



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES
OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES
RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES
 Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia

REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

ENERO DE 2012

Estaciones	Alcázar		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales		
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD			
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25			
D 1	0.0	168.6	0.0	114.8	0.0	119.8	0.0	136.6	0.0	127.8	0.2	112.2			0.0	131.2	0.0	135.6	0.0	91.8	0.0	66.2	0.2	107.0	0.0	94.5	0.4	59.4	0.2	96.6	0.0	134.9	0.1	101.1	
L 2	0.0	158.2	4.8	118.4	4.2	120.6	0.4	130.2	1.0	118.6	2.0	113.4			23.2	146.8	0.3	126.2	0.0	89.2	2.0	67.4	1.6	106.8	13.5	102.4	13.4	70.4	19.2	107.6	3.8	137.7	5.9	103.1	
Ma 3	4.2	160.6	4.6	122.8	3.4	124.0	13.0	143.2	4.3	122.2	3.6	105.4			3.2	148.2	5.8	130.1	27.0	113.4	4.0	71.4	9.0	115.8	10.2	111.6	7.2	77.6	7.4	118.2	10.9	148.3	8.0	109.6	
Mi 4	1.8	161.2	2.4	125.2	1.8	124.2	8.6	150.0	1.8	122.5	1.2	104.0			6.4	154.0	1.8	128.3	10.2	122.0	4.0	75.4	1.2	115.2	6.1	117.4	0.2	77.8	7.4	118.2	3.0	149.6	3.4	111.8	
J 5	21.0	174.2	33.2	149.4	11.0	134.8	14.0	153.2	20.8	138.2	19.2	122.4			15.6	169.2	27.9	153.7	11.2	128.0	11.8	86.8	10.8	125.8	21.4	138.0	16.8	94.4	13.2	130.4	20.6	169.9	16.9	126.3	
V 6	8.0	181.0	1.2	148.8	9.8	142.8	6.8	149.0	8.9	145.3	4.2	124.2			11.0	177.4	8.6	160.3	5.4	132.4	5.4	91.6	8.2	132.6	5.6	142.3	13.2	107.2	5.4	133.6	13.7	181.6	8.0	132.6	
S 7	1.6	161.6	3.0	129.4	0.8	139.4	2.2	142.4	1.3	130.8	0.4	107.6			1.0	154.0	1.0	149.1	0.2	112.8	0.6	84.0	0.8	131.6	0.8	122.2	0.8	107.6	0.8	116.6	1.0	177.3	1.0	122.4	
D 8	11.2	140.4	1.2	86.8	2.4	122.6	6.6	106.6	12.5	112.6	9.6	106.6			10.4	145.6	14.5	137.9	1.8	104.0	0.8	75.4	0.0	120.6	2.5	104.4	0.2	96.4	3.8	97.2	0.5	161.3	4.1	108.1	
L 9	0.0	105.4	0.0	79.8	0.2	109.2	0.0	93.0	0.0	88.9	0.0	84.4			0.0	127.4	0.0	109.2	0.0	87.0	0.0	69.0	0.0	104.6	0.0	94.3	0.0	86.0	0.0	89.0	0.0	144.0	0.0	92.9	
Ma 10	0.0	90.0	0.0	68.2	0.0	84.4	0.0	78.4	0.0	78.8	0.2	71.0			0.0	102.4	0.0	93.5	0.0	78.8	0.0	55.4	0.0	67.0	0.0	81.6	0.0	70.8	0.0	73.6	0.0	103.9	0.0	75.7	
Mi 11	0.4	86.6	2.2	68.0	0.0	70.0	8.0	85.4	0.3	75.0	0.2	60.0			0.0	98.6	0.0	85.9	0.8	76.8	0.0	51.8	0.0	62.8	0.0	80.3	0.2	70.6	0.2	72.4	0.0	99.3	0.6	72.2	
J 12	0.0	83.0	0.0	66.8	0.0	60.2	0.0	82.4	0.0	69.6	0.0	56.0			0.0	86.4	0.0	76.0	0.0	74.4	0.0	48.4	0.4	57.0	0.0	74.4	0.0	65.8	0.2	67.2	0.3	90.4	0.0	67.0	
V 13	0.0	72.6	0.0	54.6	0.0	39.6	0.0	72.4	0.0	64.5	0.0	46.6			0.0	75.8	0.0	71.9	0.0	64.0	0.0	40.4	0.2	39.2	0.0	64.5	0.0	58.4	0.0	59.2	0.0	62.7	0.0	56.5	
S 14	1.6	74.0	0.8	55.4	0.0	39.4	0.0	72.2	2.0	66.6	0.8	47.2			1.4	77.0	1.5	73.2	0.0	63.8	0.6	41.0	0.2	39.2	0.5	65.0	0.2	58.4	0.8	60.0	0.3	63.0	0.6	56.9	
D 15	0.0	74.0	0.2	55.6	1.6	41.0	0.0	72.2	0.0	66.6	0.4	47.6			0.4	77.4	0.0	73.2	0.0	63.8	2.0	43.0	3.6	42.8	1.0	66.0	0.2	58.6	0.2	60.0	3.6	66.6	0.9	57.8	
L 16	1.2	75.2	0.0	55.6	0.0	41.0	7.0	79.2	0.0	66.6	0.0	47.6			0.0	77.4	0.0	73.2	0.0	63.8	0.2	43.2	0.0	42.8	0.0	66.0	0.0	58.6	0.0	60.0	0.0	66.6	0.4	58.2	
Ma 17	3.4	56.2	1.6	57.2	2.6	43.2	4.0	73.8	3.6	59.2	10.2	57.8			7.0	81.4	2.5	67.6	2.0	64.8	11.2	54.0	6.6	48.6	5.8	70.3	6.0	64.6	2.6	61.6	4.3	70.4	5.5	60.9	
Mi 18	10.4	66.4	11.8	69.0	4.2	47.0	11.2	84.6	11.9	71.1	4.2	61.4			15.2	96.4	7.9	75.2	2.0	66.6	11.6	65.6	11.2	59.6	13.2	83.3	14.4	78.8	11.6	73.2	17.0	87.1	10.3	71.0	
J 19	2.0	68.4	0.6	69.6	23.6	70.6	1.4	85.8	1.5	72.7	11.6	73.0			5.2	101.6	2.0	77.2	6.6	73.2	13.6	79.2	31.6	91.2	13.2	96.5	12.8	91.6	1.2	74.4	29.5	116.6	11.3	82.3	
V 20	2.0	70.4	27.4	96.6	0.8	71.0	1.6	85.4	1.8	73.2	1.4	74.4			9.0	110.2	2.3	79.3	4.2	77.4	6.4	76.8	8.8	99.2	8.1	104.1	4.8	94.4	9.8	81.2	10.4	125.2	6.1	86.6	
S 21	15.6	86.0	4.2	100.8	0.8	71.8	20.6	106.0	8.1	81.3	6.2	80.6			2.2	112.4	16.0	95.3	11.0	88.4	2.6	79.4	8.4	107.4	6.4	110.0	12.8	107.2	1.4	82.6	1.8	127.0	8.4	95.0	
D 22	3.4	89.4	13.6	114.4	2.8	74.6	2.6	108.6	4.1	85.4	4.8	85.4			28.4	140.8	3.8	99.1	3.2	91.6	2.8	82.2	3.2	110.6	17.8	127.8	10.8	118.0	17.0	99.6	9.2	136.2	7.6	102.5	
L 23	0.8	90.2	1.4	114.2	0.0	71.8	2.2	110.8	0.5	85.6	0.8	85.4			0.0	140.8	1.0	100.1	6.4	97.4	0.8	82.4	0.2	109.2	0.3	127.5	0.8	115.8	0.2	99.6	0.5	134.9	1.2	102.5	
Ma 24	12.2	101.0	12.4	126.6	11.4	82.0	6.0	116.2	9.7	94.0	8.0	89.6			7.6	147.4	10.9	108.2	8.2	100.6	4.4	85.0	4.2	110.8	5.3	131.9	2.4	117.8	6.0	105.4	6.9	137.4	6.6	107.3	
Mi 25	0.2	101.0	0.0	126.6	0.4	81.8	0.0	116.2	0.0	94.0	1.0	90.2			0.0	147.2	0.3	108.2	0.0	100.2	0.2	85.0	0.2	110.6	0.0	131.6	0.4	118.0	0.2	105.4	0.3	137.4	0.2	107.3	
J 26	0.0	101.0	1.0	127.6	0.0	81.8	0.0	116.2	0.3	94.3	0.0	90.0			0.0	147.2	0.0	108.2	0.0	100.2	0.0	85.0	0.4	110.8	1.8	133.4	0.0	117.6	1.6	106.8	0.0	137.4	0.3	107.5	
V 27	4.4	105.4	6.8	129.6	1.2	78.8	13.6	129.4	3.6	96.8	3.0	91.0			4.6	128.6	3.3	111.3	4.2	104.4	4.0	87.0	8.4	117.6	18.8	138.7	1.4	105.6	10.4	98.0	10.9	144.5	5.0	106.6	
S 28	0.0	101.2	0.0	125.0	0.2	75.6	0.0	116.4	0.0	92.5	0.2	87.6			0.0	125.4	0.0	105.4	0.0	77.4	0.2	83.2	0.2	108.8	0.0	128.5	0.0	98.4	0.2	94.2	0.0	133.6	0.1	98.7	
D 29	0.0	99.4	0.0	122.6	0.4	74.2	0.0	107.8	0.0	90.7	0.0	86.4			0.0	119.0	0.0	103.6	0.0	67.2	1.4	80.6	1.8	109.4	0.5	122.9	33.8	132.0	0.0	86.8	1.8	132.3	5.7	101.0	
L 30	0.0	78.4	1.0	90.4	4.0	67.2	2.0	95.8	0.3	70.1	1.4	68.6			1.8	105.2	1.3	77.0	0.0	56.0	4.8	73.6	3.2	101.8	2.3	103.9	8.4	123.6	1.4	75.0	3.3	115.1	3.0	87.1	
Ma 31	0.0	70.4	0.0	89.2	0.0	57.4	0.0	89.0	0.0	61.2	0.0	64.4			0.0	94.2	0.3	68.6	0.0	50.6	0.2	68.4	0.4	94.0	0.3	98.5	0.2	110.6	0.2	69.8	0.0	101.4	0.2	79.3	
Li. mes	105.4	135.4	149.4	87.6	131.8	98.1	94.8	122.2	153.6	113.0	104.4	95.6	125.0	155.2	161.8	119.2	133.6	132.0	161.8	132.0	119.2	153.4	121.7												
Máx. mes	21.0	181.0	33.2	149.4	23.6	142.8	20.6	153.2	20.8	145.3	19.2	124.2	4.3	12.2	28.4	177.4	2																		



