Robin L. Simmons
Regional Land Manager

June 20, 2017

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Oklahoma Water Resources Board
3800 N. Classen Boulevard
Oklahoma City, OK 73118
Attn: Mr. Kent Wilkins

Re: Martin Marietta/TXI Mill Creek Limestone Quarry Monitoring Report Q1 2017

Dear Mr. Wilkins:

Attached please find the Q1 2017 Quarterly Monitoring Report for Martin Marietta/TXI's Mill Creek Limestone quarry. The report is summarized on the table labeled Appendix C. Supporting data is also included.

Please call if you have any questions or comments.

Sincerely,

Robin L. Simmons

Robin L. Simmons, EIT
Regional Land Manager

North Texas/Oklahoma District
1503 LBJ Parkway Suite 400, Dallas, Texas 75234
t. (972) 350-8228 m. (214) 213-6024 e. Robin.Simmons@martinmarietta.com
www.martinmarietta.com

ATTACHMENT 1 (Appendix C)

Martin Marietta (TXI) Mill Creek 2016

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Appendix C . Consumptive use of Pitwater

Q1 2017

	PIT GROUNDWATER VOLUME		
1	Total volume pumped from producing mine pit(s) (AC-FT)		365.76
2	Volume of precipitation that falls onto the surface of producing Mine Pits (AC-FT)		53.05
3	Portion of total precipitation that flows over the land surface that drains into the mine pit water (AC-FT)		19.89
4	**(WATER HELD IN PIT FROM PREVIOUS MONTHS) other non pit waters pumped from the producing mining pit (AC-FT)**		
5	add lines 2 through 4		72.94
6	**Pit Groundwater Volume (AC-FT)** (line 1 minus Line 5)		**292.82**
	DEFINED ELEMENTS OF CONSUMPTIVE USE		
7	Vol. of pit groundwater that is driven off (by drying) the mined material transp. off of the mine site (AC-FT)		0.00
8	Vol. of pit groundwater that is carried away with the the mined material transp. off of the mine site (AC-FT)		1.07
9	Vol. of pit groundwater that evaporates from producing mine pits, process ponds and lined ponds (excluding structures used for augmentation) (AC-FT)		0.81
10	Volume of pit groundwater that is used for other beneficial uses off of the mine site (AC-FT) (includes on-site dust control)		4.09
11	**DEFINED ELEMENTS OF CONSUMPTIVE USE** of Pit groundwater (AC-FT) (add lines 7 through 10)		**5.97**
	PIT GROUNDWATER BALANCE		
12	Lines 6 minus 11		286.85
13	**Groundwater Augmentation** Volume of pit groundwater returned to GW Basin or subbasin. (Troy Recharge AC-FT)	Credits	7.49
14	**Stream Augmentation** volume of pit water discharged to a definite Stream, during flow conditions that are less than or equal to the accepted exceedance level (AC-FT)	Credits	241.18
15	**PPT and Runoff** Volume of Precipitation and surface runoff into a recharge pit or holding pond (AC-FT)	Credits	46.55
16	**Recycled Pit Groundwater** - Volume of ground water returned to the mine pit or holding basin (AC-FT)		96.43
17	**Other Non-Consumptive GW Losses** Including pit GW returned to the land surface from which surface runoff flows into a mine pit and other losses (AC-FT)		0.00
18	add lines 13 through 17		391.65
19	**OTHER CONSUMPTIVE USE** Line 12 minus Line 18		-104.80
	TOTAL REPORTED CONSUMPTIVE USE (AC-FT)		
	TOTAL NET CONSUMPTIVE USE (AC-FT) Line 11 plus line 19		-98.83

RESULTS FROM RUNOFF MODELLING

2017		Quarry Monthly Totals				FW Pond Monthly Totals		Re-cycle Recharge (Troy) Monthly Totals		TXI-Mill Creek Totals	
	PPT	Sump Direct ppt	In-Quarry Runoff	Runoff from beyond Quarry	Quarry Totals	Direct ppt	Runoff	Direct ppt	Runoff	Direct ppt	Runoff
	Inches	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
January	3.40	0.057	34.537	16.111	50.70	5.30	18.05	11.19	22.93	**16.55**	**91.63**
February	2.12	0.035	15.391	3.544	18.97	3.30	1.04	6.98	2.83	**10.32**	**22.81**
March	0.80	0.013	3.007	0.244	3.26	1.25	0.00	2.63	0.04	**3.89**	**3.29**
Q1 Subtotal		**0.11**	**52.93**	**19.90**	**72.94**	**9.85**	**19.10**	**20.80**	**25.81**	**30.76**	**117.74**

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Water Volume Movements		January	February	March
Pumped from Pit	(Ac-Ft)	132.9	117.2	115.7
Groundwater Component of Pitwater		82.2	98.2	112.4
Quarry dust suppression		2.8	0.9	1.5
Q- freshwater pond	(Ac-Ft)	23.3	-18.1	114.1
To Secondary FM7	(Ac-Ft)	398.3	471.9	547.4
To sand Plant FM8	(Ac-Ft)	79.8	85.0	102.5
to loadout FM6	(Ac-Ft)	322.5	332.9	395.2
to dust control FM9	(Ac-Ft)	0.9	0.9	0.9
to Plant FM7+FM8+FM6	(Ac-Ft)	800.6	889.8	1045.1
to stream Augmentation	Ac-ft	106.78	134.40	0.00
To Troy FM3	(Ac-Ft)	805.8	903.7	1046.9
From Troy to Freshwater Pond FM4	+	788.3	900.9	947.5

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Quarter Summary	1st QTR
Total Tons Shipped	1,340,000
Total Acre Feet	27.90
Average Moisture %	2.83%

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

---------- WARNING ----------
Some of the data that you have obtained from this U.S. Geological Survey database
may not have received Director's approval. Any such data values are qualified
as provisional and are subject to revision. Provisional data are released on the
condition that neither the USGS nor the United States Government may be held liable
for any damages resulting from its use.
#
Additional info: https://help.waterdata.usgs.gov/policies/provisional-data-statement
#
File-format description: https://help.waterdata.usgs.gov/faq/about-tab-delimited-output
Automated-retrieval info: https://help.waterdata.usgs.gov/faq/automated-retrievals
#
Contact: gs-w_support_nwisweb@usgs.gov
retrieved: 2017-03-07 15:51:30 EST (nadww01)
#
Data for the following 1 site(s) are contained in this file
USGS 07331200 Mill Creek near Mill Creek, OK

