		C.M.& St.P. #18	Haugen
	8		Partly wagon or sleigh	Ward's Peak
	9	Ward's Peak		
	10		Snow shoes	?Cabin
	11			Fuller's Cabin
	12	Cedar Crossing		
	13		Snow shoes	End of Cedar Cr. road
	14		Wagon or sleigh	Superior
	15		C.M.& St.P. #17	Roland
	16	Roland		
	17		C.M.& St.P. #17	Spokane

APPENDIA B.

Course	Elev.	Date Si	epth of	Core Inches	Water Content Inches	Density Per Cent	Corrections to Mar.15,1921 Water content Inches	Content Mar. 15 1921 Inches.
Buins suicit	3100 Feb.	. 22,1921	29.3	27.0	7.6	25.9	4.1	11.7
SHURVIN	3000 Peb.	. 24,1921	38.0	33.0	10.2	26.6	2.1	12.3
HUCKLEBERRY	5000 Feb.	26,1921	56.0	50.0	18.5	53.0	5.7	22.2
SUNSET	5500 Mar.	. 1, 1921	78.9	71.2	26.3	33.4	3.8	30.1
LOOKOUP	5250 Mar.	2, 1921	79.1	75.6	28,6	56.2	1.5	30.1
TWIN CREEK	5100 Mar.	, 5, 1921	77.0	70.4	26.3	34.2	2.5	26.8
WARD'S PEAK	6200 Mer.	9, 1921	112.0	106.0	43.2	28 • 6	0.5	43.7
CEDAR CROSSING	6900 Mar.	15,1921	131.0	124.0	45.9	35.0	. 0.0	45.9
ROLAND	5200 Mar.	17,1921	118.0	112.0	38.4	52.5	0.0	38.4

Remarks.

	THE C	CRIPTION OF COURSE		MEASU	REMENTS
Sta.	Dist.	Remarks	Depth		ter tent
	, A	ESTERLY COURSE		¥	
1	50 1	from menument west in line with pole & 10 or 11 south of or	th		
	gu ys t		28"	245	6월 7분
2	SOU AR-	bte 15 to point B.T. 14'S.W.	blazed28	24	浸
3	50 AR. 8	bt. 10° to point B.T.12'6" S	26	25	7
4	50		291	26	7
5	50		27	25	できる。 できる。 できる。
6	50 AL.	abt. 2° to point B.T.W.16'3"	28		100
7	50 B.T.	S.W.16'6"(Blazed with ski pol	Le) 285		*
8	50		26_		
9	50 AL.a	bt. 2° to point. B.T. 13'6" S.	v. 26		7
10	50		26		7
11	50 B.T.	W.17'3" (Blazed with kki pole	252		5
12	50		23	22	5
13	50		25		7
14	50		27	26	6
15	50		28	27	18
		EASTERLY COURSE			
1	At 1	acunment sample taken 14' S.	at .		-1
	rig	ht angle to westerly course	29	28	12 S
2		nce from momment east in lin	le with 27	- 26	" "
		st telephone pole.	30		8
3	50	afor too buscon as	30		8
4 5	50 AR.	to second tel. pole	33		
6		W. of pole	32		8
7		abt. 10°	51.		唇
8	50 Zm.		38		9 1 10 1 10 1 10 1 10 1 10 7 10 1 10 1 1
3	50		27		67
10		.9' S. to pole	26		7
11		15 to B.12 W. pole 14	30		7.5
12		.30° to B.15' L. pole 30	27		72
		77 27			

Average Density $\frac{7.6}{29.3} = 26.9\%$

Sta.	Dist.	Remarks	Depth	Co	re co	ater ntents	Remarks.	
13	50		31		30	8		
14	50		3:	答	31층	8		
15	50 AR.	25 to pole 14 N.W. pole 14 33'	30	THE RESERVE OF THE PARTY OF THE	29	8		
16	50	29 - 27	3		24	9		
17	50		3.	3	31	8		
16	50		5	造	31	8		
19	50		2'	1	24	$6\frac{1}{2}$		
20	50 AR.	20° to pole 14. S.W.B.T. tall tal			26	8 71 8 7		
21	50	31		沙	29	8		
22	50		2	3.5 3.5	28	7		
23	50		2	9 5 -	26	71 91 81		
24	50		3		32	9是		
25	50		3	2}	30景	8		
26	50 26°	W.of pole 14 & 65' N.W. of 4th by tree.	. of <u>.</u> 3	2	31	8		
			41 120	3.0 1	107.5	311.5	TOTALS	
			2	9.3	27.0	7.6	AVERAGES.	

TIME --- Feb. 21, 1921 Began, 4:00 P. M. Finished 5:00P. M. (Westerly Course)
- Feb. 22, 1921 " 9:00 A. M. " 12:00M. (Easterly Course)
WEATHER --- Feb. 21, 1921 Clear. Feb. 22, 1921 Snowing more or less.
TEMPERATURE

CHARACTER OF SNOW-----6" loose snow on top, frozen underneath. CONDITION OF SOIL-----Soft. No frozen ground encountered.

		DESCRIPTION OF COURSE	MEASUREMENTS					
4.0					Water	SECULAR MARKET AND A SECULAR DESCRIPTION OF THE PERSON OF		
Sta.	Dist.	Remarks	Depth	Core	Content	Remarks.		
		Started at White Pine, old blaze	112					
	17	chopped across & Blue						
1	13	thence 2'5" to the R. of white fir			100			
2	50	blazed and blue	35	20	7분			
3			412	402	10			
	43		392	35	11_	3" of dirt		
4	70		39	33 1	10]			
5	50		33	26	7克			
	13	Above mentioned white fir			4 100 0			
6	50		31	27	91	1/2" of dirt		
7	46		39支	37	11			
		Passes near small blazed cedar						
8	75		36 g	33克	92			
9	58		452	36	13			
10	48		42	35表	10½			
11	50		35 g	31	9 2			
12	50	Sample taken 6" west	38	34	10½ 9½ 12½			
13	50		$33\frac{1}{2}$	30	8			
14	50	L. 85° R.T.3°L. of line 37' be-						
		yond Sta. 14	40분	372	11			
15	50		38	36長	10 ਹੈ			
16	50		36	28	10	1/2" of dirt		
		Passes 6" from tree blazed & blue						
17	50		36	32	10	1/2" of dirt		
18	50		40월	35 2	11분			
19	50		421	39	11			
20	50	R. 90° B.T. 26' W. marked R.P.	39 2	36	101			
21	50	thence 1 Ft. to right of Big						
		blazed in bark	371	321	10			
22	50		37	33 3	104			
23	50		42	40	125			
24	50		37	26	8 1			
25	50		36½	35½	8등 10등	1" of dirt		

	DESCRIPTION OF COURSE		MEASUREMENT					
ita.	Dist. / Remerks	Depth	Core co	ator	Remarks.			
26	50	4.2	34	111				
27	50	382	38	10計				
28	50	52	28	9				
	Passon 2' from tree old blaze market Blue X							
29	43	36	341	9				
30	50	40	55	10				
01	50 H.T.center of line 5' distant blaz	ed						
	and marked R.P. in blue	an l	24	8]				
	3	1 1177.0	1024.5	314.0	TOPALS			
		38.0	38.0	10.1	AVERAGES			

COURSE ----- Huckleberry Mountain.

AVERAGE ELEVATION ______5000 Feet.

CHARACTER OF FORESTATION----

		DESCRIPCION OF COURSE	IAMASURE GENUS			
ita.	Di st	. Remarks	Depth	Core Co	later	Remarks
		White Fir abt. 25' tall 600' to 700'				
		S.40°E. of Cabin, Blazed and marked	64"	56"	108	
3	50 '	食 in blue	534	495	19是	
	50		63	425	16	
	P	asses 3'3" from small white fir (Blaze marked blue.				
4	50		62	57号	201	
5	50		50	46	16	
	28'4"	AR.55°R. P. Dead snag 7'6" marked xb	lue			
6	441		43	38	151	
7	50		37章	34	135	14" of dirt
8	50		565	48 ^T / ₂	184	Wood ?
9	50		4湯	343 483 413	15	1" of dirt
10	50		46	45	18	
		3.T.63'6" ahead B.T.L.26 (Blaxed & Blu	10)			
11	50		61	483	18計	1/2" of dirt
12	50		64	59 -	21	
13	50		45	42	16	
14		B.T.W.45°E. 2' (Blazed & Blue)	55늘		19	
15	50		49	421	17%	
16	50		48	46	181	1/2" of dirt
17		B.T.N.90°E. 24' Red Fir(Blazed & Blue B.T.N.15°E 10' Dead Tree " ") 40	38	15	
18	50		64	44	175	
19	50		652	55	20 *	
20	50		57	43	16	
21	50	Sample taken 3' west of line	66			
23	50 50		49	65	235 175 165	
24	50		42	38	16是	
		Bet. 2 Trees 1 R.4'6"(Blazed on back) 1 L. 5'4"(Blazed & blue)	45	41	17毫	
25	65		401			
26	50	Sample taken 2' South of line	491	43	19	le" of dirt
27	50				16	1" of dirt
28	50		531			
29	50		46	425		13n of dirt
30		L.40° B.T.15° R.47'7" (Blazed & Blue)	41	39	141	On log?
		B.T.130° L.21'3" (dead snag blazed &bl	56 1	55	20-{	1" of dirt.

DES	CRAPPITON OF	COURSE		MPESULED		
Sta.	Dist.	Remarks	Depth	Core	Wate: Conten	[20] 사용 등 기업 기계에서 경우스(2012년 역사 시간) 시간 중심 사용하는 시간 경우스 시간
31 32 53	50 50 50	T.R.105°8°6" B.T.L.45°12'	50½ 77 67	4 8 76 64	175 275 245	1/2" of dirt
34 35 36		Blazed & Blue)	62 69 75 2	60章 62章 51章	201 21 171	1/2" of dirt
37 38 39 40	50 50 50 No Stal	ce, dropped branch marked? R.8º B.T. 15' on line	735 435 9 555 658	46 46급 55급 56급	15 17 19 2 192	1" of dirt
		40		2009.5		TOTALS
			56.	50.2	18.5	AVERAGES

Average Density 18.5 = 33.0%

TIME -----Feb. 26, 1921, Began 12:00 M. Finished 4:30 P.M. WEATHER-----Bright sunchine with occasional fog. Dense fog at lower elevation almost all day.

AVERAGE BLEVATIVE ---- 5500 Peet.

Balance in light green timber.

HARURE OF SOIL.