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FEBRERO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales							
	Propietarios		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CHEC S.A. E.S.P		Alcaldía/OMPAD		EMAS S.A. E.S.P		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CORPOCALDAS		UN-Manizales		CORPOCALDAS		UN-Manizales		Alcaldía/OMPAD		Alcaldía/OMPAD					
Día	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25	Ll. d.	A25
Mi	1	0.0	68.8	0.0	86.2	0.0	56.6	1.2	88.0	0.3	60.2	0.8	64.8	1.0	13.2	0.0	93.2	0.3	67.8	1.0	51.4	0.4	68.2	0.2	93.4	0.0	97.8	3.0	112.8	0.4	69.4	0.5	100.8	0.9	79.3					
J	2	1.0	58.6	1.0	86.0	1.8	56.0	0.6	82.0	1.0	48.8	1.6	56.8	2.0	15.2	2.2	85.0	2.0	55.4	1.0	50.6	3.0	70.4	2.6	96.0	2.0	97.3	3.0	115.6	1.6	67.2	3.3	103.6	2.0	77.2					
V	3	0.8	59.4	4.6	90.6	0.2	56.0	1.4	83.4	0.5	49.3	0.4	57.2	0.0	15.2	0.4	85.4	0.5	55.9	0.0	50.6	0.0	70.4	0.2	96.2	0.3	97.5	0.0	115.6	0.6	67.8	0.0	103.6	0.4	77.5					
S	4	0.4	59.8	2.8	93.4	0.0	56.0	0.0	83.4	0.3	49.5	0.0	57.0	1.0	16.2	0.8	86.2	0.5	56.4	0.0	50.6	0.4	70.8	0.0	96.2	1.5	99.1	0.0	115.6	1.0	68.8	0.3	103.9	0.4	77.9					
D	5	2.2	61.6	2.4	93.6	0.0	56.0	10.0	85.4	2.0	51.3	0.0	56.8	2.0	18.3	1.0	87.2	1.8	58.2	0.4	50.2	1.0	71.8	0.6	96.8	1.3	100.3	1.6	117.0	1.4	70.0	1.3	105.2	1.6	78.8					
L	6	1.6	63.2	1.6	95.2	0.4	56.4	2.0	87.4	0.8	52.1	1.4	58.2	1.8	20.1	1.4	88.6	1.3	59.4	1.4	51.6	2.2	74.0	1.6	98.0	2.0	102.4	6.8	123.8	2.0	71.8	1.5	106.4	2.4	81.1					
Ma	7	0.0	63.2	0.0	95.2	0.0	56.4	0.0	87.4	0.0	52.1	0.0	58.2	0.0	22.1	0.0	88.6	0.0	59.4	0.2	51.8	0.0	74.0	0.2	98.0	0.0	102.4	0.0	123.8	0.0	71.8	0.0	106.4	0.0	81.2					
Mi	8	17.2	78.8	14.2	108.6	9.6	66.0	9.6	97.0	13.7	63.8	12.8	70.2	2.0	20.1	12.6	99.8	16.0	73.9	21.4	73.2	9.8	83.2	8.2	106.0	9.4	111.3	2.0	125.6	8.4	79.4	8.9	115.1	10.0	90.6					
J	9	0.0	78.8	0.0	108.4	0.2	64.6	0.0	97.0	0.0	63.8	0.0	69.8	0.0	22.1	0.0	99.4	0.5	74.4	0.2	73.4	0.0	81.2	0.0	102.4	0.0	110.2	0.0	125.4	0.2	79.4	0.0	111.5	0.1	89.8					
V	10	0.6	78.2	4.6	113.0	2.0	66.6	5.8	95.8	2.3	66.1	1.0	70.8	3.3	25.4	2.0	101.4	0.3	74.7	1.4	74.8	5.6	86.6	4.6	107.0	6.9	117.1	10.6	136.0	4.8	84.2	5.6	117.1	4.3	93.8					
S	11	5.4	80.2	5.8	117.2	2.4	66.4	21.0	112.8	6.6	69.1	2.0	62.6	0.5	25.9	5.0	99.4	6.4	78.5	6.2	79.0	1.8	77.2	2.2	102.6	6.1	117.4	0.4	130.4	5.4	87.0	3.6	116.3	4.0	92.3					
D	12	33.0	102.8	5.0	110.4	10.6	72.8	17.2	118.8	28.5	85.6	19.8	78.2	7.4	33.2	18.4	102.6	34.0	104.7	18.0	95.0	6.6	72.2	9.2	100.6	11.7	115.8	7.4	123.4	13.6	89.0	9.7	109.0	14.5	96.5					
L	13	0.2	101.0	0.0	109.8	0.4	49.6	0.0	117.4	0.3	84.3	0.6	67.2	0.0	33.2	0.2	97.6	0.3	102.9	1.6	90.0	0.0	58.6	0.0	69.0	0.3	102.9	0.0	110.6	0.0	87.8	0.3	79.8	0.3	85.4					
Ma	14	0.0	99.0	0.0	82.4	0.0	48.8	0.0	115.8	0.0	82.6	0.0	65.8	0.0	33.2	0.0	88.6	0.0	100.6	0.0	85.8	0.0	52.2	0.2	60.4	0.0	94.7	0.0	105.8	0.2	78.2	0.3	69.6	0.0	79.4					
Mi	15	0.0	83.4	0.0	78.2	0.0	48.0	0.0	95.2	0.0	74.4	0.0	59.6	0.0	33.2	0.0	86.4	0.0	84.6	0.0	74.8	0.0	49.6	0.0	52.0	0.0	88.4	0.0	93.0	0.0	76.8	0.0	67.8	0.0	70.9					
J	16	0.0	80.0	0.0	64.6	0.0	45.2	4.4	97.0	0.0	70.4	0.0	54.8	0.0	33.2	0.0	58.0	0.0	80.8	0.0	71.6	0.0	46.8	0.0	48.8	0.0	70.6	0.0	82.2	0.0	59.8	0.0	58.7	0.2	63.6					
V	17	0.8	80.0	0.0	63.2	0.0	45.2	0.0	94.8	0.0	69.9	1.0	55.0	0.0	33.2	0.0	58.0	0.8	80.5	3.2	68.4	0.0	46.0	0.0	48.6	0.0	70.4	0.0	81.4	0.0	59.6	0.3	58.4	0.5	62.8					
S	18	21.2	89.0	7.0	57.8	0.4	34.2	10.4	99.2	18.0	78.2	2.8	49.8	1.8	30.7	1.8	52.2	38.4	108.0	9.6	69.8	0.6	42.2	1.4	45.8	7.6	72.6	1.2	80.2	9.4	63.0	1.5	53.1	7.0	63.1					
D	19	1.6	90.4	3.0	60.8	0.4	34.2	3.8	103.0	1.3	79.5	0.6	49.4	0.0	30.7	1.2	53.4	2.8	110.5	4.8	74.6	0.8	42.8	0.4	46.0	0.8	73.4	0.4	80.2	0.6	63.4	0.8	53.6	1.3	64.2					
L	20	0.2	90.6	0.2	60.0	0.0	34.2	0.0	103.0	0.0	79.2	0.0	49.4	0.0	29.7	0.0	53.4	0.3	110.7	0.0	74.6	0.2	43.0	0.2	45.8	0.0	71.6	0.0	80.2	0.2	62.0	0.3	53.9	0.1	64.0					
Ma	21	0.0	86.2	0.0	53.2	0.0	33.0	0.0	89.4	0.0	75.7	0.0	46.4	0.0	27.2	0.0	48.8	0.0	107.4	0.0	70.4	0.0	39.0	0.0	37.4	0.0	52.8	0.2	79.0	0.0	51.6	0.0	42.9	0.0	59.0					
Mi	22	0.0	86.2	0.0	53.2	0.0	32.8	0.0	89.4	0.0	75.7	0.0	46.2	0.0	27.2	0.0	48.8	0.0	107.4	0.0	70.4	0.0	38.8	0.0	37.2	0.0	52.8	0.0	79.0	0.0	51.4	0.0	42.9	0.0	59.0					
J	23	0.0	86.2	0.0	53.2	0.0	32.4	0.0	89.4	0.0	75.7	0.0	46.2	0.0	26.7	0.0	48.8	0.0	107.4	0.0	70.4	0.0	37.4	0.0	35.4	0.0	52.3	0.0	45.2	0.0	51.4	0.0	41.2	0.0	53.2					
V	24	0.0	86.2	0.0	52.2	0.0	28.4	0.0	87.4	0.0	75.4	0.0	44.8	0.0	24.4	0.0	47.0	0.0	106.2	0.0	70.4	0.0	32.6	0.0	32.2	0.0	50.0	0.0	36.8	0.0	50.0	0.0	37.9	0.0	50.2					
S	25	13.0	99.2	15.8	68.0	23.2	51.6	8.4	95.8	13.2	88.6	16.6	61.4	19.1	41.9	20.8	67.8	15.8	121.7	9.6	80.0	14.8	47.2	20.6	52.4	23.1	72.9	23.0	59.6	14.2	64.0	21.6	59.5	17.4	67.4					
D	26	2.8	102.0	0.0	68.0	0.6	52.2	0.4	95.0	1.5	89.9	0.2	60.8	1.0	41.9	0.2	68.0	2.3	123.7	0.2	79.2	0.2	47.0	0.2	52.4	0.0	72.9	0.4	57.0	0.6	64.2	0.3	59.2	0.6	67.1					
L	27	0.0	101.0	3.6	70.6	2.8	53.2	0.0	94.4	0.0	88.9	1.0	60.2	8.1	48.0	1.8	67.6	0.5	122.2	0.0	78.2	5.0	49.0	10.2	60.0	3.6	74.4	0.0	54.0	2.0	64.6	9.9	65.8	2.9	68.0					
Ma	28	1.2	101.4	5.4	71.4	4.6	57.6	5.6	98.6	2.8	91.2	4.4	64.2	0.0	48.0	5.2	72.4	1.8	123.4	3.0	81.2	3.0	52.0	8.6	68.4	5.3	79.5	0.2	54.2	3.8	67.8	7.9	73.7	3.3	70.9					
Mi	29	54.2	155.2	24.4	93.0	29.6	87.2	22.6	121.2	54.4	145.3	52.4	116.6	4.3	51.3	51.6	123.2	56.9	179.8	46.6	127.8	11.0	62.6	17.0	85.4	38.6	116.6	9.8	64.0	45.2	112.0	20.6	94.0	29.9	100.5					
J	1																																							
V	2																																							
Ll. mes	157.4		101.4		89.2		124.4		147.3		119.4		55.3		126.6		183.1		129.8		66.4		88.4		120.4		70.0		115.6		98.0		104.1							
Máx. mes	54.2	155.2	24.4	117.2	29.6	87.2	22.6	121.2	54.4	145.3	52.4	116.6	19.1	51.3	51.6	123.2	56.9	179.8	46.6	127.8	14.8	86.6	20.6	107.0	38.6	117.4	23.0	136.0	45.2	112.0	21.6	117.1	29.9	100.5						
Ll. acum. en el año	262.8		236.8		176.8		256.2		245.4		214.2		67.5		280.2		296.2		234.2		162.0		213.4		275.6		231.8		234.8		251.5									



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

MARZO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales			
	Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CHEC S.A. E.S.P.		Alcaldía/OMPAD		EMAS S.A. E.S.P.		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CORPOCALDAS		UN-Manizales		CORPOCALDAS		UN-Manizales		Alcaldía/OMPAD		Alcaldía/OMPAD			
	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
J 1	0.0	153.0	0.0	90.6	0.0	87.2	0.0	111.2	0.0	143.3	0.2	116.8	0.0	49.3	0.0	122.2	0.0	178.1	0.0	127.4	0.0	61.6	0.2	85.0	0.0	115.3	1.0	63.4	0.2	110.8	0.0	92.7	0.2	99.1		
V 2	0.0	151.4	0.0	89.0	2.6	89.4	0.0	109.2	0.0	142.5	0.4	115.8	2.8	50.3	0.0	120.8	0.0	176.8	0.0	126.0	0.0	59.4	1.6	85.0	0.3	113.5	0.0	56.6	0.0	108.8	1.0	92.2	0.6	97.3		
S 3	0.0	151.4	0.0	89.0	0.0	89.4	0.0	109.2	0.0	142.5	0.0	115.8	0.0	50.3	0.0	120.8	0.0	176.8	3.2	129.0	0.0	59.4	0.0	84.8	0.3	113.8	0.0	56.6	0.2	109.0	0.0	92.2	0.3	97.6		
D 4	5.4	139.6	3.6	78.4	1.0	80.8	6.2	105.8	3.8	132.6	1.0	104.0	1.3	49.5	0.8	109.0	3.0	163.8	0.0	107.6	0.0	49.6	1.0	77.6	1.5	105.9	0.6	55.2	2.0	102.6	1.0	84.3	1.6	89.1		
L 5	3.8	143.4	22.6	101.0	0.0	80.6	15.2	121.0	4.1	136.7	1.4	105.4	4.8	54.3	5.6	114.6	2.8	166.1	0.0	107.4	0.4	50.0	0.0	77.6	4.6	110.5	0.0	55.2	3.6	106.0	0.3	84.6	2.9	91.9		
Ma 6	0.0	142.8	5.2	101.6	0.8	79.4	0.0	115.2	0.0	134.4	0.0	104.4	1.8	52.8	1.0	113.6	0.3	166.1	0.0	106.0	4.4	48.8	8.0	81.0	1.8	105.4	1.6	46.2	1.2	102.4	7.1	86.1	2.0	89.6		
Mi 7	0.0	137.4	0.0	95.8	16.8	93.8	0.0	94.2	0.0	127.8	3.0	105.4	0.0	52.3	0.2	108.8	0.0	159.8	0.0	99.8	0.2	47.2	0.2	79.0	0.3	99.6	0.2	46.0	0.2	97.2	0.3	82.8	1.3	86.9		
J 8	0.0	104.4	0.0	90.8	0.0	83.2	0.0	77.0	0.0	99.3	0.0	85.6	0.0	45.0	0.0	90.4	0.0	125.7	0.0	81.8	0.0	40.6	0.0	69.8	0.0	87.9	0.4	39.0	0.0	83.6	0.0	73.2	0.1	72.4		
V 9	1.2	105.4	2.0	92.8	1.8	84.6	1.4	78.4	1.5	100.6	1.4	86.4	1.8	46.7	1.8	92.0	1.5	127.0	1.4	81.6	1.4	42.0	2.0	71.8	1.8	89.4	1.4	40.4	1.6	85.2	1.8	74.7	1.6	73.7		
S 10	1.0	106.4	1.0	93.8	0.8	85.4	1.0	79.4	1.0	101.6	0.8	87.2	1.3	48.0	0.8	92.8	1.3	128.3	0.6	82.2	1.2	43.2	1.2	72.8	1.3	90.7	3.6	44.0	1.2	86.2	1.3	75.7	1.4	75.1		
D 11	0.0	106.4	0.2	94.0	0.4	85.8	0.2	79.6	0.0	101.6	0.0	87.2	0.5	48.5	0.2	93.0	0.3	128.5	0.0	82.2	0.4	43.6	0.4	73.2	0.3	90.9	1.8	45.8	0.0	86.2	0.5	76.2	0.5	75.6		
L 12	0.0	106.4	0.0	94.0	0.0	85.8	0.0	75.2	0.0	101.6	0.0	87.2	0.0	48.5	0.0	93.0	0.0	128.5	0.0	82.2	0.0	43.6	0.0	73.2	0.0	90.9	0.0	45.8	0.0	86.2	0.0	76.2	0.0	75.4		
Ma 13	3.2	108.8	3.4	97.4	2.8	88.6	3.0	78.2	3.8	105.4	3.4	89.6	2.5	51.1	3.6	96.6	3.6	131.3	2.2	81.2	1.8	45.4	2.4	75.6	3.3	94.2	1.4	47.2	2.8	89.0	2.5	78.5	2.6	77.6		
Mi 14	0.0	87.6	0.0	90.4	0.2	88.4	0.4	68.2	0.0	87.4	0.0	86.8	0.5	49.8	0.0	94.8	0.0	93.0	0.0	71.6	0.0	44.8	0.2	74.4	0.0	86.6	0.2	46.2	0.0	79.6	0.3	77.2	0.1	70.7		
J 15	0.0	86.0	0.4	87.8	1.2	89.2	0.0	64.4	0.0	86.1	0.0	86.2	1.3	51.1	0.0	93.6	0.0	90.2	0.0	66.8	0.0	44.0	1.4	75.4	0.5	86.4	1.2	47.0	0.4	79.4	1.0	77.5	0.6	69.9		
V 16	1.6	87.4	2.4	90.0	3.2	92.4	2.6	67.0	2.5	88.7	2.2	88.4	5.1	56.1	2.0	95.6	2.3	92.2	2.8	69.6	3.2	47.0	3.8	79.0	3.3	89.7	36.8	83.8	1.6	80.8	3.6	80.8	8.3	78.2		
S 17	2.8	90.2	2.2	92.2	0.8	93.2	6.8	73.8	4.6	93.2	1.6	90.0	2.0	58.2	2.4	98.0	3.3	95.5	1.0	70.6	3.0	50.0	2.4	81.4	3.3	93.0	1.6	85.2	2.2	83.0	2.8	83.6	2.4	80.5		
D 18	0.0	90.2	12.2	104.4	18.6	111.8	0.6	74.4	0.8	94.0	2.8	92.8	33.5	91.7	1.6	96.6	0.5	96.0	9.8	80.4	28.4	78.4	15.2	96.6	14.0	106.9	16.6	101.8	7.2	90.2	15.0	98.6	13.1	93.6		
L 19	10.0	100.2	13.2	117.6	10.6	122.4	9.2	83.6	11.9	105.9	10.0	102.8	7.9	99.5	11.4	111.0	11.2	107.2	10.8	91.2	8.4	86.8	11.6	108.2	11.4	118.4	6.6	108.4	9.2	99.4	11.2	109.7	9.7	103.3		
Ma 20	3.6	103.8	0.0	117.6	1.8	124.2	1.2	84.8	1.8	107.7	0.0	102.8	3.3	102.8	0.0	111.0	1.5	108.7	5.0	96.2	0.0	86.8	0.2	108.4	0.0	118.4	10.2	118.6	0.2	99.6	0.0	109.7	2.9	106.1		
Mi 21	7.2	98.0	4.8	106.6	2.2	103.2	9.4	85.8	8.6	103.2	4.4	90.6	4.3	88.1	3.0	93.2	7.6	100.6	3.8	90.4	2.2	74.2	2.6	90.4	2.5	97.8	15.0	110.6	2.4	87.8	2.5	90.7	6.0	94.8		
J 22	18.8	114.0	43.8	150.4	20.0	122.6	10.4	95.8	36.1	137.7	27.4	117.8	22.3	109.4	23.0	116.0	38.9	137.2	43.8	134.0	12.0	86.0	17.0	107.2	25.1	122.9	14.4	124.6	26.6	113.8	22.1	112.5	23.8	117.9		
V 23	0.0	114.0	0.2	147.0	0.0	119.8	0.0	95.8	0.0	137.7	0.0	116.8	0.0	101.3	0.0	114.2	0.0	136.7	0.4	134.4	0.0	81.0	0.0	97.0	0.0	119.4	0.2	124.8	0.0	111.8	0.0	102.6	0.1	115.1		
S 24	6.4	119.2	2.8	144.4	2.0	117.2	5.0	95.2	6.4	141.2	2.8	115.2	1.5	102.8	2.8	111.8	7.6	142.5	6.8	138.2	1.0	79.0	2.0	90.4	2.8	116.8	2.0	126.6	2.6	110.6	2.0	96.8	3.3	115.2		
D 25	24.8	89.8	16.6	136.6	4.8	92.4	12.8	85.4	21.3	108.2	7.6	70.4	4.1	102.6	15.6	75.8	20.8	106.4	14.2	105.8	2.4	70.4	6.2	79.6	7.9	86.1	10.2	127.0	11.4	76.8	6.4	82.6	10.6	95.9		
L 26	13.2	103.0	4.2	140.8	7.8	100.0	11.6	97.0	11.4	119.7	22.8	93.0	8.4	111.0	5.2	81.0	16.8	123.2	19.8	125.6	2.6	73.0	4.4	83.8	3.8	89.2	6.6	128.6	3.8	80.4	4.8	87.4	9.1	104.8		
Ma 27	0.0	103.0	0.0	140.8	0.8	98.2	0.0	97.0	0.3	119.9	0.0	92.6	1.3	109.4	0.0	81.0	0.0	123.2	0.0	125.6	0.4	73.4	0.0	82.2	0.3	89.9	1.6	130.2	0.4	80.8	0.3	86.6	0.5	104.7		
Mi 28	0.0	103.0	0.0	140.8	0.2	98.4	0.0	97.0	0.0	119.9	0.0	92.6	0.3	109.7	0.0	81.0	0.0	123.2	0.0	122.4	1.0	74.4	3.2	85.4	0.0	89.7	0.6	130.8	0.0	80.6	3.3	89.9	0.6	104.9		
J 29	0.0	97.6	0.4	137.6	0.0	97.4	0.0	90.8	0.0	116.1	0.0	91.6	0.3	108.7	0.0	80.2	0.0	120.2	0.0	122.4	0.0	74.4	0.2	84.6	0.3	88.4	0.0	130.2	0.2	78.8	0.3	89.2	0.1	103.4		
V 30	28.8	122.6	21.8	136.8	8.8	106.2	20.4	96.0	29.7	141.7	21.2	111.4	20.3	124.2	23.6	98.2	34.5	151.9	27.8	150.2	8.0	82.0	4.8	89.4	16.0	99.8	8.8	139.0	23.8	99.0	8.6	97.5	17.8	118.3		
S 31	0.0	122.6	0.0	131.6	0.4	105.8	0.0	96.0	0.0	141.7	0.0	111.4	0.0	122.4	0.0	97.2	0.0	151.6	0.0	150.2	0.4	78.0	1.0	82.4	0.3	98.3	0.2	137.6	0.0	97.8	0.8	91.2	0.2	116.5		
Li. mes	131.8	163.0	110.2	117.4	149.6	114.4	133.1	104.6	157.7	153.4	82.8	93.2	106.7	140.8	105.0	113.8	100.6	124.0																		
Máx. mes	28.8	153.0	43.8	150.4	20.0	124.2	20.4	121.0	36.1	143.3	27.4	117.8	33.5	124.2	23.6	122.2	38.9	178.1	43.8	150.2	28.4	86.8	17.0	108.4	25.1	122.9	36.8	139.0	26.6	113.8	22.1	112.5	23.8	118.3		
Li. acum. en el año																																				