#
Data provided for site 07331200
TS parameter statistic Description
111780 00060 00003 Discharge, cubic feet per second (Mean)
#
Data-value qualification codes included in this output:
#
P Provisional data subject to revision.
#

agency_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n	10s
USGS	07331200	2017-01-01	0.53	P
USGS	07331200	2017-01-02	0.59	P
USGS	07331200	2017-01-03	0.57	P
USGS	07331200	2017-01-04	0.52	P
USGS	07331200	2017-01-05	0.67	P
USGS	07331200	2017-01-06	0.86	P
USGS	07331200	2017-01-07	0.97	P
USGS	07331200	2017-01-08	1.25	P
USGS	07331200	2017-01-09	1.32	P
USGS	07331200	2017-01-10	1.74	P
USGS	07331200	2017-01-11	1.51	P
USGS	07331200	2017-01-12		
USGS	07331200	2017-01-13	1.61	P
USGS	07331200	2017-01-14	2.12	P
USGS	07331200	2017-01-15	14.3	P
USGS	07331200	2017-01-16	139	P
USGS	07331200	2017-01-17	17.5	P
USGS	07331200	2017-01-18	6.34	P
USGS	07331200	2017-01-19	4.32	P
USGS	07331200	2017-01-20	3.78	P
USGS	07331200	2017-01-21	3.46	P
USGS	07331200	2017-01-22	3.24	P
USGS	07331200	2017-01-23	3.06	P
USGS	07331200	2017-01-24	3.14	P
USGS	07331200	2017-01-25	3.06	P
USGS	07331200	2017-01-26	2.85	P
USGS	07331200	2017-01-27	2.83	P
USGS	07331200	2017-01-28	2.82	P
USGS	07331200	2017-01-29	2.78	P
USGS	07331200	2017-01-30	2.72	P
USGS	07331200	2017-01-31	2.68	P

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

---------- WARNING ----------
Some of the data that you have obtained from this U.S. Geological Survey database
may not have received Director's approval. Any such data values are qualified
as provisional and are subject to revision. Provisional data are released on the
condition that neither the USGS nor the United States Government may be held liable
for any damages resulting from its use.
#
Additional info: https://help.waterdata.usgs.gov/policies/provisional-data-statement
#
File-format description: https://help.waterdata.usgs.gov/faq/about-tab-delimited-output
Automated-retrieval info: https://help.waterdata.usgs.gov/faq/automated-retrievals
#
Contact: gs-w_support_nwisweb@usgs.gov
retrieved: 2017-03-07 15:52:21 EST (nadww02)
#
Data for the following 1 site(s) are contained in this file
USGS 07331200 Mill Creek near Mill Creek, OK

#
Data provided for site 07331200
TS parameter statistic Description
111780 00060 00003 Discharge, cubic feet per second (Mean)
#
Data-value qualification codes included in this output:
P Provisional data subject to revision.
#

agency_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n	10s
USGS	07331200	2017-02-01	2.65	P
USGS	07331200	2017-02-02	2.43	P
USGS	07331200	2017-02-03	2.50	P
USGS	07331200	2017-02-04	2.52	P
USGS	07331200	2017-02-05	2.60	P
USGS	07331200	2017-02-06	2.53	P
USGS	07331200	2017-02-07	2.41	P
USGS	07331200	2017-02-08	2.33	P
USGS	07331200	2017-02-09	2.14	P
USGS	07331200	2017-02-10	2.29	P
USGS	07331200	2017-02-11	2.27	P
USGS	07331200	2017-02-12	2.11	P
USGS	07331200	2017-02-13	2.22	P
USGS	07331200	2017-02-14	36.2	P
USGS	07331200	2017-02-15	65.7	P
USGS	07331200	2017-02-16	19.6	P
USGS	07331200	2017-02-17	8.19	P
USGS	07331200	2017-02-18	5.50	P
USGS	07331200	2017-02-19	4.53	P
USGS	07331200	2017-02-20	5.36	P
USGS	07331200	2017-02-21	4.11	P
USGS	07331200	2017-02-22	4.21	P
USGS	07331200	2017-02-23	4.60	P
USGS	07331200	2017-02-24	4.22	P
USGS	07331200	2017-02-25	3.93	P
USGS	07331200	2017-02-26	3.75	P
USGS	07331200	2017-02-27	3.74	P
USGS	07331200	2017-02-28	3.63	P

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

---------- WARNING ----------
Some of the data that you have obtained from this U.S. Geological Survey database
may not have received Director's approval. Any such data values are qualified
as provisional and are subject to revision. Provisional data are released on the
condition that neither the USGS nor the United States Government may be held liable
for any damages resulting from its use.
#
Additional info: https://help.waterdata.usgs.gov/policies/provisional-data-statement
#
File-format description: https://help.waterdata.usgs.gov/faq/about-tab-delimited-output
Automated-retrieval info: https://help.waterdata.usgs.gov/faq/automated-retrievals
#
Contact: gs-w_support_nwisweb@usgs.gov
retrieved: 2017-06-12 09:56:41 EDT (nadww02)
#
Data for the following 1 site(s) are contained in this file
USGS 07331200 Mill Creek near Mill Creek, OK

#
Data provided for site 07331200
TS parameter statistic Description
111780 00060 00003 Discharge, cubic feet per second (Mean)
#
Data-value qualification codes included in this output:
A Approved for publication -- Processing and review completed.
#

agency_cd	site_no	datetime	111780_00060_00003	111780_00060_00003_cd
5s	15s	20d	14n 10s	
USGS	07331200	2017-03-01	3.31	A
USGS	07331200	2017-03-02	3.07	A
USGS	07331200	2017-03-03	3.07	A
USGS	07331200	2017-03-04	3.17	A
USGS	07331200	2017-03-05	3.39	A
USGS	07331200	2017-03-06	3.31	A
USGS	07331200	2017-03-07	3.01	A
USGS	07331200	2017-03-08	2.73	A
USGS	07331200	2017-03-09	2.80	A
USGS	07331200	2017-03-10	3.20	A
USGS	07331200	2017-03-11	3.39	A
USGS	07331200	2017-03-12	2.80	A
USGS	07331200	2017-03-13	4.17	A
USGS	07331200	2017-03-14	5.24	A
USGS	07331200	2017-03-15	4.17	A
USGS	07331200	2017-03-16	4.34	A
USGS	07331200	2017-03-17	5.23	A
USGS	07331200	2017-03-18	6.20	A
USGS	07331200	2017-03-19	6.95	A
USGS	07331200	2017-03-20	7.00	A
USGS	07331200	2017-03-21	6.33	A
USGS	07331200	2017-03-22	5.29	A
USGS	07331200	2017-03-23	4.43	A
USGS	07331200	2017-03-24	4.03	A
USGS	07331200	2017-03-25	3.63	A
USGS	07331200	2017-03-26	3.65	A
USGS	07331200	2017-03-27	3.86	A
USGS	07331200	2017-03-28	3.77	A
USGS	07331200	2017-03-29	6.11	A
USGS	07331200	2017-03-30	5.99	A
USGS	07331200	2017-03-31	7.41	A

