



UTILITIES ADVISORY COMMITTEE MEETING

Wednesday, July 8, 2015 at 5:30 p.m.
Los Osos Community Services District Office
2122 9th Street, Suite 102, Los Osos, CA

COMMITTEE MEMBERS

Louis Tornatzky, Chairperson
Jon-Erik Storm, Vice Chairperson
Noah Evans, Member
Aaron Floyd Member
Jan Harper, Member
Lee Harry, Member
Ron Munds, Member
Leonard Moothart, Alternate Member

STAFF

Kathy Kivley, General Manager
Rob Miller, District Engineer
Margaret Falkner, Utility Compliance Technician III
Ann Kudart, Administrative/Accounting Assistant III

AGENDA

1. **Opening – 5:30 p.m.**
 - A. Call to Order
 - B. Flag Salute
 - C. Roll Call
2. **Approval of UAC Meeting Minutes of April 22, 2015**
Presented By: General Manager Kivley
3. **Review Markups to District Water Conservation and Shortage Contingency Section 2.06**
Presented By: Utility Compliance Technician Falkner
4. **Utilities Department Updates**
 - a. Utilities Department Report of May 2015
 - b. June 20, 2015 Tribune Article – Los Osos Water Conservation
 - c. 8th Street Upper Aquifer Well Progress
 - d. Water Quality Report 2014
 - e. Sea Water Intrusion Update
5. **Public Comments on Items NOT on this Agenda:** At this time, the public may comment on items not on this agenda. Each commenter is limited to 3 minutes and shall address the Chairperson.
6. **Schedule UAC Meeting** – UAC meetings are held quarterly and unless otherwise noted the next meeting will be held Wednesday, October 14, 2015.
7. **Closing Comments by UAC Committee Members**
8. **Adjournment**

ITEM 2

**APPROVE UAC MINUTES OF
APRIL 22, 2015**

Los Osos Community Services District
DRAFT Minutes of the Utilities Advisory Committee Meeting
April 22, 2015 at 5:30 p.m. at the District Office

AGENDA ITEM	DISCUSSION	FOLLOW-UP
<p>1. Call to Order, Flag Salute and Roll Call</p>	<p>Chairperson Tornatzky called the meeting to order at 5:30 p.m. and led the flag salute.</p> <p><u>Roll Call:</u> Noah Evans, Committee Member – Present Aaron Floyd, Committee Member – Absent Jan Harper, Committee Member – Arrived at 5:32 p.m. Lee Harry, Committee Member – Present Ron Munds, Committee Member – Arrived at 5:35 p.m. Leonard Moothart, Alternate Member – Present Jon-Erik Storm, Vice Chairperson – Arrived at 6:58 p.m. Louis Tornatzky, Chairperson – Present</p> <p><u>Staff:</u> Kathy Kivley, General Manager Margaret Falkner, Utility Compliance Technician III Rob Miller, District Engineer Ann Kudart, Administrative/Accounting Assistant III</p>	
<p>2. Welcome 2015 Committee Members and Review Brown Act Guidelines</p>	<p>Chairperson Tornatzky welcomed the committee members and General Manager Kivley reviewed the Brown Act with the committee.</p> <p>Public Comment: Julie Tacker and Richard Margetson spoke.</p>	
<p>3. Approval of UAC Meeting Minutes of January 21, 2015</p>	<p>Committee Member Munds moved to approve the minutes. The motion was seconded by Committee Member Harry.</p> <p>Public Comment: Richard Margetson, Julie Tacker, and Linde Owen spoke.</p> <p>The motion carried with the following roll call vote: Ayes: Munds, Harry, Evans, Harper Nays: None Abstain: Moothart Absent: Floyd</p>	<p>Action: File approved minutes.</p>
<p>4. Review Fiscal Year 2015/2016 Utilities Budget and Provide Recommendations to the Board</p>	<p>General Manager Kivley gave a detailed summary of the four Utilities funds as submitted with the agenda packet reporting property tax revenue projections for Funds 200, 500 and 800 were prepared using the annual property tax increase rate of 2%. She reported on revenue, personnel services, services and supplies, and capital outlay for each of the four funds.</p> <p>Public Comment: Jeff Edwards, Julie Tacker, Linde Owen, and Richard Margetson spoke.</p> <p>The Committee discussed the need for Finance Advisory Committee review of the Utilities budget and that funding is in the budget for the Capital Improvement Projects necessary to bring the systems up to the required level of safety and reliability.</p> <p>District Engineer Miller gave a brief update on the three CIP primary projects that need to be funded which include a new 8th Street upper aquifer well and nitrate removal; processing and permitting a lower Aquifer well on the eastside; and the intertie with Golden State.</p>	<p>Action: The Committee recommended that the Utilities budget be forward to the Board provided it is reviewed by the FAC.</p>

AGENDA ITEM	DISCUSSION	FOLLOW-UP
<p>4. Review Fiscal Year 2015/2016 Utilities Budget and Provide Recommendations to the Board (continued)</p>	<p>Committee Member Evans made a motion to move the Utilities budget forward to the Board provided it goes before the Finance Advisory Committee for their review as well. The motion was seconded by Member Harry and carried with the following vote:</p> <p>Ayes: Committee Members Evans, Harry, Harper, Munds, Moothart Nays: None Abstain: None Absent: Floyd</p>	
<p>5. Update of Board Item Regarding Intent to Serve Letters</p>	<p>District Engineer Miller reported that the Board at their April 2, 2015 meeting reviewed the Novy Intent-to-Serve (ITS) and directed staff to bring back two separate actions. One, that the letter now include a requirement that the applicant provide their own engineering study of their water offsets as opposed to just providing the County's Title 19 certificate; and, an amendment to Stage III of the District's Water Shortage Contingency Plan to suspend the processing of new ITS applications.</p> <p>Public Comment: Linde Owen and Richard Margetson spoke.</p>	
<p>6. Update of Ad Hoc Committee Grant Opportunities</p>	<p>Chairperson Tornatzky reported on his efforts in reviewing and rating potential grant opportunities from federal agencies and private and public foundations.</p> <p>Vice Chairperson Storm arrived at the dais.</p> <p>Public Comment: Linde Owen, Julie Tacker, and Richard Margetson spoke.</p> <p>The Committee discussed the necessity of looking at the direct reuse of recycled water.</p> <p>Committee Member Evans left the dais.</p>	
<p>7. Utilities Department Updates – Capital Improvement Projects</p>	<p>District Engineer Miller reviewed the CIP Priority List approved by the Board at their September 4, 2014 meeting. General Manager Kivley reported that Projects OE-5 and OE-4 moving forward. Mr. Miller reported that funding was secured for a partially operable SCADA system (Project OE-2). Utility Compliance Technician Falkner reported the possibility of adding desal to the list.</p> <p>Public Comments: Jeff Edwards, Linde Owen, Julie Tacker, and Richard Margetson.</p> <p>Rob Miller left the dais.</p>	
<p>8. Public Comments on Items NOT on this Agenda</p>	<p>Julie Tacker commented that the outcome of the negotiations with Verizon concerning the cell tower should be made public.</p> <p>Linde Owen opposed quarterly committee meetings and is upset with the current management of the District.</p> <p>Richard Margetson commented on valid issues expressed by the public during comment periods.</p>	

AGENDA ITEM	DISCUSSION	FOLLOW-UP
8. Public Comments on Items NOT on this Agenda (continued)	Lynette Tornatzky commented on the increasing number of attendees at the committee meetings and the need for additional space.	
9. Schedule UAC Meeting	The next UAC meeting will be held on July 8, 2015 unless otherwise noted.	
10. Closing Comments by UAC Committee Members	<p>Committee Member Munds commented on the need to review the District's recycled water plan and inquired if Golden State is working on a water shortage plan.</p> <p>Alternate Member Moothart thanked staff for preparing the budget.</p> <p>Committee Member Harry commented on his health issues and hopes to be able to continue serving on the committee.</p> <p>Committee Member Harper encouraged the committee to look at the data on the Pacific Institute website.</p> <p>Vice Chairperson Storm commented on the recent San Juan Capistrano court decision as not being a final judgement.</p>	
11. Adjournment	The meeting adjourned at 7:40 p.m.	

ITEM 3

**REVIEW MARKUPS TO DISTRICT
WATER CONSERVATION AND
WATER CONTINGENCY
SECTION 2.06**

Chapter 2.06 Water Conservation and Emergency Water Shortage Regulations
(Adopted 1/4/01) Adopted 2/5/2015

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2.06.01 Water Conservation Stages.

A. Stage I Conservation.

1. Upon a determination by the Board of Directors that there exists, ~~or that there is a threat, of a ten percent (10%) shortage in potable water available for distribution, Rainfall total as March 31: < than median (17 inches) for current year, a target reduction of 5% and~~ the following prohibitions shall take effect ~~for residential customers:~~

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(a) All outdoor irrigation of vegetation shall occur only between the hours of ~~8 p.m. and 7 a.m. dusk and dawn~~

(b) The use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground and other hard-surface areas by direct application shall be prohibited.

(c) The use of non-drinking-water fountains, except for those using recirculated water, shall be prohibited.

(d) Use of water which results in flooding or run-off in gutters or streets shall be prohibited.

~~(e) Commercial, and Irrigation customers will reduce consumption by 5% on a voluntary basis.~~

2. In addition to the prohibitions referenced in Section 2.06.01.A1 above, the Board of Directors will initiate a public information campaign to educate District residents, urging water conservation and showing ways the public can save water.

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B. Stage II Conservation.

1. In addition to Stage I conservation measures, ~~upon determination of the Board of Directors that there exists rainfall total as of March 31: <= 32 inches for over two years or <= 48 inches over three years or 65 inches over four years or 81 inches over five years, a target reduction of 15% and, upon a determination of the Board of Directors that there exists, or there is a threat of, a twenty percent (20%) shortage in potable water available for distribution,~~ the following measures shall take effect immediately:

(a) Each residential unit shall be limited to ~~1900 cubic feet of~~
(a) ~~water bimonthly (234 gallons per day) 174 gallons per~~
day.

