



OPERATIONS & ADMINISTRATION COMMITTEE MEETING

**MONTECITO WATER DISTRICT
583 SAN YSIDRO ROAD**

**Monday June 18, 2018
9:30 A.M.**

AGENDA

1) CALL TO ORDER, DETERMINATION OF COMMITTEE QUORUM

2) PUBLIC FORUM

NOTE: This portion of the agenda may be utilized by any person to address the Operations & Administration Committee on any matter within the jurisdiction of the Committee. No consideration or discussion shall be undertaken by Committee members at this time on any item not appearing on this agenda except as permitted by the Ralph M. Brown Act. Discussion items receiving recommendations by the Committee, and/or items requiring action will be placed on the agenda of a future meeting of the Montecito Water District Board of Directors.

3) ITEMS FOR COMMITTEE CONSIDERATION

- A. Semi-Annual Groundwater Monitoring Program Spring 2018 Update
- B. 2017 Main Break Report
- C. Notice of Intent to Bank Water in the Semitropic Water Storage District Water Banking and Exchange Program in late 2018

4) ADJOURNMENT

Note: This agenda was posted at the Montecito Water District front counter and outside front office at 5:00 p.m. on Friday, June 15, 2018. The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied the benefits of, the District's programs, services or activities because of any disability. If you need special assistance to participate in this meeting, please contact the District Office at 805/969-2271. Notification at least twenty-four (24) hours prior to the meeting will enable the District to make appropriate arrangements.

Materials related to an item on this agenda submitted to the Board's Operations and Administration Committee after distribution of the agenda packet are available for public inspection in the Montecito Water District offices located at 583 San Ysidro Road, Montecito, during normal business hours.

**MONTECITO WATER DISTRICT
MEMORANDUM**

SECTION: 3-A

DATE: MAY 18, 2018

TO: OPERATIONS AND ADMINISTRATION COMMITTEE

FROM: ENGINEERING MANAGER

SUBJECT: GROUNDWATER MONITORING REPORT SPRING 2018 UPDATE

RECOMMENDATION:

For information only.

DISCUSSION:

District Staff conduct a semi-annual survey of groundwater wells within the District service boundary. The survey measures static water elevations in District owned and private groundwater wells and converts this data to groundwater aquifer elevations above mean sea level. This data has been collected by the District to continue its efforts in monitoring the groundwater basin and to ascertain groundwater storage conditions within the four defined groundwater storage units District-wide. The collection of data twice a year reflects groundwater conditions following the rainfall/groundwater recharge season (spring) and the groundwater extraction season (fall). The last groundwater monitoring report was in spring 2017.

The fall 2017 and spring 2018 groundwater well survey successfully recorded groundwater elevations for 62 wells in the Montecito Basin. The data shown in the attached spreadsheet indicates a slight rebound in groundwater elevations across the District but the majority of wells are still well below 1998 wet weather elevations. 53% of the spring 2018 monitored wells showed a decrease in groundwater elevation when compared with spring 2017 elevations.

Background

There are three main storage units in the Montecito Groundwater Basin (known as Storage Units Nos. 1, 2 and 3) and one additional storage unit (Toro Canyon Storage Unit) which lies adjacent to, and is partially separated geologically from, the Carpinteria Groundwater Basin. The three Montecito storage units are divided on the basis of east-west trending faults that act as barriers to down-slope groundwater movement. The northern unit (Storage Unit 1) is bounded on the south by the Arroyo Parida Fault, the central unit (Storage Unit 2) by the Montecito Fault and the southern unit (Storage Unit 3) by the Rincon Creek Fault, which is located under the ocean, over 1000 feet south of

the coastline. Higher water levels and steeper groundwater gradients north of the Arroyo Parida and Montecito Faults confirm the separation of the units. North of the Montecito Fault groundwater levels have historically remained about 150 feet higher than south of the fault.