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REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

ABRIL DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-EI Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales	
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD		
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
D 1	2.0	124.6	1.8	133.4	4.0	93.0	2.2	98.2	2.0	143.8	2.4	110.8	3.8	126.2	1.8	98.8	2.3	153.9	2.4	152.6	1.2	79.0	6.4	88.6	1.3	99.3	0.6	138.0	2.4	100.0	5.1	96.0	2.5	117.8
L 2	2.2	126.8	0.4	133.8	3.0	96.0	2.8	101.0	1.8	145.6	2.6	113.4	0.3	126.4	1.0	99.8	2.0	156.0	2.4	155.0	0.4	79.4	1.2	89.8	0.8	100.1	0.6	138.2	0.8	100.8	1.0	97.0	1.4	119.1
Ma 3	7.4	133.0	8.2	140.0	9.8	104.0	5.8	105.4	8.6	152.7	5.0	117.0	1.3	125.9	14.2	112.2	7.6	162.1	6.4	160.0	9.6	87.6	8.4	96.2	17.8	116.1	2.2	139.0	14.2	113.4	11.9	107.2	7.2	124.7
Mi 4	0.0	132.0	0.2	139.2	0.0	103.2	0.0	104.4	0.0	151.6	0.0	116.2	1.0	125.7	0.2	111.6	0.3	161.1	0.0	159.4	0.0	86.4	0.2	95.2	0.0	114.8	0.0	135.4	0.2	112.4	0.0	105.9	0.1	123.4
J 5	14.0	146.0	16.6	155.6	10.0	112.8	14.6	118.8	14.7	166.4	14.6	130.8	14.5	139.6	11.4	122.8	14.0	174.8	14.0	173.4	11.2	97.2	14.0	108.8	11.4	126.0	7.4	141.0	11.6	124.0	13.2	118.6	12.4	135.4
V 6	8.8	154.8	1.0	156.6	3.0	115.8	0.8	119.6	10.4	176.8	6.0	136.8	1.8	141.4	17.0	139.8	8.6	183.4	7.4	180.8	3.8	101.0	5.2	114.0	7.1	133.1	0.8	141.8	4.6	128.6	5.6	124.2	5.6	141.0
S 7	35.6	187.2	26.8	180.0	21.4	134.4	27.4	144.0	37.1	210.1	17.6	151.0	19.1	157.9	22.0	158.2	42.7	222.5	30.2	208.8	14.4	113.6	31.8	143.4	21.3	151.1			23.0	148.8	31.0	152.7	25.4	163.8
D 8	18.6	205.8	19.8	199.8	11.0	145.2	19.2	162.8	18.5	228.6	8.8	159.8	21.3	178.8	18.4	176.6	18.0	240.5	13.4	222.2	10.6	124.2	22.6	165.8	14.0	165.1			14.2	163.0	19.6	171.9	16.4	180.1
L 9	27.0	232.8	26.0	225.4	7.0	151.0	28.6	191.4	26.9	255.5	30.0	189.8	13.7	191.2	22.8	199.4	25.4	265.9	27.8	250.0	5.6	129.4	4.4	168.8	12.7	177.3			20.2	182.8	7.1	178.0	16.8	196.3
Ma 10	33.2	264.4	19.8	242.8	18.6	166.4	13.2	202.0	42.7	295.7	17.4	205.0	19.3	205.4	41.2	238.6	53.9	317.5	35.6	282.8	20.8	147.4	31.6	196.6	41.2	215.1			32.4	213.6	34.0	208.5	28.5	216.6
Mi 11	13.2	274.8	5.6	246.2	9.8	175.4	11.0	206.2	12.7	303.8	19.8	223.2	16.3	219.6	6.8	243.0	18.0	330.2	18.0	299.8	28.6	173.0	17.4	211.6	12.2	224.0			5.2	216.6	19.3	225.0	13.2	227.4
J 12	30.8	305.6	30.8	264.8	24.6	181.4	16.6	222.2	37.1	340.1	16.2	236.6	31.8	217.9	27.2	268.6	40.1	369.8	34.0	324.0	19.4	164.0	23.2	219.6	22.1	232.1			21.6	231.0	23.6	233.7	22.5	236.8
V 13	15.2	310.8	35.2	286.8	1.4	172.2	13.6	226.6	19.0	347.2	27.8	254.4	23.4	233.4	35.6	292.8	15.7	374.4	21.8	335.0	5.0	160.6	4.6	212.6	34.5	255.3	14.4	91.8	38.4	260.2	6.6	229.1	17.7	244.8
S 14	3.4	310.6	14.0	300.8	5.8	176.2	11.0	236.4	3.3	348.7	1.8	256.2	5.1	235.2	1.6	294.4	2.5	375.4	2.2	332.2	7.6	168.2	3.0	215.4	5.8	261.1	10.2	91.8	7.2	267.2	5.1	234.2	5.6	247.8
D 15	1.6	305.0	3.6	299.6	1.0	175.0	1.4	228.4	1.8	341.9	20.0	271.8	5.8	236.7	1.2	292.6	4.3	372.1	9.6	338.0	1.6	167.6	0.6	213.4	2.0	260.6	5.6	82.4	3.0	267.8	2.0	233.7	4.9	246.4
L 16	27.0	313.2	3.6	259.4	20.6	176.6	24.6	242.6	27.2	333.0	8.2	252.6	2.0	216.4	11.2	280.8	29.2	362.5	18.0	312.2	1.8	157.4	2.6	199.0	8.4	243.8	2.2	70.2	7.8	249.0	4.1	215.6	10.8	233.4
Ma 17	0.0	313.2	0.2	259.4	0.8	176.4	0.0	242.6	0.3	333.3	0.0	252.6	0.5	216.9	1.0	281.8	0.3	362.7	0.0	311.8	0.0	157.4	0.2	199.2	3.6	247.4	11.6	81.6	1.6	250.6	1.3	216.9	2.2	235.6
Mi 18	24.0	330.8	27.4	284.0	10.0	184.4	15.8	253.4	29.0	355.9	19.2	269.0	17.5	232.9	24.2	303.2	29.5	384.6	24.2	329.2	11.8	168.2	16.6	213.8	25.4	270.0	8.6	88.2	20.4	268.4	20.3	235.2	18.3	250.6
J 19	34.0	340.0	26.4	293.8	14.2	193.8	22.4	263.0	41.1	375.7	27.2	288.6	17.0	245.9	23.2	310.8	41.9	405.6	34.6	349.6	11.2	177.0	15.8	223.4	24.4	286.5	8.4	86.4	19.8	276.8	17.3	246.1	21.7	261.7
V 20	8.8	335.6	4.6	294.2	0.0	186.2	1.2	252.6	10.9	375.1	7.4	273.2	15.5	253.0	11.2	316.8	14.2	403.1	10.8	340.6	0.0	174.4	0.4	219.4	16.0	298.7	1.6	85.4	10.6	283.6	5.6	246.9	6.7	259.3
S 21	5.2	340.8	1.8	296.0	4.2	189.6	8.8	261.4	2.8	377.7	4.8	278.0	1.0	252.8	1.4	318.2	3.8	406.9	4.2	344.8	1.0	175.0	3.6	223.0	0.5	299.0	3.0	86.8	0.6	283.8	3.6	250.2	3.1	261.9
D 22	3.6	344.4	4.0	300.0	4.8	194.2	2.6	264.0	3.1	380.7	5.2	283.2	4.1	256.6	2.6	320.8	3.1	410.0	4.4	349.2	3.2	177.2	3.8	223.6	2.8	301.8	7.0	93.2	2.8	286.6	3.8	250.7	4.2	265.6
L 23	1.0	345.0	0.0	299.6	0.4	194.6	1.4	265.4	0.5	381.3	0.0	283.2	3.1	259.4	0.2	321.0	0.8	410.7	0.4	349.6	0.4	177.6	1.6	225.0	0.5	302.0	2.4	95.6	0.2	286.6	1.3	251.7	1.1	266.6
Ma 24	4.6	321.2	3.6	281.4	2.8	188.6	4.4	249.4	4.6	356.1	3.6	265.6	3.6	242.6	4.2	301.6	5.1	381.3	4.6	326.4	2.4	172.0	6.8	227.0	2.3	288.3	3.8	90.6	2.4	265.2	4.6	247.6	4.0	252.9
Mi 25	1.0	322.2	5.6	287.0	3.2	191.4	0.6	250.0	1.3	357.4	5.0	270.6	5.6	248.2	6.2	307.8	1.3	382.5	1.4	327.8	14.6	186.2	15.6	241.6	8.4	296.4		90.4	4.8	270.0	13.0	259.8	5.2	257.8
J 26	1.6	321.8	2.0	287.2	0.0	187.4	3.2	251.0	0.8	356.1	0.2	268.4	2.8	247.2	0.8	306.8	0.8	381.0	0.4	325.8	1.0	186.0	0.8	236.0	0.8	295.9	1.2	91.0	1.0	268.6	1.0	255.8	1.1	256.4
V 27	1.0	320.6	0.0	286.8	2.4	186.8	1.0	249.2	1.0	355.3	0.0	265.8	0.8	247.0	1.0	305.8	1.0	380.0	0.6	344.0	0.2	185.8	1.4	236.2	0.3	295.4	2.6	93.0	1.2	269.0	1.8	256.5	1.1	256.1
S 28	31.8	345.0	26.2	304.8	13.4	190.4	36.0	279.4	31.0	377.7	19.0	279.8	9.9	256.3	17.8	309.4	25.9	398.3	27.2	324.8	6.4	182.6	13.0	240.8	19.3	296.9	10.0	100.8	25.8	280.6	14.7	259.3	18.2	267.1
D 29	0.0	345.0	1.2	305.8	0.6	191.0	0.0	279.4	0.3	378.0	0.2	280.0	0.5	255.8	1.4	310.6	0.5	398.5	0.0	344.8	2.8	185.4	5.8	246.4	2.0	299.0	1.0	101.8	1.2	281.6	3.6	262.9	1.3	268.3
L 30	0.6	331.6	0.0	289.2	0.0	181.0	0.0	264.8	0.8	364.0	1.8	267.2	0.0	241.3	0.0	299.2	0.5	385.1	0.0	330.8	0.0	174.2	0.2	232.6	0.0	287.5	0.2	94.6	0.2	270.2	0.3	249.9	0.3	256.2
Ma 1																																		
Li. mes	357.2		316.4		207.8																													



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

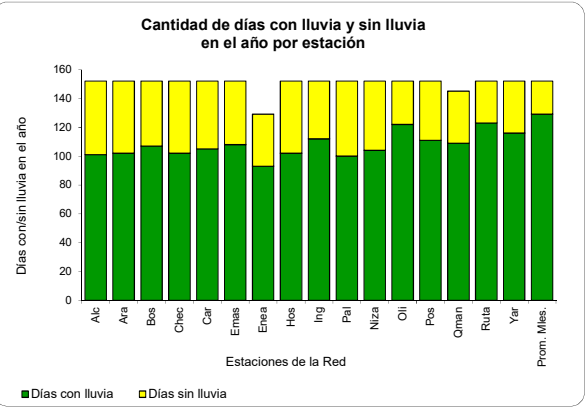
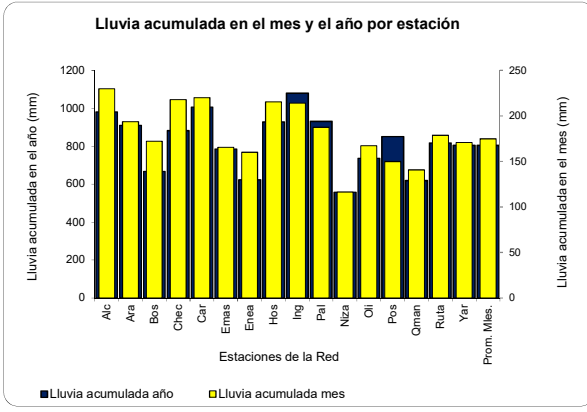
Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

MAYO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales		
	Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CHEC S.A. E.S.P.		Alcaldía/OMPAD		EMAS S.A. E.S.P.		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CORPOCALDAS		UN-Manizales		CORPOCALDAS		UN-Manizales		Alcaldía/OMPAD				
	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	
Ma	1	62.0	384.8	44.2	332.4	27.0	205.0	72.2	336.2	61.2	414.8	45.6	306.8	34.0	273.6	54.6	336.8	52.6	429.0	56.6	380.0	32.6	203.0	42.0	269.4	34.5	315.0	30.8	124.6	44.4	310.0	41.2	285.5	43.6	294.2
Li. mes	229.8		193.6		172.2		217.8		220.0		165.4		160.0		215.4		214.1		187.4		116.4		167.2		149.9		140.8		178.8		170.7		174.9		
Máx. mes	62.0	384.8	44.8	332.4	33.2	205.0	72.2	336.2	61.2	414.8	45.6	306.8	34.0	273.6	54.6	336.8	52.6	429.0	56.6	380.0	32.6	203.0	42.0	269.4	34.5	315.0	30.8	124.6	44.4	310.0	41.2	285.5	43.6	294.2	
Li. acum. en el año	981.6		909.8		667.0		881.6		1006.2		785.8		622.8		928.0		1079.2		931.0		557.8		736.6		850.9		618.8		818.0		803.9		804.6		
No. días lluvia año	101	66%	102	67%	107	70%	102	67%	105	69%	108	71%	93	72%	102	67%	112	74%	100	66%	104	68%	122	80%	111	73%	109	75%	123	81%	116	76%	129	85%	



Días transcurridos en el año a la fecha		
Estación	A	N
Alc	23	23
Ara	32	7
Bos	1	0
Chec	43	3
Car	19	26
Emas	32	1
Enea	31	0
Hos	27	16
Ing	18	21
Pal	17	24
Niza	1	0
Oli	30	0
Pos	29	4
Qui	0	0
Ruta	36	2
Yar	33	0
Prom.	33	0

CONVENCIONES

Li. d. : Lluvia diaria en mm
A25 : Indicador lluvia antecedente de 25 días en mm
Li. mes : Lluvia parcial o total en el mes en mm
Máx. mes : Valores máximos de lluvia diaria y A25 en el mes en mm
Li. acum. en el año : Lluvia acumulada en el año en mm
No. días lluvia año : Número de días con lluvia en el corrido del año
Resalta la lluvia diaria máxima del mes
* Indicadores con base a los días de funcionamiento de cada estación

NIVELES DE ALERTA (N.A.)