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~~(b) The water rate for water units exceeding 1900 cubic feet bimonthly shall be double the then established District rate.~~

(eb) Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintain health, safety and welfare of residents within the boundaries of the Los Osos Community Services District.

(ec) The use of District potable water for construction projects shall be prohibited.

~~(e) (d) The washing of automobiles, trucks, trailers, boats and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station shall be prohibited unless residents have an automatic shut-off hose nozzle and do not allow water to run off their property. The washing of automobiles, trucks, trailers, boats and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station shall be prohibited.~~

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~~(fe) The use of potable water to irrigate lawns, landscape plantings, groundcovers, and shrubs shall be limited to prescribed days and hours. Irrigation shall only occur between dusk and dawn, and shall only occur on Wednesday and Sunday for even numbered addresses, and Tuesday and Saturday for odd numbered addresses. Community recreational facilities shall be exempt from this prohibition. The use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, trees, etc., shall be limited to Saturdays, Mondays and Wednesdays for even numbered addresses and Sundays, Tuesdays and Thursdays for odd numbered addresses, or as otherwise established by resolution of the Board of Directors.~~

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(g) Water main flushing shall only occur in emergency situations as declared by the District General Manager.

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2. In addition to those measures stated in 2.06.01.B1 above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

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C. Stage III Conservation.

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1. In addition to the water conservation measures established in Stage I and Stage II above, upon a determination of the Board of Directors that there exists, ~~or that there is a threat, of a thirty-five percent (35%) shortage in potable water available for distribution, rainfall total as of March 31: <= 29 inches for over two years or <= 43 inches over three years or 58 inches over four years or 72 inches over five years, Or~~ chloride triggers at 8th Street or 10th Street wells is equal to 150 milligrams per liter

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(mg/L). Or Total Dissolved Solids (TDS) triggers at 8th Street or 10th Street wells is equal to 700 mg/L, a target reduction of 25% and the following measures shall take effect:

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(a) Each residential unit shall be limited to ~~one hundred ninety-two (192) gallons per day (1500 cubic feet of water bi-monthly)~~ 50 gallons per person per day based on the information on the occupancy form on file with the District.

(b) Each commercial customer shall be limited to ~~sixty-five percent (65%) of the twelve month average that occurred immediately prior to the Board of Directors' declaring Stage I conservation measures~~ the amount in section 2.06.C.1(a) above or the water shortage contingency rate adopted by the Board of Directors

(c) Pool covers shall be required for all municipal pools.

(dc) Irrigation of community recreational facilities and residential edible crops shall be exempt from this prohibition. The use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, trees, etc., shall be prohibited.

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(e) Water rates shall be four times the then established water rate for customers who exceed the limitations established in (a) and (b) above.

(d) No leak adjustment credits will be awarded

(e) No new intent-to-serve applications will be considered (Adopted 5/7/15)

(f) No allocations may be transferred to another property

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2. In addition to those measures stated in Section 2.06.01.C1 above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

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D. Stage IV Conservation.

1. In addition to the water conservation measures established in Stages I, II, and III above, upon a determination of the Board of Directors that there exists, ~~or that there is a threat of, a fifty percent (50%) shortage in potable water available for distribution, rainfall total as of March 31: <= 26 inches for over two years or <= 38 inches over three years or 51 inches over four years, or 64 inches over five years, Or chloride triggers at 8th Street or 10th Street wells is equal to 250 mg/L, Or TDS triggers at 8th Street or 10th Street wells is equal to 850 mg/L, a target reduction of 35% and the~~ following measures shall take effect:

(a) Each residential unit shall be limited to ~~one hundred forty-eight (148) gallons per day (1200 cubic feet of water bi-monthly)~~ 45 gallons per person per day

(b) Each commercial customer shall be limited to

fifty per cent (50%) of the twelve-month average that occurred immediately prior to the Board of Directors' declaring Stage I conservation measures.

(b) Water rates shall be four times the then-established water rate for customers who exceed the limitations established in (a) and (b) above.

(b) Commercial allocation will be set at 10% below baseline

(c) No allocations may be transferred to another property

(c) New water connections to the District water system

shall be prohibited.

2. In addition to those measures stated in Section 2.06.01.D1 above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

E. Stage V Conservation.

1. In addition to the water conservation measures established in Stages I, II, III and IV above, upon a determination of the Board of Directors that there exists rainfall total as of March 31: <= 17 in. for over two yrs. or <= 26 in. over three yrs. or 34 in. over four yrs. or 43 in. over five years Or chloride triggers at 8th Street or 10th Street wells is equal to 500 mg/L, Or TDS triggers at 8th Street or 10th Street wells is equal to 1,000 mg/L, a target reduction of 50% and the following measures shall take effect:

(a) Each residential unit shall be limited to 42 gallons per person per day

(c) Commercial allocation will be set at 15% below baseline

(d) No allocations may be transferred to another property

2. In addition to those measures stated in Section 2.06.01.E1 above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

2.06.02 Water Shortage Contingency Stages Implementation

A Stage I – Alert

1. Customers affected are residential only

B Stage II – Warning

1. Customers affected are residential only

C Stage III – Emergency

1. Customers affected are residential only

D Stage IV – Severe

1. Customers affected are residential and commercial

E. Stage V – Critical

1. All customer classifications are affected

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~~The water department and General Manager shall monitor the supply and demand on a weekly basis during drought conditions and recommend to the Board of Directors the extent of the conservation required through implementation and/or termination of a particular conservation stage in order for the District to continue to supply adequate water to the customers. Thereafter the Board of Directors may order that the appropriate phase of water conservation be implemented and/or terminated in accordance with the applicable section of this Ordinance.~~

2.06.03 Water-Saving Devices

A. All customers are encouraged to install and use the following water conservation devices:

1. Low flush toilets 1.6 gallons per flush or less;
2. Low flow shower heads ~~2.5~~2.0 gallons per minutes or less; and
3. Drip irrigation.

2.06.04 Violation and Enforcement. The following apply to persons violating the provisions of District's water conservation and emergency water shortage regulations.

A. First Violation. A copy of the notice will be left with someone at the residence or establishment, or left in a conspicuous place, at the time the violation is observed.

B. Second Violation. A twenty five dollar (\$25.00) surcharge, in addition to any other penalties or fees owing, shall be assessed to the account of the violator, and a copy of the violation notice will be sent to the address of the violator by certified mail, return receipt requested, with a letter explaining the gravity of the situation and the penalties for future violations.

C. Third Violation. A two hundred and fifty dollar (\$250.00) surcharge, in addition to any other penalties or fees owing, shall be assessed to the account of the violator, and a one-gallon per minute flow restriction will be installed at the violator's meter and left in place for seventy-two (72) hours. Installation and removal charges shall be established by District resolution and shall be assessed to the account of the violator.

D. Fourth Violation. The water meter will be removed from the premises of the violator. The meter will be reinstalled, on conditions set by the District, after the payment ~~of~~ District reconnection charges and the payment of all other charges, surcharges and penalties owing.

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2.06.05 Review and Appeals

Any person who disputes the application of these Water Conservation Regulations may seek review under the following procedures:

A. Dispute Resolution Hearings shall be conducted by the General Manager or his/her designee on the following terms and conditions:

1. The applicant shall request in writing a hearing within ten (10) days of the event giving rise to the dispute.
2. All fines, penalties, surcharges, and service charges shall be deposited with the District.
3. The hearing shall be conducted at a mutually acceptable time, as soon as practical.
4. The General Manager shall consider the evidence presented at the hearing and is authorized to render a decision in his/her discretion that is consistent with the conservation measures established in Section 2.06.01 above.

B. Appeals: The decision of the General Manager may be appealed by making written application to the Board of Directors, in care of the General Manager, within five (5) business days of the General Manager's decision. The appeal to the Board of Directors will be held under the procedures established in Sections 1.02.03.A and 1.02.03 of this Ordinance.

C. Judicial review of the decision of the Board of Directors shall be pursuant to Chapter I, Section 1.02.04 of this Ordinance.

Chapter 2.07 Design and Construction (Adopted 1/4/01)

2.07.01 Plans and Specifications

A. Water and sewer system improvement plans and specifications shall be prepared by a California registered civil engineer.

B. Water and sewer system improvements shall be designed and constructed in conformance with the "District Specifications and Drawings".

C. The District General Manager may require an applicant to enter into a plan check and inspection agreement.

D. The District's administrative costs referenced in the plan check and inspection agreement shall be paid by the Applicant. Such fees shall be established by separate agreement or resolution of the Board of Directors.

