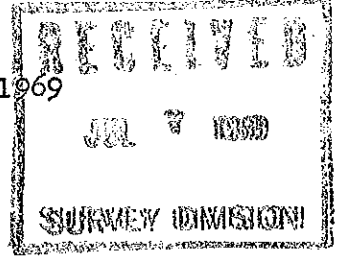


Oklahoma State Highway Dept.

Date July 2, 1969



To Mr. Gaines H. Stout P.E.

From Charles I. Hillis

Subject Highwater on Chikaskia River-Future SH 11 Kay Co.

RE: Highwater on Chikaskia River June 25, 1969.

Highwater as gaged by Mr. Montgomery US Weather Bureau at gage station located on south side of AT & SF RR. bridge located approx. $\frac{1}{2}$ mile down stream from future SH 11, river crest at 30.50 feet, elevation of gage is 967.41 \pm 30.50 - or elev. 997.91 ft. mean Sea Level (USC & GS)

1- Highwater elev. 999.0 from visible drift on slope of fill sta. 275/40 of north lane of future SH 11 west bank of chikaskia river.

2- Highwater elev. 999.0 from visible drift on slope of fill sta. 279/00 east bank Chikaskia River, North lane of future SH 11.

3- Highwater elev. 998.9 from visible drift west bank of overflow channel sta. 285/63 of north lane of future SH 11.

4- Highwater elev. 998.9 from visible drift east bank of overflow channel sta. 287/00 centerline of north lane future SH 11.

5- Highwater elev. 997.6 from visible drift in field approx. 50 ft. south of se corner of garage at residence of Mr. E.H.Green, or approx. 400 feet left or north of sta. 314/00 north lane future SH 11.

Highwater elevations shown above are to be considered as (Medium Highwater) and were placed in level book. SWO 2299(1) SH 11

Charles I. Hillis
Charles I. Hillis
Location Engineer

File ~~SWO 2299(1)~~ KAY Co. Fluo

F.A.P. 3/5/69 P.E.
SWO 2299(1)

4) 7-8-69 - copy to Bridge Engineer. Stout
" " SWO 2299(1)

✓	GIC	7-8-69
✓	WWW	7-8-69
✓	RLS	7-8-69
✓	GCC	7/8/69
✓	BLV	7-8-69
	GP	
	SPO	
	RBA	
	DP	
	IF	

Location No. 12

Oklahoma State Highway Dept.

RECEIVED
AUG 27 1968
SURVEY DIVISION

8-2968
Date August 26, 1968
10/5/70
RAC 10-5-70

To Mr. Gaines H. Stout *File*
 From Charles I. Hillis
 Subject S.W.O. 2081(1) US 177 Kay County

RE: Highwater of August 19, 1968. using Engineers Y-Level.

- 1- Highwater Elevation of 1000.6, obtained on August 19, 1968 from well defined water marks on pavement at intersection of Main Street and St Clair US 177 in Blackwell. Placed on page 21 of level book 1.
- 2- Highwater Elevation 1001.00, obtained on August 19, 1968 from well defined water mark at SE corner of brick pump house located approx. 50 feet North and 50 feet East of South end of Chickaskia River bridge US 177, placed on page 39 of level book 1.
- 3- Highwater Elevation 1000.8 obtained on August 21, 1968 from well defined water mark on corner fence post approx. 12' South and 60 feet East of North end of Chickaskia River bridge- US 177, highwater marked on post with (60d nail) placed on page 48 Level book 1.
- 4- Highwater Elevation 1000.7 obtained on August 21, 1968 from well defined water mark on power pole located approx. 12 feet North and 90 feet West of North end of Chickaskia River bridge- US 177- placed on page 48 of Level Book 1.
- 5- All highwater elevations shown above are (Mean Sea Level) USC&GS level datum S.W.O. 2081(1) US 177 levels. Highwater elevations are to considered as medium highwater, which is approx. 3.0 feet below (Highwater of November 1964).

Charles I. Hillis
 Charles I. Hillis
 Location Engineer

8-2968 MC Bridge, Div.
 MC County Flood File - Kay Co

Location No. 11

Oklahoma State Highway Dept.

RECEIVED
AUG 27 1968
DIVISION

8-27-68

Date August 26, 1968

Rec 10-5-70

To Mr. Gaines H. Stout

From Charles I. Hillis *File*

Subject S.W.O. 2323(1) Relocation US 60 Kay County.

RE: Highwater of August 19, 1968. Using Engineers Y-Level.

1-Highwater Elevation-957.3, obtained on August 21, 1968 from well defined water marks on centerline sta. 287.25 (West side of Chickaskia River) placed on page 65 of level book 1- section-1. *SWO 2323(1)*

2- Highwater Elevation-957.5, obtained on August 21, 1968 from well defined water marks (Top Bank) on centerline Sta. 306.75 (East bank of Chickaskia, River, placed on page 71 of level book 1-section 1. *SWO 2323(1)*

All highwater elevations shown above are (Mean Sea Level) USC&GS level datum S.W.O. 2323(1) US 60 relocation Kay County, and are to be considered as medium highwater.

Charles I. Hillis

Charles I. Hillis
Location Engineer

8-29-68 M.C. Bridge Div
M.C. County Flood File - Kay Co *←*

Location No. 17A

Oklahoma State Highway Dept.