According to a 1980 study (*Safe Yield of the Montecito Basin and Toro Canyon Area*) prepared by Mike Hoover, the safe yield of the groundwater basins within the Montecito Water District is estimated at 1,650 acre-feet per year. The estimated breakdown of this yield by groundwater storage unit is shown in Table 1.

Table 1 – Annual Safe Yield by Storage Unit

Storage Unit	Safe Yield (AFY)
Unit 1	550
Unit 2	100
Unit 3	700
Toro Canyon	300
Groundwater Basin Safe Yield	1,650

This safe yield of 1,650 AF is considered a long-term, yearly average of what can safely be drawn from the basin without creating an overdraft condition. This safe yield will be revisited as part of the Sustainable Groundwater Management (SGMA) process for the Montecito Basin.

On average, the District pumps between 250 to 600 AF of groundwater per year from the groundwater basin. This groundwater is used to serve both domestic and non-domestic uses for District customers. Groundwater rights have not been established for the basin by agreement or through legal process in Montecito. The amount of water drawn by private wells is not known to the District. There are hundreds of private wells with no metering or reporting requirements in place to mandate that the information be tracked. The District has been able to obtain water level information on a voluntary basis from private wells to keep track of the overall basin water levels.

Storage Unit 1

The results for spring 2018 indicate, on average, groundwater levels recovered 2 to 7 feet since spring 2017 but remain 5 to 20 feet below winter of 1991. Additionally, groundwater levels for this Storage Unit remain 5 to 100 feet below historic wet weather elevations. 14 of the 40 wells in Unit 1 recovered to levels ranging from 2 to 72 feet higher than spring 2017. Conversely, 21 of the 40 wells were at levels ranging from 2 to 31 feet below spring 2017 levels. The remaining wells remained the same as spring 2017.

Storage Unit 2

Storage Unit 2 is a low producing groundwater basin with clayey soils and very little groundwater production. There are only two data points available for analyzing groundwater levels in Storage Unit 2. These data points are not sufficient to establish a

generalized statement about the basin water level. It is noted that both indicate a relatively stable level, when compared to 2017. Both are similar to historic dry and wet weather elevations. The District does not currently have or have plans to install any groundwater wells in this storage unit.

Storage Unit 3

The results for spring 2018 indicate, on average, groundwater levels recovered 2 feet since spring 2017 and are on average 7 feet above historic dry weather elevations. However, groundwater levels for this Storage Unit remain on average 24 feet below historic wet weather elevations. 6 of the 18 wells recovered to levels ranging from 1 to 23 feet higher than spring 2017. Conversely, 10 of the 18 wells were at levels ranging from 2 to 38 feet below spring 2017 levels. The remaining two wells are new to the Monitoring Program and do not have elevations for spring 2017.

The District owns nine wells in Storage Unit 3. Four of these wells are active wells and all of them show groundwater levels well below historic dry and wet weather elevations and also below sea level since 2010. The five inactive District wells are all above sea level and show similar elevations compared to historic dry elevations but below historic wet elevations.

Toro Canyon Storage Unit

There are only two data points available for analyzing water levels in Toro Canyon Storage Unit. The data for these two wells show steadily decreasing groundwater levels since 2009 with a slight recovery in the past two years. There is not enough data to draw general conclusions about the Toro Canyon Storage Unit. District Staff will contact homeowners within the Toro Canyon Storage Unit to request access to additional private wells to expand the analysis under this monitoring program.

