

# 2016

## ANNUAL REPORT OF OPERATIONS



**LAWC**  
LINCOLN AVENUE WATER COMPANY  
ALTADENA, CA

## TABLE OF CONTENTS

<i>Letter from General Manager</i> .....	1
<i>Fair Oaks Pipeline Project</i> .....	2
<i>Fair Oaks Pipeline Project Continued</i> .....	3
<i>Glenrose Reservoir Valve Replacement</i> .....	4
<i>Glenrose Reservoir Valve Replacement Continued</i> .....	5
<i>Making Water Conservation a Way of Life</i> .....	6
<i>Making Water Conservation a Way of Life</i> .....	7
<i>Landscape Design &amp; Maintenance</i> .....	8
<i>Well 6 Construction In Progress</i> .....	9
<i>Hydrants, Water Meters and Service Lines</i> .....	10
<i>Fire Hydrant Repair Training</i> .....	11
<i>First Aid, CPR &amp; AED Training</i> .....	12
<i>Water Sales and Production for 2016</i> .....	13
<i>2016 Water Production by Source</i> .....	14
<i>Energy Cost by Pumping Station and Wells (2012–2016)</i> .....	15
<i>Annual Production (2007–2016)</i> .....	16
<i>Annual Production by Source (2007–2016)</i> .....	17
<i>Total Annual Production (2007–2016)</i> .....	17
<i>Annual Water Sales (2007–2016)</i> .....	18
<i>Meters and Service Connections</i> .....	19
<i>Number of Meters by Size</i> .....	19
<i>Well Production Capacity</i> .....	20
<i>Distribution Lines</i> .....	20
<i>Annual Canyon Water Basin Recharge</i> .....	21
<i>Board of Directors</i> .....	22
<i>Office Staff</i> .....	23
<i>Field Staff</i> .....	24

# Lincoln Avenue Water Company

March 31, 2017

John Clairday, President  
Board of Directors  
Lincoln Avenue Water Company  
564 W Harriet Street  
Altadena, CA 91001



Dear Board of Directors:

On behalf of the Staff and Management of Lincoln Avenue Water Company I am pleased to present the Annual Report of Operations.

The recent rains brought some relief to our region as we continued to work ourselves out from under the unprecedented drought. As our local canyon watershed continues to replenish itself our groundwater level remains lower than normal. We can only hope that the above average rainfall continues into the next rain season and allows our groundwater levels to fully recover.

As I reported last year, the reduction in water sales brought on by the mandatory conservation effort continues to impact operating revenue. Our annual water sales has reached a 10 year low with sales off 40 % from this period 10 years ago. Our new mode of operation **“Making Water Conservation a Way of Life”** will require us to do more with less.

In order to maintain the health of the company and to assure that its infrastructure operates adequately, it is necessary to adjust water rates as required. The Board recently adopted a moderate rate increase that will take effect in May of this year.

Despite all of the challenges we face, the company was still able to complete major accomplishments during this past year:

- Completion of a major pipeline project on Fair Oaks Avenue.
- Replacement of the 125 year old isolation valves at our Glenrose Reservoir site.
- Continued maintenance of our distribution system which includes the replacement and upgrade of aged fire hydrant, customer service lines, water meters, isolation valves, etc...

And finally, following two years of construction I am pleased to announce the near completion of our new groundwater production well #6 that is scheduled to go online this year. The well will increase the company's ability to use its groundwater resources while supporting NASA/JPL's groundwater cleanup efforts. Construction of the well has been the latest accomplishment in a long partnership between Lincoln Avenue and NASA/JPL.

While we welcome the successful completion of the operating year we remain focused on the needs of the company and the community that we serve. The professional staff at Lincoln Avenue remains committed to providing the highest quality and most reliable water service to customers at the most economically feasible cost.

Sincerely,  
Lincoln Avenue Water Company

A handwritten signature in black ink, appearing to read 'R. Hayward', written over a light blue circular stamp.

Robert J. Hayward  
General Manager



# FAIR OAKS PIPELINE PROJECT



Trenching and installation begins at E. Calaveras St.