Date June 4, 1965

To Mr. Gaines H. Stout

From Charles I. Hillis

Subject Overflow-Chickaskia River-S.W.O. 2323(1)-F283(4)

Highwater and overflow on future US 60 at Chickaskia River, approx. 2.5 miles East and 0.5 mile North of Tonkawa Okla. surveyed as S.W.O. 2323(1)F-283(4) Kay CO.


In reply to a discussion you and I had in your office on May 27, 1965, as to the possibility of overflow water from Chickaskia River breaking over bank North and West of N. & S. $\frac{1}{2}$ section line, and flowing into drain located at sta. 288+91.

I contacted local resident Mr. & Mrs. Schley Frudy, residing in E $\frac{1}{2}$ of NE $\frac{1}{4}$ sec. 35, T-26-N, R-1-W, on May 28, 1965. Mr. Frudy has been a resident in vicinity for the past 38 years. he stated that Chickaskia River has never overflowed any farm land North of center line of survey except as near as I could determine from approx. Sta. 296+00 East, which plainly shows on contact prints. main flow is at Sta. 301+00. on center line.

Mr. Frudy had an enlarged print of contact prints of Chickaskia River on which he pointed out the only place where farm land overflowed. he also farms land located South of drain in question on East side. West of N. & S. $\frac{1}{2}$ sec. line. Sta. 292+32.48

R. DIV.	
<input checked="" type="checkbox"/>	GHS
<input checked="" type="checkbox"/>	WVW
	WNM
	GWP
	GER
	SDD
	HFJ
	GJF

RECEIVED
 JUN 7 1965
 SURVEY DIVISION


 Charles I. Hillis
 Location Engineer

Notes - 6-7-65

cc) MC. to Bridge Engineer (This replaces copy of letter on same subject dated June 1, 1965).

cc Co. Plant File Ryan

Location No. 17A

Oklahoma State Highway Dept.

Date May 27, 1965

To Mr. Gaines H. Stout

From Charles I. Hillis

Subject Revised Highwater Elevation
S.W.O. 2323(1) F-283(4)- Kay Co.

Revised Highwater on future location of US 60 at (Chickaskia River) approx. 2.5 miles East and 0.5 mile North of Tonkawa Okla. surveyed as S.W. 2323(1) F-283(4) Kay CO.

As stated in my letter to you dated Dec. 3, 1964, of highwater on Nov. 18, 1964 at sta. 281+97 HW elev. 958.44. due to using wrong BM datum, highwater should be revised to read 959.88 ft.

RECEIVED
MAY 28 1965
SURVEY DIVISION

Charles I. Hillis

Charles I. Hillis
Location Engineer

CC Bridge Div. ←
CC Co. File
to be placed in Note Books

SUR.	DIV.
✓ CHS	6-2
✓ CIVIL	6-2
✓	6-7
✓	6-7
✓	6-7

Location No. 17A

Oklahoma State Highway Dept.

Date December 21, 1964

To Mr. Gaines H. Stout
 From Charles I. Hillis
 Subject Highwater US 77 Kay Co. 1964

1 # 1. At Salt Fork of Arkansas River, located between sections 31 & 36, T-25-N R-1 & 2-E, 3.0 miles North and 0.75 mile East of Marland Oklahoma Kay Co. or 1.0 mile North of Noble-Kay CO. line.

Using Assumed Elev. 100.00 ft for BM(Square) on NE corner of NE wingwall North end of bridge.

Actual highwater as marked by me on power pole right and approx. 190 feet North of bridge(Elev. 93.66 ft) and water mark on center line of present pave. approx. 215 ft. North of bridge elev.-93.66 ft.

Highwater marks on (101 ranch store building) at SE corner 2.7 feet above Gr. approx. 3000 feet North of river bridge Elev. = 93.88 ft. and water mark on center line of present US 77 approx. 3900 ft. North of river bridge E1- 93.66 feet.

37 # 2. At Cowskin Creek located on US 77 between sections 19 & 24, T-25-N, R-1 & 2-E, 3.0 miles West and 3.25 miles South of Ponca City Oklahoma. highwater 0.30 above bridge floor. or 1.0 feet below BM(X) on NE corner of hubguard at North end of bridge.

Charles I. Hillis

Charles I. Hillis
 Location Engineer

SUR. DIV.	
✓ CHS	12/21/64
WAY	
W/4	
RES	
GWP	
OC	
HED	

RECEIVED
DEC 20 1964
SURVEY SECTION

Oklahoma State Highway Dept.

Date December 21, 1964

To Mr. Gaines H. Stout
 From Charles I. Hillis
 Subject Highwater Future SH 11 Kay Co- 1964