Amarilla o baja: A 200 mm <= A25 < 300 mm
Naranja o media: N 300 mm <= A25 < 400 mm
Roja o alta: R A25 >= 400 mm

OBSERVACIONES:

- La lluvia promedio y acumulada en el corrido del año para Manizales se calcularon con el Método de los Polígonos de Thiessen
- Datos resaltados en rojo están incompletos

Entidades propietarias y participantes



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES
OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES
RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES
 Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

JUNIO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales					
	Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CHEC S.A. E.S.P		Alcaldía/OMPAD		EMAS S.A. E.S.P		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CORPOCALDAS		UN-Manizales		CORPOCALDAS		UN-Manizales		Alcaldía/OMPAD							
	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25		
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
V 1	0.0	103.6	0.0	61.0	0.0	70.8	0.0	82.8	0.0	88.9	0.0	58.0	0.0	62.0	0.0	73.6	0.0	101.1	0.0	53.6	0.0	35.2	0.0	56.2	0.0	47.3	0.0	51.2	0.0	52.4	0.0	64.5	0.0	62.8				
S 2	0.4	97.6	0.8	56.6	0.0	66.8	0.0	77.8	0.5	84.3	0.6	56.0	0.0	56.4	0.0	69.0	0.8	97.8	0.0	51.8	2.2	33.0	1.4	53.0	1.3	41.4	0.8	47.6	0.0	60.5	0.7	58.5						
D 3	3.0	100.6	6.6	61.0	1.8	68.4	0.8	74.4	2.8	87.1	1.2	56.6	0.3	48.0	1.8	70.8	4.1	101.9	3.0	54.6	0.4	33.4	0.4	53.4	0.8	42.2	4.0	51.0	0.5	61.0	1.6	59.0						
L 4	0.0	100.6	0.0	60.2	0.0	65.8	0.0	74.2	0.0	86.9	0.0	56.0	0.0	46.5	0.0	70.4	0.0	101.6	0.0	52.4	0.0	32.8	0.2	53.0	0.0	41.7	0.0	51.0	0.3	60.5	0.0	58.2						
Ma 5	0.0	94.6	0.0	53.6	0.0	61.2	0.4	64.2	0.0	80.0	0.0	52.4	2.8	43.7	0.0	62.6	0.0	95.8	0.0	50.2	0.0	27.8	0.0	46.6	0.0	36.8	0.0	46.6	0.3	52.8	0.4	52.9						
Mi 6	0.0	91.6	0.0	51.2	0.0	58.6	0.0	62.4	0.0	77.0	0.0	50.2	0.0	40.9	0.0	60.4	0.0	93.0	0.0	46.8	0.0	26.0	0.2	44.8	0.0	34.6	0.0	44.4	0.0	50.8	0.0	49.9						
J 7	0.0	91.6	0.0	51.2	0.0	58.6	0.0	59.6	0.0	77.0	0.0	50.2	0.0	40.9	0.0	60.2	0.0	93.0	0.0	46.4	0.0	26.0	0.0	44.8	0.0	34.6	0.0	44.4	0.0	50.8	0.0	49.8						
V 8	0.0	91.6	0.0	51.2	0.0	58.6	0.0	59.6	0.0	77.0	0.8	51.0	0.0	40.9	0.0	59.8	0.0	93.0	0.0	46.4	0.0	26.0	0.0	44.8	0.0	34.3	0.0	44.2	0.0	50.8	0.1	49.8						
S 9	1.8	93.4	0.6	51.8	0.0	58.6	6.2	65.8	0.3	77.0	0.0	51.0	0.0	40.9	0.0	59.8	0.3	93.2	0.0	46.4	0.0	26.0	0.0	44.8	0.0	34.3	0.0	44.0	0.0	50.8	0.4	50.2						
D 10	0.0	93.4	0.2	52.0	0.0	58.6	12.0	77.4	0.0	77.0	0.0	51.0	0.5	41.4	0.0	59.8	0.0	93.0	0.0	46.4	0.0	26.0	0.0	44.8	0.0	34.3	0.0	44.0	0.0	50.8	0.6	50.7						
L 11	3.6	79.8	3.8	55.8	3.4	62.0	4.2	73.0	2.8	67.1	3.2	54.2	3.8	45.2	3.6	58.0	2.3	81.3	2.2	48.0	5.2	31.2	6.4	51.2	4.8	39.1	1.8	31.6	3.2	45.8	6.9	57.7	3.6	51.4				
Ma 12	16.8	70.0	5.8	57.4	2.4	47.8	15.6	73.4	15.8	59.4	3.8	42.0	0.3	37.3	4.0	52.0	14.5	58.4	11.0	43.2	0.4	28.6	1.6	46.2	2.3	35.8	0.4	28.2	2.6	44.4	1.0	48.8	5.3	44.8				
Mi 13	41.0	73.4	18.4	43.2	4.2	18.8	38.4	84.8	38.6	66.6	22.0	38.0	3.3	16.8	14.8	27.6	35.8	65.5	48.2	73.4	9.0	20.0	6.0	26.2	6.4	19.8	3.6	19.6	10.2	25.0	7.4	24.4	18.8	39.2				
J 14	1.8	73.6	3.4	46.4	3.0	21.8	2.0	86.0	1.8	67.6	1.2	38.6	3.1	19.6	2.0	29.4	2.3	67.1	2.6	74.8	1.2	21.6	1.2	27.4	1.3	20.8	3.6	23.2	1.6	26.4	1.5	25.9	2.5	41.3				
V 15	7.2	79.8	2.0	65.2	15.2	35.0	10.2	95.2	10.9	77.0	12.0	48.4	14.7	33.3	10.0	37.8	12.7	78.0	12.4	86.0	6.4	26.4	7.8	32.6	7.1	26.7	2.0	23.8	6.8	32.2	10.4	32.8	9.5	49.0				
S 16	28.2	107.6	22.8	87.4	13.2	47.6	26.0	120.8	25.4	101.8	17.2	65.2	13.7	46.2	17.0	54.2	24.6	102.1	21.0	106.0	11.4	37.4	11.2	42.6	17.0	43.2	11.2	33.8	17.0	48.8	18.3	50.0	16.9	65.3				
D 17	19.4	127.0	0.6	88.0	0.4	46.2	19.0	139.8	22.6	124.5	9.6	74.8	0.0	46.2	3.8	58.0	23.4	125.5	16.4	122.4	0.2	37.6	0.6	41.8	0.3	43.4	1.4	35.2	2.6	51.4	0.5	49.8	7.0	72.1				
L 18	5.0	131.6	19.0	107.0	3.2	48.6	5.2	144.6	5.1	129.0	5.2	79.2	6.9	53.1	2.6	60.0	5.3	130.3	5.2	127.0	2.4	39.4	2.0	42.0	1.8	44.5	4.8	39.6	1.6	52.4	2.8	51.6	4.6	76.0				
Ma 19	0.6	132.0	2.0	109.0	1.2	49.4	0.6	145.2	1.0	129.8	1.0	79.8	0.8	53.9	1.2	60.8	0.8	130.6	0.8	127.4	1.6	40.4	1.4	42.6	1.3	45.2	0.2	38.0	1.0	53.0	1.5	52.3	0.9	76.4				
Mi 20	10.6	142.6	19.6	128.6	2.8	52.2	9.6	154.8	11.2	141.0	4.2	83.6	0.5	53.4	6.6	67.4	10.7	141.2	7.4	134.8	0.6	41.0	0.6	42.8	2.5	47.0	0.0	39.8	12.0	64.2	1.0	53.1	4.7	79.7				
J 21	3.0	144.6	2.4	131.0	5.2	57.4	3.0	155.4	3.1	143.0	6.8	90.2	1.8	55.1	3.4	70.8	3.0	143.3	5.0	139.4	1.6	42.6	2.4	45.2	3.3	50.3	1.0	31.8	1.8	66.0	3.6	56.6	3.0	82.4				
V 22	0.0	143.2	0.0	126.0	0.0	56.0	0.0	153.2	0.0	141.7	0.0	89.4	0.0	52.6	0.0	70.8	0.0	142.0	0.0	135.8	0.0	42.6	0.0	44.2	0.0	50.0	0.0	30.6	0.0	65.4	0.0	56.4	0.0	81.0				
S 23	0.0	143.0	0.0	126.0	0.0	56.0	0.0	153.2	0.0	141.7	0.0	89.4	0.0	52.6	0.0	70.8	0.0	142.0	0.0	135.8	0.0	42.6	0.0	44.0	0.0	50.0	0.0	30.4	0.0	65.4	0.0	56.4	0.0	80.9				
D 24	0.0	142.4	0.6	126.6	0.0	56.0	0.0	153.2	0.0	141.7	0.0	88.8	0.3	52.9	0.0	70.8	0.0	140.5	0.0	135.2	0.0	42.6	0.0	44.0	0.0	50.0	0.0	30.0	0.0	65.2	0.0	56.4	0.0	80.7				
L 25	2.4	144.8	2.0	128.6	0.4	56.4	2.4	155.6	2.3	144.0	1.4	90.2	3.1	55.7	1.6	72.4	2.5	143.0	2.0	137.2	2.4	45.0	2.4	45.8	2.0	52.1	1.8	31.8	1.6	66.8	2.5	58.9	2.1	82.7				
Ma 26	1.8	146.6	2.2	130.8	2.8	59.2	1.6	157.2	2.3	146.3	2.2	92.4	2.5	58.2	1.4	73.8	2.3	145.3	2.2	139.4	0.0	45.0	0.0	45.8	0.5	52.6	0.0	31.8	1.4	68.2	0.3	59.2	1.3	84.0				
Mi 27	0.6	146.8	0.4	130.4	1.2	60.4	0.6	157.8	0.5	146.3	1.0	92.8	0.5	58.7	0.8	74.6	0.8	145.3	0.8	140.2	1.0	43.8	0.8	45.2	0.5	51.8	0.8	32.6	0.4	67.8	1.0	59.7	0.8	84.0				
J 28	0.0	143.8	0.0	123.8	0.0	58.6	0.0	157.0	0.0	143.5	0.0	91.6	0.0	58.4	0.0	72.8	0.0	141.2	0.0	137.2	0.0	43.4	0.4	45.2	0.0	51.0	0.0	32.6	0.0	63.8	0.0	59.2	0.0	82.5				
V 29	1.4	145.2	6.2	130.0	1.6	60.2	1.8	158.8	1.8	145.3	1.8	93.4	3.8	62.2	2.0	74.8	2.0	143.3	2.0	139.2	2.0	45.4	2.8	47.8	1.8	52.8	3.2	35.8	2.4	66.2	3.6	62.5	2.9	85.4				
S 30	3.2	148.4	5.2	135.2	4.4	64.6	3.4	161.8	3.6	148.8	4.2	97.6	5.9	65.3	4.2	79.0	3.8	147.1	4.0	143.2	4.2	49.6	3.8	51.6	4.3	57.2	4.8	40.6	3.8	70.0	6.1	68.3	5.1	90.0				
D 1																																						
Li. mes	151.8		142.6		66.4		163.0		152.2		99.4		68.4		80.8		151.9		146.2		52.2		53.6		59.2		40.6		74.8		69.9		92.8					
Máx. mes	41.0	148.4	22.8	135.2	15.2	70.8	38.4	161.8	38.6	148.8	22.0	97.6	14.7	65.3	17.0	79.0	35.8	147.1	48.2	143.2	11.4	49.6	11.2	56.2	17.0	57.2	11.2	51.2	17.0	70.0	18.3	68.3	18.8	90.0				
Li. acum. en el año	1133.4		1052.4		733.4		1044.6		1158.3		885.2		691.1		1008.8		1231.1		1077.2		610.0		790.2		910.1		659.4		892.8		873.7		897.4					
No. días lluvia año	120	66%	123	68%	124	68%	122	67%	124	68%	127	70%	112	70%	119	65%	131																					



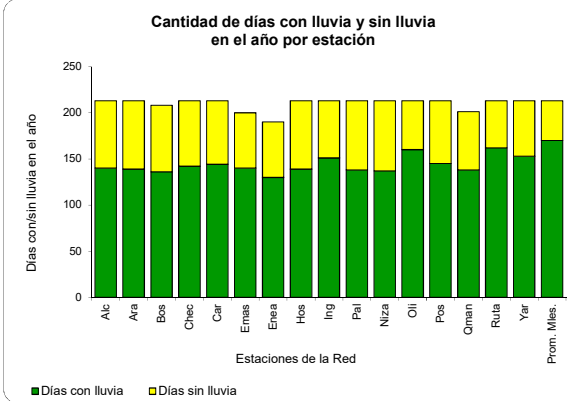
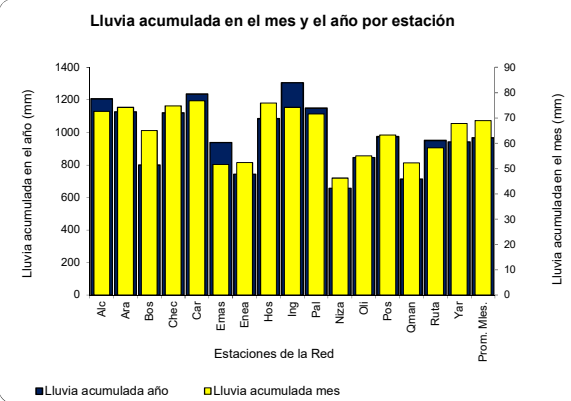
UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES
OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES
RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES
 Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