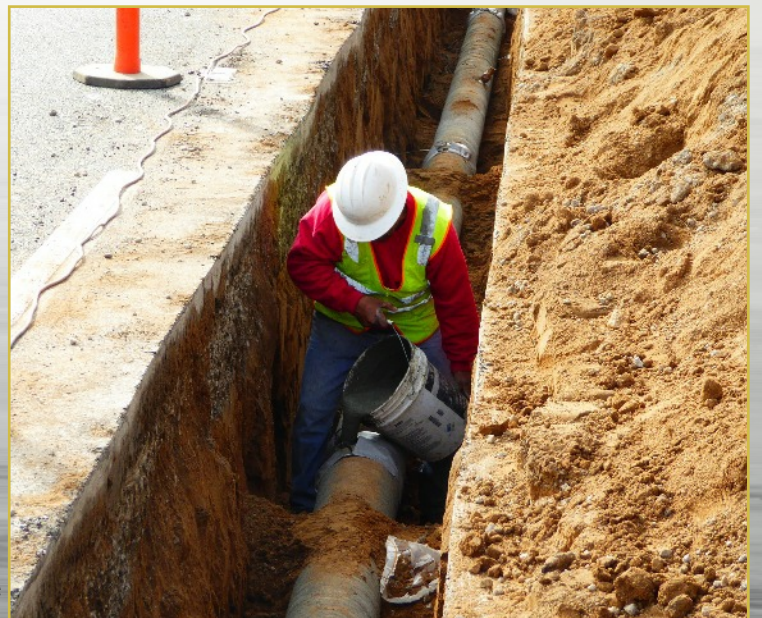
Sections of pipe welded together

Pipeline replacement continues to be a Capital Improvement priority. This Fair Oaks Pipeline Projects adds 1,700 linear feet of new 8-inch steel pipe to our distribution system.

This section of pipe from Calaveras Street to Figueroa Street, replaced an 80 year old 4-inch pipe and not only improves water service to this area but increases fire protection with the addition of 3 new fire hydrants. The completion of this project represents the replacement of the entire 1.8 mile long Fair Oaks Avenue corridor.



A joint is sealed with concrete





# FAIR OAKS PIPELINE PROJECT



One of the many challenges with any pipeline replacement project is traffic control. Working in a busy street such as Fair Oaks Avenue magnifies the importance of safety. Following proper safety procedures not only safeguards our crew but also protects the surrounding public.

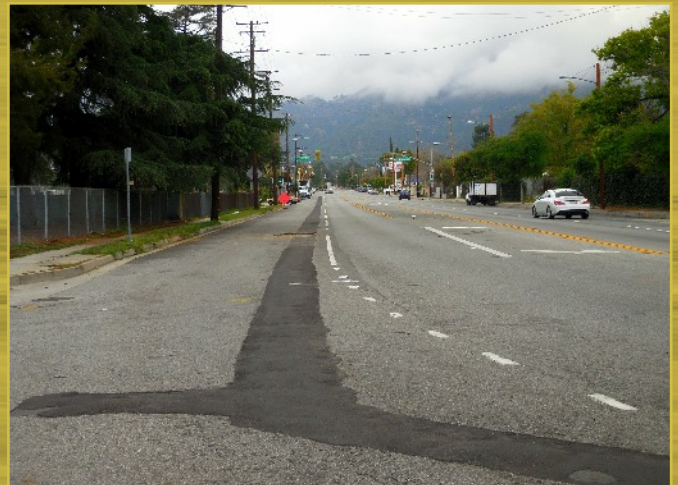
An isolation valve is installed



Working in the middle of Fair Oaks Ave



Looking North on Fair Oaks Ave from Figueroa





# GLENROSE RESERVOIR VALVE REPLACEMENT

THE TWO RESERVOIRS AT OUR GLENROSE RESERVOIR SITE, ORIGINALLY BUILT IN 1891 HAS A COMBINED STORAGE CAPACITY OF 4.5 MILLION GALLONS OF WATER.

DURING AN ANNUAL INSPECTION IT WAS DETERMINED THAT THE 125 YEAR OLD 16-INCH EFFLUENT PIPE AND VALVE ASSEMBLY AT BOTH RESERVOIRS WERE IN NEED OF REPLACEMENT.



Excavation begins



Shoring is delivered and ready to be utilized



Shoring is lowered into the excavated area

THIS PROJECT WAS A MAJOR UNDERTAKING. THE GLENROSE RESERVOIRS PROVIDE WATER SERVICE TO THE LARGEST ZONE IN OUR SERVICE AREA. ISOLATING EACH RESERVOIR TO COMPLETE THIS WORK TOOK CAREFUL PLANNING.

THE VALVES ARE LOCATED 15 FEET BELOW THE SURFACE AND REQUIRED PROPER SHORING DURING CONSTRUCTION TO PREVENT THE TRENCH FROM COLLAPSING. IT WAS ALSO IMPORTANT TO PROVIDE PROPER VENTILATION TO THIS CONFINED AREA.



Deteriorated pipe and valves are removed





# GLENROSE RESERVOIR VALVE REPLACEMENT

THIS PROJECT WAS SUCCESSFULLY COMPLETED WITHOUT DISRUPTING SERVICE TO OVER 2,200 CUSTOMERS IN THIS SECTION OF OUR DISTRICT. THIS WAS ACCOMPLISHED BY USING A PROCESS CALLED LINE STOPPING.



A worker descends into the deep pit



The valve is ready to be lowered

ONCE A SPECIAL FLANGE, VALVE AND ACTUATOR ARE INSTALLED THE LINE STOPPING PLUG IS ABLE TO WITHSTAND VERY HIGH DIFFERENTIAL PRESSURES AND PROVIDE RELIABLE AND EFFECTIVE ISOLATION OF THE LINE WHILE THE MODIFICATIONS OR REPAIRS ARE MADE. BY UTILIZING THIS TECHNOLOGY WE AVOIDED THE TIME AND COST ASSOCIATED WITH HAVING TO DRAIN THE RESERVOIRS TO PERFORM THIS WORK.