- 12 # 1. At intersection of US 177 and SH 11, Main Street and Doolin Avenue in Blackwell Oklahoma. Sta. ~~262~~491.70 of FAP U 415(4) plans, actual highwater as observed at 7:00 AM on November 17, 1964, HW Elev- 1003.73 ft.
 - 12 # 2. At Sta. ~~270~~35 of S.W.O. 2299(1) on center line of survey future SH 11 as observed at 7:00 AM on November 17, 1964, HW elev- 1002.63 ft.
 - 12 # 3. At Sta. ~~316~~13.83 section corner common to sections 13, 14, 23 & 24, T-27-N, R-1-W. of S.W.O. 2299(1) survey of future SH 11. highwater elevation as shown established from well defined water marks in farm yard left of sta. 1184 and water marks on back slope (South) side of present SH 11. HW. El- 1000.49ft.
 - 12 # 4. At Chickaskia River bridge East City limits of Blackwell Oklahoma on present SH 11. highwater as observed on November 17, 1964. 6.0 below bridge floor (East) end of bridge, or 6.4 feet below BM(X) on SE wingwall of East abutment of bridge. bridge was inaccessible at time of extreme highwater, water overflowed present highway from approx. 100 feet West of bridge, West for approx. 500 feet. and from approx. 500 feet East of bridge, North and East to approx. 200 feet West of Lost Creek Bridge.
 - 13 # 5. At Lost Creek bridge located 2.0 miles East of intersection of US 177 and SH 11 in Blackwell Oklahoma, between sections 13 & 24, T-27-N, R-1-W, using S.W.O. 2299(1) level datum HW elev.-(1001.88 ft) from well defined water marks on center line of present SH 11 200, feet West of bridge, Set BM(X) on NW end of NW wingwall of Lost Creek bridge(El-1003.01 Ft)
- Highwater at (Gaging Station) located at ST & SF RR bridge Northeast side of Blackwell Oklahoma, at Chickaskia River. river crested at 5:30 AM on November 17, 1964 at 33.08 ft. elevation of station(967.41 ft) USO&GS 1929 level datum (Corps of Engineers) HW- Elev. 1000.49 Ft.

Included with this report ~~XXX~~ is list of tabulation sheets I obtained from US Dept. of Commerce, River Forecast Center, Tulsa Oklahoma. showing gaged rainfall of Chickaskia River Basin, from November 14, 1964 7:00 AM to 7:00 AM on November 18, 1964.

Charles I. Hillis
 Charles I. Hillis
 Location Engineer

SUR. DIV.	
✓ CHS	12/23
WAV	
WFM	
WES	
GWG	
OGG	
HIS	

- Copy to Bridge

3-30-66 Hasnt been placed in notebook to the best of my knowledge
 (EST)

RECEIVED
 DEC 23 1964
 SURVEY DIVISION

Oklahoma State Highway Dept.

Date DECEMBER 3, 1964

To MR. CHARLES I. HILLIS, LOCATION ENGINEER
From WILLIAM W. VAUGHAN, ASST. SURVEY ENGINEER
Subject HIGHWATER INFORMATION ON EXISTING US 60 BRIDGE ACROSS CHICKASKIA RIVER EAST OF TONKAWA, KAY COUNTY


YOU HAVE PREVIOUSLY BEEN FURNISHED AS BUILT PLANS FAP 287(A) ON CHICKASKIA RIVER BRIDGE AND INSTRUCTED TO GET HIGHWATER INFORMATION ON NOVEMBER 17, 1964 FLOOD.

IN ADDITION TO THIS DATA YOU ARE TO OBTAIN A RAVINE SECTION FOR THE RIVER UNDER THE BRIDGE, PLOT IT ON CROSS SECTION PAPER, SCALE 1"= 10' VERTICAL AND 1"= 100' HORIZONTAL, USING PLAN FAP 287(A) STATIONS AND U.S.C. & G.S. LEVEL DATUM.

I HAVE ATTACHED LINE BOOK NO. 1 AND LEVEL BOOK NO. 1, SWO 2597 WHICH IS A SURVEY ON DUCK CREEK JUST EAST OF THE CHICKASKIA. THIS WILL BE YOUR SOURCE OF U.S.C. & G.S. LEVEL DATUM. RECORD INFORMATION IN THIS LEVEL BOOK ALSO.

THIS INFORMATION IS NEEDED FOR PLANS NOW BEING DRAWN ON RELOCATION OF US 60, THEREFORE, SHOULD BE DONE AS SOON AS CONVENIENTLY POSSIBLE.

WILLIAM W. VAUGHAN
ASST. SURVEY ENGINEER

cc: SWO 2597(1)
KAY COUNTY FLOOD FILE 

By oec

Oklahoma State Highway Dept.

Date November 3, 1964

To Mr. Gaines H. Stout ,
 From Charles I. Hillis
 Subject Highwater- Chickaskia River
 S.W.O. 2323(1) US 60 Kay Co.

As instructed by Mr. W.N. McLaughlin Ground Engineer, I obtained highwater on proposed location of US 60, FAP-F 283(4)(5) S.W.O. 2323(1) Kay Co. of highwater which occurred on October 26, 1964. from drift and water marks visible.
 Elevation of Highwater on above date was 952.81 at Sta. 304+00. west bank of Chickaskia River.

Charles I. Hillis
 Charles I. Hillis
 Location Engineer

11/11/64
 INFO TO BE PLACED IN FIELD BOOKS
 BY O.C.C.

11/11/64 COPY TO BRIDGE DIV,
 " ROY PLANS DIV.

FILE: SWO 2323(1)
 KAY CO. FLOOD FILE

RECEIVED
 NOV 9 1964
 SURVEY DIVISION

SUR. DIV.	
GHS	
WWV	
WNM	
AES	
GWP	
OCC	
HFJ	

Copy to Bridge
 3-30-66 - To the best of my knowledge
 This has not been entered
 in Notebooks (6ER)

Oklahoma State Highway Dept.