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Vibra-Tech Gauges

Date	Daily Rainfall Total	Total Daily Evaporation
4/1/17	0.17 "	0.607 "
3/31/17	0.00 "	0.619 "
3/30/17	0.00 "	0.401 "
3/29/17	0.60 "	0.368 "
3/28/17	0.00 "	0.451 "
3/27/17	0.00 "	0.608 "
3/26/17	0.01 "	0.870 "
3/25/17	0.00 "	1.010 "
3/24/17	0.00 "	0.571 "
3/23/17	0.00 "	0.886 "
3/22/17	0.00 "	0.534 "
3/21/17	0.00 "	0.976 "
3/20/17	0.00 "	0.743 "
3/19/17	0.00 "	0.985 "
3/18/17	0.00 "	0.694 "
3/17/17	0.00 "	0.626 "
3/16/17	0.00 "	0.245 "
3/15/17	0.00 "	0.177 "
3/14/17	0.00 "	0.394 "
3/13/17	0.09 "	0.290 "
3/12/17	0.00 "	0.331 "
3/11/17	0.00 "	0.529 "
3/10/17	0.00 "	0.681 "
3/9/17	0.00 "	0.877 "
3/8/17	0.00 "	0.260 "
3/7/17	0.00 "	0.244 "
3/6/17	0.02 "	0.799 "
3/5/17	0.04 "	0.978 "
3/4/17	0.00 "	1.212 "
3/3/17	0.00 "	0.710 "

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Date	Daily Rainfall Total	Total Daily Evaporation
3/2/17	0.00 "	0.296 "
3/1/17	0.04 "	0.493 "
2/28/17	0.00 "	0.002 "
2/27/17	0.01 "	0.169 "
2/26/17	0.00 "	0.062 "
2/25/17	0.00 "	0.196 "
2/24/17	0.00 "	0.010 "
2/23/17	0.00 "	0.003 "
2/22/17	0.00 "	0.002 "
2/21/17	0.00 "	0.003 "
2/20/17	0.57 "	0.170 "
2/19/17	0.00 "	0.000 "
2/18/17	0.00 "	0.765 "
2/17/17	0.00 "	0.376 "
2/16/17	0.00 "	0.179 "
2/15/17	0.00 "	0.049 "
2/14/17	1.40 "	1.363 "
2/13/17	0.12 "	0.119 "
2/12/17	0.00 "	0.000 "
2/11/17	0.00 "	0.002 "
2/10/17	0.00 "	0.233 "
2/9/17	0.00 "	0.144 "
2/8/17	0.00 "	0.000 "
2/7/17	0.00 "	0.002 "
2/6/17	0.02 "	0.020 "
2/5/17	0.00 "	0.000 "
2/4/17	0.00 "	0.088 "
2/3/17	0.00 "	0.767 "
2/2/17	0.00 "	0.281 "
2/1/17	0.00 "	0.000 "
1/31/17	0.00 "	0.000 "
1/30/17	0.00 "	0.267 "

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Date	Daily Rainfall Total	Total Daily Evaporation
1/29/17	0.00 "	0.484 "
1/28/17	0.00 "	0.855 "
1/27/17	0.00 "	0.533 "
1/26/17	0.00 "	0.663 "
1/25/17	0.00 "	0.206 "
1/24/17	0.00 "	0.421 "
1/23/17	0.00 "	0.274 "
1/22/17	0.00 "	0.033 "
1/21/17	0.00 "	0.001 "
1/20/17	0.00 "	0.054 "
1/19/17	0.00 "	0.001 "
1/18/17	0.10 "	0.101 "
1/17/17	0.01 "	0.011 "
1/16/17	0.22 "	0.221 "
1/15/17	1.68 "	0.180 "
1/14/17	0.57 "	0.290 "
1/13/17	0.58 "	0.370 "
1/12/17	0.00 "	0.000 "
1/11/17	0.00 "	0.014 "
1/10/17	0.00 "	0.007 "
1/9/17	0.00 "	0.002 "
1/8/17	0.00 "	0.467 "
1/7/17	0.04 "	0.050 "
1/6/17	0.00 "	0.015 "
1/5/17	0.00 "	0.253 "
1/4/17	0.00 "	0.078 "
1/3/17	0.00 "	0.006 "
1/2/17	0.19 "	0.190 "
1/1/17	0.01 "	0.015 "
Date	Daily Rainfall Total	Total Daily Evaporation