The valve is installed



The Line Stop plug is removed



The excavations are filled and compacted



## Making Water Conservation a Way of Life



Founded in 1883 Lincoln Avenue Water Company is one of the original members of the West Altadena community. As one of its founding families it is important that Lincoln Avenue keep its facilities well maintained and as neighborhood friendly as possible. Over the years we have transitioned from landscaping that required regular watering to more water efficient (California Friendly) plants that require significantly less water while enhancing the appearance of our facilities.



One of these locations, Olive Avenue Main Plant is home to our IX-GAC Groundwater Treatment Facility. The original landscaping consisted of a simple lawn and cinder block wall. The lawn was removed to make way for water efficient plants such as; ligustrum, salvia, cactus, cordyline and grevillea. Topped off with shredded bark to conserve moisture. This California Friendly landscape design is a positive addition to the surrounding community.





# Making Water Conservation a Way of Life



Glenrose Reservoir is another facility located within the heart of our community. The previous landscape consisted of a thick foliage along the perimeter of the property. These bushes blocked the industrial look of the facility from the street, however we felt an upgrade to landscape that is functional and appealing was well overdue. The aged foliage was removed to make way for new ficus trees. Once fully grown these trees will enhance the look of this facility.





# LANDSCAPE DESIGN & MAINTENANCE



At Lincoln Avenue we take pride in our facilities. Our partnership with Gutierrez Landscaping has resulted in the complete overhaul of our facility landscaping. We are pleased to demonstrate to our neighbors that you can conserve water while maintaining attractive landscaping.

**Gutierrez Landscaping**

**Olive Avenue Main Plant**



**Wapello Reservoir**



**Lincoln Avenue Office Facility**





## *Well No. 6 - Construction in Progress*

2016 was full of construction milestones for our new Well No. 6. During the development and testing phase we were able to put 15 million gallons of production water to beneficial use that would have otherwise been flushed to waste. The temporary treatment system used during development was removed to make way for the pump and motor installation along with the well housing and pump line. The sound barrier walls were taken down in order to complete grading and other above ground improvements. Due to rain delays and rigorous permitting requirements construction activities continue into 2017.



The temporary treatment system is removed



Asphalt is removed to begin grading



The effluent pipe and pump line are installed



The sound wall structure is dismantled.



The well housing is delivered and assembled



Well 6 Motor



## HYDRANTS, WATER METERS AND SERVICE LINES

WHILE MAJOR PROJECTS ARE IMPORTANT TO KEEPING OUR DISTRIBUTION SYSTEM UP TO DATE, ONGOING MAINTENANCE IS JUST AS IMPORTANT. OUR FIELD DEPARTMENT IS TASKED WITH MAINTAINING THE ENTIRE SYSTEM FROM WELL PRODUCTION TO DISTRIBUTION MAINS ALL THE WAY TO THE CUSTOMER WATER METER. THE MAINTENANCE AND UPGRADE OF WATER SERVICE LINES, METERS, VALVES AND FIRE HYDRANTS ARE AN EVERYDAY PRACTICE FOR OUR WATER SYSTEM OPERATORS.



A NEW HYDRANT IS INSTALLED ON CANON BLVD



A LEAKING SERVICE LINE IS REPAIRED



THE ROAD IS CUT AND EXCAVATED TO REPAIR A LEAKING SERVICE LINE



NEW HYDRANT IS INSTALLATION ON W MARIPOSA



A SERVICE LINE IS REPLACED ON W HARRIET ST



A NEW METER IS INSTALLED ON DEVIRIAN





## FIRE HYDRANT REPAIR TRAINING



THE PROPER OPERATION OF A FIRE HYDRANT IS VITAL DURING EMERGENCIES TO PROTECT BOTH LIVES AND PROPERTY.

DURING THIS LAST YEAR ONE OF OUR TRAINING SESSIONS FOCUSED ON FIRE HYDRANT MAINTENANCE AND REPAIR.



The training session included the importance of regular maintenance as well as repairs that can be completed in the field.

These practices are important because they minimize hydrant replacement costs. This exercise also extends the life of the older hydrants.

It is critical that a fire hydrant be available and ready to use when needed.



# FIRST AID, CPR & AED TRAINING

Safety in the workplace is everyone's responsibility. As part of our ongoing safety program it is important that we provide our staff with the basic training of being a first responder in the event of medical emergencies. It is proven that CPR (Cardiopulmonary Resuscitation) and AED (automated external defibrillator) training saves lives. If someone knows CPR and how to operate an AED when a person goes into cardiac arrest or stops breathing, they have a chance of saving that person's life. Quick response and action could significantly reduce the risk of a person suffering damage to vital organs since CPR helps keep the body oxygenated until emergency help arrives.