Date November 3, 1964

To Mr. Gaines H. Stout

From Charles I. Hillis

Subject Highwater in Vicinity of Blackwell Okla.
US 177 & SH 11

Highwater on Chickaskia River on October 26, 1964,
1- At Chickaskia River bridge North limits of Blackwell on US 177 Highway
3.5 feet below USGS gaging station brass cap set in East end of South abutment
of old highway bridge, South bank under present US 177 bridge.

#-2- 5.6 below ~~North~~ bridge seat, North end of East abutment of present
Chickaskia River bridge on SH 11, East limits of Blackwell Okla. checked by
me on Oct. 25, 1964 on location.

3- At section corner common to sections 13, 14, 23 & 24, T-27-N, R-1-W back
water from Chickaskia River, actual highwater as observed by me on Oct. 25, 1964
at location. Highwater Elev. = 996.4 Ft. S.W.O. 2299(1) level datum.



Charles I. Hillis
Location Engineer

*Be sure to place # 3 in
SWO 22 99(1) notebooks
Stout*

copy to Bridge

*3-30-64 This has not been
PUT IN NOTEBOOKS
TO the best of my knowledge. (GCH)*

~~SEND COPY TO BRIDGE~~

~~Put in SWO FILE~~

~~COPY TO BRIDGE~~

SUR. DIV.	
<input checked="" type="checkbox"/> GHS	4/8
<input type="checkbox"/> WWV	11/6
<input type="checkbox"/> WNN	11/6
<input type="checkbox"/> ALS	
<input type="checkbox"/> GWP	
<input type="checkbox"/> DGC	
<input type="checkbox"/> HFD	

RECEIVED
NOV 5 1964
SURVEY DIVISION

UNITED STATES DEPARTMENT OF COMMERCE

WEATHER BUREAU

River Forecast Center
Room 817, Nine East Fourth
Tulsa, Oklahoma 74103

December 18, 1964

Mr. Charles I. Hillis
Location Engineer
Oklahoma State Highway Department
P. O. Box 105
Medford, Oklahoma

Dear Mr. Hillis:

Reference is made to your recent letter requesting rainfall data over the Chikaskia River basin during storm period November 14-19, 1964.

Attached herewith are rainfall tabulation sheets for November 15-18, 1964, for those rainfall stations within and immediately adjacent to the basin. The mimeographed locations are those where gratis, un-official or semi-official rain gages have been established for meeting our forecast needs. The additional locations are those where official (paid) gages and standard reporting instructions have been established for the same purpose.

Data in columns headed 7AM, are 24-hour amounts of rainfall as of the observation hour and date. Data in column headed 1PM is the 6-hour increment since 7AM of same date. Data in column headed 7PM is the 12-hour increment of rainfall since 7AM of the same date. "None" means observer so reported. N.R. entries are for "no report received." Es-
timated amounts are those made in our office based upon subsequent re-
port of rainfall and required for our river forecast needs for time-
area distributions of rainfall over the basin. Storm totals would be
obtained by summation of the 7AM amounts.

If additional information or explanation is needed, please advise.

Very truly yours,

P. R. Jones
P. R. Jones
Hydrologist in Charge

RECEIVED 12/21/64
CHAS. I. HILLIS
LOCATION ENGR.

copy to bridge

Enc.
5/22/70 MC: ALL TO SWO 21500)

SUR. DIV.
✓ GWS
WWW
WLA
WLS
WSP
WOO
WSJ

12/28

DEC 21 1964
U.S. DEPT. OF COMMERCE
WEATHER BUREAU
TULSA, OKLAHOMA
SURVEY DIVISION

BLACKWELL FLASH FLOOD RAINFALL NETWORK

Month Nov Day 15th Year 1964

Station	7 AM	Prev. 7 AM ^{11th}	1 PM	7 PM	Remarks
Argonia, Kans.	0.10	None	—	Est. 2.00	
Ashton, Kans.	0.20	None	—	Est. 1.50	
Attica, Kans.	N.R.	—	—	N.R.	
Bluff City, Kans.	0.73	None	—	3.10	
Braman, Okla.	0.20	None	—	Est. 1.00	
Corbin, Kans.	N.R.	—	—	Est. 1.70	
Harper, Kansas	N.R.	—	—	N.R.	
Manchester, Okla.	N.R.	—	—	N.R.	
Mayfield, Kans.	N.R.	—	—	N.R.	
Nashville, Kans.	N.R.	—	—	Est. 1.50	
Norwich, Kans.	N.R.	—	—	N.R.	
Perth, Kans.	N.R.	—	—	1.50	
Renfro, Okla.	N.R.	—	—	N.R.	
Runnymede, Kans.	N.R.	—	—	Est. 2.00	
Sawyer, Kans.	0.70	None	—	Est. 1.60	
South Haven, Kans.	0.50	None	—	Est. 1.50	
Spivey, Kans.	N.R.	—	—	N.R.	
Willowdale, Kans.	N.R.	—	—	Est. 1.80	
Blackwell, Okla	1.65	None	—	0.80	
Arkansas City, Ka	2.35	None	—	N.R.	
Cardwell, Ks	0.04	None	—	1.90	
Conway Spgs. Ks	N.R.	—	—	4.75	
Kingman, Mo	0.33	—	—	1.00	
Oxford, Ks	0.29	—	—	2.75	
Wakita, Okla	N.R.	—	—	3.30	
Pratt, Ks	0.17	—	1.00	1.65	
Anthony, Ks	N.R.	N.R.	N.R.	2.25	