		DESCRIPTION OF COUNTS		MAS	URBBUTT	
ita.	Dist.	Remarks	Depth	Core Co	ater ntent,	Recerks.
		4'E of cor. pole of Guelph, blazed	0 74	66	27	2" of dirt
		thence	75	72	27	
	50 *		65	52	* 19}	1" of dire
4	50 *		62	50%	22	
	501		68	66]-	23	
5	50 '		84	72] 70]	29	33" of dirt
	50*		78	707	27	25" of dirt
	50'		81	70	26	
)	50*		· 783	683	24	
10	50 1		81	77	28	13" of dirt
11	50		80	70	24	
LZ	501		82	A 67	26	
i and		sees 4th pole N of dor. blazed 5'l				
15.	45	发表的。	.90	81	29	1" of dirt
14 15	501 501		715	65	24	
16			77	73	25	
	351	ATT THE CHARLES OF THE CONTRACT OF THE CONTRAC	84	798	30	
t 29	PA.	AR.115°3'3" E. of 5th pole H of c	or.			
17	50*	Thence	60	77	29	
18	491		531	49	17	
19	501		62	77	28	2" of dirt
20	50		100	83	30	
21	50*		84		28	
22	50 '		91分	88	32	
40		asses 2'5" L of large hemlock				
23	DU	ARSS'B.R.21'S" about 5'L. old mag	93	88	291	
24	50	Inence	875		35	
25	50		79	75]	28	
26	50'		87	77	29	30 of dirt
27	50		89	78	26	-8 n. crr.
28	50		77	74	27	
29	50		65	57	23	711 A.7 NO.
50	50		623		25	l" of dirt

	7.18	SCRIPTION OF COURSE		MEASUREETTS						
Sta.	Dist.	Remarks	Depth	Core	Water Content	Remarks.				
31 32 35 34 35 36 37	60' 50' 50' 50' 50' 50'	1'10" from blazed tree . 195° 16 feet	501 823 73 921 714 128 635 ree	59 61 51 79 68 123 62	28 22 30 24 49 49 49	1" of dirt 2" of dirt drift 2" of dirt				
			78.	9 71	.0 1006.0					

		DESCRIPTION OF COURSE		IEME		
Sta.	Dist.	Remarks	Depth	Core	Water Content	Remarks
1.		B.C.M.M.S. 18'9" B.C.M.16'2"	68 a	66"	23%	
2	50 *	Thence S. 55°C.	63	62	24	
5	101		84	61.	32	2" of dirt
	50 1		7%	77%	30	14" of dirt
5	501		63	61	24	
6	50*		72	70	25	
7	50'		- 66	66	25	
8	50 1		77%	69]-	267	53" of cirt
9	50*		74	7.2	30	
LU	50 *		76	69	28	dirt frozen (?)
11	50		85	22	201	2" of dirt
12	50		60	75	31	4 " of dirt
13	50 *	3.7.3.25° W 31' B.D.S.90° W 19	831	79	30	
14	50		60	78	29	
15	501		82	77	29	
16	50		91	80	32 1	l" of dirt
17	50 '		80	79	30	
18	50'		80	76支	30	23" of dirt
19	50*		76	55	25	
20	2 2 2	990°L.B.T. 6.40°T. 22' B.T.H.70°W.19'5	74	72	27	
21		Thence S. 30° E.	74	72	25	2" of dirt
22	50*		鲆	83	32	
25	501		72	69	25	
岩垒	501		81	74	29	1" of dirt
25	501		80	75	27	
26	50'		78	73	26	
27	501		67	65	23	Fog ?
28	50*		84	83	50	2º of dirt
29	50		85	84	27	1" or dirt
30	50'		86	83	50	2 " of dry dirt
51	50 *		80	74	25	
32	501	B.T.H.65°W.10*10" B.T.S.80°E. 12*.	111	91	34	1" of dirt
33	- 50		78	78	31	
34	50'		77	76	39	
35	D.		82	SI	50	

3	DESCRIPTION OF COURSE			PHARUM	marke ment con reputing	
ita.	Dist. Remarks 1		Depth	Core Co	ater ontent	Romanica
6	501		83	80		l" of dirt
7	501		90事	88計 74		4 of dirt
3	50. Passes 1/2" from blazed dead eneg		74	74		dirt frozen(T)
9	50'		80	80		1/2" of fromen dirt
)			69	86	33}	
		40	3165.5	5022.0	1144.6	5 TOTALS
			79.1	75.6	28.6	5 AVERAGES

Average density 28.6 = 36.2%

FIRS———March 2. 1921 Began 10:35 A.M. Pinished 2:25 P. M. WEATMER———Day cloudy Wind light. Inclined to smow. THEFFRATURE———A little below 32 P. CHARACTER OF SROW——New snow, rather damp. Packed under snow-shoes.

COMMITTON OF SOIL---Unfreren except at a few places, which are doubtful.

THE PROPERTY OF SETTINGS			<u> </u>	
DESCRIPTION OF GOURSE. Sta. Dist. Remarks	Depth	Core	Water Content	Remarks
1 1/8 mile V. of summit of				
twin Creek pass B.T.B.45 B.	00	80		2 " of dirt
5.1.H. 30°W.	62 en	50	213	
80 thence N. 60° H.	විම	86	70	
3 50	68	73	26	
1 50	75	73	27	
8 80	75	71	26	
6 50 AR.70°B.T.L.15'2" B.T.R.4'10'	77		28	
7 55 thence S. WE.	82	80	20	
8 50	62	79	25	
9 50	74	68	20	dirt
10 50 AL.55 B.T.L.5'9"B.T.R.28'2"	24	75		2" of dirt
11 50 themos S. 85° 3.	75	70	27	lan of dirt
12 50	62	573		Thete
15 50 AR. 10° B. 2. L. 50° B. 2. R. 13'8"	65	84	21	1" of dirt.
14 50 thanco S. 75° E.	84	32		
15 50	86	60	301	le of dirt
16 00	85	84		
17 50	70	68	24	
18 50 AR. 80° B.T.L.S'10" B.T.R. 15	28 . 59	28	20	
19 50 thence S. 15° E.	74	70		
20 50	94	95		150 of dirt
21 50	75	70	25	1" of dirt
28 50	77	71	28	
25 50 AL. 95° B. V. L. 8'S" (4"fir B. T. R.	51911			
[8" Piz)	76	69	28	
24 50 themes N. 70° N.	63			1" of dirt.
26 50	56			11" of dirt.
	73			
26 50 27 50 4 n. 25°B.T.L.6'4"B.T.R.25'0"	88			
전에 함께 전혀 있다면 그렇게 되었다면 하는데 되었다면 하다면 하는데 이번 사람들이 되었다면 하는데 하는데 하는데 하는데 하는데 하는데 하는데 하는데 이번 보고 있다면 보고 있다.	84			1" of dirt.
	58			
39 50				

-		DESCRIPTION OF COURSE	A PARTICIPATION OF THE PARTICI										
Sta.	Dist	Boncarda -	Depth	Gere co	ater	Remarks							
30	50		79	67	26/2		20°5.						
31	ASTO.	Al. 75° B.T. L. 1'7" B.T. R. 5'0"	70	46	22	In of dirt.							
32	50	thence N. 20°E.	75	69	26								
33	50		4 65	57	200								
34	100		78	71	27	1" of dirt.							
35	50		04	76	4+1 28								
86	50	△L.30°B.T.L.14'2" B.T.R.29'8"	67	84	274	1" of dirt.							
37	50	things I. W	73	693									
38	50		i the same	Ø	25	2" of dirt.							
39	DO.	D.T.L.5'0" D.H.R.14'2"	01	75	27	2" of dirt.							
		30	2957.5	2739.5	3027.0	20216							
			77.0	70.4	26.3	AVERAGES							

Average density 20.5 = 34.2 %

THE BOTTOM S. D. D. D. T. Finished S. D. F. H. What Man Sancit.

The Below S2° F. ali day.

CHARLOTER OF MINI-Feirly dry.

Coldinion of Coll---- Soft; none frozen.

AND SECURITY AND THE	n n	ESCRIPTION AND OWNER		· Ma	SURM	TPS
Sta.	Dist.	Romaning	dapth	Core 30	nter	Remaides.
		1 B.T.L.24 (Lurge balsam blazed)				
		1 B.C.1.51'8"(Gentl belowm blazed)	119	116	44	
2	50	tlenco 3. 90°E	121	116	45	
8	50		117	107	42	
4	50		102	100	39	
5	50		132	130	10	1" of dirt
6	50		1031	100%	45	11 of dirt
77	50		125	104	47	1 " of dirt
8	50		1053	1016	41	le" of dirt
9	50		103	96	42	d" of dirt
1.0	50		147	145	57	
11	50		129	1024	51	1 of dirt
12	50		115	113	46	
1.5	10	D.P.R.4'8" B.F.L.2'	101	60	75	2" of dirt
14	50		114	106	44	
15	50		102	94	39	
16	50		111	1105	46	le" of dirt
17 18	50 50		134	127	55	
19	50		120	11.9	52	
20	50	B.T.E.19*7" B.T.14*5"	97	97	39	l" of dirt
21	50		99	90%	40	
22	50		91	88)	34	Rock S
23	50		134	125	51	
			107	101	4.5	2" of dirt
24	994	08.85 B.T.R.21 B.T.L.34'5"	96	93	39	
25	50	thecoe S. 55°M.	975		37	15" of dirt & grass
26	50		112	111	42	was or come a States
27	50		124	116	45	
28	50		130	128		
29	50				50	
30	50 4	AL.50° B.T.R.18'B.T.L.50'3"(Gmall tr	14.0 00	106}	41	
31	50	bealde 2 large coes)	119	112	47	E" of dirt
			122	114	45	

DESCRI	PTION OF C	OURSE		MEASUR	Annual State of the Control of the C	The second second second second second
Sta.	Dist.	Remarks	Depth	Core	Content	Remarks
32 33	50 50		85 126 ½	74 122	34 47	2" of dirt
34 35	50 50		113 109 120	102 107 111	44 43 46	2" of dirt
36 37 38	50 50 50		94 123	85 118	33 477	on rocks
39 40	50	h Blazed tree on sout R. 15'10" B.T.L. 15'6	56	41 103	20 42	3" of dirt
			40 4477.5	4245.0	1728	TOTALS
			TIE	106	43.2	AVERAGES

AVERAGE DENSITY 43.2 = 38.6%

TIME - - - - - March 9, 1921, Began 7:40 A.M. Finished 11:30 A.M. WEATHER - - - - - Bright sunshine, strong wind.

TEMPERATURE - - - - - Abt. 30° to 32°F.

CHARACTER OF SNOW - - - Dry on top, wet below.

CONDITION OF SOIL - - - Soft.

		DEPOSTURAÇÃO OR COURSE		THE PROPERTY OF THE PARTY OF TH									
Sta.	Dist.	Sidna ska	Depta	Core	Content	Remarks.							
1	50	B.T.A.1117# B.T.L.15*1*	114	112	42								
	50*	Throng N 45° V	138	138	10								
3	BQ *		137	155	47								
4	50 1		1.27	122	46	3" of dirt							
	50*		120	104	40								
6	501		120	123	45								
7	60*		120	126	- 45								
	13)*		130	127	45								
	ED 1		137	135	51								
10	501		189	127	49	l" of dirt							
11	D'	S.R.corner tool house R28**** at F.S. onbin an Sine B.D											
				117									
			11 1440.0	1859.	505.	202.1.6							
			152	124	45.9	ATRIAGES							

Average density 45.9 = 35.0%

THE Description of Soll-Vafreson.

CHARACTER OF FORESTATION -- Stations one and two in C.M. & St. P. clearing
Stations three to twelve in old burn porcupine
timber. Balance of course in fairly heavy timber.

NATURE OF SOIL-----Humus.