LOS OSOS COMMUNITY SERVICES DISTRICT WATER SHORTAGE CONTINGENCY PLAN

Stage	Reduction Target	Climate Trigger (MEDIAN RAINFALL 17 INCHES)	CHLORIDE TRIGGER (8th or 10th Street Wells - Zone D)	TDS TRIGGER (8th or 10th Street Wells - Zone D)	CLIMATE & WATER QUALITY REQUIREMENTS TO EXIT WATER SHORTAGE STAGES (DE-TRIGGER)	PROHIBITIONS
STAGE I ALERT Customers: Residential Allocation: 183 gal/day	5%	Rainfall total as March 31: < than median (17 in.) for current year	N/A	N/A	Receive rainfall >= median by March 31	<ul style="list-style-type: none"> All outdoor irrigation of vegetation shall occur only between dusk and dawn. The use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground and other hard-surface areas by direct application shall be prohibited. The use of non-drinking-water fountains, except for those using recirculated water, shall be prohibited. Use of water which results in flooding or run-off in gutters or streets shall be prohibited.
STAGE II WARNING Customers: Residential Allocation: 174 gal/day	15%	Stage I plus rainfall total as of March 31: <= 32 in. for over two yrs. or <= 48 in. over three yrs. or 65 in. over four yrs. or 81 in. over five years	N/A	N/A	Receive rainfall >= median by March 31	<p>In addition to Stage I conservation measures:</p> <ul style="list-style-type: none"> Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintain health, safety and welfare of residents within the boundaries of the Los Osos Community Services District. The use of District potable water for construction projects shall be prohibited. The washing of automobiles, trucks, trailers, boats and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station shall be prohibited unless residents have an automatic shut-off hose nozzle and do not allow water to run off their property. The use of potable water to irrigate lawns, landscape plantings, groundcovers, and shrubs shall be limited to prescribed days and hours. Irrigation shall only occur between dusk and dawn, and shall only occur on Wednesday and Sunday for <u>even</u> numbered addresses, and Tuesday and Saturday for <u>odd</u> numbered addresses. Community recreational facilities shall be exempt from this prohibition. Water main flushing shall only occur in emergency situations as declared by the General Manager.
STAGE III EMERGENCY Customers: Residential Allocation: 50 gal/day/occupant NO TRANSFERS ALLOWED	25%	Stage I plus rainfall total as of March 31: <= 29 in. for over two yrs. or <= 43 in. over three yrs. or 58 in. over four yrs. or 72 in. over five years Stage III shall be enacted no earlier than April 2015. Declared by BOD 4/2/2015 – Based on Climate Trigger ONLY Modified on 5/7/2015	150 mg/l	700 mg/l	Receive rainfall >= median by March 31. If in Stage III due to water quality, two consecutive semi-annual samples must be below trigger concentrations to exit Stage III	<p>In addition to Stage I & II conservation measures:</p> <ul style="list-style-type: none"> Irrigation of community recreational facilities and residential edible crops shall be exempt from this prohibition. Penalties up to 2 times the established rate for usage above the allocation. No leak adjustment credits will be awarded No new Intent to Serve applications No allocations may be transferred to another property
STAGE IV SEVERE Customers: Residential, Commercial Allocation: 45 gal/day/ occupant NO TRANSFERS ALLOWED	35%	Stage I plus rainfall total as of March 31: <= 26 in. for over two yrs. or <= 38 in. over three yrs. Or 51 in. over four yrs. Or 64 in. over five years, Stage IV shall be enacted no earlier than November 2015	250 mg/l	850 mg/l	Receive rainfall >= median by March 31, transition to Stage II for current year. If in Stage IV due to water quality, two consecutive semi-annual samples must be below trigger concentrations to exit Stage IV	<p>In addition to Stage I, II, & III conservation measures:</p> <ul style="list-style-type: none"> Irrigation of community recreational facilities and residential edible crops shall be exempt from this prohibition. New water connections to the District water system shall be prohibited Commercial allocation 10% below baseline Penalties up to 4 times established rate may be applied No allocations may be transferred to another property
STAGE V CRITICAL ALL CUSTOMERS Allocation: 42 gal/day/ occupant NO TRANSFERS ALLOWED	50%	Stage I plus rainfall total as of March 31: <= 17 in. for over two yrs. or <= 26 in. over three yrs. or 34 in. over four yrs. or 43 in. over five years	500 mg/l	1,000 mg/l	Receive rainfall >= median by March 31, transition to Stage II for current year. If in Stage V due to water quality, two consecutive semi-annual samples must be below trigger concentration to exit Stage V	<p>In addition to Stage I, II, III, & IV conservation measures:</p> <ul style="list-style-type: none"> Commercial allocation 15% below baseline Penalties up to 4 times established rate may be applied No allocations may be transferred to another property

ITEM 4

UTILITIES DEPARTMENT UPDATES

- A. UTILITIES DEPARTMENT REPORT OF MAY 2015**
 - B. JUNE 22, 2015 TRIBUNE ARTICLE
LOS OSOS WATER CONSERVATION**
- C. 8TH STREET UPPER AQUIFER WELL PROGRESS**
 - D. WATER QUALITY REPORT 2014**
 - E. SEA WATER INTRUSION UPDATE**



June 22, 2015

TO: LOCSO Board of Directors
FROM: Margaret Falkner, Utility Compliance Technician III *MX7*
SUBJECT: Agenda Item 9B – 7/9/2015 Board Meeting
Utilities Department Report for May 2015

President
R. Michael Wright

Vice President
Marshall E. Ochylski

Directors
Charles L. Cesena
Jon-Erik G. Storm
Louis G. Tornatzky

General Manager
Kathy A. Kivley

District Accountant
Michael L. Doyel

Fire Chief
Robert Lewin

Battalion Chief
Phill Veneris

Mailing Address:
P.O. Box 6064
Los Osos, CA 93412

Offices:
2122 9th Street, Suite 102
Los Osos, CA 93402

Phone: 805/528-9370
FAX: 805/528-9377

www.lososocsd.org

WATER PRODUCTION

The total production for the month of **May 2015** was approximately **14.5 million gallons (MG)** this equates to an average daily demand of 466,600 gallons. This represents a **decrease** in production from last year by approximately **30%**.

Fifty-seven percent of the service area received bills for approximately **15.1 MG** consumption for the period **April 10, 2015 through June 11, 2015**. This generated **\$148,384** in revenue. This represents a **decrease** in consumption by approximately **27%** and a **decrease** in revenue by approximately **20%** when compared to last year. Graphs and tables are attached.

PRODUCTION AND RUNTIME HOURS BY WELL SITE

Below are two tables that break down the production by well site and the runtime on the pump motor for the month of **May 2015**. Totals for last year are included for comparison:

Production (MG) May	2015	2014
Palisades	1.4810	7.3720
3 rd Street/Bayside	3.0260	3.1523
8 th Street/El Moro	4.1936	4.7107
10 th Street	3.6716	4.3586
South Bay (lower)	1.9833	0.9969
South Bay (upper)	0.1080	0.0000
TOTAL:	14.4635	20.5905

Runtime (Hours) May	2015	2014
Palisades	56.9	217.0
3 rd Street/Bayside	722.4	715.4
8 th Street/El Moro	200.5	225.0
10 th St	194.7	230.8
South Bay (lower)	695.6	735.4
South Bay (upper)	485.3	0.0
TOTAL:	2355.4	2123.6

Please refer to the attached May 2015 "Well Log Summaries" for more data regarding chemical usage, soundings, and alarms.

CALIFORNIA STATE OF EMERGENCY DUE TO DROUGHT

We remain officially in a drought.

On May 29, 2015, District staff attended a Water Forum hosted by the El Moro Democratic Club of Los Osos. This was a non-partisan event held at the South Bay Community Center to address measures each water purveyor in Los Osos has taken in response to the governor's executive order. All the Los Osos water purveyors were in attendance. Short presentations were provided followed by questions from the attendees. It was a very well attended meeting. On May 26, 2015, staff attended a webinar on the proposed regulations for small water systems. This presented new information which is noted in ***bold italics*** below. The Executive order requires the following for small water systems:

1. Reduce production by 25% compared to ***June – Nov 2013 (baseline) OR***
2. Limit outdoor irrigation to two days per week ***with enforcement***
3. ***AND*** One time reporting (December 15, 2015)

The District's water service area has reduced pumping on average by 13.5% between 2013 and 2014 as specified above. We will report in December 2015 in an effort to meet a 25% reduction from the baseline.

BIG NEWS FROM UTILITY BILLING

In May 2015, the Payment Portal went live! This capability has been requested by our customers for many years. With the new software we were able to make this a reality. Now customers who want access to their account information including payment history, usage history, and more can set up an on-line account. A billing insert was sent to customers with their water bills in May and June. Customers should have their most recent bill in hand before setting up the on-line account. The customer account number is a five-digit number so leading zeros are important. Customers may pay using, Visa, MasterCard, and Discover credit cards. Customers will be charged 3% of the balance due paid to a third party vendor. None of the credit card information is stored on the District's server. Here is a picture of the secure portal:



Los Osos
Community
Services District



Welcome to the Los Osos CSD Online Water Account Access



For Customers in the Los Osos Community Services District Water Service Area

Username

Password

Forgot Password?

Please register in order to view your account.

Want to make a payment without logging in?

Credit card information is not stored by the Los Osos Community Services District.

LOCSD CONSUMER CONFIDENCE REPORT

The District's Consumer Confidence Report was mailed to all customers the week of June 8, 2015. This is a water quality report of the drinking water system with lab results for the calendar year 2014. The annual report is due in the consumer's hands by July 1st every year. This year we went with a new vendor and were able to use local pictures. Staff is happy with the results and have heard positive comments from the public. We beat the deadline and look forward to working with this new vendor in the future. A link to the electronic copy is here:

http://www.losososcsd.org/Library/Utilities/LosOsosWQR_web2015.pdf

DRAINAGE WDID # 3 40M2000133

The District complies with the General National Pollutant Discharge Elimination System (NPDES) Permit for storm water discharges for small Municipal Separate Storm Sewer Systems (MS4). Under this permit, all Community Services Districts are considered "Non-traditional" MS4s. District staff continues working with District Engineering and Water Board staff to meet compliance in this second year of the new permit.

Rain measured at our operations facility between January 1st & December 31st

Month	Year	Rainfall (Inches)	Year	Rainfall (Inches)	Year	Rainfall (Inches)	Year	Rainfall (Inches)
January	2015	0.19	2014	0.00	2013	0.97	2012	1.70
February	2015	0.89	2014	3.61	2013	0.56	2012	0.26
March	2015	0.26	2014	1.34	2013	0.62	2012	2.19
April	2015	0.79	2014	1.03	2013	0.03	2012	2.28
May	2015	0.13	2014	0.00	2013	0.10	2012	0.00
June	2015		2014	0.00	2013	0.00	2012	0.00
July	2015		2014	0.00	2013	0.00	2012	0.00
August	2015		2014	0.00	2013	0.00	2012	0.00
September	2015		2014	0.00	2013	0.00	2012	0.00
October	2015		2014	1.21	2013	0.29	2012	1.17
November	2015		2014	1.56	2013	0.36	2012	1.03
December	2015		2014	4.93	2013	0.19	2012	2.89
Total		<u>2.26</u>		<u>13.67</u>		<u>3.12</u>		<u>11.52</u>

BAYRIDGE ESTATES WDID# 3 401027001

Crews continue monitoring and grounds keeping at this facility. Specialty Construction Inc. was awarded the Phase I improvement projects for the Bayridge Estates Subdivision improvements. They should be finished with their work by the first week of August.