TOTAL
 RAIN FALL
 7 AM 11/14 TO 7 AM 11/15
 7.26 INCHES
 24 HOURS
 July 1962

Tulsa River Forecast Center
 Weather Bureau Office
 9 East 4th Street, Room 817
 Tulsa, Oklahoma 74103

BLACKWELL FLASH FLOOD RAINFALL NETWORK

Month Nov. Day 16 Year 1964

Station	7 AM	Prev. 15 th 7 AM	1 PM	7 PM	Remarks
Argonia, Kans.	4.25	↑	1.00	↑	
Ashton, Kans.	3.00		2.50		
Attica, Kans.	N.R.*		N.R.		* Unofficial report in vicinity est. 6.00
Bluff City, Kans.	5.15*		2.00		* ditto est. 8.00
Braman, Okla.	2.95		Est. 1.00		
Corbin, Kans.	4.00		1.50		
Harper, Kansas	N.R.		N.R.		
Manchester, Okla.	N.R.		N.R.		
Mayfield, Kans.	N.R.		N.R.		
Nashville, Kans.	4.50		N.R.		
Norwich, Kans.	N.R.*		N.R.		* Maudock, Ks. 4.50
Perth, Kans.	3.50		1.05		
Renfro, Okla.	N.R.		N.R.		
Runnymede, Kans.	4.75		N.R.		
Sawyer, Kans.	3.50		N.R.	↓	
South Haven, Kans.	3.50		N.R.	est 1.50	
Spivey, Kans.	N.R.		N.R.	N.R.	
Willowdale, Kans.	2.85		N.R.	N.R.	
Blackwell, Okla	2.00	—	0.34	N.R.	
Arkansas City, Ks	1.92	—	1.30	N.R.	
Caldwell, Ks	3.16	—	1.50	2.15	
Conway Spgs, Ks	6.05	—	1.00	N.R.	
Kingman, Ks	2.12	—	0.41	N.R.	
Oxford, Ks	2.24	—	0.95	1.26	
Wakita, Okla	4.30	—	N.R.	N.R.	
Prett, Ks	2.54	↓	0.30	0.37	
Anthony, Ks	3.13	—	0.85	N.R.	

Sheet for 11/15/64

No. Reports

← July 1962
 TOTAL FALL
 7 AM 11/15 TO 7 AM 11/16
 71.41 INCHES
 24 HOURS

Tulsa River Forecast Center
 Weather Bureau Office
 9 East 4th Street, Room 817
 Tulsa, Oklahoma 74103

BLACKWELL FLASH FLOOD RAINFALL NETWORK

Month Nov. Day 17 Year 1964

Station	7 AM	Prev. 7 AM ¹¹	1 PM	7 PM	Remarks
Argonia, Kans.	1.30		↑	↑	
Ashton, Kans.	2.50 ⁺ N.R.				
Attica, Kans.	N.R.				
Bluff City, Kans.	2.30				
Braman, Okla.	1.40				
Corbin, Kans.	1.50 ⁺				
Harper, Kansas	N.R.				
Manchester, Okla.	N.R.				
Mayfield, Kans.	N.R.				
Nashville, Kans.	N.R.				
Norwich, Kans.	N.R.				
Perth, Kans.	N.R.				
Renfro, Okla.	N.R.				
Runnymede, Kans.	0.65				
Sawyer, Kans.	0.60				
South Haven, Kans.	2.30				
Spivey, Kans.	N.R.				
Willowdale, Kans.	0.27		↓	↓	
Blackwell, Okla.	1.63		0.55	N.R.	July 1962 Total FALL rain 11/14 to 11/17 23.07 INCHES 24 HOURS
Arkansas City, Ks	2.01		N.R.	0.10	
Caldwell, Ks	2.74		0.04	N.R.	
Cowley Spgs. Ks	1.40		N.R.		
Kingman, Ks	0.42		N.R.		
Oxford, Ks	1.77		Trace		
Wakita, Okla	1.55		N.R.		
Prett, Ks	0.38		0.01	0.07	
Anthony, Ks	0.85 ⁺		0.33	N.R.	

No sheet for 7 AM 11/18/64

Tulsa River Forecast Center
 Weather Bureau Office
 9 East 4th Street, Room 817
 Tulsa, Oklahoma 74103

BLACKWELL FLASH FLOOD RAINFALL

Month Nov. Day 18 Year 1964

Station	7 AM	Prev. 7 AM	1 PM	7 PM	Remarks
Argonia, Kans.	0.50				
Ashton, Kans.	NR				
Attica, Kans.	NR				
Bluff City, Kans.	0.35				
Braman, Okla.	0.60				
Corbin, Kans.	NR				
Harper, Kansas	NR				
Manchester, Okla.	NR				
Mayfield, Kans.	NR				
Nashville, Kans.	NR				
Norwich, Kans.	NR				
Perth, Kans.	0.27				
Renfro, Okla.	NR				
Runnymede, Kans.	NR				
Sawyer, Kans.	NR				
South Haven, Kans.	0.65				
Spivey, Kans.	NR				
Willowdale, Kans.	NR				

See Sheet for 11/17/64

TOTAL RAIN FALL IN
 CHICKASAW RIVER BASIN
 FROM 7 AM NOV 18 TO 7 PM
 5.93 INCHES FALL
 OVER 96 HOURS

- Blackwell, Okla. 0.85
- Aekenser City, Ks 0.60
- Caldwell, Ks - 0.51
- Conway Spgs. Ks - 0.15
- Kingman, Ks - 0.10
- Oxford, Ks - 0.23
- Wakita, Okla - 0.31
- Prett, Ks - 0.07
- Anthony, Ks - 0.64

July 1962

Rainfall had ended over basin by Nov. 18 7 AM.