	DESC	RIPTION OF COURSE			MEASU	REMENTS
Sta.	Dist.	Remarks	Depth	Cole	Water	
1	Mid	way bet. two H. frances of C.M. & St.P.R.	16 - - ON			
		mit -	72"	58π	20"	
.2	50 The	nce W. 60°W	54	53	14.	
3	501		122	120	58	017 a.g. 23 mb
4	501		115 97	111 95	40 32	2" of dirt
456	50 i		120	118	42	l" of grass
7	50 r		111章	1072	35	21" of dirt
7 8	501		108	105	34	
9	501		124	123 1223	41 40	1을" of dirt
10	50 1 50 1		119	115	40	TS OT CTTA
		s about 1' from				
		blazed tree				-11
12	50'		125	120 96	43 35	1 of dirt
13	50°		99 136 2	1331	44	13" of dirt
14 15	501		140	133	45	
16	501 AR .40	B.T.14'8"B.T.L.6"	123	119	40	1" of dirt
17		ice N 20° W	124	121	40	TH AD BELLE
18	50'		126 129	123	42 41	1" of dirt
19	501 501		119	110	58	
60	함께 발매되는 제품 경기에 가장하지 않는데 하고 있었다면 되는 것이다. 사람들은 10	s bet.blazed trees				
		18" apart	- 00			
21	50		109 110 1	84	30 32	1" of dirt 22" of dirt
22	50! 50!		139	126	42	12" of bear gra.
24	50 AR. 80	B.T.R. 5'B.T.L. 6'9"	134	125	41	
25		ice N 60°E	138	135	45	
26	501		1385	120号	40	12" of bear gra.
27	50	00°B.T.R.9'4"B.T.L.	134	129 79	44 33	2" of dirt
28		L'5" Thence S 20° E	ب بلدیده			
29	501		117	109	33	
30	501		133	131	44	l" of bear grass
31	501		114출 109	106 월 98	37 31	21 of dirt
32 33	50°		99	92	34	3" of dirt
UU	70					ASSESSMENT OF THE PROPERTY OF THE PARTY OF T

nar e	DESCRI	PTION OF COURSE	MEASUREMENTS							
Sta.	Dist.	Remarks	Depth	Core	Water Content	Remarks				
34	501		131	124	41	1" of dirt				
35	501		117点	116	41	e grass				
36	501	Passes about 8" L. of blazed tree	140	136	47	2" of dirt				
37	50*		130	134	44					
3 8	501		124	119	40	3" of dirt				
39	501		118 1	108	39	21" of dirt				
40		B.T.R.6'4" B.T.L.22'5" about 32' to intersection of course 40	(<u>99</u> (4732.5	77 4464.5	33 1535	3" of dirt TOTALS				
			118.3	111.6	38.4	AVERAGES				
			Averag	e Densi	ty <u>38.4</u>	= 32.5%				

TIME ______ March 17, 1921 — Began at 12:15 P.M. Finished at 3:05 P.M.

WEATHER _____ Raining & Snowing. A little wind.

TEMPERATURE _____ About 35° F.

CHARACTER OF SNOW _____ Very wet on top 2° to 3° below frozen crusts.

CONDITION OF SOIL _____ Unfrozen.

DRAINAGE AREA OF THE COEUR D'ALENE LAKE WATERSHED-IN SQ. MILES.

			LEVATION-				
	2000 to 3000	3000 to 4000	4000 to 5000	5000 to 6000	6000 to 7000	Above 7000	TOTALS
Coeur d'Alene River-							
Above Cataldo	166.75	502,25	402.00	126.50	17.00		1974 -
Above the mouth	310.50	612.00	426.50	131.75	17.00		1214.50 1497.75
St.Joe River-							
Above Calder	52,08	245.72	396.81	334.18	55.71	.82	1005 80
*Above the mouth	369,02	604.84	524.05	346.65	56.75	.82	1085.32 1902.31
*Includes St.Maries							
St. Maries River-							
Above Lotus	86.10	223,75	102,20	7.95			400.00
*Above the mouth	112.02	257.76	102.20	7.95			420.00 479.93
*Included in St.Joe							
TOTAL AREAS							
Above Gaging Stas.	304.93	971.72	901.01	468,63	72.71		9810 00
Above the mouths	679.52	1216,84	950.55	478.60	73.73	.82 .82	2719.82 3400.06
Total Area of							
Watershed	974.60	1312,40	971.73	479,42	73.73	.82	3812.70
Per Cent of Total	25.56%	34.42%	25.49%	12.57%	1.94%	0.02%	

The narmal and monthly run-off with the percentage relationship of the monthly to the annual is given in the following table: Table -. Normal Mouthly and annual Cum-Off of Pend Orcelle River at Newport, Washington. and Cornected for natural Stanage in Lance Pend Oriella. Per Cent Months acre-Test 649,000 aclaher 3,38 796,000 November 4,15 Desember 646,000 3,37 689,000 January 3,59 February 613,000 3,19 4,86 Murch 932,000 1,809,000 9,43 april 19.40 3,721,000 May June 4, 755,000 24.79 July 2,685,000 14.00 1, 174,000 6.12 august Deplember 710,000 3.70 19,180,000 100,0 annual 67,62 12,970,000 april- July

upon it, famisher the below of the remoff.

Willamelle [10,341,304A.F.] 2.6

Columbia

let-

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Survee Colombia Classes Forse lep. Cal. 3.90 3.38 4.20 5.10 Kev 4.15 3.89 4.75 4.75 alce. 3.37 4.17 2.98 3,92 Jan. 4.30 3.82 3,59 2.15 4.98 Fel. 3.19 3.77 1,62 I bleer. 10,28 4.86 5.30 2.20 8,31 14,50 9:43 4.94 15,29 19:40 20.05 12.68 24.79 July 22.83 19.71 21.13 14.00 16.22 7.71 8.83 Sug. 14.42 6,12 2.94 5.34 3.70 2.70 Sep. 8.41 100.0 100.0 100.0 majora: 100,0 ogs-guly 58,97 neay-ang. 68,45 apre-pely 61.97 60.95 apr. ply 67.62 Mar. June 64,52 May aug 61,47 5x.49

Ripana 3.71 4.36 4.75 nov 4.46 4.74 4.17 4.86 5.42 4.30 5.25 5.51 4.98 9.26 10.26 14.01 13.52 14.50 20,24 20.42 20.05 20.41 21.10 7.91 8.11 2.90 2.86 2.65 100.02 63192 63.30 62.57 apr-July

DAILY GAGE HEIGHT, IN FEET, AND DISCHARGE, IN SECOND FEET, OF COLORADO

DRAINAGE AREA

SOUTHERN COLORADO

SOUTHER COLORADO

SOUTHERN COLORADO

SOUTHERN COLORADO

SOUTHERN COLORAD

Table of use: Half tenths All Used rating table dated .

OCTOBER. NOVEMBER. DECEMBER. JANUARY. FEBRUARY. MAY. JUNE. JULY. AUGUST. SEPTEMBER. DAY. Gage Discharge. Gage Discharge. Gage Discharge. Gage Discharge.	DAY. BY A SERIES
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0 8 15 10.1 145 15000 8.65 10700	2 15 - 5
16 935 16 16 16 16 16 16 16 16 16 16 16 16 16	
00 0 17 155 28000 98 16000 84 9660	7 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日
- 18 - 1055 26.3 12.0 32.000 10.5 20000 8.2 8860	18 KH 49 49
NO 1195 31600 9.95 16800 82 8860	19 8 8 8 8
20 20 8300	20 # 37 N
195. 21 120 32000 1095 23200 80 8110	
50 28400 11.8 28400 11.2 25100 8.0 8110	22 6 33
32 1145 1915 11.7 29300 12.5 36800 8.0 8110	23 = 886
11.55 28000 13.45 47400 80 8110	
1 5 0 1.5 27500 15.1 66600 7.9 7750	
26 164 11.35 26300 1385 52100 7.85 7580	
. 6 2 120 1615 11.35 26300 13.45 47400 7.85 7580	
Σ 5 6 28 16.0 11.5 27500 12.35 35300 7.8 7400	
29 12.1 16.2 12.0 32.000 1.85 30600 7.75 72.3	
. 9 5 5 1.3 25900 1.5 27500 7.7 7060	2 30
31 13.45 11.2 25100 1.2 25100	51
1,098,400 813,300 378,720	
35,400 26,200 12,600	
Second-feet per square mile	
Run-off, depth in inches	
2,180,000 1,610,000 750,000	
64,800 66,600 24,700	
25,100 14,300 7,060)

AILY GAGE REIGH	II, IN FE	ET, AND	And the same of the same of	RGE, IN SI hern Cal	ifornio		Co. 5	LORA I.G. Coc W.E.Jo	kroft		, Obsc	RIVER							RENDING S		0, 19 22	***	le of use: Fial		A II	rick f t. k a	++
	осте	BER.		EMBER.	DECE	MBER.	JAN	NUARY.	FEBI	RÚARY.	M	ARCH.		AP	RIL.		MAY.	J	UNE.	J	ULY.	AU	GUST.	SEPT	EMBER.	ET.S.	H.
		Disc. 10	Gage height.		Gage height.	Discharge.	Goge height.		Gage height.	Discharge.	Gage height.	Discharge,	LWY.	Cage height.	Discharge,	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge,	Gage height.	Discharge	Gage Leight,	Discharge.	DAY.	427
	7.7	7060	760	7140	7.85	7770	8.1	8480	7.05	4820	8.35	9460	1	9.85	17000	12.9	43900	19.7	106000	13,8	50000	88	10400	80	8570	4	1 2
				7080								9260	2	965	16000	13.3	48500	19.75	102 000	13.5	46700	8,85	10500	805	8760	2 QNOO	世中了
		7750		7020								9260	3	9.4	14800	13.9	55400	18.7	99000	1325	44000	8.9	10200	8.05	8760	3 5	any
	7.80	7400	7.6 0	6960	7.25	7230	81	8480	7.2	5090	8.1 @	8480	4	9.20	14000	14.1	57800	17.7	91500	13.05	42300	9.1	11300	8.55	10800	4 1881	FH
	76	6810	765	7050	7.75	7060	845	9860	7.1	5180	7.85	7580	5	9.1	13400	14.10	57800	16.85	\$6900	12.9	41100	9.4	12600	8.75	11600	5	0
												7230	6	9.3	14400	14.6	62000	164	81600	12.3	35200	9.25	12200	8.35	9980	6 2	
												7060									33500					7	mpute ccked
				7230								6720	8	995	18400	1555	71800	16.7	85100	11.9	32200	8.8	10400	8.1	8960	8	3 5 4
	No. of Concession, Name of Street, or other Publisher, or other Publisher, Name of Street, or other Publisher, or											6720	9	10.1	19200	164	81600	17.05	87000	11.7	30/00	8.75	10200	8.15	9160	9	17.4
												6560									26600					10	257
												6240	11	9.95	18700	1675	85700	18.4	101000	11.2	15000	8.35	8800	7.9	8200	11 🗐 🚊	7 K
												6080	12								23400						50
												6080	la de la companya de								21800						#£6
												6080	14								21200						25
												6240	15								20000	A CONTRACT OF THE PARTY		District Control of the Control of t			#,
							Maria Control of the					6720	16								18100					THE RESERVE TO SERVE THE PARTY OF THE PARTY	3
												10300	17								17/00						lied.
												17000	1								15600	A STATE OF THE RESIDENCE OF THE PARTY OF THE				The second second	h. app
												23200		to be a second or the contract of		The second secon					14300	The second secon					Disc Disc Date
												30 000						All the second s			13500						
							The Real Property lies					33100	21		Control of the Contro	Maria Santa Sa		The state of the s			12800	Marie Control					
							AND DESCRIPTION OF THE PARTY OF					32200	22								12100						112
												25000	23			No.						CONTRACTOR OF THE PARTY OF THE				A STATE OF THE PARTY OF THE PAR	222
							A STATE OF THE PARTY OF					21600						The second second			11300						-Or
					H. C.							22000				Harmon Control of the					10800						100
												21600									10300						五五
												24000	27			A CONTRACTOR OF STREET					9700					27	五五元
												24400	28								9560					28	g 1 g
							ALCOHOLD STATE OF THE PARTY OF					24400									9290						Ched.
							A TOTAL PORT OF THE REAL PROPERTY.					22200		12.85	43300	19.60	106 000	1410	53000	8.35	8790	8.2	9370	4.8	4600	30	G. H. G. H. Date
												19300									8670						
Total				010								6070		60:	2 300	2 2 3	37200	252	4 500	687	1010	325	680	211	940	811	1,930
												-000															
	1	270	/	000	1	240	د د	710		1880	13	5000			.6100	/	2200	0	7 200		2200	70	300	'		22	,200
de depth in inches				200			2-			0										13	1		//>		order (1984)	17	
		000		7000		5000				8000		2000									60000		6 000		000		100,000
		500		7860		500		7860		1100		3100			43300		10000		06000		0000		8500		1600		10 0.00
	6	580		6400		4960		3680		4820		6080			12800		43900		53000		8670		7250		1600		3680