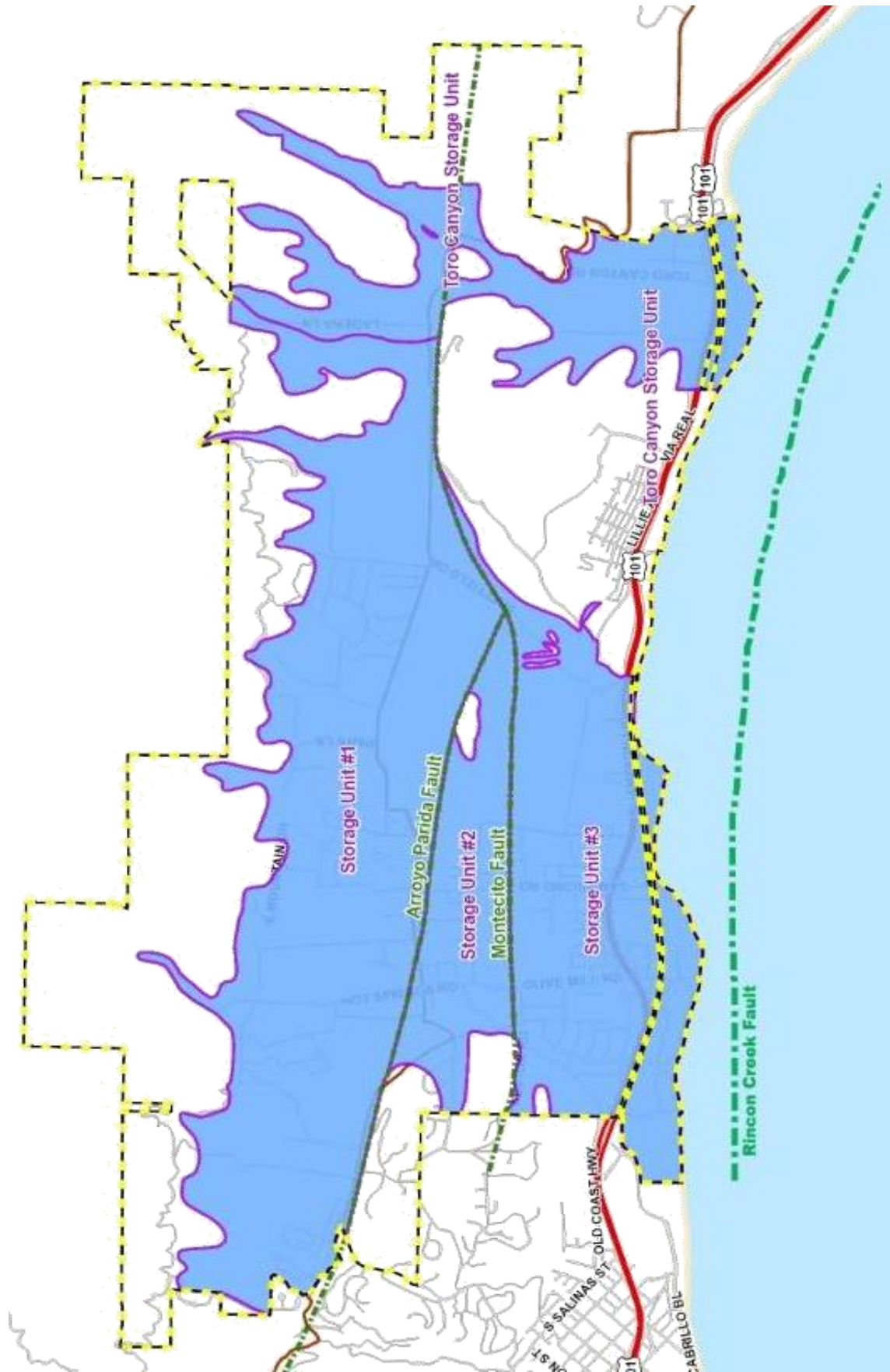
Summary

Based on the limited data gathered by the District, the Montecito groundwater basin remains well below “full” aquifer condition. Storage Unit 1, closest to the mountains, remains 5 to 20 feet below historic dry weather groundwater elevations and over 100 feet below historic wet weather elevations in some areas. Storage Unit 3 closest to the ocean is, on average, 7 feet above historic dry weather elevations but 24 feet below historic wet weather elevations. Groundwater recharge rates of the Montecito Basin are likely limited in recent years due to the ongoing historic drought and a high quantity of private well users in the Basin. Several wet winters would be needed to significantly recharge the basin to a “full” condition.