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

MESONET CLIMATOLOGICAL DATA SUMMARY
(TISH) Tishomingo
Latitude: 34-19-57

January 2017
Nearest City: 6.0 N Tishomingo
Longitude: 96-40-44

Time Zone: Midnight-Midnight CST
County: Johnston
Elevation: 879 feet

DAY	TEMPERATURE (F) MAX	MIN	AVG	DEWPT	DEG DAYS HDD	CDD	HUMIDITY (%) MAX	MIN	AVG	RAIN (in)	PRESSURE (in) STN	MSL	WIND SPEED (mph) DIR	AVG	MAX	SOLAR (MJ/m2)	4" SOIL TEMPERATURES SOD	BARE	MAX	MIN
1	54	40	48.2	46.8	18	0	100	70	95	0.02	28.92	29.86	ESE	5.4	14.3	3.09	49.8	48.7	53	45
2	68	43	55.2	50.2	10	0	100	49	86	0.52	28.86	29.79	ESE	5.8	24.3	10.46	53.3	54.2	61	51
3	48	30	38.9	34.0	26	0	100	56	83	0.00	29.09	30.03	NNW	11.8	27.6	2.16	49.6	46.2	51	40
4	36	24	28.6	18.5	35	0	98	47	67	0.00	29.18	30.13	N	8.0	19.4	9.98	44.3	38.7	43	37
5	29	22	25.7	17.5	39	0	97	59	72	0.00	29.12	30.07	N	13.5	26.5	6.29	41.7	36.1	38	35
6	22	3	15.8	9.3	52	0	91	56	76	0.00	29.40	30.35	NNE	11.8	27.8	4.57	39.0	34.0	35	34
7	37	3	18.9	9.9	45	0	93	35	71	0.04	29.69	30.65	NW	3.9	11.5	13.83	38.6	33.4	34	33
8	44	13	29.1	15.4	36	0	98	26	62	0.00	29.57	30.53	SSE	8.3	27.1	13.06	38.0	33.3	34	33
9	61	27	45.3	36.3	21	0	93	50	71	0.00	29.20	30.15	S	12.9	33.1	9.93	40.4	38.3	45	34
10	71	40	58.6	42.8	9	0	86	24	61	0.00	28.95	29.89	SSW	10.7	29.4	11.02	47.8	49.5	55	45
11	75	38	60.5	52.1	9	0	100	51	75	0.00	28.87	29.81	S	14.5	34.2	10.93	49.6	51.0	58	43
12	66	39	47.9	38.9	13	0	89	58	71	0.00	29.14	30.09	NNE	13.5	29.5	4.11	51.8	51.3	56	45
13	40	34	36.3	32.5	28	0	100	63	87	0.55	29.43	30.38	N	10.3	18.6	1.93	46.9	43.3	45	41
14	38	33	35.6	35.6	29	0	100	100	100	0.22	29.45	30.40	NNE	9.4	18.3	2.25	44.7	41.1	42	40
15	57	35	43.6	43.6	19	0	100	100	100	1.67	29.15	30.10	NE	7.9	30.5	2.33	45.7	43.6	49	41
16	56	40	48.5	44.8	17	0	100	56	88	0.01	29.02	29.96	WSW	8.5	20.7	10.12	49.7	50.3	56	46
17	52	31	41.6	37.7	24	0	100	66	87	0.02	29.20	30.15	NW	4.0	14.7	9.09	47.6	45.8	51	41
18	53	42	47.3	45.6	18	0	100	83	94	0.03	29.12	30.06	NE	3.8	14.5	4.51	49.2	48.4	52	46
19	59	46	50.7	48.6	12	0	100	70	93	0.00	28.79	29.72	S	8.1	20.8	7.49	50.8	50.7	55	49
20	72	42	55.1	40.2	8	0	100	26	64	0.01	28.63	29.56	SW	10.3	33.8	14.04	50.5	50.1	56	45
21	64	35	52.0	45.2	15	0	99	55	79	0.00	28.55	29.47	S	4.5	17.7	6.73	50.2	49.4	55	44
22	60	44	51.4	40.4	13	0	92	42	68	0.00	28.68	29.61	NNW	13.7	39.0	9.41	50.5	49.4	53	46
23	61*	31*	46.6*	32.2*	19*	0*	96*	29*	61*	0.00*	28.93*	29.87*	S *	6.2*	17.0*	14.38*	48.9*	46.7*	55*	40*
24	74	43	56.0	39.7	7	0	76	29	57	0.00	28.70	29.64	ESE	8.3	23.9	11.55	49.8	48.5	55	43
25	59	30	42.9	27.3	20	0	73	23	55	0.00	29.00	29.94	NW	9.7	27.5	10.22	49.0	46.3	50	41
26	47	24	35.0	21.2	30	0	89	32	60	0.00	29.30	30.25	NW	6.8	19.7	15.34	45.0	41.2	48	37
27	50	24	36.2	18.9	28	0	88	23	54	0.00	29.34	30.29	NW	7.8	27.3	15.77	43.4	40.0	47	36
28	54	28	40.9	23.3	24	0	66	33	50	0.00	29.26	30.21	WNW	8.2	25.9	15.45	43.0	40.5	48	36
29	65	35	47.5	27.0	15	0	76	24	48	0.00	29.22	30.17	WNW	8.6	28.7	15.45	44.4	42.7	51	36
30	73	31	51.8	26.7	13	0	86	14	45	0.00	29.13	30.07	WNW	5.9	18.1	15.85	46.3	45.6	55	38
31	75	32	52.6	31.2	12	0	89	18	51	0.00	28.97	29.91	S	6.5	23.5	15.94	47.8	47.2	56	40
	56*	32*	43.4*	33.3*	<- Monthly Averages ->						29.09*	30.04*	S *	8.7*	39.0*	9.59*	46.7*	44.7*	50*	41*

Temperature - Highest: 75*
Lowest: 3*

Degree Days - Total HDD: 663*
Total CDD: 0*

Rainfall: Monthly Total: 3.09* in.
Greatest 24 Hr: 1.67* in.

Humidity - Highest: 100*
Lowest: 14*

Number of Days With:
Tmax ≥ 90: 0*
Tmax ≤ 32: 2*
Tmin ≤ 32: 15*
Tmin ≤ 0: 0*
Rainfall ≥ 0.01 inch: 10*
Rainfall ≥ 0.10 inch: 4*
Avg Wind Speed ≥ 10 mph: 10*
Max Wind Speed ≥ 30 mph: 5*