for the years ending Sept. 30,

	DISCH.	RUN-OFF IN ACRE-		
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1902				226 144
N evembe r				2-19-6-50
December				301
January .				229 164
February.				219 650
March	Marin Marin			301 474
April				367 676
May				2211 156
June	10000000000000000000000000000000000000			2530 115
July				770 255
$\Lambda \mathrm{ugust}$				257 203
September				227246
The period				7,110,000
1902-3				264 335
October				249 144
November				332 771
December		The second		189 935
January Eebruary				187 271
March				376 120
April				852 456
May				2074284
June				3162526
July				2304 494
August				668309
September				403795
The year period				11,100,000
perioo				
Note:				

for the years ending Sept. 30, ____

	RUN-OFF IN ACRE-			
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1903-4				521 538
October				321 263
November 2				267 041
December				223 507
January				218 406
February				367 573
March				479 484
				1703 022
May				2607 114
June				1417 105
July				1054 143
August				691 497
September year				9870 000
The year period 1904-5				/ - /
October				715 839
November				366 009
December				275 305
January				499 900
February				1561 000
March				3108 000
April				2251 000
May				2593 000
June				4550 000
July				1864 000
August				744 000
September				386500
The year poriod.				18,900 000

for the years ending Sept. 30,

	DISCHARGE IN SECOND-FEET.			RUN-OFF IN ACRE-
MONTH.	Maximum.	Minipium.	Mean.	FEET.
1905-6				494 200
October				714 000
November				946900
December				422 000
January.				531000
February				
March				1930 000
April				3 3 3 0 000
May				
June				5010.000
July				2400.000
August				1180 000
September.				696 000
The year				19200000
The year period 1406-7 October				719000
November				578000
December				1130 000
January				1320000
February				1040000
March				1480 000
April				2100 000
May				2300 000
June				5640 000
July				5930000
August			700	2310000
September				1380 000
				26000 000
The period				The state of the s

for the years ending Sept. 30,

	DISCHARGE IN SECOND-FEET.			RUN-OFF IN ACRE-
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1907-8				836 000
October				643 000
November				
December				458 000
January				389 000
February				817 000
March				990000
April				1060 000
May				1670 000
June				2550000
July				2000 000
August.				1490 000
				678 000
The year period . 908-9				13600000
1908-9				
October				585000
November.				481000
December				978000
January 1				615000
February				772000
March				978000
April				1800 000
May				3330000
June				6250000
July				4890 000
August				2510000
September				2890000
The year period				26/00 000

for the years ending Sept. 30, ...

	DISCH	RUN-OFF IN ACRE-		
MCNTH.	Maximum.	Minimum.	Mean.	FEET.
1909-10				861000
October				562000
November				517 000
December				1160000
January				
Eebruary.				509000
March				1500 000
April				1710 000
May				3470 000
June				2800000
July				904000
August	1-2-			592000
September 12		The statement of		367000
The period				15000 000
1910-11 October				429000
November				467 000
December	Section 1			427000
January				541487
February				742610
March			. ,	1067 700
April				1213685
May				2764960
June				3818576
· July				3083549
August				1131 983
September				530388
The year period				16 200 000
p ortou				
Note:				

for the years ending Sept. 30,

	DISCHA	RGE IN SECOND	RUN-OFF IN ACRE-	
MONTH.	Maximum.	Minimum.	Mean.	FEET.
October ,911-12-				1756786
November	149.00			722 391
December				465 130
January				331 000
				424 000
February	特特从下的 最后,			818000
March				1260000
April				2510.000
May				6430000
				2870000
AND LOCAL PROPERTY OF THE PARTY				1400000
				582000
September				
The period		Practical Control		19 600 000
0ctober				676000
November				702000
December		Karaka 1		403 000
January				238000
February				337000
March				558000
April				1520000
May				2360 000
June				2830000
July				1300 000
August				580 000
September				525000
The year period				12000 000
pe rred				

NOTE:

Monthly discharge of COLORADO

River at YUMA, ARIZ.

for the years ending Sept. 30,

	DISCHA	ARGE IN SECONE	RUN-OFF IN ACRE-	
MONTH.	Maximum.	Minimum.	Mean.	FEET
October 1913-14				633000
November				472000
December				393 000
January				462 000
				644 000
February March				922000
				1360000
April				3310000
May				. 6600 000
June				3170000
July				1350000
August				591000
September vent		· · · · · · · · · · · · · · · · · · ·		
The period				19900000
1914-15 October				842000
November				613000
December				818000
January				564000
February				1510000
March				953000
April				1790000
May	DAM STATE			2940000
June				2890000
July				1890000
August				682000
September				270000
The year	() () () () () ()	The Carlo		15 800 000
P				

Monthly discharge of ... COLOIRADO

River at YUMA, ARIZ

for the years ending Sept. 30,

	DISCH	arge in second	DUN OFF IN LOSS	
MONTH.	Maximum.	· Minimum.	Mean.	RUN-OFF IN ACRE- FEET.
1915-16				
October				442000
November				356 000
December				354 000
January				2820000
February				1630000
March				2200 000
April	As the second second			2120000
May				3360 000
June				3540 000
July				2260000
August				1670000
September				738000
The year period				21500000
1916-17				
October				1640 000
November				708 000
December .				454000
January				162000
February				440000
March				603000
April				1560 000
May				3030 000
June				5350 000.
July				5770000
August				1440 000
September				536000
The year period				22 100 000

Note:

Monthly discharge of COLORADO

River at YUMA, ARIZ

for the years ending Sept. 30,

	DISCHA	DISCHARGE IN SECOND-FEET.			
MONTH,	Maximum.	Minimum.	Mean.	RUN-OFF IN ACRE-	
1917 - 18 October				465000	
November				422000	
December				420000	
Januagy				405 000	
February.				323000	
March	and the second second			1010000	
April		Total Control		768 000	
May				1790 000	
June				3680 000	
July				2660 000	
August				713000	
September				406 000	
The year period				13100000	
1918-19					
October				473000	
November				479000	
December				451 000	
anuary				231 000	
february				398 000	
March				544 000	
ipril				1230 000	
day				2220 000	
une				2040 000	
\mathbf{uly}				1240 000	
ugust		·		658 000	
eptember				307 000	
the year				10,300,000	

MONTHLY WATER DIVERSIONS

Yuma Project

From Colorado River.

Years 1908- 1915.

(quantities in acre-feet)

MONTH	: : 1908	: : 1909	: : 1910	1911	1912	: : : 1913: 1914	: :1915
Jan.	: 695.7	: 1523.7	: 2288.6	3079.4 :	3187.0	: 3208: 7567	9268
Feb.	: 1916.8	: 4526.7	3002.7	4392.2	6292.0	: 9588: 5221	: 3555
Mar.	2503.7	: 3596.1	4100.8	5691.7	5576.0	: 11309:12569	25746
Apr.	2305.4	: 5968.3	5026.9	7361.5	6474.0	11781:11900	: : 25367
May	2477.8	: 5210.4	5510.9	9560.2	8968.0	: 11400:21255	: 1759 1
June	2341.8	: 6753.2	4326.7	9052.4	9670.0	13949:22444	26893
July	2282.8	: 4869.3	3056.7	6731.6	12155.0 *	15862:26939	34733
Aug.	2391.8	: 3711.2	4943.1	8775.3	13086.0	16141:24963	: 29543
Sept.	2119.0	: 3102.5	3414.8	8109.5	12572.0	13073.26538	29672
Oct.	1601.4	3532.6	2507.0	5032.2	8851.0	8669:27120	20575
Nov.	975.6	: 1665.7	2614.6	3324.7	5827.0	6035:13199	: 18907
Dec.	372.5	: 1481.5	1525.9	1453.1	3751.0	5492: 5492	6936 (3570)
Total	: : 21983.7	:45940.2	42318.7	72563.8	96409.0	: : 127307 : 205207	: 246786

^{*}Siphon water started.

Furnished by USACE

Reed Tuesmi Buy 1/18/22 fine Projeit Manager yourand Willes dates 1/10/24 RER 9 - 2201

Monthly discharge of

for the years ending Sept. 30,

Kenethly Mater Deversions from

Colorado River of Jon June Project

	DISCH	ARGE IN SECONI	RUN-OFF IN ACRE-	
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1915-16				
October				20575
November				18907
December				6936
January	realization section.			0
February				0
March				23 172
April				37 424
May				39 801
June				46 714
July		1.0		41790
August				50 690
September				43 605
The period				
0ctober 9/6-17				41253
November				37 160
December				15 942
January .				14806
February :				36 500
March				48777
April				42436
May				42825
				51001
June				45980
July				46768
August				41 877
September vear				
The year period				

NOTE Deta furnished by U.S.R.S.

9-220 f

Monthly discharge of

hencethy deversions from

arge of Colonado River to for young Project

for the years ending Sept. 30,

	DISCH	RUN-OFF IN ACRE-		
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1917-18				
October				37/73
November				24 084
December				19383
January				15074
February.				17826
March				41902
April				48060
May				52044
June				51880
July				6/233
August				59602
September				51975
The year period 1915 - 19				
0ctober				39964
November				15877
December				13320
January				22/8/
February				28096
March				39269
April				54085
May		•		47973
June				57420
July				55083
August				46918
September				45726
The year period				
	, ,		,, ,	Q.
NOTE: Data	Jurush	ed by	u.J.	11.3
		(/		

Monthly discharge of

for the years ending Sept. 30,

himitely denusions from Colonado River to for youna Project

	DISCH	ARGE IN SECOND	-FEET.	RUN-OFF IN ACRE-
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1919-20				41 547
October				20357
November				18 530
December				16829
anuary				1943
ebruary				48611
March				45565
April				46467
lay				53360
fune				63544
July				63375
Tugust				34136
September				70,00
The year period				
1920-21 October				42167
November				26 909
December				24012
January				. 24945
February				32496
March				48681
April				5/354
May				46550
June				46806
July				52989
August				45141
September				45727
The year period				
period	1 ./	, ,	11 100	
NOTE: Data	furnishe	d by		

9-220 i

Monthly discharge of

Monthly divisions from

Ge of Colnado River at for Yenna Cryit

for the years ending Sept. 30, ...