TOTAL RAIN
 FROM 7 AM 11/17 TO 7 PM 11/18/64
 5.93 INCHES = 24 HRS

Oct 27 1964

Chikaskia River

Flood Peril Ends

All highways were open in the Blackwell area Tuesday morning, and the errant Chikaskia River was settling back into its banks after exceeding flood stage Monday.

Blackwell police reported no property damage by the normally placid little river, which crested more than 3 feet above flood stage Monday afternoon.

Floyd Montgomery, U. S. Weather Bureau observer in Blackwell, said the river was down to 25.70 feet by 8 a.m. Tuesday after cresting at 29.28 feet at 3:45 p.m. Monday. Flood stage is 26 feet.

It was pouring about 19,500 cubic feet per second at the crest," Montgomery said. "Normal is about 800 or 900 feet per second." He said the normal level of the river was a mere 1.70 feet.

Heavy rains in north central Oklahoma and in Kansas that swelled the river have ended, and the weather bureau reports no shower activity in the state.

Clear to partly cloudy skies are forecast across the state through Wednesday with temperatures ranging from 74 to 80 Tuesday night lows should be from 42 northwest to 60 southeast.

Accumulated dampness from rains over the weekend helped form heavy fog in many areas of the state early Tuesday morning, reducing visibility to less than one mile in many places. Weathermen said it would burn off by mid-morning as temperatures increased.

Will Rogers World Airport reported visibility less than one mile. Tinker Air Force Base ceased all takeoffs and landings at 12:17 a.m. because of virtually zero visibility.

The Oklahoma City forecast called for partly cloudy skies and a high temperature of 77 Tuesday and 79 Wednesday.

FILE: KAY Co. FLOOD FILE

COPY TO: BRIDGE DIV.

SWD. 2323 (1)

CHAS. I. HILLIS

5/22/70 MC: SWD 2154(1)

HILLIS TO DETAIL

H. W. HILLIS

Oklahoma State Highway Dept.

Date Sept. 24, 1963

To Mr. Gaines H. Stout
 From Charles I. Hillis
 Subject Highwater- Chickaskia River.
 Blackwell Oklahoma
 S.W.O. 2299(1)-

Highwater vicinity of Blackwell on (Chickaskia River) on July 12, 1963. as recorded by Mr. Floyd Montgomery official weather bureau observer in Blackwell Oklahoma. highwater gauge located on Frisco Railroad bridge approx. 0.5 mile down stream from Sta, 277.50 of S.W.O. 2299(1). crest elevation at that point = 995.41 mean sea level (USC & GS level datum)

As to highwater on Legion creek as I had Quoted Mr. Floyd Montgomery as saying that water was over pavement was in error. I went back and talked to Mr. Montgomery on Sept. 16th. in regards to highwater on Legion creek on July 12, 1963, He stated that he was referring to highwater of an earlier date, of which I checked as being highwater as shown on FAP U-315-4 plans. Elevation of 1006.70. sheet- 17. Set (BM) X on SW wingwall of 2-1018171' Rdwy ROB. Sta. 242.07.60 on S.W.O. 2299(1) Elevation = 1006.45 ft.

Charles I. Hillis

Charles I. Hillis
 Location Engineer

*B.M. Information placed in S.W.O. 2299(1)
 Level Book 9/30/63*

McLaughlin



✓

Oklahoma State Highway Dept.

Date NOVEMBER 18, 1964

To MR. CHARLES I. HILLIS, LOCATION ENGINEER
 From MR. GAINES H. STOUT, SURVEY ENGINEER
 Subject SURVEY DIVISION: HIGH WATER MARKS: GRANT, KAY & NOBLE COUNTIES

- (1) IN ADDITION TO DESIRED HIGH WATER MARKS AS DISCUSSED WITH YOU BY TELEPHONE AND IN PERSON ON NOVEMBER 17, 1964, DUE TO HEAVY CONTINUED RAINS IN THE SALT FORK AND CHICKASKIA RIVER BASINS PRODUCING RECORD FLOODING, PLEASE OBTAIN MARKS ON THE FOLLOWING LOCATIONS, SOME OF WHICH WERE MENTIONED AFORE AND NOT INCLUDING SOME THAT OUR MR. CURNUTT WILL SEND YOU INFORMATION ON:

KAY COUNTY

US 77-SALT FORK 3 MILES NORTH OF MARLAND
 US 177-SALT FORK ABOUT 3 MILES SOUTH AND 1 MILE EAST OF TONKAWA
 US 177-SALT FORK-BRIDGE SOUTH EDGE OF TONKAWA WHERE WE UNDERSTAND THERE IS A GAUGE.