© 1993,2017 Oklahoma Climatological Survey

* Denotes incomplete record

Monthly data generated on Sunday, April 02, 2017 at 19:00 UTC

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

MESONET CLIMATOLOGICAL DATA SUMMARY
(TISH) Tishomingo
Latitude: 34-19-57

February 2017
Nearest City: 6.0 N Tishomingo
Longitude: 96-40-44

Time Zone: Midnight-Midnight CST
County: Johnston
Elevation: 879 feet

DAY	TEMPERATURE (F) MAX	MIN	AVG	DEWPT	DEG DAYS HDD	CDD	HUMIDITY (%) MAX	MIN	AVG	RAIN (in)	PRESSURE (in) STN	MSL	WIND SPEED (mph) DIR	AVG	MAX	SOLAR (MJ/m2)	4" SOIL TEMPERATURES SOD	BARE	MAX	MIN
1	68	39	53.4	39.5	11	0	96	43	61	0.00	29.00	29.94	NNE	8.7	30.9	15.56	49.4	49.3	59	42
2	44	35	38.1	25.7	26	0	64	55	61	0.00	29.35	30.30	NNE	15.0	31.3	5.11	47.1	43.2	47	41
3	49	32	38.5	17.7	25	0	56	28	44	0.00	29.46	30.41	NNE	9.5	20.3	14.17	45.9	42.2	50	38
4	48	33	42.4	27.9	24	0	82	44	57	0.00	29.25	30.20	S	9.9	26.7	4.84	45.2	41.5	45	38
5	59	45	49.8	47.4	13	0	100	74	92	0.00	29.07	30.01	ESE	6.5	14.4	5.64	48.5	47.9	53	44
6	80	49	64.4	58.8	1	0	100	48	85	0.01	28.83	29.77	S	12.4	34.5	7.76	53.0	54.9	61	49
7	76	47	62.8	41.6	4	0	83	21	50	0.00	28.74	29.67	SW	6.9	23.8	14.84	55.6	56.9	63	52
8	56	32	46.7	33.0	21	0	85	40	60	0.00	28.95	29.89	N	11.6	32.9	15.19	51.8	50.4	56	44
9	55	27	39.7	25.6	24	0	81	32	59	0.00	29.35	30.30	SSE	7.6	16.4	16.81	48.4	45.6	55	38
10	72	38	55.6	45.1	10	0	92	49	69	0.00	29.09	30.03	S	12.7	32.2	15.98	50.3	50.2	60	42
11	84	56	68.9	58.6	0	5	98	41	73	0.00	28.92	29.86	S	12.3	28.0	16.75	55.9	59.3	68	53
12	69	51	59.7	40.4	5	0	92	29	53	0.00	29.23	30.18	NNE	17.7	42.2	16.54	56.4	58.7	64	54
13	57	42	50.0	32.9	15	0	98	35	55	0.26	29.24	30.18	NE	10.6	22.4	5.39	52.8	53.5	56	50
14	44	37	41.2	40.5	25	0	100	92	97	1.18	29.03	29.97	NNE	11.5	28.6	1.44	49.2	47.2	50	45
15	55	32	43.5	31.6	22	0	97	34	67	0.00	29.17	30.11	NNW	9.4	25.3	18.76	48.4	46.7	54	42
16	65	26	45.4	33.1	19	0	100	32	67	0.00	29.07	30.01	SSW	6.7	21.1	18.86	48.7	46.4	56	39
17	68	40	53.6	42.5	11	0	88	42	68	0.00	28.87	29.81	S	8.3	26.8	11.19	50.0	48.5	54	42
18	65	50	56.5	52.8	7	0	100	67	88	0.00	28.86	29.80	ESE	6.8	14.8	8.06	53.2	53.5	59	50
19	67	52	61.0	59.7	6	0	100	88	96	0.00	28.95	29.88	SE	8.1	21.3	3.44	55.2	56.3	59	52
20	66	44	56.1	54.8	10	0	100	80	96	0.28	28.96	29.90	SSE	7.7	29.1	4.02	56.5	57.2	59	53
21	72	41	56.3	46.7	8	0	100	38	74	0.01	28.99	29.93	NNW	7.6	25.7	19.18	55.4	55.3	63	50
22	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00*	NA	NA	S *	NA	22.6*	NA	NA	NA	NA	NA
23	85	50	67.0	47.5	0	2	90	24	54	0.00	28.61	29.54	S	11.3	30.5	19.50	57.1	56.9	64	50
24	70	35	49.3	32.5	13	0	82	31	54	0.00	28.90	29.84	NNW	13.2	31.2	19.84	56.0	53.9	59	46
25	50	26	36.7	19.7	27	0	81	24	54	0.00	29.21	30.15	N	6.2	18.1	20.43	51.4	46.7	57	39
26	62	33	47.5	35.2	18	0	89	45	63	0.00	29.00	29.94	ESE	8.4	28.8	11.09	50.5	46.6	53	40
27	62	50	55.5	52.4	9	0	100	65	90	0.01	28.97	29.91	ESE	7.0	17.2	3.65	53.3	52.3	56	49
28	74	60	68.2	62.9	0	2	100	68	84	0.00	28.86	29.80	SSW	13.6	33.3	5.81	57.9	59.8	63	56
	64*	41*	52.1*	41.0*	<- Monthly Averages ->						29.03*	29.98*	S *	9.9*	42.2*	11.85*	52.0*	51.1*	57*	46*

Temperature - Highest: 85*
Lowest: 26*

Degree Days - Total HDD: 353*
Total CDD: 9*

Rainfall: Monthly Total: 1.75* in.
Greatest 24 Hr: 1.18* in.

Humidity - Highest: 100*
Lowest: 21*

Number of Days With:
Tmax ≥ 90: 0*
Tmax ≤ 32: 0*
Tmin ≤ 32: 6*
Tmin ≤ 0: 0*
Rainfall ≥ 0.01 inch: 6*
Rainfall ≥ 0.10 inch: 3*
Avg Wind Speed ≥ 10 mph: 11*
Max Wind Speed ≥ 30 mph: 9*