JULIO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales		
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD			
Proprietarios	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD			
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25			
D 1	3.8	152.2	6.6	141.8	3.0	67.6	3.6	165.4	3.6	152.4	4.4	102.0	5.3	70.6	4.0	83.0	3.8	150.9	4.0	147.2	3.0	52.6	3.8	55.2	4.8	62.0	5.8	46.4	4.2	74.2	4.6	72.9	5.0	95.0	
L 2	0.0	152.2	0.0	141.8	0.0	67.6	0.0	165.4	0.0	152.4	0.0	102.0	0.0	70.6	0.0	83.0	0.0	150.9	0.0	147.2	0.0	52.6	0.0	55.2	0.0	62.0	0.0	46.4	0.0	74.2	0.0	72.9	0.0	95.0	
Ma 3	3.0	155.2	0.0	141.8	1.6	69.2	2.8	168.2	2.8	155.2	4.0	105.2	1.0	71.6	1.4	84.4	3.6	154.4	3.8	151.0	0.6	53.2	1.0	56.2	1.0	63.0	0.8	47.2	1.0	75.2	1.8	74.7	1.9	96.8	
Mi 4	1.0	154.4	1.2	142.4	0.6	69.8	1.4	163.4	1.0	156.0	0.8	106.0	1.3	72.9	1.0	85.4	1.0	155.2	1.0	152.0	1.4	54.6	1.2	57.4	1.3	64.3	0.2	47.4	1.0	76.2	1.8	76.5	1.0	97.4	
J 5	0.6	155.0	0.4	142.6	1.4	71.2	0.6	152.0	0.5	156.5	1.0	107.0	0.8	73.2	0.8	86.2	0.8	156.0	0.8	152.8	0.4	55.0	2.2	59.6	0.5	64.8	2.6	50.0	0.6	76.8	2.5	79.0	1.2	98.0	
V 6	0.2	151.6	0.2	139.0	0.0	67.8	0.2	148.0	0.3	153.9	0.0	103.8	0.3	69.6	0.2	82.8	0.3	153.9	0.4	151.0	0.0	49.8	0.2	53.4	0.0	60.0	0.2	48.4	0.2	73.8	0.0	72.1	0.2	94.6	
S 7	1.2	136.0	2.6	135.8	12.8	78.2	1.2	133.6	1.3	139.5	5.6	105.6	1.5	70.9	6.4	85.2	1.5	141.0	3.6	143.6	2.4	51.8	6.0	57.8	4.3	62.0	0.0	48.0	2.2	73.4	8.6	79.8	3.4	92.7	
D 8	0.2	95.2	0.0	117.4	0.0	74.0	0.2	95.4	0.3	101.1	3.8	87.4	0.0	67.6	0.2	70.6	0.3	105.4	2.0	97.4	0.0	42.8	0.0	51.8	0.0	55.6	0.0	44.4	0.2	63.4	0.0	72.4	0.5	74.5	
L 9	0.0	93.4	0.0	114.0	0.0	71.0	0.0	93.4	0.0	99.3	0.0	86.2	0.0	64.0	0.0	68.6	0.0	103.1	0.0	94.8	0.0	41.6	0.0	50.6	0.0	54.4	0.0	40.8	0.0	61.8	0.0	70.9	0.0	72.0	
Ma 10	0.0	86.2	0.0	94.0	0.0	55.8	0.0	83.2	0.0	88.4	0.0	74.2	0.0	49.8	0.0	58.6	0.0	90.4	0.0	82.4	0.0	35.2	0.0	42.8	0.0	47.3	0.0	38.8	0.0	55.0	0.0	60.5	0.0	62.5	
Mi 11	15.6	73.6	34.4	105.6	14.4	57.0	15.0	72.2	16.8	79.8	14.2	71.2	18.0	54.1	17.8	59.4	16.0	81.8	14.8	76.2	13.8	37.6	14.4	46.0	14.2	44.5	4.6	32.2	21.8	59.8	15.5	57.7	16.8	62.4	
J 12	8.8	63.0	6.2	111.2	10.2	66.8	9.0	62.2	9.2	66.3	5.4	67.0	4.1	58.2	8.4	64.0	8.6	67.1	7.0	66.8	2.6	40.0	4.0	49.4	9.1	53.3			3.4	60.6	3.8	61.0	5.9	61.3	
V 13	6.4	64.4	6.6	98.8	5.8	69.4	6.6	63.6	6.9	68.1	5.8	67.6	6.4	57.7	8.8	67.2	5.8	67.6	5.4	67.0	4.8	42.0	6.4	53.8	5.9	57.4	28.4	54.4	5.4	64.4	8.1	66.3	10.4	67.2	
S 14	0.4	64.2	0.6	97.4	5.2	73.4	0.6	63.6	0.5	67.6	1.0	67.6	0.8	57.7	2.0	68.0	0.5	67.3	0.8	67.0	0.6	41.4	0.6	53.0	0.8	56.9	1.0	55.2	0.8	64.2	0.8	65.5	1.0	67.3	
D 15	0.0	53.6	0.0	77.8	0.2	70.8	0.0	54.0	0.0	56.4	0.2	63.6	0.0	57.2	0.2	61.6	0.0	56.6	0.2	59.8	0.0	40.8	0.0	52.4	0.0	54.4	0.2	55.4	0.2	52.4	0.0	64.5	0.1	62.7	
L 16	2.0	52.6	5.8	81.2	8.6	74.2	2.2	53.2	1.8	55.1	2.4	59.2	2.3	57.7	8.7	66.9	2.3	55.9	2.4	57.2	7.2	46.4	5.8	55.8	10.2	61.2	1.2	56.6	7.2	57.8	7.9	68.8	4.9	64.6	
Ma 17	6.0	58.6	2.8	84.0	1.2	75.4	6.4	59.6	6.9	62.0	0.0	59.2	6.1	63.8	3.4	70.3	6.1	62.0	3.8	61.0	2.2	48.6	1.2	57.0	1.8	63.0	3.4	59.0	1.8	59.6	1.3	70.1	3.9	68.5	
Mi 18	0.4	59.0	0.0	84.0	0.0	75.4	0.4	60.0	0.3	62.2	3.0	62.2	0.3	64.0	0.0	70.3	0.5	62.5	1.8	62.8	0.2	48.8	0.2	57.2	0.0	63.0	0.0	59.0	0.0	59.6	0.3	70.4	0.5	69.0	
J 19	1.2	60.2	2.4	85.8	0.0	75.4	1.2	61.2	1.5	63.8				63.8	1.8	72.1	1.3	63.8	1.0	63.8	2.2	51.0	2.8	60.0	2.3	65.3	0.0	59.0	1.4	61.0	4.3	74.7	1.2	70.2	
V 20	12.0	69.8	0.0	83.8	0.0	75.0	12.8	71.6	12.7	74.2				61.0	5.2	75.7	11.4	72.7	8.6	70.4	0.0	48.6	0.0	57.6	0.0	63.2	0.0	57.2	0.2	59.6	0.0	72.1	3.9	72.0	
S 21	0.0	68.0	0.0	81.6	0.0	72.2	0.0	70.0	0.0	71.9				58.4	0.0	74.3	0.0	70.4	0.0	68.2	0.0	48.6	0.0	57.6	0.0	62.7	0.0	57.2	0.2	58.4	0.0	71.9	0.0	70.7	
D 22	0.0	67.4	0.0	81.2	0.0	71.0	0.0	69.4	0.0	71.4				57.9	0.0	73.5	0.0	69.6	0.0	67.4	0.0	47.6	0.0	56.8	0.0	62.2	0.0	56.4	0.0	58.0	0.0	70.9	0.0	69.9	
L 23	0.0	67.4	0.0	81.2	0.0	71.0	0.0	69.4	0.0	71.4				57.9	0.0	73.5	0.0	69.6	0.0	67.4	0.0	47.6	0.0	56.8	0.0	62.2	0.0	56.4	0.0	58.0	0.0	70.9	0.0	69.9	
Ma 24	0.0	66.0	0.0	75.0	0.0	69.4	0.0	67.6	0.0	69.6				54.1	0.0	71.5	0.0	67.6	0.0	65.4	0.0	45.6	0.0	53.4	0.0	60.5	0.0	53.2	0.0	55.6	0.0	67.3	0.0	66.9	
Mi 25	0.0	62.8	0.0	69.8	0.0	65.0	0.0	64.2	0.0	66.1				48.3	0.0	67.3	0.0	63.8	0.0	61.4	0.0	41.4	0.0	49.8	0.0	56.1	0.0	48.4	0.0	51.8	0.0	61.2	0.0	61.9	
J 26	0.0	59.0	0.0	63.2	0.0	62.0	0.0	60.6	0.0	62.5				42.9	0.0	63.3	0.0	60.0	0.0	57.4	0.0	38.4	0.0	46.0	0.0	51.3	0.0	42.6	0.0	47.6	0.0	56.6	0.0	56.9	
V 27	0.0	59.0	0.0	63.2				60.6	0.0	62.5				42.9	0.0	63.3	0.0	60.0	0.0	57.4	0.0	38.4	0.2	46.2	0.0	51.3	0.0	42.6	0.0	47.6	0.0	56.6	0.0	56.9	
S 28	0.6	56.6	2.2	65.4			0.4	58.2	0.5	60.2				0.8	42.7	0.6	62.5	0.5	56.9	0.2	53.8	0.0	37.8	0.4	45.6	0.5	50.8	0.2	42.0	0.8	47.4	0.5	55.4	0.5	55.5
D 29	2.2	57.8	1.4	65.6			2.6	59.4	2.0	61.2				2.3	43.7	3.8	65.3	2.5	58.4	2.0	54.8	3.0	39.4	1.6	46.0	4.6	54.1	1.8	43.6	3.0	49.4	2.0	55.6	2.4	56.9
L 30	5.6	62.8	0.6	65.8			6.0	64.8	6.6	67.3				0.8	43.7	3.4	67.9	5.6	63.2	6.4	60.4	1.6	40.6	3.0	46.8	1.8	55.4	1.4	42.4	2.0	50.8	3.8	56.9	3.5	59.2
Ma 31	1.4	64.0	0.2	65.8			1.6	66.2	1.5	68.6				0.3	43.7	0.8	68.5	1.8	64.8	1.6	61.6	0.2	40.8	0.0	46.6	0.3	55.6	0.4	42.6	0.6	51.2	0.3	57.2	0.8	59.8
Li. mes	72.6		74.2		65.0		74.8		76.7		51.6		52.3		75.9		74.2		71.6		46.2		55.0		63.2		52.2		58.2		67.8		69.0		
Máx. mes	15.6	155.2	34.4	142.6	14.4	78.2	15.0	168.2	16.8	156.5	14.2	107.0	18.0	73.2	17.8	86.2	16.0	156.0	14.8	152.8	13.8	55.0	14.4	60.0	14.2	65.3	28.4	59.0	21.8	76.8	15.5	79.8	16.8	98.0	
Li. acum. en el año	1206.0		1126.6		798.4		1119.4		1235.0		936.8		743.4		1084.7		1305.3		1148.8		656.2		845.2		973.3		711.6		951.0		941.6		966.4		
No. días lluvia año	140	66%	139	65%	136	65%	142	67%	144	68%	140	70%	130	68%	139	65%	151	71%	138	65%	137	64%	160	75%	145	68%	138	69%	162	76%	153	72%	170	80%	





UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

AGOSTO DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales	
	Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CHEC S.A. E.S.P		Alcaldía/OMPAD		EMAS S.A. E.S.P		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		Alcaldía/OMPAD		CORPOCALDAS		UN-Manizales		CORPOCALDAS		UN-Manizales		Alcaldía/OMPAD		Alcaldía/OMPAD	
Propietarios	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
Mi 1	4.2	67.0	3.8	67.0			4.0	69.0	3.3	70.6	0.0	35.8	4.3	46.5	2.2	64.3	5.1	68.3	2.4	60.4	0.6	39.0	1.2	41.8	2.0	53.3	1.6	44.2	1.2	50.2	1.8	50.3	2.5	58.9
J 2	9.0	75.8	0.4	67.4			9.4	78.2	9.4	79.8	6.2	38.2	0.0	46.5	6.2	70.3	9.9	78.0	8.0	66.4	0.0	39.0	0.2	42.0	1.0	54.4	0.0	44.2	1.6	51.6	0.3	50.5	3.8	62.2
V 3	1.0	76.8	1.8	69.2			1.0	79.2	1.0	80.8	0.8	39.0	1.0	47.5	0.4	70.7	1.0	79.0	1.0	67.4	0.6	39.6	0.6	42.6	0.5	54.9	1.0	45.2	1.2	52.8	0.5	51.1	0.9	63.0
S 4	19.4	96.2	20.2	89.4			20.2	99.4	20.1	100.9	2.4	41.4	1.5	49.0	4.0	74.7	21.3	100.3	1.4	68.8	2.2	41.8	1.2	43.8	1.8	56.6	3.2	48.4	6.0	58.8	4.1	55.1	6.4	69.4
D 5	10.0	90.6	15.8	70.8			9.6	94.0	10.4	94.5	10.6	37.8	13.7	44.7	9.6	66.5	9.7	94.0	11.8	65.8	9.4	37.4	11.8	41.2	13.0	55.4	13.8	57.6	10.6	47.6	14.0	53.6	11.7	64.3
L 6	4.0	85.8	3.4	68.0			4.2	89.2	3.6	88.9	1.6	34.0	0.3	40.9	3.4	61.5	4.8	90.2	3.0	61.8	11.8	46.6	4.4	41.6	7.9	54.1	0.6	58.2	6.2	50.4	6.1	55.9	3.8	62.2
Ma 7	0.2	79.6	0.0	61.4			0.2	82.8	0.0	82.0	0.0	28.2	0.0	34.5	0.0	55.7	0.3	84.6	0.0	56.4	0.0	41.8	0.0	35.2	0.0	48.3	0.0	29.8	0.2	45.2	0.0	47.8	0.0	51.8
Mi 8	0.0	79.2	0.0	60.8			0.0	82.2	0.0	81.5	0.0	27.2	0.0	33.8	0.0	53.7	0.3	84.3	1.6	57.2	0.0	41.2	0.2	34.8	0.0	47.5	0.0	28.8	0.0	44.4	0.0	47.0	0.2	50.9
J 9	0.0	79.2	0.0	60.8			0.0	82.2	0.0	81.5	0.0	27.0	0.0	33.8	0.0	53.5	0.0	84.3	0.0	57.0	0.0	41.2	0.2	35.0	0.0	47.5	0.0	28.6	1.0	45.2	0.0	47.0	0.1	50.9
V 10	1.2	78.4	3.4	58.4			1.4	81.4	1.3	81.0	0.6	25.2	1.8	33.3	1.6	46.4	1.3	83.3	0.6	55.2	2.8	36.8	1.2	30.4	2.5	39.9	3.0	30.4	1.4	39.4	1.5	40.6	1.7	47.7
S 11	0.8	73.2	0.0	55.6			1.0	76.0	0.5	74.7	1.8	27.0	0.0	27.2	0.2	43.2	1.5	78.7	1.0	52.4	0.0	34.6	0.2	29.4	0.0	38.1	0.4	27.4	0.0	37.6	0.0	39.4	0.5	44.4
D 12	0.8	73.6	8.2	63.8			0.8	76.4	1.0	75.4	0.0	24.0	0.5	27.4	0.8	44.0	0.5	78.7	0.2	50.8	0.4	34.8	0.8	30.0	0.3	38.4	5.4	32.8	3.2	40.8	0.5	39.6	1.6	45.4
L 13	10.0	82.4	7.4	68.8			9.6	84.8	9.7	83.6	6.6	30.6	4.1	31.5	8.6	50.8	10.9	88.4	8.0	57.8	5.0	37.6	7.4	34.6	5.1	41.2	4.6	37.4	7.0	46.4	6.1	41.4	6.9	51.1
Ma 14	4.2	74.6	2.4	71.2			4.6	76.6	4.8	75.7	1.4	32.0	3.3	34.5	1.4	47.0	4.3	81.3	1.6	50.8	1.2	38.8	1.6	36.2	1.5	42.7	2.2	39.6	2.0	48.2	1.8	43.2	2.4	49.5
Mi 15	0.0	74.6	0.0	71.2			0.0	76.6	0.0	75.7	0.0	32.0	0.0	34.5	0.0	47.0	0.0	81.3	0.0	50.8	0.0	38.8	0.2	36.4	0.0	42.7	0.0	39.6	0.0	48.0	0.0	43.2	0.0	49.6
J 16	0.0	74.6	0.0	71.2			0.0	76.6	0.0	75.7	0.0	32.0	0.0	34.5	0.0	47.0	0.0	81.3	0.0	50.8	0.0	38.8	0.4	36.8	0.0	42.7	0.0	39.6	0.0	48.0	0.0	43.2	0.0	49.6
V 17			10.2	81.4	12.0	12.0	9.0	85.6	8.4	84.1	14.4	46.6	5.6	40.1			9.9	91.2	8.6	59.4	3.2	42.0	5.6	42.4	3.8	46.5	6.2	45.8	6.2	54.2	7.1	50.3	7.6	57.2
S 18			8.8	90.2	1.4	13.4	3.8	89.4	4.1	88.1	0.8	47.4	4.6	44.7			3.6	94.7	0.8	60.2	2.0	44.0	1.8	44.2	2.5	49.0	12.4	58.2	3.6	57.8	3.3	53.6	4.3	61.5
D 19			0.6	90.8	0.2	13.6	10.0	99.4	10.4	98.5	0.6	48.0	0.0	44.7			9.1	103.9	1.4	61.6	0.0	44.0	0.0	44.2	0.3	49.3	0.2	58.4	0.6	58.4	0.0	53.6	2.3	63.8
L 20			0.2	91.0	0.0	13.6	0.8	100.2	1.0	99.6	0.8	48.8	0.0	44.7			1.3	105.2	1.0	62.6	0.0	44.0	0.8	45.0	0.8	50.0	0.0	58.4	0.4	58.8	0.8	54.4	0.5	64.3
Ma 21			8.0	99.0	1.4	15.0	18.8	119.0	20.3	119.9	7.2	56.0	0.0	44.7			22.1	127.2	6.6	69.2	0.4	44.4	0.4	45.2	7.1	57.2	0.4	58.8	11.4	70.2	2.0	56.4	6.8	71.1
Mi 22	5.0	79.0	8.2	105.0	2.0	17.0			3.1	122.4	2.0	58.0	0.3	44.2	0.0	46.4	2.3	129.0	3.2	72.2	0.4	44.8	0.2	45.0	0.8	57.4	0.0	58.6	1.4	70.8	0.3	56.1	1.6	72.2
J 23	24.6	101.4	7.2	110.8	5.2	22.2			13.9	144.3	11.0	69.0	2.8	44.7	9.8	52.4	28.2	154.7	14.6	84.8	1.4	43.2	0.4	43.8	3.1	55.9	3.2	60.0	5.6	73.4	2.3	56.4	9.3	79.2
V 24	0.0	95.8	0.6	110.8	2.8	25.0			1.3	138.9	7.0	76.0	1.0	45.0	2.2	51.2	1.5	150.6	2.6	81.0	3.8	45.4	10.8	51.6	2.0	56.1	3.8	62.4	2.8	74.2	10.9	63.5	3.6	79.4
S 25	6.6	101.0	9.8	120.4	8.0	33.0			7.6	145.0	5.6	81.6	6.9	51.6	7.0	57.4	8.4	157.2	6.8	86.2	5.8	51.0	4.2	55.8	7.4	63.2	7.2	69.2	6.6	80.2	12.2	75.4	7.0	85.5
D 26	0.0	96.8	0.0	116.6	0.6	33.0			0.3	142.0	0.6	82.2	0.3	47.5	0.0	55.2	0.0	152.1	0.0	83.8	0.2	50.6	0.2	54.8	0.3	61.5	0.4	68.0	0.4	79.4	0.3	73.9	0.2	83.2
L 27	17.6	104.4	15.4	131.6	0.0	33.6	4.2	99.2	5.6	138.2	0.0	76.0	9.1	56.6	2.4	51.4	5.3	147.6	0.0	75.8	2.0	52.6	0.0	54.6	1.8	62.2	0.0	68.0	2.8	80.6	0.0	73.7	3.1	82.6
Ma 28	0.0	104.4	0.0	129.8	0.0	33.6	0.0	98.2	0.0	137.1	0.0	75.2	0.0	55.6	0.0	51.0	0.0	146.6	0.0	74.8	0.0	52.0	0.2	54.2	0.0	61.7	0.0	67.0	0.2	79.6	0.0	73.2	0.0	81.7
Mi 29	0.0	85.0	0.0	109.6	0.0	33.6	0.0	78.0	0.0	117.1	0.0	72.8	0.0	54.1	0.0	47.0	0.0	125.2	0.0	73.4	0.0	49.8	0.0	53.0	0.0	59.9	0.0	63.8	0.0	73.6	0.0	69.1	0.0	75.3
J 30	0.0	75.0	0.0	93.8	0.0	33.6	0.0	68.4	0.0	106.7	0.0	62.2	0.0	40.4	0.0	37.4	0.0	115.6	0.0	61.6	0.0	40.4	0.4	41.6	0.0	47.0	0.2	50.2	0.0	63.0	0.0	55.1	0.1	63.7
V 31	0.0	71.0	0.0	90.4	0.0	33.6	0.0	64.2	0.0	103.1	0.0	60.6	0.0	40.1	0.0	34.0	0.0	110.7	0.0	58.6	0.0	28.6	0.0	37.2	0.0	39.1	0.0	49.6	0.0	56.8	0.0	49.0	0.0	59.9
Li. mes	118.6		135.8		33.6		112.6		150.9		82.2		61.0		59.8		162.6		86.2		53.2		56.6		65.3		69.8		83.6		75.7		89.0	
Máx. mes	24.6	105.4	20.2	131.6	12.0	45.6	20.2	119.0	23.9	145.0	14.4	82.2	13.7	56.6	9.8	74.7	28.2	157.2	14.6	86.2	11.8	52.6	11.8	55.8										