Once connected to the Los Osos Wastewater Project, the District crews will no longer maintain the septic system.

VISTA DE ORO WDID# 3 401024001

Crews continue monitoring and grounds keeping at this facility. Once connected to the Los Osos Wastewater Project, the District crews will no longer maintain the septic system. Prior to connection there will be maintenance projects to be completed by our crew for County acceptance of the system.

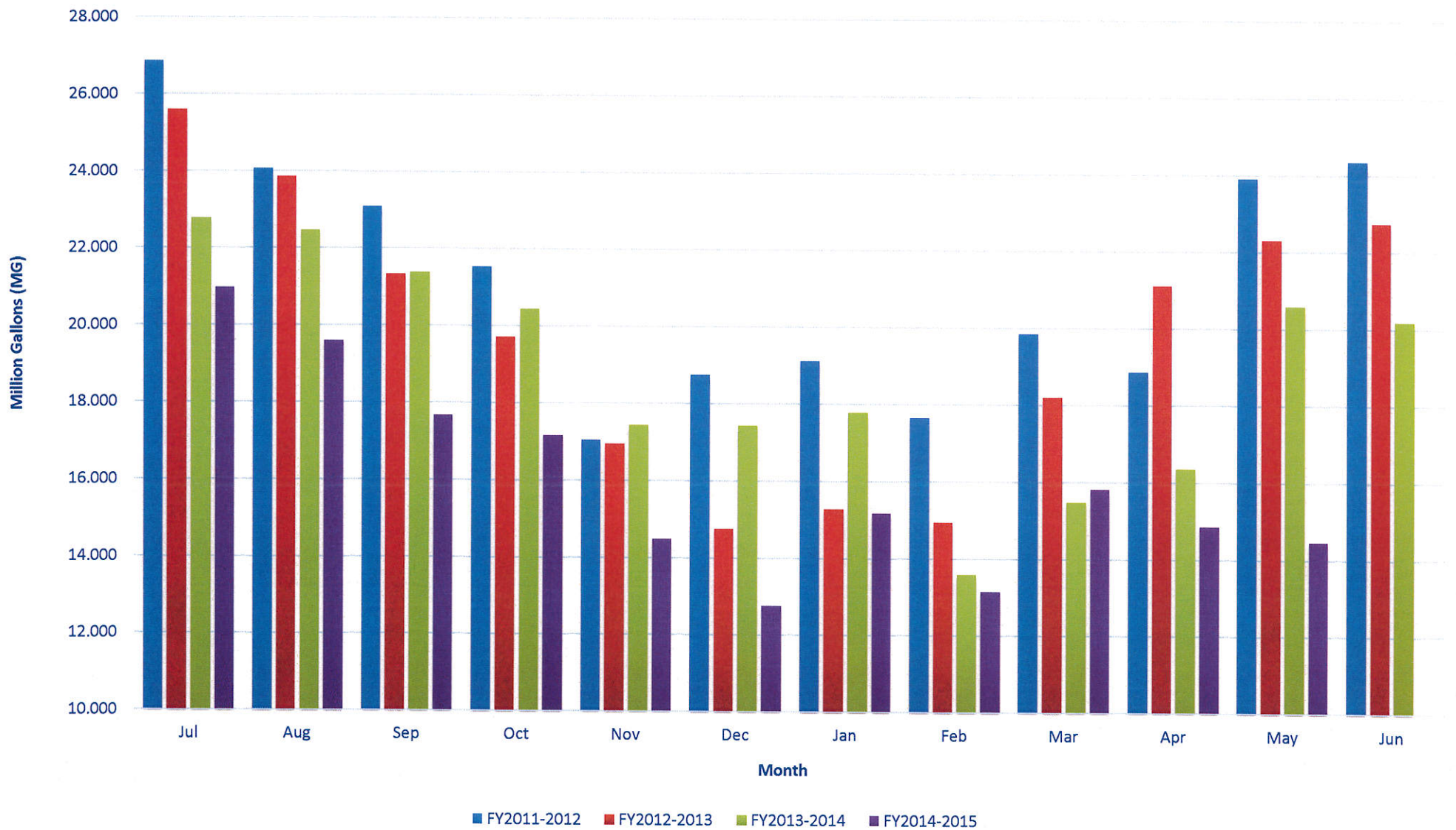
RECOMMENDATION

Staff encourages the Board to ask any questions they may have with regard to the aforementioned report or any other related item that may be listed separately as an agenda item.

Attachments

MAY 2015	8th St./ EI Moro Well	3rd St./ Bayside Well	10th St. Well	South Bay Well	South Bay Upper Well	Palisades Well	All Wells TOTAL	Last Years TOTAL	Percent% Differential
Total Gallons Produced, Mgal	4.1936	3.0260	3.6716	1.9833	0.1080	1.4810	14.4635	20.5905	-29.76%
Average Daily Flow, Mgal							0.4666		
Total Gallons to Waste (Filter Backwash), Mgal	0.0000			0.0000	0.0000		0.0000	0.0367	
Total Gallons to Waste (System Flushing), Mgal							0.0000	0	
Distribution System Losses (Water Line Breaks), Mgal							0.0000	0	
Total Gallons Adjusted, Mgal	4.1936			1.9833			14.4635	20.5538	-29.63%
Pump Runtime, total hours	200.5	722.4	194.7	695.6	485.3	56.9	2355.4	2123.6	9.84%
Daily Avg. Runtime, hours/day	6.5	23.3	6.3	22.4	15.7	1.8			
Energy Used, kWatts	7853	5754	8634	11442		2349	36032	49522	-27.24%
Eff. Ratio, kWatts/hr	39.17	7.97	44.35	16.45		41.28			
Chlorine Used, total gallons	53.3	30.5	19.7	33.9		20.1	157.5	227.5	-30.78%
Aqua Mag, pounds	49.2		31.4	0.0		2.6	83.2	172.2	-51.68%
Static water level, ft.	33.20	6.70	156.65	124.50	94.70	93.10			
Pump water level, ft.	140.40	54.50	245.70	184.70	118.20	131.90			
Draw-down level, ft.	107.20	47.80	89.05	60.20	23.50	38.80			
Gallons per minute	353	71	352	21	21	280			
Pressure, psi	93	79	38	79	59	54			
Alarm Events									
YES / NO	YES	NO	NO	NO	NO	YES			
Type of event									
Well Failure							0		
Power Failure							0		
Low Chlorine							0		
Other:	1					1	2		
Total number alarms	1	0	0	0	0	1	2	3	-33.33%