**WATER SALES AND PRODUCTION FOR 2016  
IN ACRE FEET**

<b>MONTH</b>	<b>IMPORTED WATER PURCHASE</b>	<b>WELL PRODUCTION</b>	<b>LOCAL SURFACE WATER</b>	<b>TOTAL PRODUCTION</b>	<b>SALES</b>	<b>RAIN FALL (INCHES)</b>
January	7.99	81.66	0	89.65	94.32	3.90
February	0.02	124.03	0	124.05	105.17	2.09
March	0	108.82	0	108.82	91.09	3.01
April	0.05	136.13	0	136.18	110.16	1.30
May	0.05	144.96	0	145.01	123.04	0.69
June	31.24	148.31	0	179.55	155.50	0.33
July	65.77	154.45	0	220.22	165.79	0
August	46.74	171.18	0	217.92	206.35	0
September	48.28	144.28	0	192.56	189.76	0.14
October	33.31	148.67	0	181.98	173.41	0.60
November	13.68	123.55	0	137.23	158.58	1.43
December	2.13	120.68	0	122.81	123.08	5.11
<b>TOTAL</b>	<b>249.26</b>	<b>1606.72</b>	<b>0</b>	<b>1855.98</b>	<b>1696.25</b>	<b>18.60</b>

**PUMPED FROM WELLS**

WELL #3	597.73
WELL #5	<u>1008.99</u>
TOTAL	<u>1606.72</u>

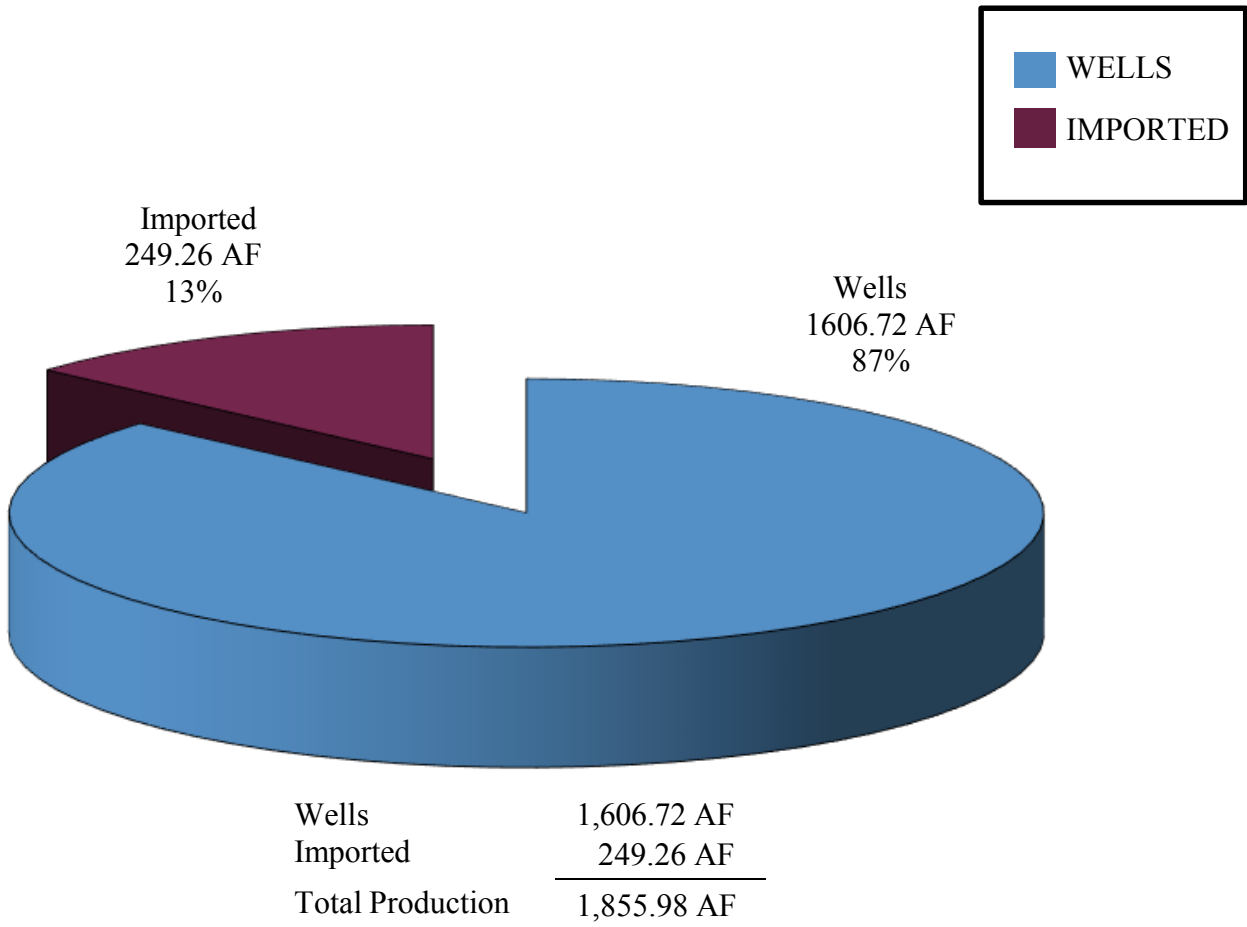
Total Production	1855.98
Total Sales	<u>-1696.25</u>
Subtotal	159.73
Treatment Plant Operation & Water Quality Control	<u>-37.00</u>
Non-Revenue Production	122.73 or 7%

**Non-Revenue Production** is water used for routine water quality sampling, evaporation from reservoirs, irrigating at Company sites, water quality flushing, pipeline ditch compaction, fire fighting, fire training, leaks on mains, etc.