© 1993,2017 Oklahoma Climatological Survey

* Denotes incomplete record

Monthly data generated on Sunday, April 30, 2017 at 19:01 UTC

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

MESONET CLIMATOLOGICAL DATA SUMMARY
(TISH) Tishomingo
Latitude: 34-19-57

March 2017
Nearest City: 6.0 N Tishomingo
Longitude: 96-40-44

Time Zone: Midnight-Midnight CST
County: Johnston
Elevation: 879 feet

DAY	TEMPERATURE (F) MAX	MIN	AVG	DEWPT	DEG DAYS HDD	CDD	HUMIDITY (%) MAX	MIN	AVG	RAIN (in)	PRESSURE (in) STN	MSL	WIND SPEED (mph) DIR	AVG	MAX	SOLAR (MJ/m2)	4" SOIL TEMPERATURES SOD	BARE	MAX	MIN
1	72	35	52.9	26.0	12	0	83	13	40	0.00	29.19	30.13	NNW	12.9	32.8	21.03	56.8	55.1	62	47
2	64	27	45.8	22.1	19	0	84	15	46	0.00	29.46	30.41	NNW	3.8	12.6	21.01	53.2	49.8	61	40
3	69	29	49.6	26.9	16	0	89	18	48	0.00	29.50	30.45	SSE	7.0	23.0	20.29	53.2	50.2	60	41
4	62	41	51.8	39.3	13	0	81	38	63	0.00	29.36	30.31	S	13.1	30.7	7.68	52.1	49.6	54	44
5	59	52	54.6	52.8	10	0	100	80	94	0.02	29.15	30.10	SSE	12.6	24.9	2.34	53.6	52.8	55	51
6	78	59	69.6	61.6	0	4	100	57	77	0.00	28.88	29.82	S	17.7	38.7	8.43	58.2	60.2	65	55
7	71	34	54.5	21.6	12	0	78	11	32	0.16	29.24	30.18	N	10.3	36.9	22.45	57.7	56.3	63	50
8	74	29	53.4	33.0	13	0	89	21	52	0.00	29.28	30.23	SSE	7.8	33.5	21.84	54.5	52.8	64	42
9	78	49	64.4	56.4	1	0	98	58	76	0.00	29.11	30.06	S	9.0	28.1	13.93	57.6	59.0	68	51
10	65	49	59.1	45.7	8	0	99	46	63	0.00	29.23	30.18	NNE	10.8	31.6	14.51	58.6	59.7	64	55
11	60	40	49.9	40.1	15	0	93	53	70	0.00	29.26	30.21	NE	11.4	29.0	5.30	56.6	55.7	59	50
12	56	38	44.9	37.5	18	0	94	51	76	0.06	29.29	30.24	NE	7.5	25.7	13.63	54.2	52.4	60	47
13	54	34	45.9	34.2	21	0	99	32	68	0.07	29.23	30.18	NNW	10.5	32.7	21.59	54.7	53.0	59	47
14	56	28	41.8	27.6	23	0	89	36	60	0.00	29.31	30.25	NE	6.5	24.2	21.72	53.2	50.4	62	41
15	58	32	44.3	32.1	20	0	85	41	64	0.00	29.37	30.32	SE	8.2	17.1	21.34	53.4	51.3	62	42
16	66	42	55.2	49.6	11	0	89	70	82	0.00	29.17	30.12	SSE	10.8	29.2	5.30	54.1	53.1	58	48
17	77	61	68.1	60.7	0	4	96	58	78	0.00	29.12	30.07	S	10.5	27.1	10.35	59.5	61.9	68	57
18	81	56	67.7	60.8	0	3	100	50	81	0.00	29.27	30.22	SSE	6.0	16.8	22.10	63.1	66.3	77	57
19	83	52	69.2	60.5	0	3	100	49	77	0.00	29.18	30.13	S	10.1	29.8	22.22	64.2	67.7	78	59
20	88	61	73.3	56.6	0	10	91	25	60	0.00	29.04	29.98	S	13.5	33.7	22.91	65.1	69.5	79	62
21	84	58	71.1	56.5	0	6	85	40	62	0.00	29.04	29.98	S	8.9	24.6	22.91	65.6	70.5	80	62
22	66	55	61.4	54.3	5	0	88	71	78	0.00	29.14	30.08	ESE	9.0	22.5	9.12	63.5	65.7	69	62
23	82	55	69.1	52.5	0	4	91	33	60	0.00	29.01	29.95	SSE	17.4	39.6	21.42	63.8	67.0	76	59
24	75	58	66.2	51.1	0	2	91	30	61	0.00	28.86	29.79	SSE	17.0	38.1	18.18	64.3	67.9	75	64
25	65	47	55.5	45.7	9	0	89	50	70	0.00	28.97	29.91	WNW	9.6	29.9	17.71	62.3	64.5	72	60
26	79	44	61.8	52.7	3	0	99	46	75	1.07	28.88	29.81	SSE	10.8	40.0	17.98	61.5	63.5	72	54
27	72	53	60.9	52.5	2	0	99	44	76	0.00	28.92	29.86	NW	7.6	23.8	20.12	63.7	63.9	71	59
28	73	51	62.1	56.4	3	0	93	69	82	0.00	28.89	29.83	ESE	10.5	25.8	10.39	62.7	61.3	66	56
29	77	50	63.1	53.7	2	0	100	35	74	0.51	28.76	29.70	WNW	12.8	43.9	19.04	64.8	63.9	69	58
30	68	48	55.7	43.0	7	0	80	41	64	0.00	28.82	29.76	WNW	9.5	23.5	21.01	61.9	58.6	66	53
31	77	46	60.5	48.3	3	0	90	39	67	0.00	28.87	29.80	ENE	8.1	17.6	25.35	62.9	60.8	71	52
	71	46	58.2	45.5	<- Monthly Averages ->						29.12	30.07	SSE	10.4	43.9	16.88	59.0	59.2	67	52

Temperature - Highest: 88
Lowest: 27

Degree Days - Total HDD: 248
Total CDD: 35

Rainfall: Monthly Total: 1.89 in.
Greatest 24 Hr: 1.07 in.

Humidity - Highest: 100
Lowest: 11

Number of Days With:
Tmax ≥ 90: 0
Tmax ≤ 32: 0
Tmin ≤ 32: 5
Tmin ≤ 0: 0
Rainfall ≥ 0.01 inch: 6
Rainfall ≥ 0.10 inch: 3
Avg Wind Speed ≥ 10 mph: 17
Max Wind Speed ≥ 30 mph: 12