Historical to Present LOCSD Well Production Data



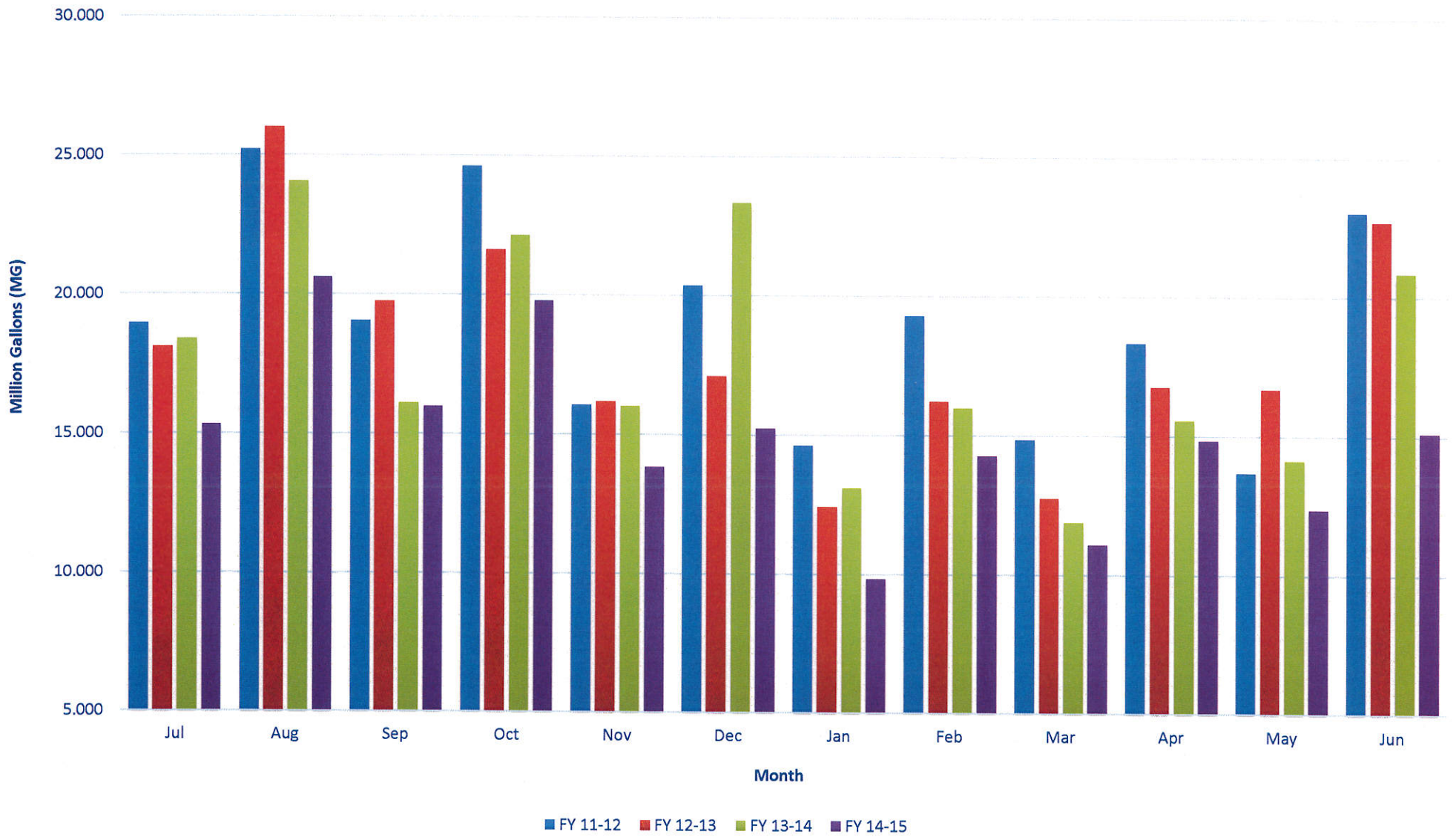
LOCSD Water Data

Water Production Data in Million Gallons

	FY 11-12	FY 12-13	FY 13-14	FY 14-15
Jul	26.868	25.600	22.779	20.979
Aug	24.064	23.862	22.470	19.593
Sep	23.086	21.340	21.380	17.668
Oct	21.543	19.708	20.431	17.169
Nov	17.046	16.939	17.436	14.482
Dec	18.745	14.747	17.431	12.759
Jan	19.117	15.268	17.780	15.174
Feb	17.662	14.940	13.584	13.142
Mar	19.843	18.193	15.476	15.807
Apr	18.873	21.118	16.354	14.856
May	23.914	22.310	20.591	14.464
Jun	24.347	22.743	20.179	
TOTAL	255.107	236.767	225.890	176.093

Consumption is billed for a two month period every month.
Revenue is based on gallons billed - not cash received.
Production is recorded daily.

Historical to Present LOCS D Water Consumption

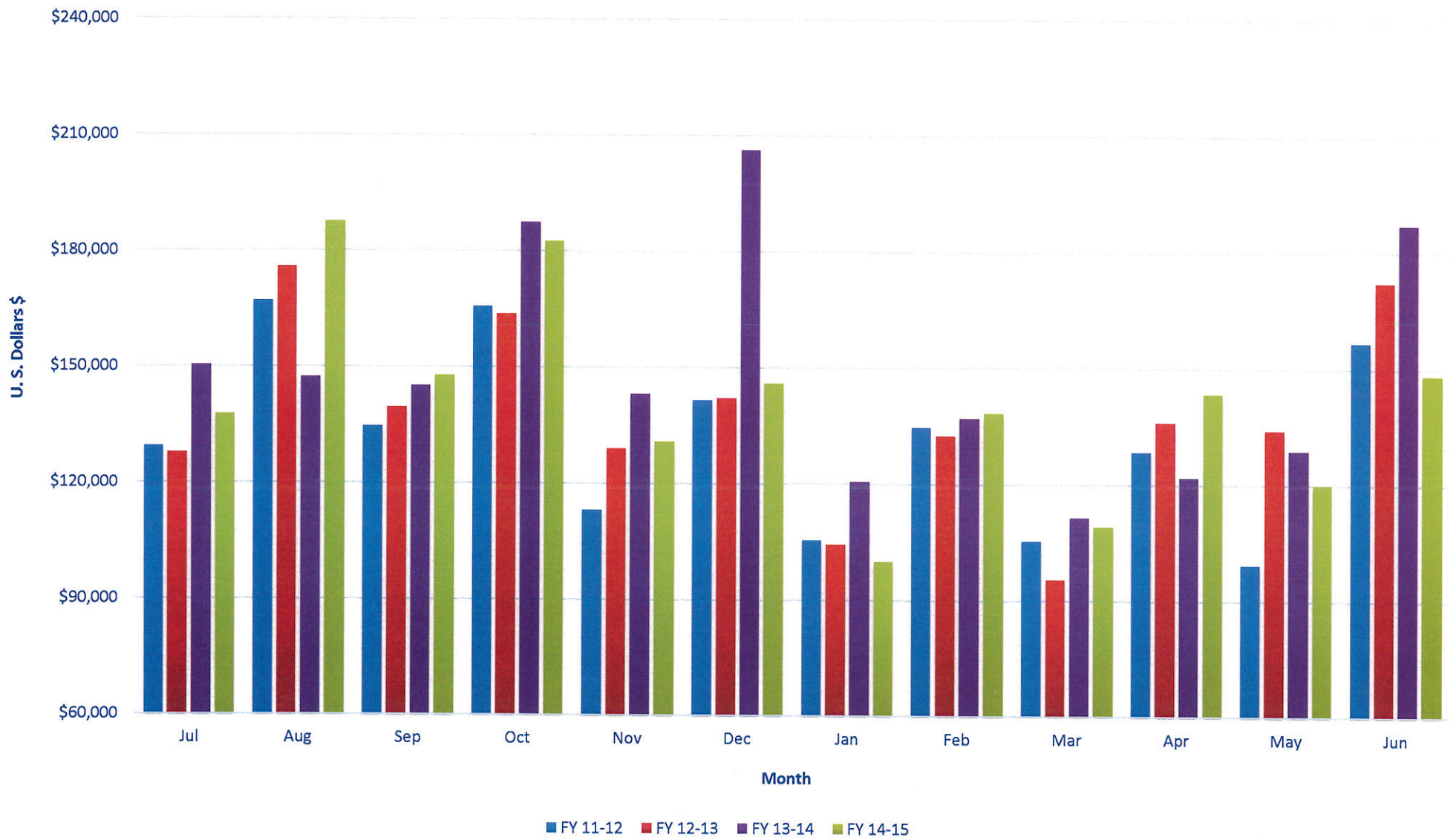


LOCSD Water Data

Water Consumption Data in Million Gallons						
% of Service Area	Billing Period		FY 11-12	FY 12-13	FY 13-14	FY 14-15
43	5/11 to 7/10	Jul	18.950	18.110	18.402	15.330
57	6/11 to 8/10	Aug	25.210	26.006	24.061	20.627
43	7/11 to 9/10	Sep	19.044	19.748	16.087	15.989
57	8/11 to 10/10	Oct	24.636	21.617	22.142	19.804
43	9/11 to 11/10	Nov	16.048	16.155	15.994	13.830
57	10/11 to 12/10	Dec	20.355	17.096	23.342	15.236
43	11/11 to 1/10	Jan	14.623	12.406	13.105	9.828
57	12/11 to 2/10	Feb	19.294	16.223	15.969	14.276
43	1/11 to 3/10	Mar	14.858	12.737	11.886	11.079
57	2/11 to 4/10	Apr	18.313	16.756	15.559	14.829
43	3/11 to 5/10	May	13.685	16.686	14.131	12.367
57	4/11 to 6/10	Jun	23.029	22.709	20.852	15.111
		TOTAL	228.044	216.249	211.530	178.306

Consumption is billed for a two month period every month.
 Revenue is based on gallons billed - not cash received.
 Production is recorded daily.