The District will continue to monitor the potential for seawater intrusion into Storage Unit 3 using District well data and private well data under this monitoring program. Seawater intrusion has not been documented as having occurred in the past but the District will continue this monitoring program to respond to seawater intrusion, if necessary.

Attachment 1 – Groundwater Basin Map

Attachment 2 – Groundwater Well Data 1991 - Present



MONTECITO WATER DISTRICT GROUNDWATER MONITORING PROGRAM

WELL WATER LEVEL DATA

NAME/ADDRESS	MWD	USGS	MWD	WIN	SPR	SPR	FALL	SPR	FALL	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	2 YEAR	1 YEAR	CURRENT	CURRENT	
WELL NAME	WELL #	WELL #	WELL #	1991	1998	2009	2009	2010	2010	2011	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016	2017	2017	2018	CHANGE	CHANGE	VS. WIN 91	VS. SPR 98	
VALLEY CLUB RD (MWD)	Valley Club	16DO1S	1-1	159	221	193	187	171	146	192	186	175	184	165	161	160	160	148	149	194	153	157	156	7	3	-3	-65	
EASTGATE LN/EVR 8	EVR 8	16AO1S	1-3	195	219	210	210	211	210	211	210	209	191	205	202	200	197	169	170	146	212	193	195	25	-17	-1	-24	
BROOKTREE RD			1-4	418	428	NA	417	418	NA	NA	NA	NA	NA	404	405	400	403	394	396	391	405	397	398	2	-7	-20	-30	
EAST MTN DR			1-5	494	510	509	NA	473	496	492	490	485	490	485	487	476	482	473	480	463	484	467	511	31	27	17	1	
PICACHO LN		8M2	1-6		219	NA	NA	NA	264	182	22	4	307	NA	NA	NA	NA	NA	51	60	35	52	NA	-8	NA	-167		
HOT SPRINGS RD		7R1	1-7		257	221	183	207	101	182	198	163	193	150	174	140	170	123	151	111	152	95	121	-31	-31	NA	-136	
HOT SPRINGS RD		7R2	1-8		263	227	192	219	226	183	193	167	192	155	187	147	177	135	165	121	156	115	141	-25	-15	NA	-122	
BOUNDARY DR		9Q1	1-10	218	243	224	223	228	214	219	209	194	198	182	183	175	179	170	173	168	189	190	195	22	6	-22	-48	
BOUNDARY DR		9Q2	1-11	219	241	225	223	229	224	224	223	221	221	219	219	215	214	195	193	189	228	218	215	22	-13	-4	-26	
INVERNESS LN		9P1	1-13	183	240	214	NA	NA	NA	NA	NA	NA	204	195	192	187	183	177	175	171	179	179	179	4	0	-4	-61	
E VALLEY RD		8R2	1-14	DRY	220	215	201	185	205	208	206	NA	200	DRY	177	DRY	DRY	DRY	DRY	180	168	164	240	NA	72	NA	20	
491 LIVE OAKS RD (MWD)	Live Oaks	17BO3S	1-15	122	206	190	176	181	178	177	192	155	164	147	149	DRY	134	124	DRY	52	DRY	130	133	NA	NA	11	-73	
EL BOSQUE RD		8Q2	1-16	136	237	216	173	195	197	170	229	144	NA	164	169	NA	NA	130	139	276	175	119	177	38	2	41	-61	
HODGES WELL (MWD)	Hodges	8PO1S	1-17	117	196	184	171	177	173	175	174	154	166	149	147	132	136	50	126	111	120	109	109	-17	-11	-8	-87	
SAN YSIDRO RD - Upper		8L1	1-18	226	251	NA	247	251	NA	246	248	NA	246	242	244	235	236	230	234	219	222	178	215	-19	-8	-11	-37	
SAN YSIDRO RD - Lower			1-18a																			76	85	85	NA	NA	NA	NA
583 SYR/OFFICE WELL (MWD)	T. Mosby	8PO3S	1-19	118	206	183	167	175	173	110	169	147	163	143	152	122	135	95	121	76	37	27	66	-54	29	-51	-139	
RANDALL RD			1-21	267	291	285	NA	275	283	281	280	271	282	265	281	257	277	253	271	208	279	267	273	2	-6	6	-18	
KNOLLWOOD DR			1-28	456	491	447	403	419	447	NA	436	420	NA	424	NA	426	424	401	402	399	432	421	401	-1	-31	-55	-90	
BROOKTREE RD			1-29	468	463	422	423	423	498	424	437	NA	423	421	431	420	424	413	413	537	415	415	388	-25	-27	-80	-75	
E MOUNTAIN DR			1-30	375	375	383	NA	383	NA	380	380	377	378	377	377	373	376	371	374	372	380	376	378	4	-2	3	3	