	DISCH	ARGE IN SECON	D-FEET.	RUN-OFF IN ACRE-
MONTH.	Maximum.	Minimum.	Mean.	FEET.
1921-22				23 484
November				40634
· December				23 232
January				
February				
March				
April				
May				
June				•
July				
August				
September				
The year period				
October				
November				
December				
January				
February				
March				
April				
May				
June				
July				
August				
September				
The year period				
			//	NCS
NOTE: NOTE:	urus	neg v	7 4	

Error in Means -- Mare Dec. 30, 1922 -Green River: april-July
-28.5 annal -30,5+15.1 +16.7 11.0 17.1 23.0 29.3 4 26.4 -25.3 0.3 -41.2 25.2 25,3 39.8 40.2 10.6 28.1 -108.0 209 14,9 -111.1 100.3 19,8 E,001+ 9) - 7.7 +129.1 111.1 -0,856% 10)+18.0 -0.86% +1.80% Grand River: -

april - July + 45.1 - 35.1 annual -11.0 +45.1 +15.1 16,7 20.7 23.0 29,3 28.5 + 64.5 17.1 39.8 -11.0 -104.3 + 131.2 4)+53.5 + 13.38% 104.3 (10) + 26.9 (+ 2.69 %

Eerror in Means -

San Juan; amusic +23.0 -11.0 26.4 -11.0 3] + 38.4 -12.80 %

apriel-July +0.3 -17.1 39.8 +40.1 -17.1 3)+23.0 +7.67%

Gila:

annal

+12.7 -30.5

15.1 11.0

23.0 26.4 4 KZ

+77.2

-108.0 77.2 8) -30.8 8) -30.8 april-July

+16.7 -28.5

29.3 17.1

0.3

39.8

- 486.1 - NA.1

- 1×1.1 86.1 8)-25.0 8)-3,13

+77.2 - 41.5 - 435.7 6) + 35.7 4 5,95%

4.86.1 -45.6 6)* 40.5 apr-fuly. + 6.75 %

Divisor	Dividend	Quotient	
.923	1002/23	1,085,724	Gila River
1,085,724	522,721	48.1%	Kelvin, Ariz.
	180,950	16.7	CLOSETS .
Annual	443,547	40.9	Corrected Normals 5 1,085,724 Ann. 167,667 Period.
	2,950,200	271.7	L'or, or remod.
	1,334,540	122.9	
Total	6,012,738	. 553.8	
.9478	158,915	167,667	
167,667	142,821	85.2 20.5	
	34,320	76.1	
Period	455,200	271.5	
	79,480	68.1	
Total	953,488	568.7	
. 6867	3,098,667	4,509,490	San Juan River
4509,490	2,710,000	60.1	b Odh Miver
Annal	3,240,000	71.8	hear Black
Annual	3,340,000	74.1	Bluff, Utah
.653	2,093,333	3,205,717	[4.509 100 Ann
3,205,717	2,048,000	63.9	Corrected Normals \ \begin{aligned} 4,509,490 Ann. \\ 3,205,717 Period \end{aligned}
	1,966,000	70.7	
" 是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个		THE RESERVE TO SERVE THE PARTY OF THE PARTY	

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D-192-n UNITED STATES GEOLOGICAL SURVEY DEPARTMENT OF THE INTERIOR WATER RESOURCES BRANCH Colorado Daily gage height, in feet, and discharge, in second-feet, of River -at-Creek near Topock, Ariz. for the year ending Sept. 30, 1917 Used rating table dated 4/10/18 and indirect method Hecorder wetther Gage Discharge | Gage Discharge Discharge Discharge Discharge Discharge Discharge Gage Discharge, Gage Discharge, Gage Discharge, Gage Discharge, Gage Discharge, beight. 6.7 12,300 (14.7) 65,000 13.8 59,600 (24.4) 135,000 7.4 34,400 5.0 6,750 5.8 9,100 12,000 7.2 14,300 15.6 71,000 (14.4) 63,200 (243) 134,000 6.9 30,900 3.3 6,250 6.0 9,800 11,200 7.4 15,200 (16.0) 73,800 (15.1) 67,500 (24.9) 139,000 6.5 28,100 4.8 6250 6.4 11,200 110,800 7.6 16,000 (5.6) 71,000 (15.2) 68,200 (24.7) 138,000 6.0 24,600 4.7 6,000 7.1 13,900 10,500 4.9 6,500 7.3 14,700 8.0 18,000 (15.2) 68,200 (14.7) 65,000 23.9 131,000 124600 10,200 4.9 6,500 7.2 14,300 8.8 22,200 12.8 52,300 (14.6) 64,400 (22.9) 123,000 \$ 24,600 3.0 9,800 9.8 28,800 (12.4) 48,800 (14.6) 64,400 (21.7) 114,000 5.0 6,750 7.0 13,500 24600 3.0 9,800 9.4 26,000 (12.0) 45,500 (14.3) 62,600 (20.6) 106,000 6.0 24,600 4.9 6,500 6.8 12,700 29,680 8.0 18,000 (11.8) 43,900 (14.6) 64,400 (19.1) 95,500 6.0 24,600 4.9 6,500 6.5 11,600 9,570 7.8 17,000 (11.6) 42,300 (15.4) 69,600 (172) 82,200 5.9 24,000 2.9 4.9 6,500 6.2 10,500 9450 7.4 15,200 (11.5) 41,500 (15.4) 69,600 (15.6) 71,000 5.6 22,200 5.2 7.300 6.0 9,800 1 2,720 7.2 14300 (11.4) 40,700 15.0 66,800 13.3 56,500 5.5 21,600 5.3 7,600 6.0 2800 1 9,990 7.5 15,600 10.1 30,900 (16.0) 73,800 (13.8) 59,600 5.0 19,000 5.2 7,300 6.0 9,800 10,300 7.7 16,500 (10.5) 33,700 (16.3) 75,900 (13.1) 54,800 4.6 17,000 5.3 7,600 6.0 9,800 10,500 8.1 18,500 (10.4) 33,000 (17.7) 85,700 (13.1) 54,800 4.6 17,000 3.4 10,800 5.3 7,600 5.9 9450 9.3 25,300 (10.4) 33,000 (19.7) 99,700 (13.3) 56,500 4.4 16,000 4.4 14,000 5.4 7900 5.8 9,100 10.8 36,000 (10.9) 36,700 (21.2) 110,000 10.0 55,600 4.6 17,000 3.9 12,300 8,500 5.8 9100 12.2 47,200 (11.5) 41,500 22.4 119,000 9.2 48,800 4.8 18,000 4.1 13,100 5.6 8,500 5.8 9,100 13.1 54,800 12.0 45,500 (22.9) 123,000 8.7 44,700 4.4 16,000 4.6 15,200 8,200 5.9 2450 13.2 55,600 (13.7) 59,000 (22.9) 123,000 7.9 38,300 4.3 15,600 4.7 15,600 20 7,600 6.0 9,800 21 13.3 56,500 16.4 76,600 (23.3) 126,000 7.7 36,700 4.3 15,600 4.4 13,900+ 7,600 6.0 9,800 12.0 45,500 18.2 89,200 24.2 134,000 7.2 33,000 4.3 15,600 4.2 13,100 7,300 6.0 9,800 (11.5) 41,500 (19.8) 100,000 (24.7) 139,000 6.8 30,200 4.2 15,200 4.6 14,700 7300 6.1 10,200 (11.5) 41,500 (20.9) 108,000 (25.0) 140,000 (6.7 29,500 4.1 14,700 4.5 14,300 5.3 7,600 6.1 10,200 5.5 8,200 6.1 10,200 (10,9) 36,700 21.6 113,000 (24.7) 138,000 6.8 30,200 4.0 14300 4.5 14,300 5.4 7,900 6.2 10,500 9.9 29,500 (21.7) 114,000 (24.6) 137,000 6.8 30,200 171,3,900 4.4 13,500 (10.9) 36,700 (20.9) 108,000 25.0 140,000 6.5 28,100 3.8 13,500 4.4 13,500 8,200 6.2 10,500 10.8 36,000 (19.5) 98,300 (24.4) 135,000 6.9 30,900 3.7 13,100 4.2 12,700 8,500 6.2 10,500 6.6 11,900 (12.9) 53,100 16.8 79,400 (24.7) 138,000 6.9 30,900 3.8 13,500 4.2 12,700 Ser (13.4) 57,300 16.6 78,000 (25.0) 140,000 7.2 33,000 3.8 13,500 4.1 12,300 7.0 13,500 period. 15.0 66,800 7.6 36,000 112,700 336,300 TOTAL 205200 921,100 2,008,600 2961,400 2,087,000 359,810 600,000 2,479,410 7,330 10800 30,700 64,800 98,700 67,300 19,400 12,000 39,200 Sec.-ft. per Kun-off in acre-407,000 664000 3,980,000 1,830,000 5,870,000 1,190,000 4,140,000 714,000 18,800,000 Maximum 8,500 14700 57,300 114,000 140,000 139,000 34,400 15,600 140,000 6,000 Minimum 9,100 12,300 30,900 28,100 59,600 12,700 6,000 9,450 Accuracy