The Company's well production consists of 567 acre feet annual decreed right plus spread credit from mountain run-off, and available leased groundwater rights.



**2016 WATER PRODUCTION  
BY SOURCE**





**ENERGY COST BY PUMPING STATION AND WELLS**  
**2012 - 2016**

PUMPING STATIONS & WELLS	2016 ANNUAL	2015 ANNUAL	2014 ANNUAL	2013 ANNUAL	2012 ANNUAL
	ENERGY COST	ENERGY COST	ENERGY COST	ENERGY COST	ENERGY COST
	COST/AF	COST/AF	COST/AF	COST/AF	COST/AF
Well #3 (Pump to Main Plant)	43,575.63 72.90	\$46,657.37 \$77.89	\$65,176.53 \$69.03	\$54,368.65 \$54.92	\$34,069.28 \$49.28
Well #5 (Pump to Main Plant)	65,635.50 65.05	70,407.46 70.52	78,535.78 68.25	67,918.96 53.42	61,223.37 41.95
Main Plant (Pump to Glenrose Resv.)	111,084.41 58.05	108,920.30 55.52	138,605.32 57.45	130,538.65 52.49	94,853.41 43.78
Glenrose Reservoir (Pump to Wapello Resv.)	38,950.26 38.88	37,992.59 40.20	47,151.47 39.72	53,564.53 39.63	42,982.41 39.87
Wapello Reservoir (Pump to Ware & La Vina & Swigart Resv.)	40,686.37 54.70	40,013.54 53.71	51,110.93 48.77	53,439.08 44.98	44,314.94 50.95
Ware Reservoir (Pump to Coulter Resv.)	11,356.20 54.46	11,267.75 53.58	21,049.34 88.52 (New TOU Rate)	22,370.95 66.03	20,205.52 63.48
TOTAL ANNUAL ENERGY COST	\$311,288.37	\$315,259.01	\$401,629.37	\$382,200.82	\$297,648.93