MEADOW WOOD LN			1-31	243	280	253	229	227	205	226	238	69	154	221	NA	192	NA	172	224	226	223	111	279	55	56	36	-1	
E MOUNTAIN DR			1-32	566	582	540	567	511	568	548	542	542	571	529	571	565	566	558	543	543	519	500	500	-43	-19	-65	-81	
PARK LN			1-33	305	364	NA	NA	NA	299	NA	NA	317	320	317	317	307	306	299	299	315	299	297	309	10	10	4	-56	
WESTMONT COLLEGE			1-35	475	513	495	384	326	354	465	NA	NA	455	432	409	383	461	400	401	NA	401	397	416	15	15	-59	-96	
CLOYDON CIRCLE			1-36	334	402	399	397	401	400	436	436	401	401	396	392	389	387	381	379	374	357	370	371	-8	14	38	-31	
E VALLEY RD			1-37	135	214	198	182	239	183	188	191	170	179	158	158	138	145	126	133	123	144	122	130	-3	-14	-5	-84	
COYOTE RD			1-38	532	532	501	505	511	513	526	527	525	526	463	521	513	500	500	496	493	501	500	503	7	2	-29	-28	
FUERA LN			1-40	257	367	NA	323	325	325	321	321	317	324	316	303	304	306	253	282	NA	290	289	296	14	6	39	-71	
LILAC DR			1-42	284	297	NA	NA	265	282	NA	NA	274	285	272	271	191	199	231	237	NA	264	231	238	1	-27	-47	-59	
LADERA LN			1-43	723	744	733	729	733	631	731	729	725	725	723	719	719	718	716	723	716	737	724	734	11	-3	11	-10	
TOLLIS AVE			1-45	348	392	337	289	326	332	336	333	335	358	336	309	335	316	203	188	182	214	185	203	15	-11	-145	-189	
COLD SPRINGS RD			1-47		625	642	611	619	612	631	612	609	610	610	611	615	609	609	DRY	633	608	598	601	NA	-8	NA	-24	
ASHLEY ROAD			1-48		499	449	421	425	438	434	425	402	420	381	411	365	388	346	377	340	358	337	344	-33	-14	NA	-155	
EAST VALLEY RANCH 3 (MWD)	EVR 3		1-49		179	178	175	175	171	176	152	164	166	163	163	163	162	161	162	134	181	170	174	12	-7	NA	-5	
EAST VALLEY RANCH 4 (MWD)	EVR 4		1-50		183	179	174	173	NA	177	172	167	169	166	165	166	166	165	DRY	160	182	169	171	NA	-11	NA	-12	
SEAVIEW (MWD)	Seaview	17C05S	1-51			191	179	177	183	183	183	163	173	154	158	135	140	123	129	111	120	112	128	-1	8	NA	NA	
PARK LANE		09D001S	1-52			470	408	NA	433	477	449	429	458	438	345	348	407	356	391	367	437	414	471	80	34	NA	NA	
LAS FUENTES (MWD)	Las Fuentes		1-53										189	196	182	183	177	177	170	171	160	214	195	27	-16	NA	NA	
EAST VALLEY RANCH 6 (MWD)	EVR 6		1-54										171	168	168	167	167	165	166	171	185	171	173	7	-12	NA	NA	
STORAGE UNIT 1 AVERAGES																							7	1	-18	-58		
CAMINO VIEJO RD		17E3	2-2	281	291	297	291	287	296	294	295	294	293	273	290	292	292	288	287	289	288	287	286	-1	-2	4	-5	
CAMINO VIEJO RD		17E4	2-3	286	294	299	296	299	301	293	298	297	300	290	296	291	294	291	289	288	288	283	284	-5	-4	-2	-10	
STORAGE UNIT 2 AVERAGES																							-3	-3	1	-7		
LAS ENTRADAS 2 (MWD)	LE II	16NO2S	3-2	-16	64	12	49	53	50	51	50	50	51	45	28	34	38	24	30	21	53	50	42	11	-12	57	-22	
S B CEMETERY		13R1	3-5	0	10	8	NA	NA	NA	NA	NA	10	9	8	8	6	5	3	3	1	1	2	4	1	3	4	-6	
BILTMORE HOTEL		19H3	3-7	-5	NA	NA	1	1	1	-28	28	1	-4	1	0	1	0	-2	-1	0	1	0	-6	-6	-7	-1	NA	
NEAL WELL (MWD)	Neal	17NO1S	3-8	-11	40	30	29	32	61	37	NA	32	31	28	24	20	18	8	9	0	5	-1	0	-9	-5	11	-41	
LAGUNA BLANCA SCH		17L1	3-9	3	39	15	16	18	11	8	8	10	11	5	5	2	0	1	1	-1	12	1	2	1	-10	-1	-37	
LE1-PADEN WELL 2 (MWD)	Paden 2		3-12a									8	6	-33	-42	-49	-58	-77	-55	-81	-96	-62	-32	23	64	NA	NA	
LOUREYRO RD		16N1	3-15	-20	13	-7	9	NA	-3	5	11	5	7	Dry	-11	Dry	-11	-11	DRY	51	-10	-14	-12	NA	-2	8	-24	
MIDDLE RD			3-16	25	75	59	59	67	67	163	74	71	72	65	58	-9	48	41	40	34	32	37	38	-1	6	13	-37	