NOBLE COUNTY

SH 40-SALT FORK SOUTH OF PONCA CITY INCLUDING OVERFLOW STRUCTURES
 SH 40-RED ROCK CREEK SOUTH OF PONCA CITY
 US 77-RED ROCK CREEK ABOUT 12 MILES NORTH OF PERRY

GRANT COUNTY

SH 74-SALT FORK-SOUTH OF LAMONT

- (2) WHERE WE DO NOT FURNISH YOU PLANS OR OTHER INFORMATION, SHOW YOUR INFORMATION FROM BRIDGE FLOORS AND CHECK FOR UPSTREAM AND DOWNSTREAM SIDES OF BRIDGES, IF ANY DIFFERENCE, THAT IS GREATER THAN 0.3 SHOW, IF NOT, STATE BOTH THE SAME, WHICH IS VERY IMPORTANT ON ALL HIGH WATER MARKS.
- (3) OF COURSE YOU WILL OBTAIN MARKS AT POND CREEK & JEFFERSON. CURNUTT WILL SEND YOU THE PLANS ON THE US 81 SALT FORK PROJECT NORTH OF POND CREEK AND INFORMATION ON YOUR SURVEY AT JEFFERSON.
- (4) NO DOUBT YOU WILL PICK UP MANY MORE MARKS OVER THIS AREA NOT DISCUSSED.
- (5) IT IS IMPORTANT, IF POSSIBLE, TO OBTAIN MARKS ON BOTH SIDES OF A STREAM.

Gaines H. Stout
 GAINES H. STOUT
 SURVEY ENGINEER

JH

MC: KAY COUNTY-FLOOD FILE
 GRANT COUNTY-FLOOD FILE
 NOBLE COUNTY-FLOOD FILE

STATE OF OKLAHOMA
DEPARTMENT OF HIGHWAYS
SURVEY DIVISION

**Forecast Sees
Record Crest
On Chikaskia**

Nov 17-64
More Than 200

Evacuate Homes
As River Rises

Daily Okla.
By Shorty Shelburne
Of State Staff

Evacuation operations with boats and trucks were stepped up early Tuesday in flooded Blackwell to move more families to safety as rain continued to fall, sending the rampaging Chikaskia River toward a predicted record flood crest of more than 34 feet.

Red Cross officials said shortly after midnight that five boats and several trucks were in service evacuating persons who had refused to leave flood areas earlier. They estimated more than 50 blocks of Blackwell were under water and the river was still rising at five inches an hour. More than 200 already had been forced to flee from the estimated 150 to 200 homes threatened.

Record Crest Due

Floyd Montgomery, official river forecaster, said his 10 p.m. reading showed the river at 32.3 feet and he predicted the eventual crest would go well above a previously predicted 34 feet. The highest flood crest ever reported for the Chikaskia at Blackwell was an even 34 feet during the damaging flood of June 1923. Flood stage is 26 feet.

U.S.G.S GAGE ON SL-SF RR LOCATED IN N.E. SECTION OF BLACKWELL, APPROXIMATELY 1200' DOWNSTREAM CENTER LINE OF SWO 2299(1) - NOW DOOLIN AVENUE.

DAILY OKLAHOMAN - NOVEMBER 17, 1964

ELEV. OF GAUGE = 967.41

<u>DATE</u>	<u>STAGE-FEET</u>	<u>ELEVATION</u>
JUNE 1923	34.0	1001.41
Nov. 17, 1964	33.08	1000.49
MAY 18, 1957	32.56	999.97
JUNE 1957	30.20	997.61
FLOOD STAGE	26.00	993.41

FILE: SWO 2299(1)
BLACKWELL - KAY COUNTY

CC Bridge 12-2-64

Location No. 12

Oklahoma State Highway Dept.

Date NOVEMBER 20, 1964

To Mr. CHARLES I. HILLIS, LOCATION ENGINEER

From MR. GAINES H. STOUT, SURVEY ENGINEER

Subject HIGHWATER INFORMATION ON FLOOD OF KAY AND GRANT COUNTIES.

I HAVE MAILED UNDER SEPARATE COVER PLAN AND PROFILE SHEETS OF AREAS EFFECTED BY HIGHWATER WHICH WILL BE HELPFUL TO YOU IN OBTAINING HIGHWATER INFORMATION AS PREVIOUSLY INSTRUCTED. PLANS COVERING AREAS AS FOLLOWING:

- (1) US 177 KAY COUNTY, TONKAWA SOUTH ACROSS THE SALT FORK OF THE ARKANSAS SOUTH TO KAY-NOBLE COUNTY LINE. PLANS INCLUDE:
 - A. FAS-S 887 (1) CS. BRIDGE ACROSS THE SALT FORK OF THE ARKANSAS. AT THIS LOCATION YOU ARE TO CONTACT THE CITY WATER DEPARTMENT OF TONKAWA, WHO MAINTAIN A GAGE ON THIS BRIDGE AND WILL BE HELPFUL TO YOU.
 - B. PRELIMINARY PLANS SURVEYED AS SWO 2214 (1) BEGIN AT SOUTH END OF FAS 887 (1) AND CONTINUE SOUTH APPROXIMATELY 1500' SOUTH OF FAS ROUTE CONNECTION TO INTERSTATE. AT APPROXIMATELY 1:00 PM, NOVEMBER 17, 1964, WE VISITED THIS SITE AND WATER WAS ON CENTER LINE EXIST PAVEMENT AT APPROXIMATELY STATION 133+00, HOWEVER WE WERE ADVISED BY CITY EMPLOYEES OF TONKAWA THAT THE SALT FORK WAS EXPECTED TO RISE APPROXIMATELY 4' HIGHER.
- (2) SAP 280 (c) US 177 KAY COUNTY FROM 3 MI. N. OF COUNTY LINE EAST 1.0 MILE.
- (3) FAP 140 (F) US 177 KAY COUNTY FROM COUNTYLINE N. 3.0 MILES.
- (4) FAP - 287 (A) & SAP 111 (B) US 60 KAY CHICKASKIA RIVER, E. TONKAWA.
- (5) FAS 887 (4) CS. FOUNDATION ROAD KAY COUNTY FROM I-35, 1.75 MI. TO US 77 SOUTH OF TONKAWA.
- (6) US 81 GRANT COUNTY FAP 24 (9) SALT FORK OF ARKANSAS RIVER 1.5 MI. N. OF POND CREEK.
- (7) US 60 GRANT COUNTY, NRH 283 (c) SALT FORK OF ARKANSAS RIVER 0.5' MI. E. OF POND CREEK.
- (8) US 77 KAY COUNTY FROM BRAMAN N.W. TO OKLA.-KANSAS STATE LINE. THIS AREA NOT OF EXTREME URGENCY BUT SHOULD BE CHECKED OVER AND HIGHWATER RECORDED.