RECOMPUTATIONS DEPARTMENT OF THE INTERIOR UNITED STATES GEOLOGICAL SURVEY WATER RESOURCES BRANCH File Numbe River # TOPOCK, ARIZ. Daily gage height, in feet, and discharge, in second-feet, of... for the year ending Sept. 30, 1918 COLORADO Stevens water-stage recorder 2-8-22 (Feb 1- June 20, 1918) G.M. Bobst Indirect method June 21-Sept. 30, 1920 MAR. APR. OCT. DEC. JAN. FEB. SEPT. JULY beight Discharge. beight Discharge. Gage height. Discharge. Discharge. Gage Discharge. 49 6800 5.8 10500 4.1 55 4.9 4.2 6.6 14100 128 51600 14.1 87500 425 24000 2.35 7000 11000 57 10000 5.1 56 4.3 12.5 49600 12.3 77500 4.15 23500 2.35 7000 14600 11000 59 11000 4.8 6400 12.0 46200 10.7 68500 HO 22300 2.35 1000 5.2 6.2 12300 4.4 5.5 17500 6.1 1/800 4.2 48 6400 5.5 6.5 13600 5.3 11.8 44800 9.6 6350.0 49 6800 6.8 15000 5.3 5.4 15500 4.4 11.2 40800 8.5 58500 3.5 17600 5.0 7200 6.6 14100 52 14100 5.2 19500 10.4 35500 6.9 50000 17400 2.5 7600 6.4 13200 5.1 5.1 5.0 7200 14600 19500 10.2 34200 6.85 45700 4.2 17200 6800 3.4 6.2 12300 5.1 5.4 8800 5.1 9.9 32200 15000 4.2 2/600 6.2 41500 6000 17600 2.4 6.4 /3200 5.1 10.234200 5.2 42300 6410 7.2 17000 5.1 5.2 8000 5.2 4.2 17500 90 26800 11.2 40800 6820 6.25 41800 6.7 14600 5.1 7600 10.2 34200 5.2 5.1 12.0 46200 635 42500 1230 63 /2800 5.3 5.1 5.0 7200 17000 40100 129 52300 6.3 42300 16300 7.6 19000 138 58500 5.2 44200 7200 17000 44900 5.0 17000 14.5 63400 52 121 46900 5.0 7200 11.1 40100 46900 19000 3.9 5.3 50 8.9 26200 7.0 16000 12.5 49600 5.1 15.1 67500 7200 7.1 47500 16500 5.1 8.8 25600 2000 16000 128 51600 3.9 5.2 16.0 73800 80 50500 5.2 15500 15000 121 46900 5.0 8.7 31000 5.2 5.4 8800 8.6 54500 17.2 82200 3.3 14800 7200 15000 7.6 19000 5.1 8800 11.5 42800 84 53 300 5.4 4.5 180 87800 15200 11000 15500 11.4 42100 4.8 8800 4.7 5.0 186 92000 5.4 7.2 17000 49300 11500 15200 5.1 55 7.2 17000 112 40800 4.7 9200 18490600 47300 47 4.2 11500 15200 9600 5.6 7.1 16500 118 44800 4.5 20600 3.8 18.2 91700 68542800 46 15200 4.3 /2200 8800 65 13600 4.5 4.7 22800 124 48900 17.5 89000 40000 14500 4.25 11800 23300 12.5 49600 17.0 88000 6.4 13200 4.4 5.95 37000 47 40 15300 4.15 11500 8400 84 23300 126 50300 162 8500 5.55 34200 3.6 5.3 6.5 /3600 4.4 14000 4.35/2500 5.0 8.4 23300 12.6 50300 15.5 82500 6.5 13600 5.8 10500 4.7 5.1 40 4.4 5.3 30000 13/00 4.6 13500 8.1 21600 12.8 51600 146 78500 6.1 11800 5.1 4.7 4.5 6.5 13600 4.1 5.15 29000 12200 4.2 11500 7.8 20000 12.3 48200 147 82000 6.0 11400 6.5 13600 4.8 52 S.1 28500 4.7 11300 3.75 10000 4.1 5.9 11000 7.6 19000 12.4 48900 15.1 87000 6.5 13600 4.7 5.3 4.9 40 485 27200 10400 3.7 9500 7.0 16000 129 52300 15.5 89000 6.5 13600 4.7 5.4 5.0 4.6 25500 2.6 9500 3.65 8400 4.8 5.4 50 6.2 /2300 6.7 14600 133 55100 15.2 91500 4.0 4.5 25200 3.5 7800 2.4 7850 Year 6.0 11400 126 50300 5.1 4.3 24000 2.35 7000 266290 273730 296670 1185400 173 000 499000 232300 509600 1988400 1399200 484 450 263050 7671090 TOTAL 9100 = 88300 95700 85902 8300 16100 38200 45100 17000 66300 8770 15600 21000 Sec.-it. per __rquaremile_ 15,219,200 588000 528000 541,000 543000 461000 kun afi inner 990,000 1010,000 2350,000 3950000 2770 000 1,520,000 957000 522,000 11800 40/00 23300 55 100 87500 92000 13500 24000 92000 Maximum 6400 10000 14100 11000 322 00 24000 6000 7.00

1916 recomputations

DEC.

(Washington

5,350

4,450

4,100

Drainage area

OCT.

Gage height Discharge.

square miles.

Gage height. Discharge. height. Discharge.

NOV.

4.03 9.350 4.67 9,850 4.74 8,600

A20 9,850 4.64 9,600 4.61 8,400

4.33 10,100 4.75 10,100 4.57 8,2004.53

4.53 10,6004.76 9,8504.59 8,2004.35

4.34 10,1004,85 9.850 4.49 8,000 4.12

6 4.11 9,3504.89 10,100 4.40 7,800 4.08.

3.99 9,100 4.78 9,850 4.47 8,000 4.09 3

4.09 9.350 4.78 9,600 4.62 8,000 3.66

10 4.08 9,350 4.84 9,600 5.06 9,100 3.60 -

11 4.08 9,3504.89 9,850 4.69 8,200 3.50 4

12 4.07 9,100 4.84 9,600 4.60 8,000 3.50 4

13 4.06 9,100 4.89 9,8504.86 8,850 3,44 4

14 4.19 9.350 4.94 9.850 5.04 9,100 3.35 4

16 4.18 9,3504.90 9,600 5.13 9,100 3.20 4

17 4.52 10,100 4.85 9,350 5.25 9,350 3.84 4

18 4.75 10,600 4.68 9,100 5.25 9,350 4.45 5

19 4.42 9,600 4.70 9,100 5.14 8,850 4.58 5

20 4.35 9,600 4.60 8850 5.16 9,100 4.75 6

21 4.51 9,850 4.57 8,600 5.12 8,850 4.80 6

22 4.69 10,400 4.57 8,600 5.09 8,600 4.83 6

23 4.63 9,850 4.61 8,600 4.88 8,200 4.80 6

24 4.47 9,600 4.81 9,100 4.81 8,000 4.81 5

26 4.45 9,350 4.90 9,350 5.04 8,200 4.82 5

28 4.81 10,400 4.84 8,850 5.25 8,400 4.87 6

9,400

559,000

10,100

8,600

29 5,19 11,500 4.70 8,600

31 4.85 10,100

TOTAL,

Sec.-ft. per square mile

Run-off, depth in inches

Run-off in acre-

Maximum

Minimum

Mean

303,100

601,000

11,500

9,100

9,780

5.05 10,600 4.74 8,600

4.56 9,850 5.00 9,600 4.88 8,000 4.78 5

9,600 4.87 9,100 5.16 8,600 4.82 5

282,000 261,550

8,100 4,92 6

7,500 4.84 5

348

4,100

6,250

7,200

16,000

32,300

26,600

16,000

7,800 4.91

8,440

519,000

9,350

7,500

4.25 9,350 4.92 9,600 4.97 9,100 3.28 4

9,3504.76 9,850 4.65 8,000 3.84

Daily gage height, in feet, and discharge, in second-feet, of COLORA

Stevensy

E INTERIO		UN		SIALES							RESOURCE					File N	umber	ishingi	on	
PAD	0		Ri	ver #	10	Poc	KA	RIZ	for the	year ei	iding Sept. :	30, 191		7-11.	Cuca. II. II	ths-		trict		
ensWate	-stage	recorder, ob	server.]		Gag	e read to	hundr	edth	5 % #	Hay				Used ra	ting table do	ated J.	g 8,	191	8	7.0
JAN.		FEB.		MAR.			APR.		MAY		JUNE	1	JULY		AUG.		SEPT.			
ge ght. Discharg	Gage height.	Discharge.	Gage height.	Discharge.	Day.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gåge height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Day.	4119	٨
7.20	04.98	6250	5.43	7,200	1	8.95	23,000	1283	41,600			42	25,800		15700	290	4900	1	3rd	
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A CONTRACTOR OF THE PARTY OF TH			11	7,800			A STATE OF THE STA						22,600	D				\$1	1st	11
				7.800									21,400							
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				7.600		The section course will be a						H	19,400	THE RESERVE AND ADDRESS OF THE PARTY.			The Control of the Co	22	Quan	icked
				7,800						Market Street		1	19,400	1				II	3	5
				7,800		11 25 25 41				THE THE PARTY OF		48	21,000		34,800	0.0000000000000000000000000000000000000			HH.	
				8,400		The state of the s		TO THE LONG MIT					20,600				5,050	H		A
0 4,75								THE RESERVE OF THE PERSON NAMED IN			A STATE OF THE PARTY OF THE PAR		20,200	THE RESERVE TO SERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED		STATE OF THE PARTY OF	5,500	THE REAL PROPERTY.	3rd	
				9,600					44,300				20,200				6,400		$ \chi$	127
			315 W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9,350	A Section				43,800			43-	19,400				6800		2nd	1/2
35 44,5								100 500 500	42,00				21,800				7,400		1	10 /
8 4,20								(S12) (S12) (S12)	42,100				25,300				8600		1.st	
20 4,10						THE RESERVE OF THE PERSON	A CONTRACTOR OF THE PARTY OF TH			Carlon Park	1 5 50		21,800	The Party of the P	12.2	R Labor St.	1-70		d	d.
4 4,90	The state of the		DESCRIPTION OF THE PERSON OF T						36,800	T TAXABLE TO			120				7,800		rter	hecke Date
15 5,65												11 THE R. P. LEWIS CO., LANSING, MICH.	21,400		16,400				Qua isch.	isch
						The state of the s				A STATE OF THE PARTY OF THE PAR			26,200						9	9
58 5,95													29,400						ith	
			A STATE OF THE PARTY OF	10,400	Martin Co.		THE RESIDENCE OF THE PARTY OF T					The second secon	38,800		E LINKS IN THE RESERVE OF THE RESERV					
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30 6,10								13 7 m			38,800		35,000			A CONTRACTOR			Sind A	11 1
31 5,95										THE RESERVE	37,800		31,600			Marine Service			1/4	11/
18 5,95			A STATE OF THE PARTY NAMED IN	THE PERSON NAMED IN COLUMN 2 I						AND DESCRIPTION	35,800				8,400	Charles and the second of	COMPANY AND DESCRIPTION OF THE PARTY NAMED IN	I THE RESIDENCE IN COLUMN 2	Ist	
				16,000		F/16 (1916)	27,600				34,300		24,900		TO THE RESIDENCE OF THE PARTY O					
				20,200		System on	30,300			A PARTY OF THE REAL PROPERTY OF THE PARTY OF		E	21,600			ENGINEER CONTRACTOR				hecke Date
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COLORADO

River TOPOCK, ARIZ.

for the year ending Sept. 30, 1920

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	The second secon	THE RESIDENCE OF THE PARTY OF T	THE RESERVE OF THE PARTY OF THE	Maria Anna Alice Street		ELECTRIC CONTRACTOR AND		THE RESERVE OF THE PERSON IN	THE RESERVE OF THE PARTY OF THE		The state of the s	19800	49		the state of the state of		147000			A STATE OF THE PARTY OF THE PAR			17400		AND RESIDENCE OF THE PARTY OF T		G H.
		Mary Bally Mary Services	I STATE OF THE PARTY OF		No. of Concession	7200					A man and an area	19000					152000								THE RESERVE AND ADDRESS OF THE PARTY OF THE	STATE OF THE PARTY	
	The second secon		the state of the s		Section of the sectio	7200	Section of the second section is a second section of the section of the second section of the					19000	30			25.4	150000	200	43700	5.3	28000	46	14000	3.5	8000	Y Y	ear
	CONTRACTOR OF STREET	550	A ROSE CONTRACTOR OF THE PARTY			4400		No. of the second second second		0600		3300		68			5800	Marine Street, Square,			AND RESIDENCE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER.	STREET, SQUARE, SQUARE	A CONTRACTOR OF THE PARTY OF TH	Bernand Control of Control of the State of the	200	1026	6800
AL ALLEY AND AND ADDRESS OF THE PARTY OF THE		1440		400		0500	Maria de la compania del compania del la compania del compania de la compania de la compania del compania d	the same of the sa	The same of the same of	8300	A proving soletta metter and or visit	-		THE RESIDENCE	2800		6300		4200		0100	Section 1	3300		170		100
Sucft	. per								7.12									11				1 72	Face of the second				
	depth		建 型。										7		S _12-86	Z.	19 74.6									1	
	1 Refe 580	000	559	7000	64	6000	491	000	1050	0000	91	6000		136	0000	46	70000	561	0000	247	0000	143	0000	564	000	20.36	6,000
Maximum	a H	200	11	800	2	5800	12	400	5	8 400	2	2200			-		2000						7100				000
Minimum	,	800	. 7	1200		5 500	5	500		9600	1	0 400		12	2400		-	4	15000	2	8000	A) 45 90 MISS	4000	The second second	000		500
A									S. Asia		4 8	并为公司															