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OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

SEPTIEMBRE DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorales		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales	
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD			
Propietarios	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
S 1	0.0	70.8	0.0	90.4	0.0	33.6	0.0	64.0	0.0	103.1	0.0	60.6	0.0	40.1	0.0	34.0	0.0	110.5	0.0	58.6	0.0	28.6	0.0	37.2	0.0	39.1	0.0	49.6	0.0	56.6	0.0	49.0	0.0	59.9
D 2	0.0	70.8	0.0	90.4	0.0	33.6	0.0	64.0	0.0	103.1	0.0	60.6	0.0	40.1	0.0	34.0	0.0	110.2	0.0	57.0	0.0	28.6	0.0	37.0	0.0	39.1	0.0	49.6	0.0	56.6	0.0	49.0	0.0	59.7
L 3	0.0	70.8	0.0	90.4	0.0	33.6	0.0	64.0	0.0	103.1	0.0	60.6	0.5	40.6	0.0	34.0	0.0	110.2	0.0	57.0	0.0	28.6	0.4	37.2	0.0	39.1	0.4	50.0	0.0	55.6	0.3	49.3	0.1	59.8
Ma 4	0.0	69.6	0.0	87.0	0.0	33.6	0.0	62.6	0.0	101.8	0.0	60.0	0.0	38.9	0.0	32.4	0.0	109.0	0.0	56.4	0.0	25.8	0.0	36.0	0.0	36.6	0.0	47.0	0.0	54.2	0.0	47.8	0.0	58.1
Mi 5	0.0	68.8	0.0	87.0	0.0	33.6	0.0	61.6	0.0	101.3	0.0	58.2	0.0	38.9	0.0	32.2	0.0	107.4	0.0	55.4	0.0	25.8	0.0	35.8	0.0	36.6	0.0	46.6	0.0	54.2	0.0	47.8	0.0	57.5
J 6	0.0	68.0	0.0	78.8	0.0	33.6	0.0	60.8	0.0	100.3	0.8	59.0	0.0	38.4	0.0	31.4	0.5	107.4	1.0	56.2	0.0	25.4	0.0	35.0	0.0	36.3	0.0	41.2	0.0	51.0	0.0	47.3	0.2	56.1
V 7	3.8	61.8	6.8	78.2	0.8	34.4	3.6	54.8	4.1	94.7	4.4	56.8	0.3	34.6	7.6	30.4	5.8	102.4	1.6	49.8	15.4	35.8	12.2	39.8	11.9	43.2	0.0	36.6	11.6	55.6	13.2	54.4	5.4	54.7
S 8	0.0	57.6	0.0	75.8	0.0	34.4	0.0	50.2	0.0	89.9	0.0	55.4	0.0	31.3	0.0	29.0	0.0	98.0	0.0	48.2	0.0	34.6	0.0	38.2	0.0	41.7	0.0	34.4	0.0	53.6	0.0	52.6	0.0	52.3
D 9	0.0	57.6	0.0	75.8	0.0	34.4	0.0	50.2	0.0	89.9	0.0	55.2	0.0	31.3	0.0	29.0	0.0	98.0	0.0	48.2	0.0	34.6	0.0	38.0	0.0	41.7	0.0	34.4	0.0	53.6	0.0	52.6	0.0	52.3
L 10	0.0	57.6	0.0	75.8	0.0	34.4	0.0	50.2	0.0	89.9	0.0	55.2	0.0	31.3	0.0	29.0	0.0	98.0	0.0	48.2	0.0	34.6	0.0	37.6	0.0	41.7	0.0	34.4	0.0	53.6	0.0	52.6	0.0	52.3
Ma 11	0.0	57.6	0.0	65.6	0.0	22.4	0.0	41.2	0.0	81.5	0.0	40.8	0.0	25.7	0.0	29.0	0.0	88.1	0.0	39.6	0.0	31.4	0.0	32.0	0.0	37.8	0.0	28.2	0.0	47.4	0.0	45.5	0.0	44.6
Mi 12	0.0	57.6	0.0	56.8	0.0	21.0	0.0	37.4	0.0	77.5	0.0	40.0	0.0	21.1	0.0	29.0	0.0	84.6	0.0	38.8	0.0	29.4	0.0	30.2	0.0	35.3	0.0	15.8	0.0	43.8	0.0	42.2	0.0	40.3
J 13	5.0	62.6	1.0	57.2	1.8	22.6	6.4	33.8	4.1	71.1	3.4	42.8	2.3	23.4	1.6	30.6	4.6	80.0	12.2	49.6	3.4	32.8	2.0	32.2	2.3	37.3	1.0	16.6	1.4	44.6	3.8	46.0	3.6	41.6
V 14	0.0	62.6	0.0	57.0	0.0	22.6	0.0	33.0	0.0	70.1	0.0	42.0	0.0	23.4	0.0	30.6	0.0	78.7	0.0	48.6	0.0	32.8	0.2	31.6	0.0	36.6	0.0	16.6	0.0	44.2	0.0	45.2	0.0	41.1
S 15	0.0	62.6	0.0	49.0	0.0	21.2	0.0	14.2	0.0	49.8	0.0	34.8	0.0	23.4	0.0	30.6	0.0	56.6	0.0	42.0	0.0	32.4	0.0	31.2	0.0	29.5	0.0	16.2	0.0	32.8	0.0	43.2	0.0	34.3
D 16	0.0	57.6	0.0	40.8	0.0	19.2	0.0	14.2	0.0	46.7	0.0	32.8	0.0	23.1	0.0	30.6	0.0	54.4	0.0	38.8	0.0	32.0	0.0	31.0	0.0	28.7	0.0	16.2	0.0	31.4	0.0	42.9	0.0	32.7
L 17	10.8	43.8	5.8	39.4	14.0	28.0	5.8	20.0	15.8	38.6	20.4	42.2	8.4	28.7	23.0	43.8	13.7	39.9	25.8	50.0	10.4	41.0	7.0	37.6	27.2	52.8	4.6	17.6	19.4	45.2	15.2	55.9	13.2	36.6
Ma 18	0.0	43.8	0.2	39.0	0.2	25.4	0.2	20.2	0.3	37.6	0.2	35.4	1.5	29.2	0.2	41.8	0.0	38.4	0.0	47.4	0.4	37.6	1.2	28.0	0.3	51.1	7.8	21.6	0.4	42.8	1.0	46.0	1.6	34.6
Mi 19	0.0	37.2	0.0	29.2	0.0	17.4	0.0	20.2	0.0	30.0	0.0	29.8	0.0	22.4	0.0	34.8	0.0	30.0	0.0	40.6	0.0	31.8	0.0	23.8	0.0	43.7	0.0	14.4	0.2	36.4	0.0	33.8	0.0	27.7
J 20	6.2	43.4	1.4	30.6	2.0	18.8	10.0	30.2	7.1	36.8	0.8	30.0	2.0	24.1	1.6	36.4	6.1	36.1	1.4	42.0	2.6	34.2	3.8	27.4	2.3	45.7	11.2	25.2	1.2	37.2	2.3	35.8	4.5	31.9
V 21	0.0	25.8	0.0	15.2	0.0	18.8	0.0	26.0	0.0	31.2	0.0	30.0	0.0	15.0	0.0	34.0	0.0	30.7	0.0	42.0	0.0	32.2	0.0	27.4	0.0	44.0	2.4	27.6	0.2	34.6	0.0	35.8	0.4	29.1
S 22	1.2	27.0	2.4	17.6	7.0	25.8	2.2	28.2	1.0	32.3	2.8	32.8	5.6	20.6	2.0	36.0	0.8	31.5	1.4	43.4	5.0	37.2	4.4	31.6	3.3	47.3	17.4	45.0	2.4	36.8	5.1	40.9	5.5	34.6
D 23	8.4	35.4	0.0	17.6	15.6	41.4	1.6	29.8	14.5	46.7	16.2	49.0	1.8	22.4	14.8	50.8	13.7	45.2	5.4	48.8	1.8	39.0	8.8	40.4	5.8	53.1	3.8	48.8	5.0	41.8	11.4	52.3	7.5	42.1
L 24	4.2	39.6	5.8	23.4	9.6	51.0	8.0	37.8	6.4	53.1	15.2	64.2	6.6	29.0	29.2	80.0	5.6	50.8	4.0	52.8	8.6	47.6	13.2	53.2	23.1	76.2	5.6	54.2	24.6	66.4	17.8	70.1	10.2	52.2
Ma 25	1.0	40.6	0.2	23.6	2.0	53.0	1.4	39.2	1.0	54.1	0.6	64.8	1.3	30.2	0.6	80.6	0.8	51.6	0.6	53.4	1.2	48.8	1.4	54.6	0.5	76.7	1.2	55.4	0.2	69.8	1.5	71.6	1.0	53.3
Mi 26	1.0	41.6	3.2	26.8	7.4	60.4	2.8	42.0	1.3	55.4	4.2	69.0	2.8	33.0	4.0	84.6	1.0	52.6	3.6	57.0	2.2	51.0	2.8	79.5	3.2	58.6	2.2	66.8	3.3	74.9	3.1	56.3		
J 27	7.2	48.8	0.0	26.8	2.4	62.8	9.6	51.6	9.9	65.3	19.2	88.2	0.0	33.0	1.8	86.4	10.4	63.0	44.4	101.4	0.0	51.0	0.0	57.4	2.0	81.6	0.0	58.6	2.6	71.6	0.0	74.9	7.8	64.2
V 28	0.0	48.8	0.0	26.8	10.0	72.8	0.4	52.0	0.3	65.5	5.0	93.2	0.3	32.8	1.0	87.4	0.3	63.2	0.6	102.0	4.6	55.6	7.2	64.2	1.0	82.6	4.6	62.8	2.0	73.6	9.7	84.3	3.2	67.2
S 29	0.0	48.8	0.0	26.8	0.0	72.8	0.0	52.0	0.0	65.5	0.2	93.4	0.0	32.8	0.0	87.4	0.0	63.2	0.2	102.2	0.0	55.6	0.0	64.2	0.0	82.6	0.0	62.8	0.0	73.6	0.0	84.3	0.0	67.3
D 30	8.0	56.8	12.3	39.6	3.6	76.4	13.6	65.6	10.4	76.0	9.0	102.4	0.0	32.8	42.6	130.0	11.4	74.7	1.4	103.6	2.2	57.8	2.2	66.4	31.2	113.8	0.0	62.8	17.6	91.2	2.3	86.6	7.4	74.7
L	1																																	
Li. mes	56.8	70.8	39.6	76.4	65.6	76.0	102.4	33.3	130.0	74.7	103.6	44.4	103.6	57.8	66.8	113.8	63.2	91.2	24.6	91.2	86.9	74.8												
Máx. mes	10.8	12.8	90.4	15.6	13.6	1																												



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES
OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES
RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES
 Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