Historical to Present LOCSD Water Revenue

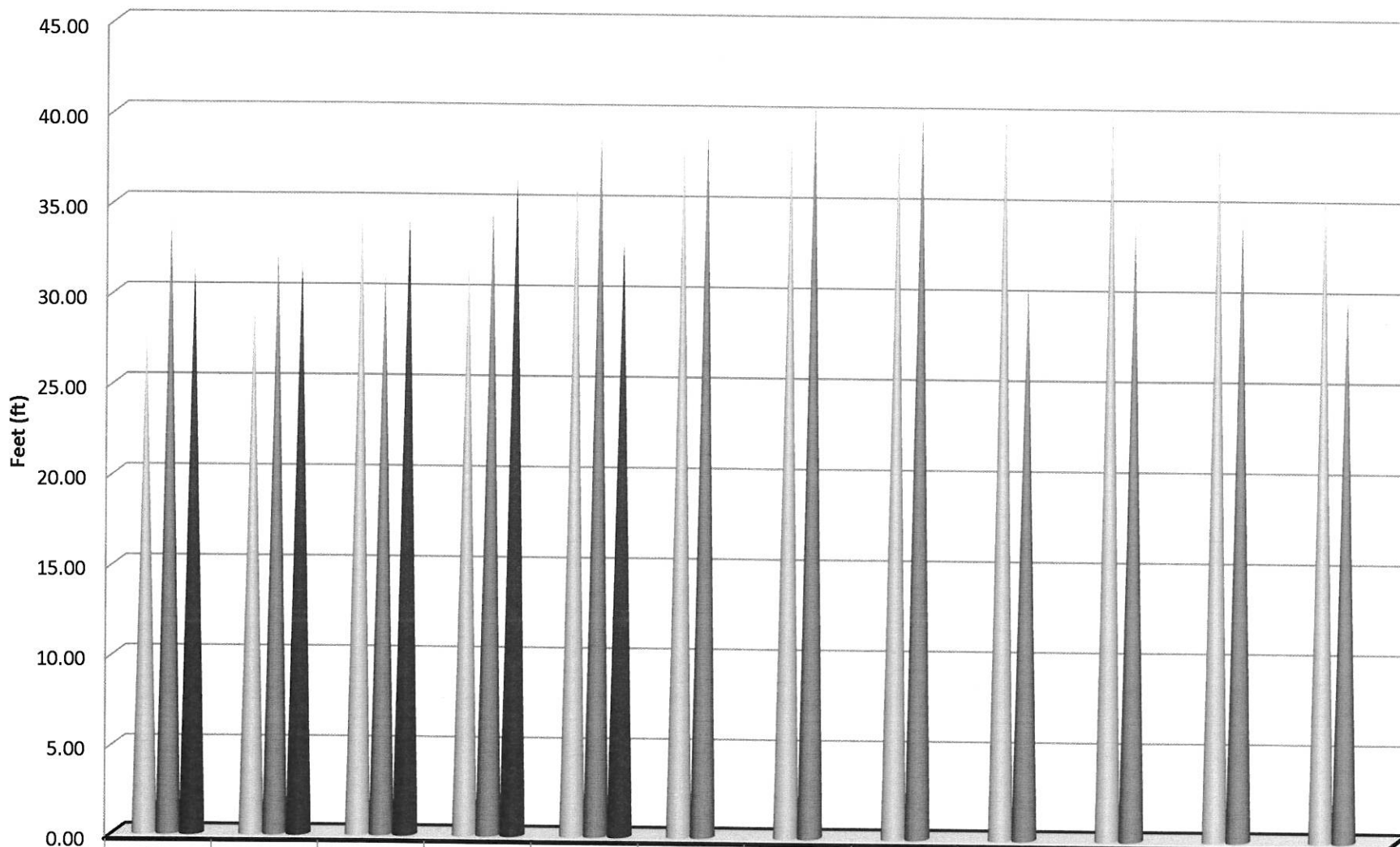


LOCSD Water Data

Water Revenue Data						
% of Service Area	Billing Period		FY 11-12	FY 12-13	FY 13-14	FY 14-15
43	5/11 to 7/10	Jul	\$129,524.46	\$127,737.70	\$150,401.90	\$137,752.98
57	6/11 to 8/10	Aug	\$167,062.07	\$175,798.70	\$147,246.54	\$187,468.02
43	7/11 to 9/10	Sep	\$134,650.62	\$139,628.43	\$145,135.28	\$147,808.06
57	8/11 to 10/10	Oct	\$165,624.63	\$163,698.98	\$187,431.78	\$182,463.96
43	9/11 to 11/10	Nov	\$113,044.46	\$128,918.55	\$143,029.03	\$130,772.31
57	10/11 to 12/10	Dec	\$141,492.06	\$142,026.32	\$206,187.91	\$145,977.27
43	11/11 to 1/10	Jan	\$105,371.44	\$104,328.08	\$120,500.40	\$99,970.19
57	12/11 to 2/10	Feb	\$134,692.14	\$132,433.64	\$137,045.65	\$138,344.52
43	1/11 to 3/10	Mar	\$105,313.67	\$95,487.96	\$111,475.31	\$109,092.25
57	2/11 to 4/10	Apr	\$128,368.97	\$135,947.81	\$121,943.68	\$143,355.32
43	3/11 to 5/10	May	\$99,287.66	\$133,939.00	\$128,784.61	\$120,013.25
57	4/11 to 6/10	Jun	\$156,744.35	\$172,139.37	\$187,230.13	\$148,384.13
		TOTAL	\$1,581,176.53	\$1,652,084.54	\$1,786,412.22	\$1,691,402.26

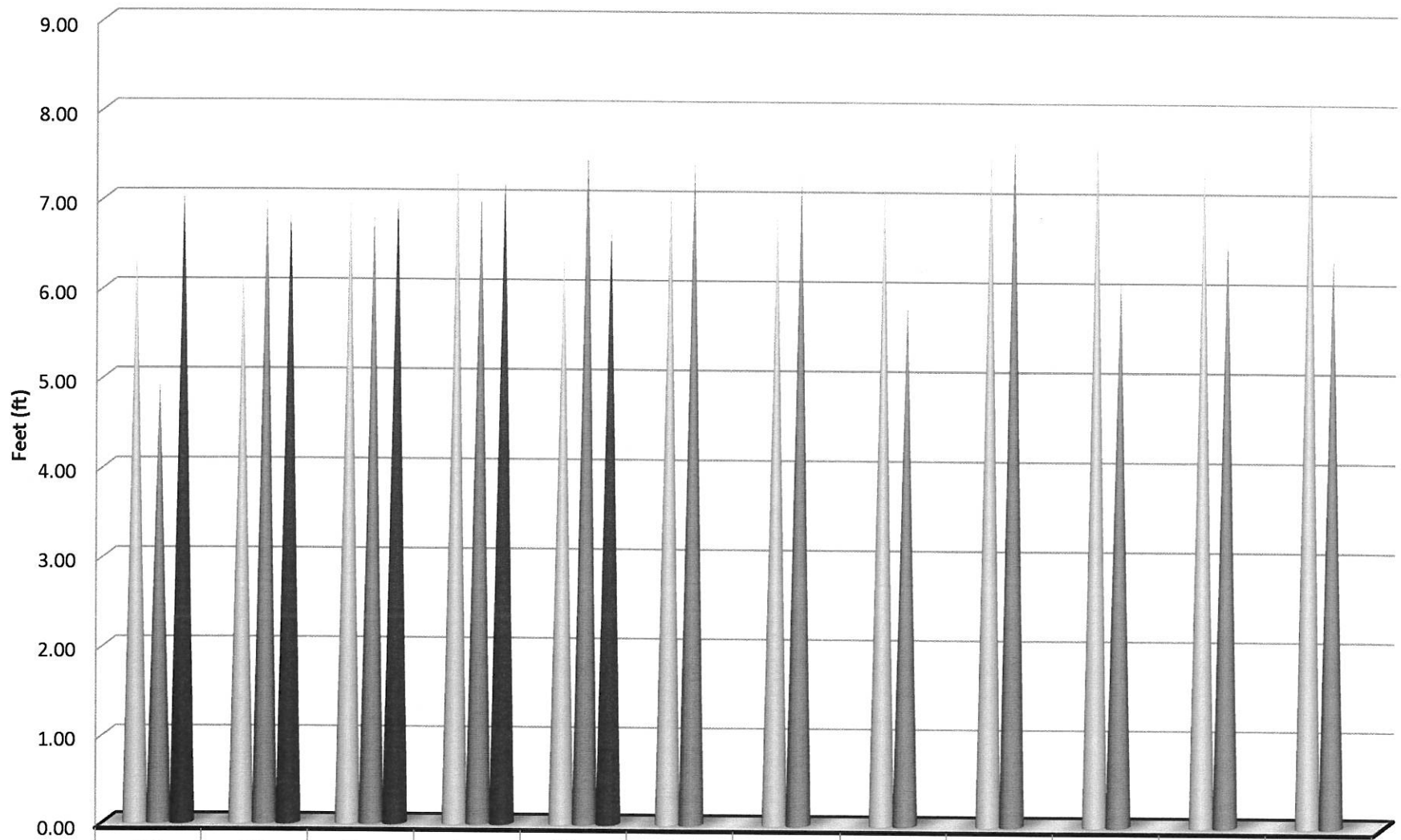
Consumption is billed for a two month period every month.
 Revenue is based on gallons billed - not cash received.
 Production is recorded daily.

8th Street or El Moro Well Static Water Levels



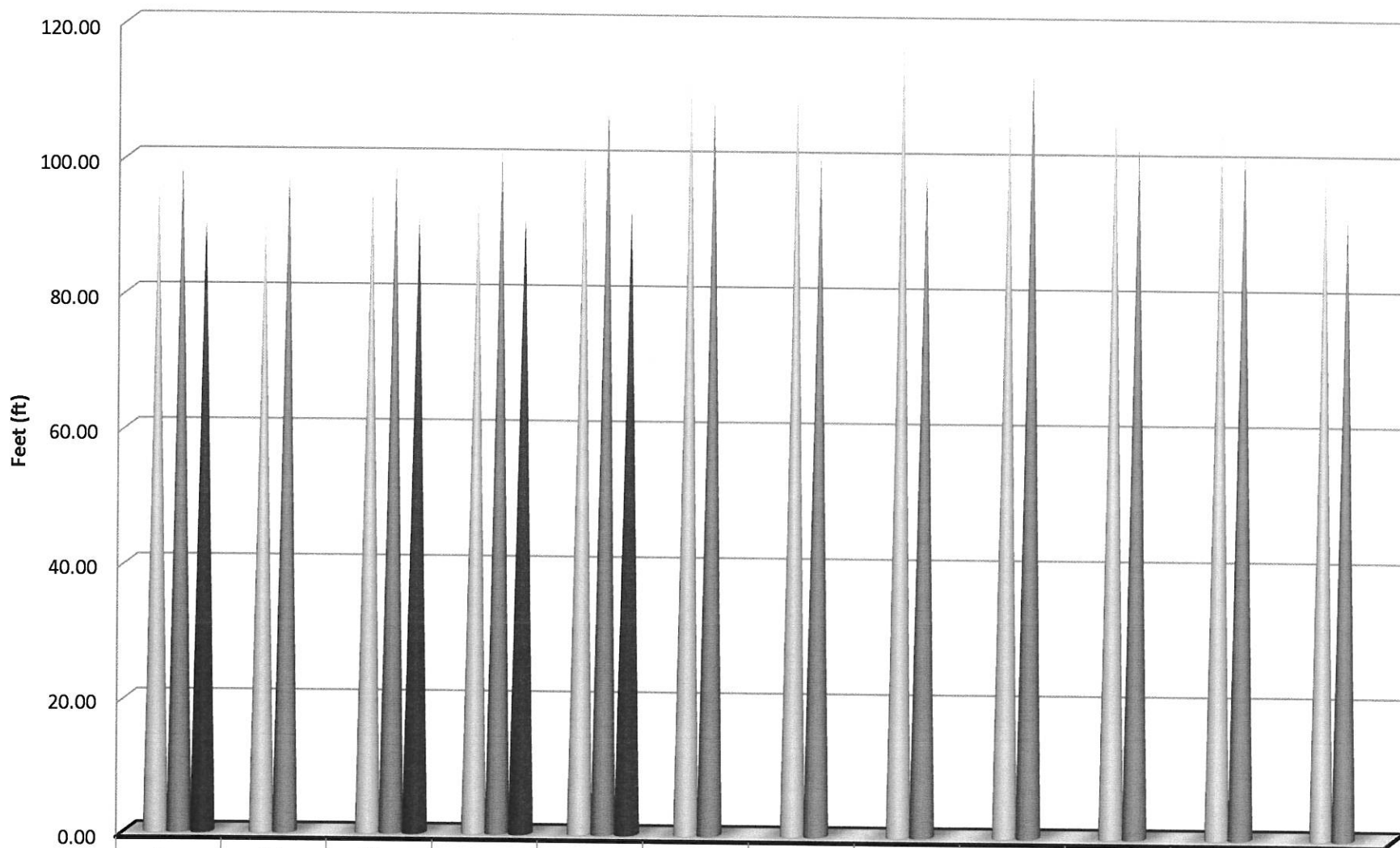
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	28.00	29.80	34.80	32.50	37.20	39.00	39.80	39.80	41.10	41.30	39.50	37.00
2014	34.20	32.50	31.30	35.10	39.40	39.70	41.10	40.70	31.20	34.30	34.90	30.80
2015	31.50	32.00	34.60	36.70	33.20							