Daily gage height, in feet, and discharge, in second-feet, of____

DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCES BRANCH

COLORADO

River TOPOCK, ARIZ. for the year ending Sept. 30, 1921

Stevens Continuous Water Stoge Recorder DEC. OCT. Discharge. Gage Discharge. Gage Discharge. Guge Discharge, Gage Discharge, Leight, 8900 6.5 10 500 70000 8.6 31600 18500 9.9 47700 6500 6.3 87800 27000 7900 51 10 300 4.9 7800 4.5 67000 45000 30800 10800 23500 /59 90500 18300 96 6100 6.3 8900 6.6 7920 50 10 800 > 7900 4.9 49000 30100 10500 21300 /68 96600 64000 6100 63 9.1 8900 6.5 7930 50 10400 8000 4.9 60000 93 52500 Z 29400 19900 /79 104 000 17400 BB 6100 64 9000 6.5 11000 7950 5.0 10200 7900 49 3.6 57000 10.4 60 000 28700 86 18700 189 111 000 9000 6.5 6100 6.4 11000 7960 5.0 10 000 8200 4.9 3.8 18700 /9/ 112000 D 51700 16800 86 55000 28000 9000 6.7 11500 6100 64 7980 5.0 9700 8500 4.9 4.0 19000 196 116000 50000 43300 27200 12500 15900 87 6100 64 9000 68 9500 8000 5.0 8600 4.9 32500 (195) 115000 35000 47000 66 6200 63 15500 10.4 26400 12800 8900 6.9 9200 8010 5.1 9200 49 51000 1944 114000 28500 44000 5.9 24700 14400 12.7 8030 5.1 6200 60 12800 7700 9000 9500 4.9 26000 24900 12800 63000 19.7 116000 41000 5.7 6300 6.0 13700 /3.9 8040 5.2 7700 6.9 8800 9200 4.9 43 28500 24100 6700 60 7700 7.0 13600 74500 /9.9 118000 39000 12800 15.1 8060 54 8560 9000 49 4.2 34000 5.6 24000 79500 /99 118000 Z 7700 23400 8080 5.5 6900 6.0 7.0 13600 13000 /53 8340 8800 4.9 38000 58 24500 8090 56 7000 63 79500 204 121000 22600 8900 13600 15000 148 8120 8300 A.9 3.9 19500 43 78500 206 122000 6.9 42000 5.2 19500 7290 64 8110 58 20 14500 13000 14.2 9000 7910 8200 4.9 20500 4.1 17500 13500 /3.2 72000 209 124000 69 42000 54 14500 7100 6.3 8120 58 8900 7690 7.0 8500 4.9 3.9 42000 5.3 19000 4.0 16500 7100 63 68800 225 136000 8140 58 8900 14 900 14800 /2.7 7480 8500 4.9 39 17500 38 40200 5.2 14500 14500 /20 64100 233 141000 7./ 8160 58 7100 64 9000 15500 7260 8700 49 17500 3.7 13300 15500 62100 24.3 148000 7.1 39500 53 15100 11.7 8170 58 7100 64 9000 7300 50 8600 4.9 38 22000 3.7 66600 25.3 154000 7.5 12800 16000 124 42000 7500 64 15800 9000 7350 5.0 8000 5.9 8800 49 3.8 26500 12500 74100 264 162000 7.6 42000 68 17000 135 7800 64 15800 7390 5.0 9000 7900 6.0 8900 49 3.8 82200 276 170000 8.0 22200 -44000 17500 147 12200 7800 6.4 15400 7440 5.0 9000 7800 6.0 9300 49 3.9 89000 282 174000 79 42000 64 11800 15000 18000 7480 48 7500 6.5 9500 18000 15.7 6.9 7200 5.9 9600 4.9 11500 93300 270 166000 7.3 36000 5.7 11000 6400 6.5 15400 9500 18100 /63 6700 5.6 7530 46 9800 49 42 38000 95 95300 25.1 153000 75 9 950 7.1 11200 35000 15800 19100 /66 6000 6.6 6300 55 7570 45 9600 49 har F 33800 /2.4 10100 93300 22.0 132000 69 15800 9950 7.1 19500 /63 6100 5.7 6700 66 7620 44 9400 4.9 66500 3.3 36000 (14.0) 9000 119000 7/ 16800 10 000 (74) 20000 /48 83000 9 6000 60 7800 6.5 7660 44 9600 49 4.2 9000 63000 3.3 34800 /35 9500 (8.0) 19000 105000 6.9 21800 /4.3 79500 7800 6.3 5900 6.1 7710 44 9600 49 4.2 35500 130 59500 3.3 9000 10 000 8.1 78000 92300 6.9 22000 14.1 19500 7730 65 6000 6.A 7750 45 9600 49 4.2 41000 114 48500 3.3 22300 /43 9000 79500 Z 78000 75 8500 19500 6100 62 7800 47 8.1 9600 49 Dai 4.3 72 000 7.9 33000 3.5 43000 90 9900 19000 25500 82200 12.1 8500 7850 48 6100 6.2 9600 49 43 32300 44 500 81 18500 85000 6500 6.2 8500 7.9 5.1 9400 1954600 3,667,900 1,384,300 1102700 561200 10,865,580 251710 231250 216620 251500 514 400 453200 276,200 44,700 29,800 63,100 6,990 122,000 35,600 18,700 14,600 17,100 7,460 8 980 8,390 8,910 Sec.-It. per square mile Run-off, depth; 1,110,000 21500,000 7,260,000 2750,000 2,190,000 3,880,000 499,000 1,020,000 898,000 459,000 499,000 430,000 548,000 174,000 66500 31,600 174,000 95, 300 25,500 70000 8,500 19,500 10,000 8,170 10,800 9,800 9,000 5,900 72 000 18,700 33800 11,000 12,800 6,000 7,700 10,500 5,900 7,800 7,260

1000 Run off in acre-feet of SAN JUAN River at ARBOLES

ENGINEERING DEPT.

Drainage area.....

1394 Sq. miles. Altitude 6001 feet above sea level

					, , , , , , , , , , , , , , , , , , ,					itude			
YEAR	JAN.	FEB.	MAR.	APR,	MAY	JUNE	JULY	AUG.	SEPT.	oct.	NOV.	DEC.	TOTAL
					No.								
1895		PG 1.				*106.0	39.7	25.9	13.1	12.7	11.7		
96				* 85.5	100.5	26.2	15.7	11.6	18.4	15.4	12.5		
97		The same		115.3	208.6	137.5	42.1	18.6	36.1	62.6	23.6		
98					115.8	141.9	62.8	16.2	7.3	6.1	5.0		
99					56.4	32.7	经产业的	23.7	12.9	120			
													张说这些
1910								*15.0	7.2	11.5	9.0	7.1	
11	7.5	8.4	88.0	117.7	193.7	217.9	174.2	53.1	46.1				
DAY STATE	14.3	11.2	53.5	91.9	198.5	165.7	63.8	21.5	11.0	15.4	12.0		
	°6.2	0 6.4	13.8	98.2	117.0	92.8	24.7	10.5	12.1	19.0	12.1	9.0	421.8
	•8.6	°10.6	44.6		165.0	168.0		35.7		52.4	16.5		
	°10.0	0 9.9	27.9	STREET, STREET	166.0	STRUCTURED !	106.0	26.3		12.9	8.7	8.1	721.4
	10.9	29.6	126.0	118.0	148.0	174.0	85.8	91.9	31.9	80.2	23.1	15.4	934.8
	18.6	18.0	45.4	110.0	135.0	247.0	STATE OF STREET	26.0	13.5	8.2	5.9	4.2	764.8
18		5.4	41.6	NAME OF TAXABLE PARTY.	95.4	123.0	58.5	21.3	20.4	8.2	8.8	4.2	436.5
19	REAL PROPERTY.	4.6	25.7		136.0	113.0	Control of	27.9	14.5	10.7	12.2	18.6	535.8
	19.7	44.0	58.0	1000	302.0	277.0			13.4	13.3			100
		7.0				~ 1	nlo -te V V						
		1 1 1 1		-									
Mean	10400	14800	52500	97500	152500	148900	73300	28500	20600	23500	12500	9500	643,500
TT. %	THE RESERVE OF THE PERSON NAMED IN	2.3	8.2	15.1	23.7	23.	11.4	4.4	3.2	3.7	2.	1.5	100%

*Fractional record extended.

"Estimated.

Station located in Sec. 21, T. 32 N., R. 5 W. 2 m. above mouth Piedra River.

Run off in acre-feet of SAN JUAN

River at ARBOLES

	ENGINE	ERING D	DEPT.		Drainage are	ea	1394		Sq. miles. A	Altitude	6.0.01		. feet above sea l	evel
YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ост.	NOV.	DEC.	TOTAL	
1895				°101.0	°124.0	*106.0	39.7	25.9	13.1	12.7	11.7		434.1	
96				* 85.5			15.7	CENTER SERVICE	18.4	15.4	12.5		285.8	51
97				115.3	208.6	137.5	42.1	18.6	36.1	62.6	23.6		744.4	117
98				91.5	115.8	141.9	62.8	16.2	7.3	6.1	5.0		444.6	81
99				• 54.2	56.4	32.7	32.2	23.7	12.9	°13.5	0 7.4		233.0	42
1911		77.52	\$ 100 m	117.7	193.7	217.9	174.2	53.1	46.1	*24.5	°12.6		839.8	750
12				91.9	CONTRACTOR OF STREET		有可以可以以及其他的		11.0	15.4	12.0		579.8	152
13				98.2	117.0	92.8	24.7	新疆域的地域的	12.0	19.0	12.1		386.4	69
18				83.9	165.0	168.0	61.5	35.7	39.2	52.4	16.5		622.2	113
15				117.0	166.0	196.0	106.6	26.3	32.6	12.9	8.7		665.5	120
16				118.0	148.0	174.0	85.8	91.9	31.9	80.2	23.1		752.9	136
17				110.0	135.0	247.0	183.0	26.0	13.5	8.2	5.9		678.6	123
18			100	45.4	95.4	123.0	58.5	21.3	20.4	8.2	8.8		381.0	69
19				89.1	136.0	113.0	78.6	27.9	14.5	10.7	12.2		482.0	87
20		and the second		104.0	302.0	277.0	119.0	30.6	13.4	13.3	14.0		873.3	157
Total				1422.7	2261.9	2218.7	1097.6	440.8	322.5	355.1	186.1			
Mean			28	94.8	150.8	147.8	73.3	29.7	21.5	23.4	12.4		553.7	
Acre-ff. per													STATE OF THE STATE	

^{*}Fractional record extended.

estimated by comparative method.

Run off in acre-feet of ... PIEDRA.