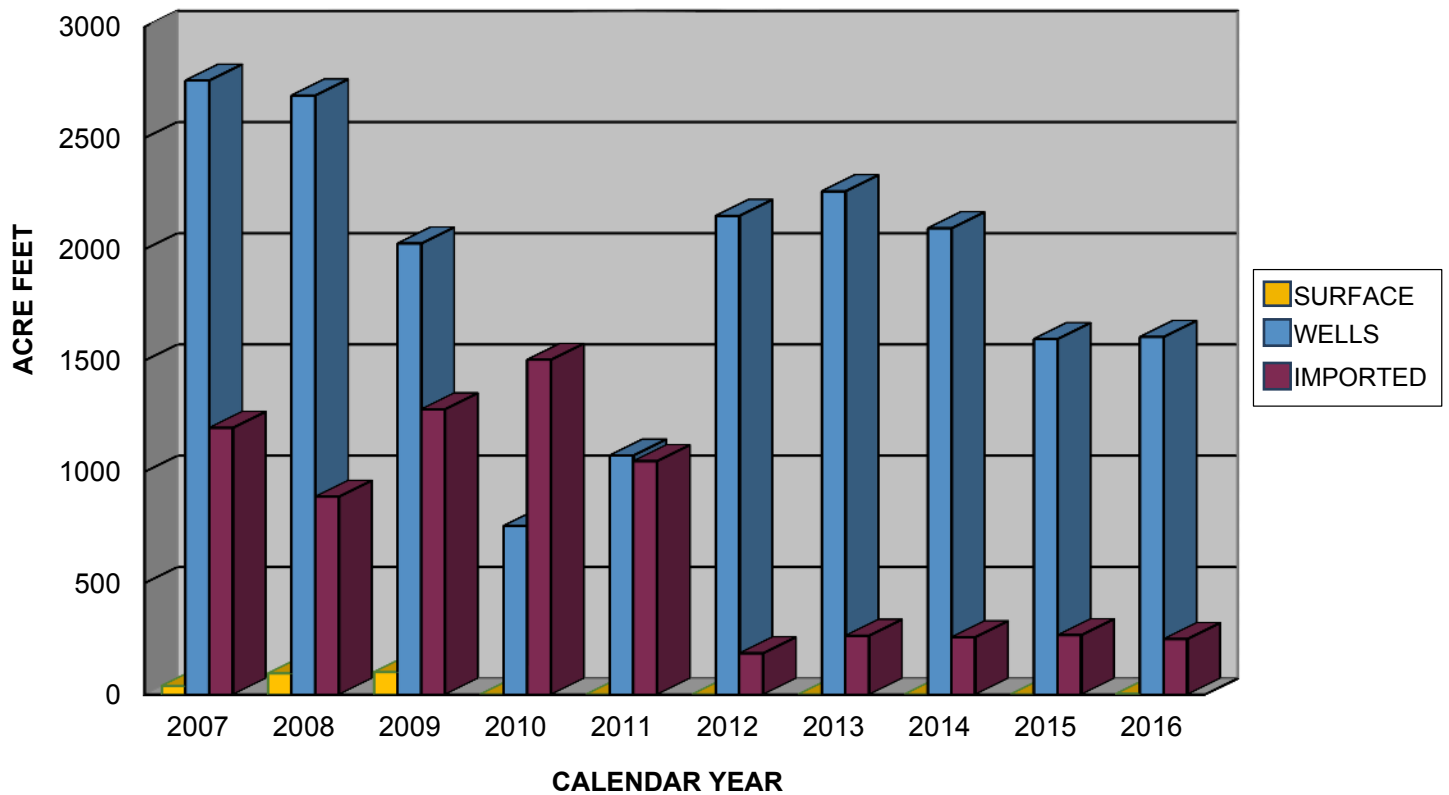
# ANNUAL PRODUCTION IN ACRE FEET

2007 - 2016

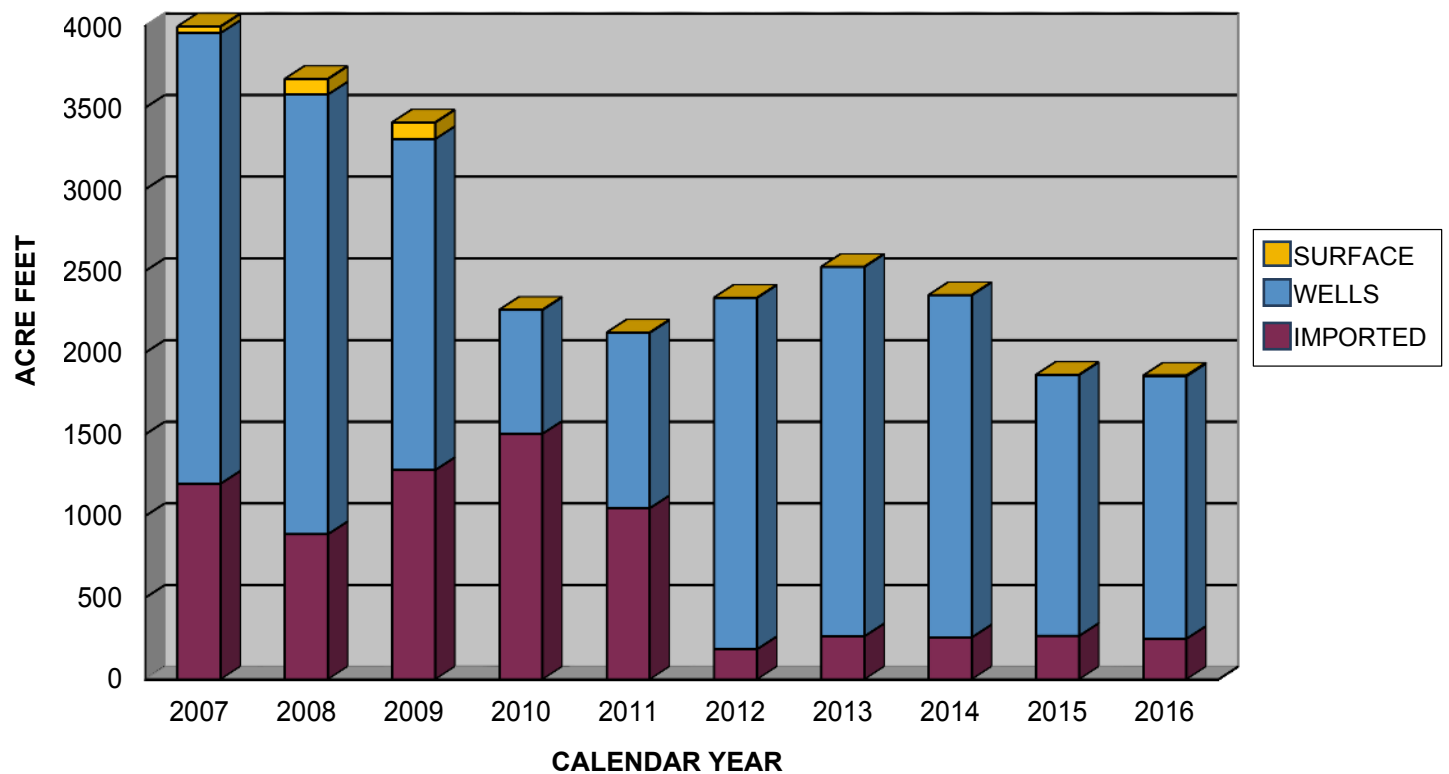
CALENDAR YEAR	WELL #3	WELL #5	SURFACE	IMPORTED	TOTAL PRODUCTION	LESS LEASE WATER DELIVERY	ACTUAL PRODUCTION (LINCOLN)	RAINFALL (INCHES)
2016	597.73	1008.99	0	249.26	1855.98	0	1855.98	18.60
2015	599.02	998.41	0	266.71	1864.14	0	1864.14	10.22
2014	944.15	1150.76	0	257.49	2352.40	0	2352.40	14.88
2013	989.88	1271.38	0	264.35	2525.61	96.39	2429.22	10.13
2012	691.28	1459.58	0	185.33	2336.19	0	2336.19	18.20
2011	599.17	474.85	0	1048.62	2122.64	0	2122.64	17.65
2010	757.68	0.03	0	1504.14	2261.85	108.70	2153.15	37.00
2009	1269.96	756.55	100.55	1281.62	3408.68	915.40	2493.28	16.17
2008	1379.75	1311.92	94.56	888.76	3674.99	944.90	2730.09	30.30
2007	1398.73	1360.11	39.16	1198.16	3996.16	968.50	3027.66	9.54