MONTECITO WATER DISTRICT GROUNDWATER MONITORING PROGRAM

WELL WATER LEVEL DATA

NAME/ADDRESS	MWD	USGS	MWD	WIN	SPR	SPR	FALL	SPR	FALL	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	FALL	SPR	2 YEAR	1 YEAR	CURRENT	CURRENT		
	WELL NAME	WELL #	WELL #	1991	1998	2009	2009	2010	2010	2011	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016	2017	2017	2018	CHANGE	CHANGE	VS. WIN 91	VS. SPR 98		
GLENVIEW RD			3-17	183	194	199	NA	283	249	NA	278	NA	242	198	199	196	195	195	193	187	191	190	190	-3	-1	7	-4		
SPRING RD			3-19	3	5	NA	3	3	3	4	4	5	3	3	2	3	3	2	2	3	2	1	-1	-2	-2	-4			
MONTECITO DEL MAR			3-20	6	15	11	7	11	11	14	13	12	7	10	8	7	5	4	4	3	7	6	5	0	-3	-1	-10		
AMAPOLA (MWD)	Amapola	17K01S	3-22	0	36	10	10	16	12	19	10	7	7	-7	-13	-19	-20	28	-20	-29	-24	-26	-19	1	5	-19	-54		
MORGAN (MWD)	Morgan	16P06S	3-23			40	52	59	59	58	51	50		44	50	34	38	25	31	21	53	50	42	11	-12	NA	NA		
UNDERWOOD (MWD)	Underwood	17A02S	3-24			7	19	NA	4	7	5	2	4	1	1	1	21	-1	30	0	21	21	3	-27	-18	NA	NA		
ENNISBROOK 2 (MWD)	Ennisbrook 2	17J01S	3-25			4	4	33	-24	-38	1	7	6	-43	-47	-22	-26	-40	-29	-37	-28	-43	-13	16	15	NA	NA		
ENNISBROOK 5 (MWD)	Ennisbrook 5		3-26			4	4	33	-24	-38	1	7	6	-43	-47	-22	-26	-40	-29	-37	-28	-47	-24	5	4	NA	NA		
BUTTERFLY LANE			27-Mar																				1	NA	NA	NA	NA		
POSILIPO LN			28-Mar																				3	1	2	NA	-1	NA	NA
STORAGE UNIT 3 AVERAGES																							2	1	7	-24			
TORO CYN RD			4-4	350	340	244	303	241	268	334	326	287	338	303	244	276	244	281	289	204	374	226	308	19	-66	-42	-32		
368 LAMBERT RD (EDGEWOOD MWD)	Edgewood	23C4	4-6			49	50	48	49	50	48	46	46	42	43	37	27	35	39	35	35	35	37	-2	2	NA	NA		
STORAGE UNIT 4 AVERAGES																							9	-32	NA	NA			