© 1993,2017 Oklahoma Climatological Survey

* Denotes incomplete record

Monthly data generated on Thursday, May 25, 2017 at 19:06 UTC

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Date	Reference ET, Short [in]	Reference ET, Tall [in]	Cool Season Grass ET [in]	Warm Season Grass ET [in]	Pan Evaporation [in]
2017-05-25	0.27	0.36	0.25	0.17	0.37
2017-05-24	0.21	0.27	0.20	0.13	0.28
2017-05-23	0.09	0.10	0.09	0.06	0.11
2017-05-22	0.15	0.17	0.14	0.09	0.18
2017-05-21	0.19	0.22	0.17	0.12	0.23
2017-05-20	0.15	0.18	0.14	0.09	0.19
2017-05-19	0.07	0.09	0.06	0.04	0.08
2017-05-18	0.20	0.26	0.19	0.12	0.27
2017-05-17	0.27	0.37	0.26	0.17	0.38
2017-05-16	0.18	0.25	0.17	0.11	0.25
2017-05-15	0.24	0.29	0.22	0.15	0.31
2017-05-14	0.22	0.26	0.20	0.14	0.28
2017-05-13	0.20	0.24	0.19	0.13	0.25
2017-05-12	0.15	0.20	0.14	0.09	0.20
2017-05-11	0.16	0.19	0.15	0.10	0.20
2017-05-10	0.07	0.09	0.07	0.05	0.09
2017-05-09	0.20	0.25	0.19	0.13	0.26
2017-05-08	0.22	0.26	0.20	0.13	0.28
2017-05-07	0.22	0.27	0.20	0.14	0.28
2017-05-06	0.20	0.23	0.18	0.12	0.24
2017-05-05	0.21	0.26	0.19	0.13	0.27
2017-05-04	0.19	0.26	0.18	0.12	0.27
2017-05-03	0.12	0.17	0.12	0.08	0.17
2017-05-02	0.21	0.26	0.19	0.13	0.26
2017-05-01	0.21	0.28	0.19	0.13	0.28
2017-04-30	0.14	0.19	0.13	0.09	0.20
2017-04-29	0.06	0.07	0.06	0.04	0.08
2017-04-28	0.13	0.16	0.12	0.08	0.16
2017-04-27	0.16	0.19	0.15	0.10	0.20
2017-04-26	0.11	0.16	0.10	0.07	0.14
2017-04-25	0.20	0.27	0.19	0.13	0.28
2017-04-24	0.19	0.25	0.18	0.12	0.25
2017-04-23	0.18	0.23	0.17	0.11	0.23
2017-04-22	0.09	0.12	0.08	0.05	0.12
2017-04-21	0.08	0.10	0.08	0.05	0.10
2017-04-20	0.13	0.16	0.12	0.08	0.16
2017-04-19	0.13	0.16	0.12	0.08	0.16
2017-04-18	0.16	0.18	0.15	0.10	0.19
2017-04-17	0.04	0.04	0.03	0.02	0.04
2017-04-16	0.07	0.09	0.07	0.04	0.09
2017-04-15	0.20	0.26	0.19	0.12	0.27
2017-04-14	0.22	0.29	0.20	0.14	0.30
2017-04-13	0.15	0.18	0.14	0.09	0.18
2017-04-12	0.09	0.11	0.09	0.06	0.11
2017-04-11	0.21	0.29	0.20	0.13	0.30
2017-04-10	0.13	0.18	0.12	0.08	0.17
2017-04-09	0.21	0.29	0.20	0.13	0.31
2017-04-08	0.22	0.30	0.20	0.13	0.31
2017-04-07	0.19	0.25	0.18	0.12	0.25

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

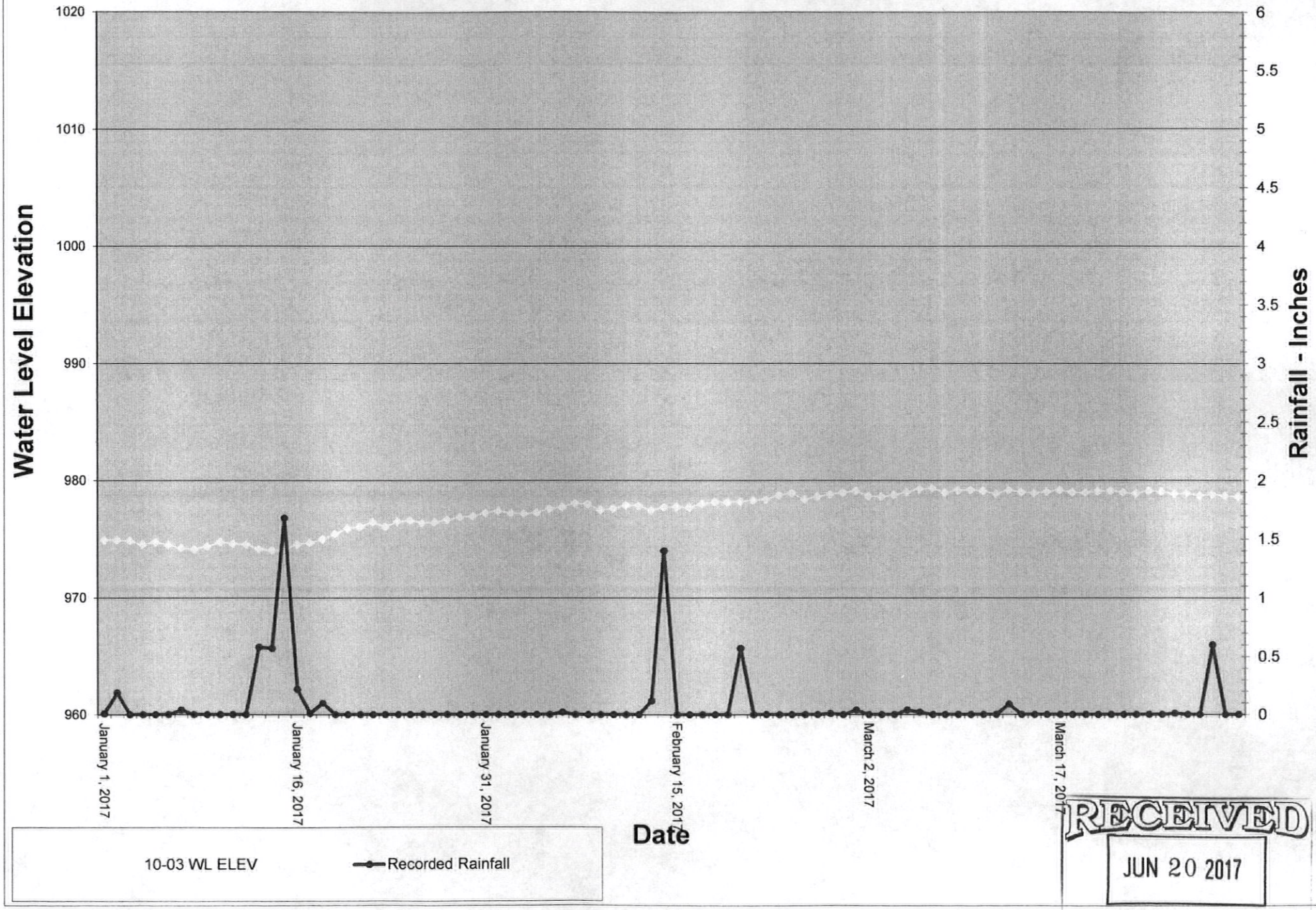
2017-04-06	0.17	0.22	0.16	0.10	0.22
2017-04-05	0.20	0.30	0.19	0.13	0.31
2017-04-04	0.19	0.28	0.18	0.12	0.26
2017-04-03	0.17	0.21	0.16	0.10	0.21
2017-04-02	0.06	0.07	0.05	0.04	0.07
2017-04-01	0.16	0.21	0.15	0.10	0.21
2017-03-31	0.19	0.25	0.18	0.12	0.25
2017-03-30	0.16	0.22	0.15	0.10	0.22
2017-03-29	0.17	0.23	0.15	0.10	0.23
2017-03-28	0.10	0.14	0.10	0.06	0.13
2017-03-27	0.14	0.18	0.13	0.09	0.18
2017-03-26	0.17	0.23	0.15	0.10	0.22
2017-03-25	0.13	0.17	0.12	0.08	0.17
2017-03-24	0.22	0.33	0.21	0.14	0.34
2017-03-23	0.25	0.37	0.23	0.15	0.37
2017-03-22	0.08	0.11	0.08	0.05	0.11
2017-03-21	0.21	0.28	0.19	0.13	0.27
2017-03-20	0.26	0.38	0.24	0.16	0.37
2017-03-19	0.17	0.22	0.16	0.11	0.22
2017-03-18	0.15	0.18	0.14	0.09	0.19
2017-03-17	0.12	0.17	0.11	0.08	0.16
2017-03-16	0.08	0.11	0.07	0.05	0.10
2017-03-15	0.12	0.17	0.11	0.07	0.16
2017-03-14	0.11	0.15	0.10	0.07	0.14
2017-03-13	0.10	0.14	0.10	0.06	0.14
2017-03-12	0.09	0.12	0.08	0.05	0.11
2017-03-11	0.09	0.13	0.08	0.06	0.12
2017-03-10	0.12	0.17	0.11	0.08	0.17
2017-03-09	0.12	0.17	0.12	0.08	0.16
2017-03-08	0.17	0.25	0.16	0.11	0.23
2017-03-07	0.21	0.33	0.20	0.13	0.33
2017-03-06	0.13	0.19	0.12	0.08	0.18
2017-03-05	0.04	0.05	0.03	0.02	0.05
2017-03-04	0.11	0.17	0.10	0.07	0.15
2017-03-03	0.15	0.21	0.14	0.09	0.20
2017-03-02	0.11	0.15	0.10	0.07	0.15
2017-03-01	0.22	0.33	0.20	0.13	0.33
2017-02-28	0.07	0.10	0.07	0.04	0.10
2017-02-27	0.04	0.06	0.04	0.03	0.05
2017-02-26	0.10	0.14	0.09	0.06	0.13
2017-02-25	0.09	0.13	0.09	0.06	0.12
2017-02-24	0.19	0.29	0.17	0.12	0.27
2017-02-23	0.22	0.33	0.20	0.13	0.31
2017-02-22	0.16	0.23	0.15	0.10	0.21
2017-02-21	0.12	0.17	0.12	0.08	0.16
2017-02-20	0.03	0.04	0.03	0.02	0.04
2017-02-19	0.03	0.03	0.02	0.02	0.03
2017-02-18	0.06	0.08	0.06	0.04	0.08
2017-02-17	0.10	0.15	0.10	0.06	0.13
2017-02-16	0.10	0.15	0.10	0.06	0.13