3rd Street or Bayside Well Static Water Levels



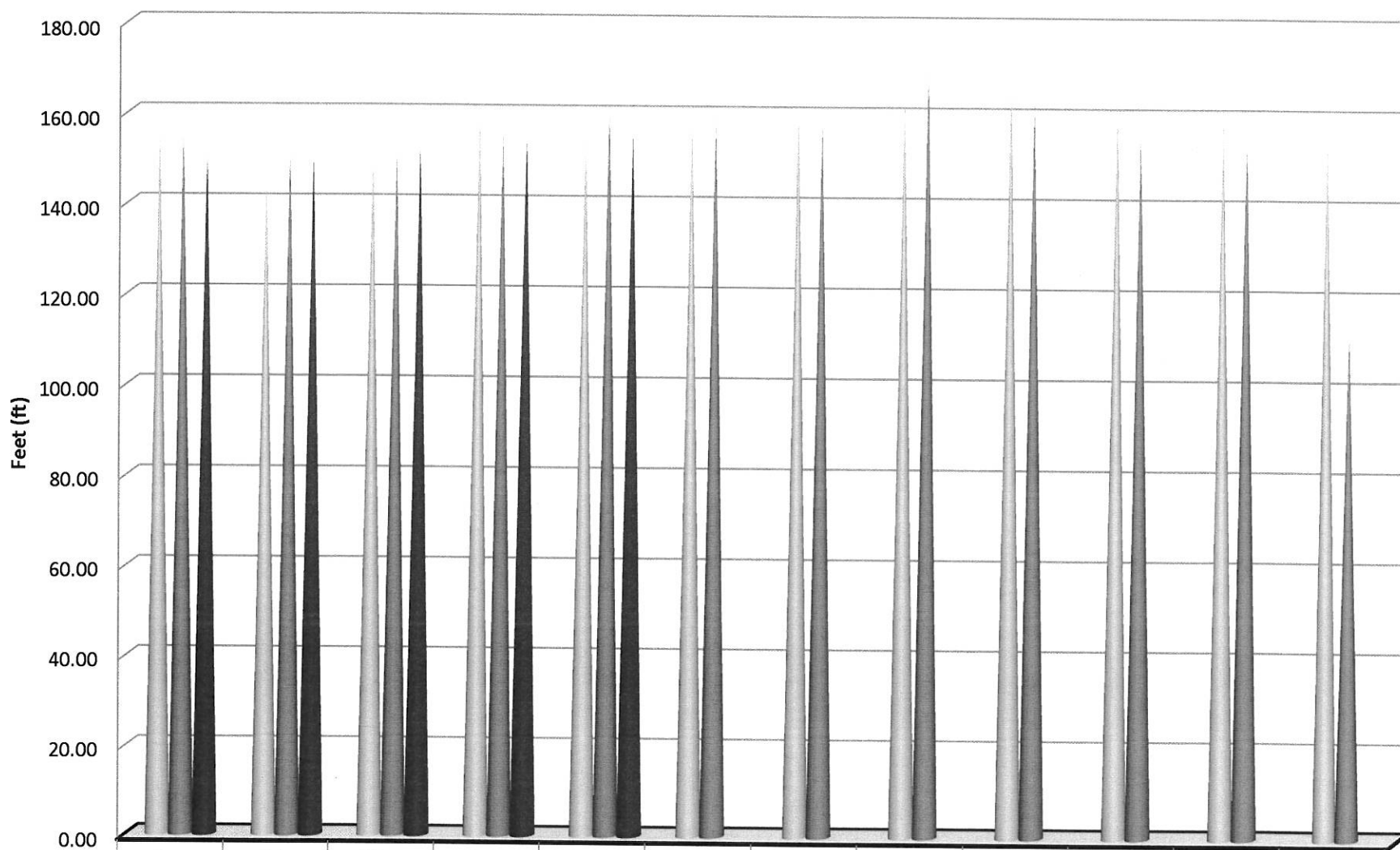
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	6.50	6.30	7.10	7.50	6.50	7.30	7.00	7.30	7.70	7.90	7.50	8.45
2014	5.00	7.10	6.90	7.10	7.70	7.55	7.30	5.90	7.80	6.20	6.70	6.50
2015	7.10	6.90	7.05	7.25	6.70							

Palisades Well Static Water Levels



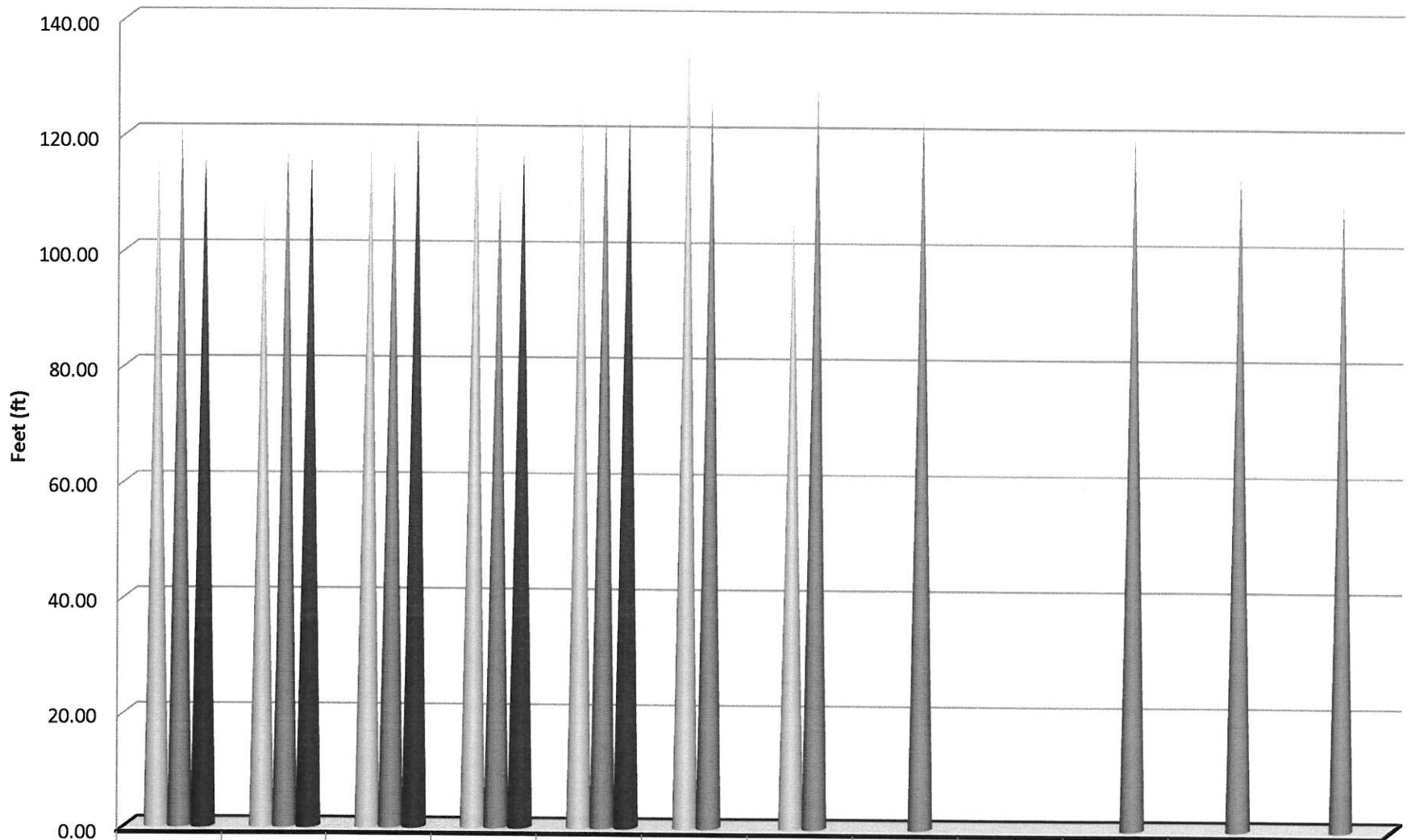
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	97.20	92.30	97.90	96.20	104.90	113.60	112.60	118.70	109.80	109.90	106.50	101.35
2014	100.40	98.60	99.90	102.10	109.85	110.3	101.60	100.05	114.80	103.70	103.60	94.00
2015	91.50		91.50	92.55	93.10							