OCTUBRE DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales			
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P.	Alcaldía/OMPAD	EMAS S.A. E.S.P.	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD			
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25		
L	1	6.6	63.4	0.0	39.6	2.0	78.4	0.0	65.6	4.3	80.3	1.6	103.2	0.8	33.5	2.4	132.4	3.3	77.5	0.0	102.6	0.0	57.8	1.0	67.4	1.3	115.1	0.2	63.0	0.8	92.0	2.0	88.6	1.3	75.8	
Ma	2	0.6	60.2	1.0	33.8	12.6	90.2	0.6	62.6	1.0	77.2	4.6	103.4	1.0	34.3	4.8	129.6	0.8	72.4	7.2	108.2	0.0	42.4	2.4	57.6	1.5	104.7	1.2	64.2	1.4	81.8	5.9	81.3	2.9	73.2	
Mi	3	0.2	60.4	1.2	35.0	0.6	90.8	0.8	63.4	0.3	77.5	0.6	104.0	5.1	39.4	0.6	130.2	0.3	72.6	0.8	109.0	0.8	43.2	1.2	58.8	1.0	105.7	2.4	66.6	0.8	82.6	1.5	82.8	1.4	74.6	
J	4	4.0	64.4	7.6	42.6	7.0	97.8	7.4	70.8	4.8	82.3	10.0	114.0	7.6	47.0	11.0	141.2	5.6	78.2	6.8	115.8	7.4	50.6	7.2	66.0	10.4	116.1	2.4	69.0	8.2	90.8	7.1	89.9	6.7	81.3	
V	5	14.8	79.2	13.6	56.2	28.8	126.6	11.6	82.4	14.2	96.5	17.0	131.0	11.2	58.2	13.0	154.2	18.3	96.5	24.2	140.0	10.4	61.0	14.4	80.4	23.4	139.5	15.6	84.6	11.6	102.4	18.3	108.2	16.2	97.5	
S	6	45.8	125.0	31.8	88.0	10.6	137.2	43.4	125.8	48.3	144.8	34.8	165.8	9.9	68.1	54.2	208.4	45.7	142.2	30.0	170.0	8.6	69.6	10.6	91.0	34.5	174.0	50.8	135.4	41.6	144.0	12.4	120.6	31.6	129.1	
D	7	7.2	132.2	3.8	91.8	5.2	142.4	6.8	132.6	7.9	152.7	5.2	171.0	4.1	72.2	8.0	216.4	8.6	150.9	6.2	176.2	3.4	73.0	7.2	98.2	6.6	180.6	9.4	144.8	5.6	149.6	10.9	131.6	6.7	135.8	
L	8	4.6	131.8	6.2	97.0	6.8	147.4	5.0	131.2	5.8	154.4	4.4	172.0	2.0	71.9	9.8	224.6	3.8	150.1	4.0	168.0	6.8	76.4	10.0	106.2	7.9	186.2	0.0	143.8	5.8	154.0	13.4	141.2	5.0	137.2	
Ma	9	0.0	131.8	0.0	97.0	0.0	147.4	0.0	131.2	0.0	154.4	0.0	172.0	0.0	71.9	0.2	224.8	0.0	150.1	0.0	168.0	0.0	76.4	0.0	106.0	0.0	186.2	0.0	143.8	0.2	154.2	0.0	141.2	0.0	137.2	
Mi	10	0.0	131.8	0.0	97.0	0.0	147.4	0.0	131.2	0.0	154.4	0.0	172.0	0.0	71.9	0.0	224.8	0.0	150.1	0.0	168.0	0.0	76.4	0.0	106.0	0.0	186.2	0.0	143.8	0.0	154.2	0.0	141.2	0.0	137.2	
J	11	0.8	132.6	2.2	99.2	0.0	147.4	0.0	131.2	0.5	155.0	0.8	172.8	1.8	73.7	1.4	226.2			3.4	171.4	2.6	79.0	2.4	108.4	5.1	191.3	0.0	143.8	3.4	157.6	2.3	143.5	1.6	138.8	
V	12	3.6	125.4	5.2	98.6	4.6	138.0	5.0	130.4	4.8	144.0	4.0	166.4	12.2	77.5	5.4	208.6			5.0	150.6	14.8	83.4	15.6	117.0	6.1	170.2	9.4	148.6	5.0	143.2	16.5	144.8	8.2	133.8	
S	13	8.0	133.4	11.2	109.6	11.8	149.6	9.0	139.2	8.9	152.7	7.4	163.6	22.1	98.1	5.8	214.2			13.4	164.0	6.2	89.2	7.2	123.0	6.1	176.0	21.8	162.6	5.6	148.4	7.9	151.6	11.9	144.0	
D	14	6.6	140.0	4.0	113.6	13.8	163.4	2.8	142.0	7.9	160.5	14.6	178.2	6.1	104.2	7.4	221.6			8.6	172.6	4.6	93.8	9.0	132.0	4.8	180.9	17.8	180.4	4.6	152.8	13.5	165.1	9.6	153.7	
L	15	13.0	146.8	9.8	122.0	11.8	173.2	3.4	135.4	14.0	167.4	14.8	192.2	20.1	122.2	20.0	240.0			18.0	189.2	12.0	103.0	14.0	142.2	17.3	195.9	23.0	192.2	16.6	168.2	15.5	178.3	16.0	165.2	
Ma	16	31.2	178.0	106.6	228.6	68.8	242.0	72.0	207.4	46.5	213.9	84.6	276.8	46.0	168.2	90.0	330.0			34.8	224.0	39.2	142.4	60.8	203.0	82.8	278.7	31.0	220.8	94.8	262.8	78.7	257.0	55.8	220.6	
Mi	17	0.2	177.0	0.2	226.4	0.2	235.2	0.2	205.4	0.3	213.1	0.2	274.2	0.8	163.4	0.4	328.4			0.4	223.0	0.4	137.8	1.0	199.6	0.3	275.6	0.0	204.4	0.4	260.8	1.5	253.5	0.5	215.6	
J	18	32.6	201.2	50.2	276.6	32.4	252.0	45.0	248.8	41.4	240.0	40.4	298.4	22.6	184.2	40.8	354.4			26.8	244.4	25.4	161.4	28.0	218.8	30.0	299.7	10.0	210.6	41.8	297.6	32.5	274.5	29.4	237.5	
V	19	24.0	221.0	3.6	274.4	2.4	244.8	3.6	244.8	17.5	251.2	9.4	292.6	7.4	184.9	3.0	328.2			12.4	252.8	5.2	158.0	5.2	210.8	5.3	282.0	14.2	219.2	7.8	280.8	5.5	262.1	9.5	236.9	
S	20	0.0	220.0	0.2	274.4	0.2	243.0	0.2	243.2	0.3	250.5	0.2	292.2	0.3	183.9	0.0	327.6	0.0	109.5	0.4	252.6	0.2	157.0	0.4	209.8	0.3	281.7	0.4	218.4	0.2	280.6	0.5	261.1	0.3	236.1	
D	21	17.2	236.2	64.4	335.6	14.8	250.4	33.4	273.8	30.0	279.2	9.2	297.2	36.3	217.5	21.6	345.2	15.4	123.9	7.2	256.2	36.0	190.8	34.2	241.2	31.2	310.1	11.8	227.0	28.2	306.6	30.7	288.5	23.2	256.3	
L	22	9.2	238.2	16.0	351.6	8.2	256.2	8.2	272.4	8.1	277.4	5.6	283.6	35.3	252.8	19.4	362.8	9.6	123.0	13.0	224.8	18.8	209.6	19.0	260.2	19.6	327.7	30.6	257.6	19.6	323.6	19.1	307.6	18.1	266.5	
Ma	23	5.4	243.6	9.6	361.2	3.6	249.8	8.6	280.6	5.8	283.0	6.0	284.6	4.6	257.1	6.6	368.4	7.6	130.4	3.4	227.6	4.4	209.4	9.2	262.2	10.4	337.1	0.4	253.4	6.6	328.2	14.0	311.9	2.3	428.6	
Mi	24	17.8	261.4	20.4	381.6	12.6	262.4	20.0	300.6	23.1	306.1	21.0	305.4	16.5	273.6	24.6	393.0	28.6	159.0	24.0	251.4	15.4	224.8	16.2	278.4	19.1	356.1	12.0	265.4	18.6	346.8	21.8	333.7	18.6	284.2	
J	25	3.0	256.4	3.8	372.6	3.4	262.2	3.2	290.2	3.3	299.0	4.0	300.4	2.3	275.9	4.4	354.8	4.6	152.2	2.6	252.6	2.2	224.8	3.0	279.2	3.0	327.9	2.4	267.8	3.2	332.4	4.6	336.0	3.1	279.8	
V	26	0.0	249.8	0.0	372.6	0.0	260.2	0.0	290.2	0.0	294.6	0.0	298.8	0.0	275.1	0.0	352.4	0.0	148.9	0.0	252.6	0.0	224.8	0.0	278.2	0.0	326.7	0.0	267.6	0.0	331.6	0.0	334.0	0.0	278.5	
S	27	0.0	249.0	0.0	371.6	0.0	247.6	0.0	289.6	0.0	293.6	0.0	294.2	0.0	274.1	0.0	347.6	0.0	148.1	0.0	245.4	0.0	224.8	0.0	275.8	0.0	325.1	0.0	266.4	0.0	330.2	0.0	328.1	0.0	275.6	
D	28	0.0	249.0	0.0	370.4	0.0	247.0	0.0	288.8	0.0	293.4	0.0	293.6	0.0	269.0	0.0	347.0	0.0	147.8	0.0	244.6	0.0	224.0	0.0	274.6	0.0	324.1	0.0	264.0	0.0	329.4	0.0	326.6	0.0	274.3	
L	29	0.4	245.4	7.4	370.2	1.2	241.2	0.0	281.4	0.5	289.1	0.6	284.2	13.5	274.9	1.2	337.2	0.0	142.3	0.0	237.8	0.0	217.6	3.4	270.8	3.3	317.0	7.2	268.8	2.2	323.4	4.1	323.6	3.7	271.3	
Ma	30	9.4	240.0	10.8	367.4	0.4	212.8	3.0	272.8	10.9	285.8	9.6	276.8	3.3	267.0	20.4	344.6	12.0	136.0	2.2	215.8	3.0	214.2	2.0	258.4	11.7	305.3	2.8	256.0	14.2	326.0	3.3	308.6	6.0	261.1	
Mi	31	4.4	198.6	1.2	336.8	2.0	204.2	1.6	231.0	6.4	243.8	3.4	245.4	2.5	259.6	8.0	298.4	8.6	98.8	0.8	186.6	3.0	208.6	11.6	259.4	5.3	276.1	1.2	206.4	3.8	288.2	14.0	310.1	4.2	233.8	
Li. mes		270.6		392.0		265.8		294.8		316.7		314.0		295.2		384.4		172.8		255.6		235.8		296.2		348.2		279.0		352.6		357.4		293.8		
Máx. mes		45.8	261.4	106.6	381.6	68.8	262.4	72.0	300.6	48.3	306.1	84.6	305.4	46.0	275.9	90.0	393.0	45.7	159.0	34.8	256.2	39.2	224.8	60.8	279.2	82.8	356.1	50.8	268.8	94.8	346.8	78.7	336.0	55.8	428.6	
Li. acum. en el año		1652.0		1694.0		1174.2		1592.4		1778.6		1435.4		1132.8		1658.9		1715.3		1594.2		1003.0		1264.8		1500.7		1123.6		1478.4		1461.5		1424.0		
No. días lluvia año		192	64%	194	64%	183	64%	196	65%	205	67%	201	69%	185	66%	193	64%	202																		



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

NOVIEMBRE DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales		
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P.	Alcaldía/OMPAD	EMAS S.A. E.S.P.	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD		
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	
J 1	0.2	191.6	0.2	333.2	0.8	199.8	0.0	224.2	0.0	236.0	0.4	240.6	0.5	256.1	0.2	290.6	0.2	90.4	0.4	180.8	0.2	205.4	0.8	253.0	0.3	269.8	3.0	200.0	0.2	282.8	0.5	299.7	0.8	227.9	
V 2	4.4	191.4	4.8	331.8	4.8	197.8	3.8	223.0	4.1	234.2	5.2	241.4	8.1	262.2	5.8	286.6	6.0	92.6	7.6	184.4	6.2	204.8	7.8	250.8	5.6	267.5	20.2	220.2	4.8	281.8	8.9	295.2	8.3	231.2	
S 3	5.4	196.8	8.2	340.0	5.8	203.6	6.6	229.6	7.1	241.3	6.2	247.6	9.1	271.3	8.2	294.6	8.0	100.6	6.4	190.8	8.2	213.0	8.8	259.6	7.6	275.1	9.0	229.2	7.0	288.6	10.4	305.6	7.7	238.9	
D 4	11.4	208.2	21.6	361.6	2.4	206.0	19.0	248.6	12.2	253.5	5.2	252.8	5.3	276.6	13.2	307.8	8.2	108.8	6.2	197.0	5.2	218.2	5.2	264.8	23.9	299.0	5.0	234.2	26.2	314.8	6.1	311.7	8.7	247.6	
L 5	4.8	212.2	8.2	367.6	5.2	211.2	5.8	254.4	6.9	259.8	4.2	256.2	2.8	277.6	7.8	314.2	8.4	117.2	4.0	197.6	9.2	224.8	10.6	273.0	7.9	301.8	2.4	236.6	5.0	316.4	13.2	322.6	5.9	252.0	
Ma 6	0.2	208.8	0.0	362.4	0.0	206.6	0.0	249.4	0.0	255.0	0.2	252.4	0.0	265.5	0.0	308.8	0.0	117.2	0.0	192.6	0.0	210.0	0.0	257.4	0.0	295.7	0.0	227.2	0.2	311.6	0.0	306.1	0.0	243.8	
Mi 7	0.0	200.8	0.0	351.2	0.8	195.6	0.0	240.4	0.0	246.1	0.4	245.4	0.0	243.3	0.0	303.0	1.0	118.2	0.0	179.2	0.0	203.8	0.4	250.6	0.0	289.6	0.0	205.4	0.0	306.0	0.3	298.5	0.2	232.1	
J 8	0.0	194.2	0.0	347.2	0.8	182.6	0.0	237.6	0.0	238.5	0.4	231.2	0.0	237.2	0.0	295.6	0.4	118.6	0.0	170.6	0.0	199.2	0.6	242.2	0.0	284.7	0.4	188.0	0.2	301.6	0.5	285.5	0.2	222.7	
V 9	0.0	181.2	0.0	337.4	0.4	171.2	0.0	234.2	0.3	224.8	0.4	216.8	0.5	217.7	0.4	276.0	0.4	119.0	0.0	152.6	0.0	187.2	1.2	229.4	0.8	268.2	0.0	165.0	0.4	285.4	1.0	271.0	0.3	207.0	
S 10	0.0	150.0	0.0	230.8	0.4	102.8	0.0	162.2	0.0	178.3	0.0	132.2	0.0	117.7	0.0	186.0	0.0	119.0	0.0	117.8	0.0	148.0	0.2	168.8	0.5	185.9	0.0	134.0	0.6	191.2	0.5	192.8	0.1	151.3	
D 11	3.8	153.6	0.0	230.6	2.2	104.8	2.2	164.2	1.3	179.3	0.0	132.0	0.0	170.9	0.0	185.6	10.0	129.0	0.0	117.4	0.0	147.6	0.0	167.8	0.0	185.7	0.0	133.0	0.0	190.8	0.3	191.5	1.0	151.8	
L 12	3.0	124.0	12.2	192.6	13.4	85.8	0.0	119.2	2.0	139.9	11.4	103.0	7.9	156.2	1.6	146.4	4.0	133.0	12.0	102.6	17.2	139.4	18.4	158.2	4.6	160.3	5.0	128.0	3.2	152.2	4.1	163.1	8.4	130.8	
Ma 13	6.0	106.0	24.2	213.2	2.0	85.4	1.6	117.2	8.9	131.3	0.4	94.0	13.0	161.8	12.8	156.2	10.0	143.0	0.0	90.2	9.6	143.8	4.6	157.6	9.1	164.1	2.8	116.6	8.8	153.2	6.9	164.6	6.2	127.6	
Mi 14	2.8	108.8	0.4	213.4	0.2	85.4	6.8	123.8	1.3	132.3	2.0	95.8	0.8	162.3	2.0	158.2	1.2	144.2	0.6	90.4	0.0	143.6	0.2	157.4	0.5	164.3	7.6	123.8	0.6	156.6	0.0	164.1	2.2	129.5	
J 15	27.0	118.6	20.2	169.2	15.4	86.0	20.8	111.2	28.4	130.8	36.0	122.6	20.8	148.8	27.8	164.4	31.2	160.0	42.6	125.8	23.0	130.6	21.6	144.8	22.9	156.0	16.2	128.2	20.8	146.2	29.7	163.1	25.1	131.3	
V 16	6.4	115.8	6.6	159.8	1.2	79.0	5.2	108.2	7.1	129.8	4.8	121.8	12.5	124.0	4.8	149.8	12.8	163.2	38.8	151.6	3.4	115.2	5.0	130.8	5.3	141.7	10.2	107.8	4.6	131.2	11.2	155.2	10.1	52.0	
S 17	43.8	154.2	25.6	175.8	14.2	89.6	48.0	147.6	38.3	24.4	140.2	19.2	138.6	35.0	178.2	46.4	202.0	36.4	184.6	13.2	124.0	16.2	137.8	34.6	165.9	12.2	119.6	39.4	164.0	23.6	164.8	26.1	147.2		
D 18	13.4	149.8	4.0	159.4	2.8	79.8	15.6	143.2	14.2	153.4	7.4	126.6	0.0	122.1	5.2	158.8	12.0	185.4	7.6	168.2	2.6	111.2			5.3	152.1		5.0	150.4	5.3	148.3	5.8	134.3		
L 19	0.0	146.8	0.0	155.6	0.0	76.4	0.0	140.0	0.0	150.1	0.2	122.8	0.0	119.8	0.0	154.4	0.2	181.0	0.0	165.6	0.0	109.0			0.0	149.1		0.2	147.4	0.0	143.8	0.0	131.3		
Ma 20	0.0	146.8	0.0	155.6	0.0	76.4	0.0	140.0	0.0	150.1	0.0	122.8	0.0	119.8	0.0	154.4	0.0	181.0	0.0	165.6	0.0	109.0	0.2	118.8	0.0	149.1	0.0	105.2	0.2	147.6	0.0	143.8	0.0	131.3	
Mi 21	6.0	152.8	13.6	169.2	0.6	77.0	18.8	158.8	4.1	154.1	1.8	124.6	2.0	121.8	5.2	159.6	4.0	185.0	5.4	171.0	0.6	109.6	1.8	120.6	5.3	154.4	0.2	105.4	5.6	153.2	2.0	145.8	3.6	134.9	
J 22	0.2	153.0	0.4	169.6	3.4	80.4	0.4	159.2	0.3	154.4	0.2	124.8	1.3	123.1	0.2	159.8	0.0	185.0	0.2	171.2	1.6	111.2	3.6	124.2	0.3	154.7	17.4	122.8	0.4	153.6	4.6	150.4	3.7	138.7	
V 23	2.0	154.6	0.0	162.2	2.8	82.0	0.8	160.0			7.2	131.4	0.0	109.6	1.2	159.8	4.4	189.4	13.6	184.8	0.2	106.4	0.0	120.8	0.3	151.6	0.0	115.6	0.2	151.6	1.3	147.6	2.6	137.6	
S 24	0.0	145.2	0.0	151.4	0.0	81.6	0.0	157.0			0.0	121.8	0.0	106.3	0.0	139.4	0.0	177.4	0.0	182.6	0.0	103.4	0.0	118.8	0.0	140.0	0.0	112.8	0.2	137.6	0.3	144.5	0.0	131.5	
D 25	0.0	140.8	0.0	150.2	0.0	79.6	0.0	155.4			0.0	118.4	0.0	103.8	0.0	131.4	0.0	168.8	0.0	181.8	0.0	100.4	0.4	107.6	0.5	135.0	0.0	111.6	0.4	134.2	0.3	130.8	0.1	127.4	
L 26	0.0	140.6	0.0	150.0	0.0	78.8	0.0	155.4			0.0	118.0	0.0	103.3	0.0	131.2	0.0	168.6	0.0	181.4	0.0	100.2	0.2	107.0	0.0	134.9	0.0	108.6	0.0	134.0	0.0	130.3	0.0	126.6	
Ma 27	0.0	136.2	1.6	146.8	0.0	74.0	0.0	151.6	0.3	132.8	0.0	112.8	2.0	97.2	0.6	126.0	0.0	162.6	0.0	173.8	2.2	96.2	0.8	100.0	1.8	131.1	1.4	89.8	1.0	130.2	1.0	122.4	0.9	119.2	
Mi 28	19.0	149.8	4.8	143.4	22.0	90.2	11.2	156.2	17.8	143.4	25.2	131.8	1.0	89.1	18.4	136.2	31.0	185.6	32.8	200.2	11.8	99.8	19.0	110.2	12.7	136.1	2.8	83.6	8.8	132.0	28.7	140.7	15.8	127.2	
J 29	12.2	150.6	6.0	127.8	11.8	99.6	10.2	147.4	13.7	145.0	19.4	146.0	5.8	89.6	30.6	153.6	19.2	196.6	8.2	202.2	13.4	108.0	29.2	134.2	27.7	140.0	8.2	86.8	17.8	123.6	37.1	171.7	15.1	133.6	
V 30	7.4	153.2	20.2	139.8	11.4	105.8	16.0	157.6	20.8	159.0	11.4	153.2	30.5	117.3	15.6	161.4	12.8	201.0	10.6	208.8	18.0	116.8	31.8	155.4	21.1	153.2	31.4	115.8	13.0	131.6	38.6	197.1	20.5	148.2	
S 1																																			
Li. mes	179.4		182.8		124.8		192.8		189.2		17																								