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

2017-02-15	0.09	0.14	0.09	0.06	0.13
2017-02-14	0.01	0.01	0.01	0.01	0.02
2017-02-13	0.11	0.16	0.10	0.07	0.15
2017-02-12	0.19	0.30	0.18	0.12	0.31
2017-02-11	0.17	0.25	0.16	0.10	0.23
2017-02-10	0.14	0.20	0.13	0.08	0.19
2017-02-09	0.09	0.14	0.09	0.06	0.12
2017-02-08	0.09	0.14	0.09	0.06	0.13
2017-02-07	0.13	0.20	0.12	0.08	0.18
2017-02-06	0.10	0.16	0.10	0.07	0.14
2017-02-05	0.05	0.07	0.05	0.03	0.06
2017-02-04	0.07	0.11	0.06	0.04	0.10
2017-02-03	0.10	0.16	0.09	0.06	0.15
2017-02-02	0.08	0.12	0.07	0.05	0.12
2017-02-01	0.11	0.17	0.11	0.07	0.15
2017-01-31	0.13	0.20	0.12	0.08	0.17
2017-01-30	0.09	0.14	0.09	0.06	0.12
2017-01-29	0.12	0.18	0.11	0.07	0.16
2017-01-28	0.09	0.14	0.08	0.06	0.12
2017-01-27	0.07	0.11	0.07	0.05	0.10
2017-01-26	0.06	0.09	0.06	0.04	0.08
2017-01-25	0.10	0.16	0.10	0.06	0.14
2017-01-24	0.13	0.20	0.12	0.08	0.17
2017-01-23	0.08	0.12	0.08	0.05	0.10
2017-01-22	0.09	0.14	0.09	0.06	0.13
2017-01-21	0.04	0.05	0.04	0.03	0.05
2017-01-20	0.13	0.20	0.12	0.08	0.17
2017-01-19	0.05	0.06	0.04	0.03	0.06
2017-01-18	0.03	0.03	0.02	0.02	0.03
2017-01-17	0.03	0.04	0.03	0.02	0.04
2017-01-16	0.04	0.06	0.04	0.03	0.05
2017-01-15	0.03	0.04	0.03	0.02	0.04
2017-01-14	0.01	0.01	0.01	0.01	0.02
2017-01-13	0.03	0.04	0.02	0.02	0.03
2017-01-12	0.11	0.17	0.10	0.07	0.14
2017-01-11	0.10	0.16	0.10	0.06	0.14
2017-01-10	0.12	0.18	0.11	0.07	0.16
2017-01-09	0.09	0.13	0.08	0.05	0.12
2017-01-08	0.06	0.09	0.05	0.04	0.08
2017-01-07	0.03	0.05	0.03	0.02	0.04
2017-01-06	0.02	0.03	0.02	0.01	0.03
2017-01-05	0.04	0.06	0.03	0.02	0.05
2017-01-04	0.04	0.07	0.04	0.03	0.06
2017-01-03	0.04	0.06	0.04	0.02	0.05
2017-01-02	0.06	0.08	0.05	0.04	0.07
2017-01-01	0.02	0.03	0.02	0.01	0.03
2016-12-31	0.10	0.16	0.09	0.06	0.13
2016-12-30	0.11	0.17	0.10	0.07	0.15
2016-12-29	0.13	0.21	0.12	0.08	0.20

RECEIVED
JUN 20 2017
Oklahoma Water Resources Board

Mill Creek Water Levels First Quarter 2017



RECEIVED
JUN 20 2017
Oklahoma Water Resources Board