2.

(9) SH 11 KAY COUNTY FAP 62 (A) BLACKWELL E. ACROSS CHICKASKIA RIVER. AT APPROXIMATELY 1:30 PM ON NOVEMBER 17, 1964, WE SAW HIGHWATER AT APPROXIMATELY STATION 1+75 HOWEVER IT HAD RECESSED SOME AT THIS TIME.

I WISH TO CAUTION YOU TO EXERCISE EVERY PRECAUTION IN RECORDING AND DOCUMENTING HIGHWATER RECORDS CONCERNING THIS FLOOD. IT APPEARS THAT IT WILL APPROACH OR EXCEED THE MAXIMUM FLOOD OF RECORD, THEREFORE IT WILL BE IMPORTANT WHEN CONSIDERING FUTURE CONSTRUCTION IN THIS AREA.

CHECK WITH THE WEATHER BUREAU REPRESENTATIVE IN THE AREA INVOLVED AND RECORD THE RAINFALL AMOUNTS AND TIME, ETC., THAT IS PERTINENT TO THE RECORD.

IF YOU HAVE ANY QUESTIONS PERTAINING TO THIS ASSIGNMENT, PLEASE DO NOT HESITATE TO CONTACT THIS OFFICE.

GAINES H. STOUT
SURVEY ENGINEER

GS:JH

CC: FLOOD FILE: KAY COUNTY ←
FLOOD FILE: GRANT COUNTY

Box 385
Perry Oklahoma
July 9, 1951

Mr. Homer X. White

R. A. Ward

Elevations of Arkansas River
during flood state.

File - Highwater - Kay County

*Bill Vaughan says he was
held by Ward these were taken at the
RCB on Hwy U.S. 97*

Stout

Below are the elevations of the Arkansas River at Ponca City as recorded
by Mr. O. O. Henry and Mr. Wayne Smith.

July 1, 1951

9:30 AM	922.31
11:30 AM	922.64
1:30 PM	922.91
3:30 PM	923.19
5:30 PM	923.37
7:30 PM	923.49
9:30 PM	923.60

July 2, 1951

7:30 AM	924.85
8:30 AM	925.03
9:00 AM	925.16
10:00 AM	925.45
11:00 AM	925.66
12:00	925.91
1:00 PM	926.08
2:00 PM	926.19
3:00 PM	926.29
4:00 PM	926.39
5:00 PM	926.39
6:00 PM	926.39
6:30 PM	926.39
7:30 PM	926.40
9:30 PM	926.16
11:00 PM	926.09

July 3, 1951

7:30 AM	925.26
8:00 AM	925.24
9:00 AM	925.14
10:00 AM	925.04
11:00 AM	924.99
12:00	924.94
1:00 PM	924.89
2:00 PM	924.84
3:00 PM	924.74
4:00 PM	924.64
5:00 PM	924.54

C O P Y

RECEIVED
JUL 14 1951
PLANS & SURVEY
DEPARTMENT

Location No. 3 v

Box 385
Perry, Oklahoma
July 9, 1951

Homer X. White

R. A. Ward

Elevations of Arkansas River
during flood state. (Continued)

Stage

July 5, 1951

8:30 AM	920.30
9:30 AM	920.15
10:30 AM	920.05
11:30 AM	920.00
12:30 PM	919.95
1:30 P ^{mi}	919.95
2:30 Pm	919.95
3:30 PM	919.90
4:30 PM	919.85
5:00 PM	919.85

July 6, 1951

8:00 AM	920.15
9:00 AM	920.25
10:00 AM	920.25
11:00 AM	920.25
12:00	920.30
1:00 PM	920.35
2:00 PM	920.35
3:00 PM	920.35
4:00 PM	920.30
5:00 PM	920.25

July 7, 1951

8:00 AM	919.25
9:00 AM	919.04
10:00 AM	918.83
11:00 AM	918.63
12:00	918.41
1:00 PM	918.20
2:00 PM	917.95
3:00 PM	917.45
4:00 PM	916.76
5:00 PM	916.44

At crest on July 2, 1951, the difference in upstream and downstream elevations were as follows:

3:30 PM	926.02 Upstream	925.30 Downstream
4:30 PM	926.05 Upstream	925.33 Downstream

Respectfully Submitted,

R. A. Ward
Res. Engr.

Loc. No. 3

*How far upstream
and down stream*

C

O

P