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES

Contrato Municipio de Manizales/OMPAD - Universidad Nacional de Colombia



REGISTROS DE LLUVIA DIARIA E INDICADORES DE LLUVIA ANTECEDENTE DE 25 DÍAS

DICIEMBRE DE 2012

Estaciones	Alcázares		Aranjuez		Bosques del Norte		Chec Uribe		El Carmen		Emas		Enea		Hospital de Caldas		Ingeominas		La Palma		Niza		Quebrada Olivares-El Popal		Posgrados		Quebrada Manizales-Tesorito		Quebrada San Luis-Ruta 30		Yarumos		Promedio Manizales	
	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CHEC S.A. E.S.P	Alcaldía/OMPAD	EMAS S.A. E.S.P	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	CORPOCALDAS	UN-Manizales	CORPOCALDAS	UN-Manizales	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	Alcaldía/OMPAD	
Día	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25	Li. d.	A25
S 1	8.6	161.6	2.2	142.0	7.4	113.2	8.2	165.8	13.5	172.4	16.2	169.2	3.0	120.3	5.0	166.4	24.0	225.0	28.2	237.0	1.6	118.4	2.4	157.8	2.5	155.7	1.0	116.8	3.4	134.8	3.8	200.9	8.4	156.6
D 2	0.0	161.6	0.2	142.2	0.2	112.6	0.0	165.8	0.0	172.4	0.0	168.8	1.5	121.8	4.6	171.0	0.0	224.0	0.0	237.0	2.6	121.0	12.0	169.4	5.3	161.0	8.4	125.2	2.6	137.4	8.4	209.0	3.4	159.8
L 3	0.0	161.6	0.0	142.2	0.0	111.8	0.0	165.8	0.0	172.2	0.0	168.4	0.0	121.8	0.0	171.0	0.0	223.6	0.0	237.0	0.0	121.0	0.0	168.8	0.0	161.0	22.8	147.6	0.0	137.2	0.0	208.5	3.6	163.2
Ma 4	8.8	170.4	0.0	142.2	4.0	115.4	5.0	170.8	6.1	178.0	0.0	168.0	7.6	129.0	0.0	170.6	1.8	225.0	0.6	237.6	15.2	136.2	28.6	196.2	0.0	160.3	9.6	157.2	0.4	137.2	17.8	225.3	7.6	170.5
Mi 5	7.0	177.4	9.6	151.8	4.2	119.2	10.2	181.0	8.4	186.4	6.8	174.8	3.8	132.8	10.4	181.0	10.2	235.2	4.8	242.4	3.2	139.4	2.4	198.4	17.0	176.8	27.8	185.0	9.2	145.8	7.9	232.7	10.0	180.3
J 6	0.2	173.8	4.6	156.4	0.2	117.2	0.2	179.0	0.5	185.6	0.2	175.0	0.3	133.0	1.0	182.0	0.4	225.6	0.2	242.6	2.6	142.0	12.8	211.2	14.7	191.5	6.2	191.2	2.6	148.4	16.8	249.2	3.6	182.9
V 7	0.0	178.0	0.0	144.2	0.0	103.8	0.0	179.0	0.0	183.6	0.0	163.6	0.0	125.1	0.0	180.4	0.0	221.6	0.0	230.6	0.0	124.8	0.2	193.0	0.0	187.0	0.0	186.2	0.2	145.4	0.0	245.1	0.0	174.5
S 8	0.0	164.8	0.0	120.0	0.0	101.8	0.0	177.4	0.0	174.7	0.0	163.2	0.0	112.2	0.0	167.6	0.0	211.6	0.0	230.6	0.0	115.2	0.2	188.6	0.0	177.8	0.0	183.4	0.0	136.6	0.0	238.3	0.0	168.3
D 9	0.0	162.0	0.0	119.6	0.0	101.6	0.0	170.6	0.0	173.5	0.0	161.2	0.0	111.4	0.0	165.6	0.0	210.4	0.0	230.0	0.0	115.2	0.2	188.6	0.0	177.3	0.0	175.8	0.2	136.2	0.0	238.3	0.0	166.1
L 10	0.0	135.0	0.0	99.4	0.0	86.2	0.0	149.8	0.0	145.0	0.0	125.2	0.0	96.6	0.0	137.8	0.0	179.2	0.0	187.4	0.0	92.2	0.0	167.0	0.0	154.4	0.0	159.6	0.0	115.4	0.0	208.5	0.0	141.1
Ma 11	3.0	131.6	0.0	92.8	1.0	86.0	0.6	145.2	0.5	138.4	0.6	121.0	0.0	78.2	0.0	133.0	4.8	171.2	6.2	154.8	0.0	88.8	0.2	162.2	0.3	149.4	0.0	149.4	0.2	111.0	0.3	197.6	1.2	132.1
Mi 12	0.2	88.0	0.0	67.2	1.0	72.8	0.0	97.2	0.0	100.1	0.0	96.6	0.0	58.9	0.0	98.0	0.2	125.0	0.6	119.0	0.0	75.6	0.4	146.4	0.0	114.8	0.6	137.8	0.0	71.6	0.0	174.0	0.3	106.3
J 13	3.4	78.0	2.2	65.4	4.2	74.2	4.8	86.4	4.3	90.2	6.0	95.2	1.0	60.0	3.8	96.6	3.8	116.8	3.2	114.6	5.4	78.4	4.6	151.0	3.1	112.5	0.4	138.2	1.8	68.4	5.1	173.7	3.3	103.8
V 14	7.8	85.8	24.8	90.2	16.0	90.2	8.2	94.6	35.8	126.0	43.2	138.2	34.0	94.0	34.2	130.8	14.0	130.6	9.6	124.2	26.2	104.6	23.2	174.2	29.2	141.7	18.0	156.2	22.0	90.2	26.4	200.1	23.0	126.8
S 15	4.6	90.4	15.2	105.4	12.6	102.8	24.2	118.8	9.1	135.1	8.0	146.2	18.8	112.8	15.2	146.0	7.2	137.8	5.2	129.4	9.4	114.0	10.8	184.8	14.5	156.2	20.0	176.2	14.0	104.0	10.2	210.3	12.8	139.6
D 16	3.6	88.0	4.0	95.8	2.4	104.6	13.4	113.4	3.8	134.9	2.4	146.8	1.5	112.3	3.0	143.8	2.6	136.4	2.2	126.2	2.8	116.2	3.2	186.2	3.6	154.4	8.2	184.2	3.2	101.6	3.1	211.3	4.1	140.0
L 17	0.0	87.8	0.0	95.4	1.0	102.2	0.2	113.2	0.0	134.6	0.0	146.6	0.0	111.0	0.0	143.6	0.4	136.8	0.0	126.0	0.0	114.6	3.6	186.2	0.0	154.2	9.2	176.0	0.0	101.2	2.8	209.6	1.9	138.2
Ma 18	3.4	89.2	3.2	98.6	3.4	102.8	0.6	113.0	4.3	138.9	13.2	152.6	7.1	118.1	1.6	144.0	0.4	132.8	6.8	119.2	6.2	126.6	4.4	190.6	4.7	158.6	10.6	186.6	1.6	102.6	5.2	213.5	6.0	141.6
Mi 19	1.2	90.4	1.0	99.6	0.8	103.6	0.4	113.4	2.0	141.0	3.6	156.2	0.3	118.4	5.0	149.0	1.4	134.2	1.0	120.2	6.2	120.8	12.8	203.4	4.8	163.5	0.0	186.6	3.0	105.4	9.5	228.8	3.1	144.6
J 20	0.0	90.4	0.0	99.6	0.2	103.8	0.0	113.4	0.0	141.0	0.0	156.2	0.0	118.4	0.0	149.0	0.2	134.4	0.0	120.2	0.0	126.8	0.2	203.2	0.0	162.9	0.0	186.6	0.2	105.2	0.0	225.5	0.0	144.6
V 21	22.4	112.8	0.6	100.2	0.0	103.8	11.0	124.4	5.8	146.8	2.8	159.0	0.3	118.6	4.2	153.2	15.4	149.8	6.0	126.2	1.6	128.4	3.8	206.6	2.5	165.5	0.6	187.2	1.2	106.4	2.8	225.3	4.3	148.9
S 22	0.6	113.4	0.0	98.6	0.0	103.8	0.0	124.4	0.0	146.6	0.0	159.0	0.0	116.6	0.0	152.6	0.2	150.0	0.0	126.2	0.2	126.4	0.0	206.0	0.0	163.7	0.0	185.8	0.2	105.6	0.0	224.3	0.1	148.1
D 23	0.0	94.4	0.0	93.8	0.0	81.8	0.0	113.2	0.0	128.8	0.0	133.8	0.0	115.6	0.0	134.2	0.0	119.0	0.0	93.4	0.0	114.6	0.0	187.0	0.0	151.0	0.0	183.0	0.0	96.8	0.0	195.6	0.0	132.3
L 24	0.0	82.2	0.0	87.8	0.0	70.0	0.0	103.0	0.0	115.1	0.0	114.4	0.0	109.7	0.0	103.6	0.0	99.8	0.0	85.2	0.4	101.6	0.2	158.0	0.0	123.3	0.8	175.6	0.2	79.2	0.3	158.8	0.2	117.4
Ma 25	0.0	74.8	0.0	67.6	0.0	58.6	0.0	87.0	0.0	94.2	0.0	103.0	1.5	80.8	0.0	88.0	0.0	87.0	0.0	74.6	0.6	84.2	0.6	126.8	0.3	102.5	2.2	146.4	0.2	66.4	0.5	120.7	0.6	97.4
Mi 26	0.0	66.2	0.4	65.8	1.2	52.4	0.0	78.8	0.5	81.3	0.8	87.6	0.5	78.2	0.6	83.6	1.2	64.2	4.8	51.2	0.6	83.2	0.8	125.2	0.5	100.5	1.2	146.6	0.4	63.4	0.8	117.6	1.1	90.1
J 27	0.0	66.2	0.0	65.6	0.0	52.2	0.0	78.8	0.0	81.3	0.0	87.6	0.0	76.7	0.0	79.0	0.0	64.2	0.0	51.2	0.0	80.6	0.2	113.4	0.0	95.1	0.0	138.2	0.0	60.8	0.0	109.2	0.0	86.7
V 28	0.0	66.2	0.0	65.6	0.0	52.2	0.0	78.8	0.0	81.3	0.0	87.6	0.0	76.7	0.0	79.0	0.0	64.2	0.0	51.2	0.0	80.6	0.0	113.4	0.0	95.1	0.0	138.2	0.0	60.8	0.0	109.2	0.0	83.2
S 29	0.0	57.4	0.0	65.6	0.0	48.2	0.0	73.8	0.0	75.2	0.0	87.6	0.0	69.1	0.0	79.0	0.0	62.4	0.0	50.6	0.0	65.4	0.0	84.8	0.0	95.1	0.0	105.8	0.0	60.4	0.0	91.5	0.0	75.6
D 30	1.8	52.2	0.0	56.0	0.0	44.0	0.0	63.6	4.3	71.1	0.0	80.8	0.0	65.3	3.0	71.6	1.4	53.6	0.0	45.8	0.0	62.2	2.0	84.4	0.8	78.9	0.0	78.0	3.4	54.6	1.8			