## ANNUAL PRODUCTION BY SOURCE - SURFACE, WELLS & IMPORTED

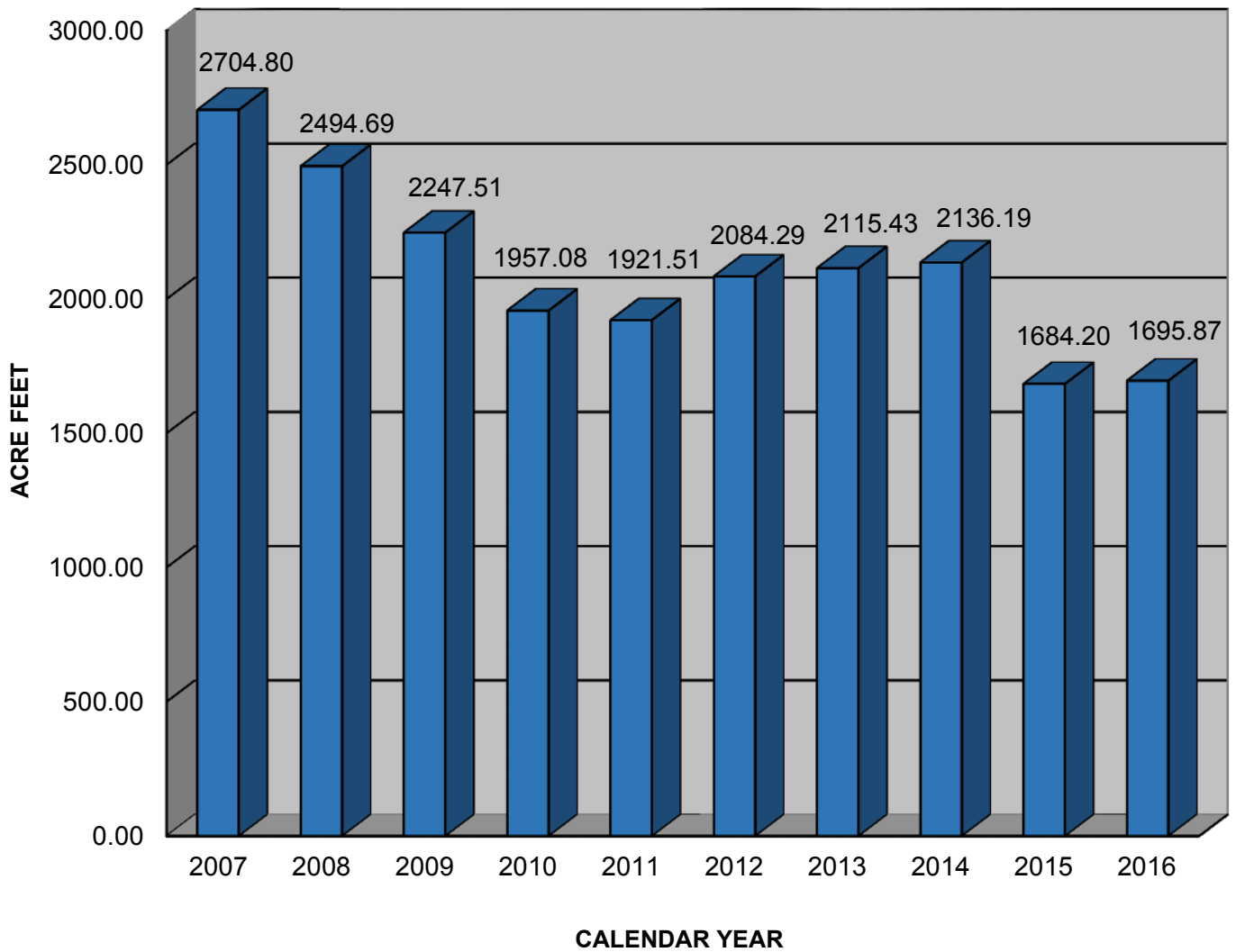


## TOTAL ANNUAL PRODUCTION - SURFACE, WELLS & IMPORTED





**ANNUAL WATER SALES IN ACRE FEET  
2007 - 2016**





## METERS AND SERVICE CONNECTIONS

New service connections installed in 2016	3
Meters replaced in 2016	227
Distribution system service connections in 2016	4472
2016 average consumption per meter per day - Residential	306 gal.
2016 average consumption per meter per day - Commercial	1301 gal.
2016 average consumption per capita per day - Residential	87 gal.