River at

RBOLES

ENGINEERING DEPT.

Drainage area.....6.5.0...

...Sq. miles. Altitude 6000

Ofeet above sea level

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1895				(in the			21275	12298	6843	7686	5558	Marine (1)	
96				*42700	64378	13626	6825	3603	20648	10760	7200		
97				86876	124512	70751	18200	6456	23564	51650	13983		
98				58195	60196	72060	35970	9162	5296	4304	2202		
99					19369	10056	8670	11068	2940				1 1 1
1910					笔等				4879	7378	6664	5427	
11	11802	7371	44757	109482	118116	107466	84920	24684	20487	73525	21465	13501	638000
12	7518	5752	24659	66935	140140	89507	34963	14870	6590	8956	9158		
13	2460	3890	6820	60700	72600	52100	8550	5800	8150	10800	7080	5980	245000
14	4300	4720	32000	61300	96500	90400	46900	16400	15600	42500	13400	9900	434000
15	4890	7870	26700	112000	111000	111000	47000	13900	14400	10300	6590	5360	471000
16	°4610		89600	102000	40800	91400	5 0300	49200	15900	67100	15500	6020	大小大学
17	8190	7110	11100	88400	129000	152000	73800	13400	8026	5740	4400	2040	503000
18	1330	3110	19800	27400	54500	50000	16400	9270	12500	6090	5720	4640	211000
19	3420	4060	18200	86800	95600	65900	48700	31900	11800	8340	8070	13500	396000
20	12600	19200	32900	87300	208000	158000	80700	26900	7550	8060	10900		
		100											
			100 mg										
Hozn	6110	7010	30 700	76200	95300	81000	38200	16600	11600	21500	13100	7370	405000
DESIG OF		1.7	7.6	18.8	23.5	20.0		4.1	2.9	5.3	3.2	1.8	1 200000

^{*}Fractional record extended

Station located in Sec. 16, T. 33 N., R. 5 W. at D.&. R.G. Bridge at Arboles.

[·] Estimated from measurement

Run off in acre-feet of ... NAVAJO

Creek River at EDITH

ENGINEERING DEPT

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ост.	NOV.	DEC.	TOTAL
912										3220	2910	2630	
13	°2150	°1670	:3690	16100	20200	14900	5320	2820	2460	3950	2710	2560	78500
14	°2280	°1940	9900	20700	32800	°38900	°18600	°6800	°3500	8730	3700	°2900	151000
15	°2170	·2680	6840	25200	34700	38400	20700	6230	3060	2640	2400	°2400	147000
16	2530	3820	21200	32200	36300	33400	20200	12800	4640	12100	3340	3200	186000
17	3800		3240	20500	32200	54500	*40000	*5300	3360	2820	2040	2320	173000
18	1910		5310	9340	18700	21800	8450	4370	3250	2220	1880	2030	81600
19	2250		8740	22500	45300	24100	OF REAL PROPERTY.	6900	4560	4840	4820	4830	149000
20		CONTRACTOR OF STREET	21800	42100	78300	46500	17800	9270	3430	2710	2660	° 6900	234000
~~+	2860	2700	STOOO	42100	70000	-20000	1.000	2210	0.200	7.2			
				3									
				1-12-	•								
						-					in and		- for the life of
											100 m		
								200		25.75.67.57			
										4550	0010	0000	750000
Mean	2500	2750	10100	23600	37300	34100	18600	6810	3540	4800	2940	2860	150000
inth part	1.7	1.8	6.7	15.7	24.9	22.8	12.4	4.5	2.4	3.2	2.0	1.9	= 100%

*Fractional record extended.

°Estimated

Station located in Sec. 30 T. 33 N., R. 1 E. at bridge 1/8 m. east Edith.

Run off in acre-feet of ANTMAS River at DURANGO

Greek

ENCINEERING DEPT

	ENGINE	ERING D	EFI.		Drainage are	a	0.74		Sq. miles. Al	titude	001	00	feet above sea leve
YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ост.	NOV.	DEC.	TOTAL
1919	11700	10600	16600	75900	212000	149000	98700	47100	31000	2000	16800	17300	707000
1920	18500	20200	26800	49900	326000	322000	133000	47100	24400	24400	21900		
					1	4							
									A 1			and the same	
				27									
					All Control								
				N. Committee									
								1 2					
											1		
												Set out	
											100 300	See	
		-14				- 3							
Meza	75000	10000	94500	66100	374000	7,00000	05100	22000	007.00	47.000	7.0500	7 57 00	
Acresti navy	2.1	12000	24600 3.4	66100 9.2	24.2	199000 27.7	11.8	5.3	29100	41300 5.7	NAME OF STREET	15100	719000
				7	NZ.	~1.11	TT-01	0.0	4.0	0.1	2.7	2.1	

^{*}Fractional record extended.

From 1895 to 1911 station was located below Lightner Cr. After 1911 Station was located above Lightner Cr. No correction has been made to compensate for the run-off from Lightner Cr. in these records.

Run off in acre-feet of ANIMAS

River at ... DURANGO

878000

545000

8770

16600

	ENGINE	ERING DI	EPT.		Drainage area	81	2		Sq. miles. Al	titude!	6550		feet above sea level
YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ост.	NOV.	DEC.	TOTAL
1895							23857	31420	21600	19123	14638	*14100	
96				*69000	143020	52066	21459	12236	59742	29207	16304	10 mg	
97	12185	10245	15651	160915	279981	200190	70841	34029	53929	87155	34070	23780	983000
98	24145	14436	19038	89851	108526	204159	83869	22443	15650	9961	9402		
99				34750	106374	106929	41135	42488	16423	17893	15584	13359	
1900	11028	7317	12234	19874	134227	118413	25148	11006	13745	15765	12206	13184	394000
01				50281					A Sugar				
02				26517	104453	70169	16685	16770	17792	15727			
02				92469	198813	245678	150408	34064	32273	21366			1.2.6
04	SECTION AND ADDRESS.						*29100	55523	43914	103238	30407	*19800	
OE	;			87174	239433	375174	112215	50174	31775	32097	17197	*15000	
10	22063	15719	57633	77076	148805	117300	37722	25401	16364	14767	11336	6764	556000
N. SECTION AND DESCRIPTION	14396	9144	28642	102368	190396	236889	200909	55102	34285	*200000	37350	18903	1128000
	17147	14152	17800	37531	223202	211924	107524	43426	21991	18724	16681		P 6 (P)
THE RESIDENCE	*9220	THE RESERVE AND A STREET	11900	46800	135000	123000	49600	23900	33400	29600	17300	13800	503000
	12900	10300	29900	59500	195000	270000	132000	80300	22400	40100	20100	12400	845000
	12300		17800	71400			105000			20200	16000	13100	663000
	12400		51900	THE PROPERTY OF THE PARTY OF TH	181000					103000	32600	20000	981000

16300

7200

20000

18400

55200

32500

17 19500

18 12100

M.can

Acre ff. per eq. mile

Station located in Sec. 20, T. 35 N., R. 9 W. at foot bridge on 14th St. near San Juan Water & Power Co. plant.

122000 348000 179000 46900

116000 167000 55000 36200

25700

45600

22900

13400

21700 16500

^{*} Fractional record extended.

Run off in acre-feet of LOS PINOS River at IGNACIO

FAI	CIN	FFD	DIA	DEDT	
EN	GIN	EEK	ING	DEPT	

	ENGINEERING DEPT.				Drainage area 450			Sq. miles. Altitude 6480				feet above sea level	
YEAR	JAN,	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1899		建			32404	27907	17770	21459	Z 660	7809	6129	*3440	
1900	5060	3388	5786				A. 10					355 55	
01	*			26896	63087	45402	13896	12420	*10400				
02				18563	35494						17 7		70.0
03				*40600	103577	134904	*49300	10048	17222	9037	1 1 T		
06				52185	149722	188152		15249	24575				
10	Section 1								2559	7194	6307	5234	
11	7644	6540	26374	58052	112635	140658	79097	10725	16602		200		
12	8331	6922	13636	29314	70613	59656	34166	13514	2882	8035	12012	1 12 16 3	
13	1. 2. 2.		* 5890	41200	75600	49200	6820	1160	9160	11400	7440	6950	
14	4990	6500	23800	43900	93500	138000	69500	8240	1330	26400	12200	6960	
15	3360	5050	15900	55400	80300	116000	45400	4470	6970	5500	4040	4520	756000
16	5830	7760	41700	60600	86000	93100	43500	61700	17800	74600	18800	6200	518000
17	7310	7800	7490	37900	68400	129000	66900	6120	3500	8790	1590	3570	343000
18	4120	3220	11900	15300	43300	40900	10500	1920	13500	710	2230	3940	152000
19	5390	4080	9200	43300	100000	65200	50600	20900	5180	4400	7440	10900	327000
20	11100	15100	23100	48600	125000	129000	64800	10500	1550	5520	9640		
Mean	6310	6640	16800	40800	82600	96900	42500	14200	9130	13700	7980	5750	343000
Accents per	Market Street,	1.9	4.9	11.9	24.1	28.3	OF RESIDENCE PROPERTY.	4.1	2.7	4.0	2.3	1.7	

*Fractional record extended

Station located in Sec. 8, T. 33 N., R. 7 Wat Highway Bridge.

Divisor	Dividend	Quotient	
42.45	3.11	7.33%	Pred
	6,00 7,21 6.32	14.13	
	4.96	14.89	Port,
	4,74 2,94 2,38	6.93	
	0,75	4:17	
	0,58	3.98	
	125	100.01	
17.89	1.35 2.17 2.39	7.55 12,13 13,36	
	1.40	7.83	Spoke
	1.19	6.65 8.44 8.38	J pon
	0.66	3.69	
	0.93 -[2,36	5.20	
		100.00	

cipitation

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Table _ Similarity in Relative Rem-Off and in Precipitation thrusant Upper Columbia.

	Run-	Off			Precipitation					
Months	Pend Over 1/903-84 to acre-feet	Yt	Columi Dalle Fr. 79 to		Tr. [184	rtland 9-1908] P.Crof Annual	SPO In.	Kane 11-1908] P.Croj Annual		
October	649,000		6,379,000		3.//	7.33	1,35	7.55		
November	796.000	The second secon	5,900,000		6.00	14.13	2,17	12.13		
Mesember	646,000		5,940,000		7.21	16.98	2,39	13.36		
January	689,000		5,800,000		6.32	14.89	2.36	10.56		
Tebreedry	613,000		5,720,000	1	4.96	11.68	1.89	7.83		
april	932,000		8,040,000		4.74	11,17	1.40	6,65		
	1,809,000	9,43	12,600,000	8.31	2.94	6.93	1.19	8.44		
may	3,721,000	19.40	23,200,000	15.29	2.38	5,61	1,51	8.38		
June	4,755,000	24.79	33,060,000	21.13	1.77	4,17	1.50	3,69		
July	2,685,000	14.00	24,600,000	16,22	0.75	1.77	0.66	3.02		
angunt	1,174,000	6.12	13,400,000	8.83	10.58	1.37	0,54	5.20		
September	710,000	3.70	8,10000	5.34	1.69	3.98	0.93	W.		
annual	19,180,000	100.0	151,710,000	100.0	42.45	100.0	17.89	100.0		
april-July	12,970,000	67.62	92,460,000	60.95	7.84	18.47	4.86	27.16		