**MONTECITO WATER DISTRICT
MEMORANDUM**

SECTION: 3-B

DATE: JUNE 18, 2018

TO: OPERATIONS AND ADMINISTRATIVE COMMITTEE

FROM: ENGINEERING MANAGER

SUBJECT: 2017 WATER MAIN BREAK REPORT

RECOMMENDATION:

For information only.

DISCUSSION:

District staff respond to water main breaks throughout the year. An annual review of these breaks, their locations, type of breaks, age of pipe, and date of occurrence are beneficial in understanding the causes of main breaks in the District. Table 1 lists the number of water main breaks recorded in 2017. 2-inch and smaller service pipes are not included as main breaks.

Table 1 - 2017-18 Water Main Break Report

#	DATE	Add.	Street	Material	Diameter	Year	Type
1	01/01/17	2500	East Valley Road	CIP	10	1926	round
2	01/03/17	2899	Hidden Valley Ln	STL	12	1966	pinhole (on weld)
3	01/07/17	1415	School House Road	CIP	6	1923	round
4	01/26/16	2511	Olive Street	AC	6	1954	split
5	03/02/17	670	Lilac Drive	CIP	6	1927	round
6	03/04/17	1586	San Leandro Lane	STL	6	1923	pinholes
7	03/04/17	1579	San Leandro Lane	STL	6	1923	pinholes
8	04/05/17	2747	Macadamia Lane	CIP	6	1961	lead packing leak
9	05/17/17	2710	Sycamore Canyon Road	CIP	8	1923	split
10	05/23/17	351	Ridgecrest Lane	C900	4	1971	split
11	07/10/17	345	Ridgecrest Lane	C900	4	1971	split
12	07/21/17	583	San Ysidro Road	CIP	12	1964	joint failure
13	11/13/17	2536	Banner Avenue	AC	4	1954	round break
14	11/28/17		Monte Cristo at Channel Dr	CIP	6	1923	split
15	11/28/17	1499	Edgecliff Lane	CIP	4	1950	split
16	11/28/17	1399	School House Road	CIP	6	1923	round
17	12/13/17	1520	Las Tunas Road	CIP	6	1923	split
18	12/20/17	2440	Sycamore Canyon Road	CIP	8	1923	round
19	12/22/17	512	Santa Angela Lane	CIP	6	1951	round
20	12/27/17	895	Buena Vista Avenue	CIP	8	1924	round

The figure below shows the historical main break trend since 1981. The annual number of main breaks varies between 5 and 37 but the trend remains steady at about 17 main breaks per year. The quantity of main breaks over the past 5 years has increased above the average of 17. This is likely attributed to the increased average age of District water mains and large amount of 1920's cast iron mains. Eleven of the 20 main breaks in CY2017 occurred on 1920's water mains. These water mains remain a high priority for replacement.

Figure 1 – Historical Main Break Trend