## NUMBER OF METERS BY SIZE

5/8"	3077
3/4"	930
1"	360
1½"	27
2"	70
3"	5
4"	3
<b>TOTAL</b>	<b>4472</b>



## WELL PRODUCTION CAPACITY

Well #3 (drilled 1924)	900 GPM
Well #5 (drilled 1971)	1100 GPM

## DISTRIBUTION LINES IN LINEAR FEET

Distribution System	288,323
Pumping Lines	18,128

TOTAL      306,451  
or 58 miles



## **ANNUAL CANYON WATER BASIN RECHARGE IN ACRE FEET**

### **CANYON WATER BASIN RECHARGE**

Swigart	10.31
El Prieto	21.60
Millard/La Vina	103.10
 TOTAL	 135.01

All canyon water that flows to the spreading basin is metered with an allowable extraction the following year based on Raymond Basin Management Board percolation calculations.

## **WATER QUALITY**

California Department of Public Health (CDPH) requires Lincoln Avenue Water Company to take distribution system water quality samples which include bacteriological, total trihalomethanes, volatile organic compounds, general physical, general mineral and inorganics, along with other scheduled analyses. Lincoln's system was in compliance with CDPH water quality standards at all times during 2016.



## **BOARD OF DIRECTORS FOR THE YEAR 2016**



**JOHN CLAIRDAY**

**PRESIDENT**

John Clairday, a graduate of the University of Southern California and Loyola Law School, has served on Lincoln Avenue's Board since 1993. Mr. Clairday recently retired, after 27 years, from the Metropolitan Water District of Southern California, where he served as Chief Deputy General Counsel within the legal department, and as manager of the District's Real Estate Group. In addition to serving as President of Lincoln Avenue's Board, Mr. Clairday is a member of the San Gabriel Valley Habitat for Humanity Board of Directors.



**ROBERT J. GOMPERZ**

**VICE PRESIDENT**

Robert J. Gomperz has been a Board member since 1990. He is retired from the Metropolitan Water District of Southern California where he coordinated various communications programs to the public about Metropolitan's programs and policies. Mr. Gomperz has been a public relations professional for more than four decades. He has a degree in Management from the University of Redlands. Prior to joining Metropolitan, he was Pasadena City College's Public Information Director for 12 years. Mr. Gomperz also represented West Altadena for 10 years as a Foothill Municipal Water District director and as a Southern California region director on the Association of California Water Agencies Board.



**LAWRENCE W. DUNCAN**

**1ST VICE PRESIDENT**

Lawrence W. Duncan is a retired textile industry supervisor and a 49-year Altadena resident. Mr. Duncan is entering his 16th year as a member of the Lincoln Board and also serves as the Company's Community Liaison Officer.



**ANN R. DOUGHERTY**

**TREASURER**

Ann R. Dougherty is a retired Management Consultant. She worked as an Executive Director for various non-profit organizations for 26 years. She currently serves on the Board of Directors for the San Gabriel Valley Habitat for Humanity where she has been involved for 19 years. She is a 45-year resident of Altadena.



**DIEGO FERNANDEZ**

**ASSISTANT SECRETARY**

Diego Fernandez is an Operating Partner with the El Cholo Restaurant Management Group LLC. He started work with El Cholo at the age of 18 and in 1994 he was promoted to the position of General Manager. In 2000 he became an Operating Partner. As a partner, Diego has been involved with the opening of El Cholo-Pasadena, Rose City Catering and Hart Pony Baseball & Softball. Mr. Fernandez brings a broad array of business and management skills to Lincoln Avenue. Mr. Fernandez has lived in Altadena for the past 11 years and was appointed to the Board in 2014.



# Office Staff



*Maria Roxanna Autran*

Office Supervisor oversees Bookkeeping/Accounting and all administrative compliance.



*Jennifer Betancourt*

Water Quality Coordinator and Assistant Office Supervisor, oversees all areas of water quality compliance.



*Wendy Childs*

Customer Service Representative, Water Stock Clerk and Water Conservation Coordinator



*Jesus Bugarin*

Customer Service Representative and Administrative Assistant



# *Field Staff*



**Left to right:**

**Michael Cotter, Field Supervisor  
Michael Crowe, Field Representative  
Asia Smith, Field Supervisor  
Matthew Zamayoa, Field Representative  
Jose Gonzalez, Field Representative  
Jack Harms, Field Representative  
Bartolo Gonzalez, Field Representative  
Dave Castillo, Field Representative**