10th Street Well Static Water Levels



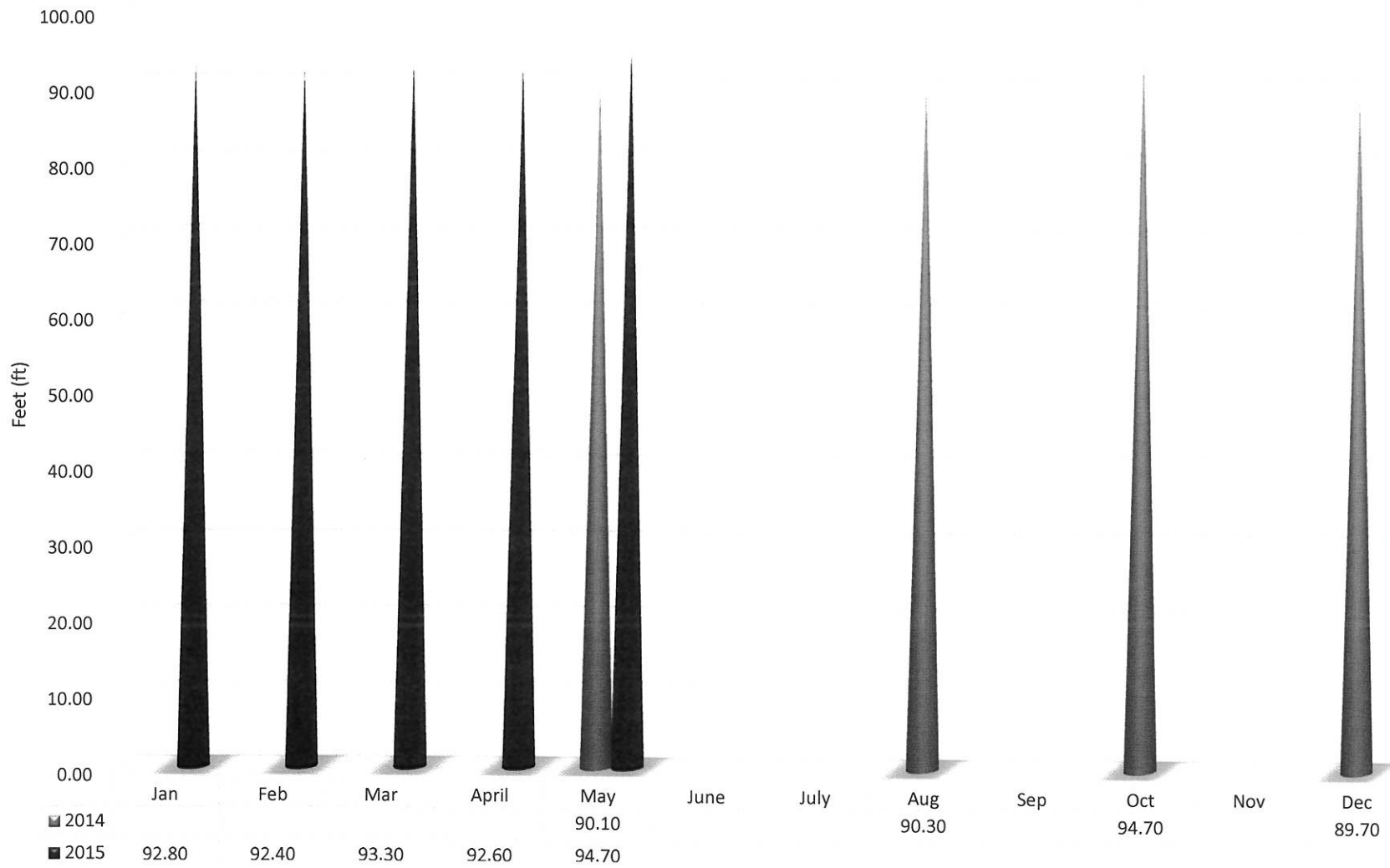
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	157.00	144.90	152.90	161.60	156.80	161.30	163.90	164.80	168.40	164.30	161.20	157.45
2014	156.20	152.40	152.60	156.80	162.90	160.15	159.30	171.30	163.50	156.90	156.70	113.80
2015	151.80	150.70	153.40	156.60	156.65							

South Bay Lower Well Static Water Levels



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	117.25	109.90	121.60	127.60	127.50	139.00	108.60					
2014	122.10	118.90	116.80	112.90	126.00	128.50	129.30	125.60		121.40	116.20	111.30
2015	117.30	116.80	122.50	118.70	124.50							

South Bay Upper Well Static Water Levels



Publication: San Luis Obispo Tribune; Date: Jun 20, 2015; Section: Local; Page: A3

County Roundup

Los Osos cuts water use by 30 percent

Los Osos Community Services District customers reduced water consumption by nearly 30 percent in May 2015 compared with May 2014, a new district report shows. And they saved nearly 35 percent compared with May 2013.

Gov. Jerry Brown has mandated that Los Osos residents cut water use by 20 percent from 2014.

“Los Osos residents should be proud,” district General Manager Kathy Kivley said. “Our customers have stepped up in a big way to set an example for water conservation, and we hope they continue to raise the bar.”

Kivley noted that Los Osos faces seawater intrusion into the groundwater and “our residents are working very hard to conserve in any way possible because the threat to our basin is critical.”

This month, the district released a report showing that seawater is encroaching and mixing with freshwater in the basin; prolonged drought has only increased the rate. The district’s goal is for customers to use 50 gallons of water per person per day; currently, they use about 66 gallons of water per person per day.

For more information, visit www.SaveLosOsosWater.org or [Facebook.com/SaveLosOsosWater.org](https://www.facebook.com/SaveLosOsosWater.org).

— Nick Wilson

Morro Bay fair accepting vendors

The Morro Bay Merchant’s Association is accepting applications for vendors for its Summer Street Fair set for 10 a.m. to 5 p.m. Aug. 2 in downtown Morro Bay. Application forms are available online at www.morro-bay.net/mbma/fairform.cfm.

The fair has been an annual event for more than 35 years. This year, the Morro Bay Merchant’s Association wants to bring in environmental education groups, gourmet food trucks and family-oriented games and entertainment.

— Danielle Ames



WATER QUALITY REPORT 2014

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

PWS ID#: 4010016



THE LOS OSOS COMMUNITY SERVICES DISTRICT WORKS HARD TO PROVIDE QUALITY WATER TO YOU!

Once again we proudly present our annual water quality Report for the 2014 calendar year. Included in this report are details about where your water comes from, what it contains, and how it compares to State standards.

The Los Osos Community Services District safeguards its water supplies and once again, we are proud to report that our system has not violated a maximum contaminant level or any other water quality standard. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Margaret Falkner, Utility Compliance Technician III, at (805) 528-9376.

Maintenance of the distribution system is a high priority for the Los Osos Community Services District (LOCS) water resource operators. The operators implement a meter replacement program which replaces older meters with new meters in the system. The LOCS's meters are replaced approximately every 10 years. As meters get old they tend to slow down due to buildup of minerals from the drinking water. In 2014 the operators replaced 213 old meters in our distribution system.

In addition to the meter replacement program the operators maintain fire hydrants throughout our water service area. It is important to keep these hydrants in proper working order. They exercise main valves to make sure they function in the event of an emergency where a main line shut-down in the system is required. The operators work through the system exercising the valves to minimize any water loss due to an accident or main line break.

Water quality is tested throughout the distribution system as required by the state for free chlorine residual, reactive phosphate, and any coliform presence. The maintenance of the distribution system is important to sustain water quality goals.

In 2014 the LOCS water system operators continued providing our customers with high quality drinking water, 24 hours per day, 7 days per week.

If you have any questions regarding the quality of your water, contact the office at (805) 528-9370 and an operator will be sent to your home to investigate.



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YOUR VIEWS ARE WELCOMED!

We invite the public to participate in our Board of Directors meetings and voice your concerns about your drinking water. Our Board meets the first Thursday of each month at 7:00 pm at the Sea Pines Golf Resort Conference Room, 1945 Solano Street, Los Osos, CA 93402.

In addition, the public is invited to attend quarterly meetings of the Utilities Advisory Committee (UAC) held at 5:30 pm at the District office, 2122 9th Street, Suite 102, Los Osos, CA 93402. The UAC is a committee of five volunteers with one Director as the non-voting Chairperson along with another Director as a non-voting alternate Chairperson. The committees are advisory to the Board of Directors considering District-related issues assigned by the Board of Directors. The committee meeting schedule is set in December for the following year. The Board may ask for special committee meetings during the year based upon subject and timing.

GET YOUR FREE WATER CONSERVATION ITEMS AND SAVE BOTH WATER AND MONEY!

Many customers in our water service area are doing their part to conserve water. The District provides low-flow fixtures free to our customers. These fixtures include showerheads, bathroom and kitchen faucet aerators, and garden hose nozzles. We also have a 5-minute shower timer. This item is a big hit with our customers who have teen-age children in their home. We also provide dye tablets to place in the toilet tank to see if there is a leak from the tank to the toilet bowl. There are drip gauges of all sorts to monitor slow drips. Even what appears to be a small leak will increase your water usage and bills. The District lobby is open between the hours of 9:00 am and 3:00 pm Monday through Friday except on Holidays. Stop by the office at 2122 9th Street, Suite 102, in Los Osos and pick up as many fixtures as you like. Thank you for your water conservation efforts.

Los Osos Community Services District
2122 9th Street, Suite 102
Los Osos, CA 93402

<http://locsd.org/cm/Home.html>



WHERE DOES MY WATER COME FROM?

The Los Osos Community Services District (LOCS D) water system uses five source wells. Water delivered to the LOCS D customers is groundwater that originates from the Los Osos Valley Basin. The five water well sites are known as the 8th Street Well, 3rd Street Well, 10th Street Well, Palisades Well, and South Bay Well. The groundwater basin is a collection of local drainage basins, streams, creeks, and natural percolation from rain, agricultural, and domestic use. Water is cleaned through a natural filtration process as it trickles down through the ground. During this process, water may also pick up contaminants found in the soil, both naturally occurring minerals, and substances resulting from animal or human activity. Groundwater is normally very clean and is simply disinfected to help minimize the chance of any viral and bacterial contamination.

Each well is equipped with online devices for operation and monitoring purposes. An alarm system is integrated in the monitoring process to notify operators if there is a problem at any well site or facility. The South Bay and 8th Street wells have additional filtration equipment designed to remove iron and manganese found in these two wells to aesthetically acceptable levels.

Utilities Department operators are responsible for treatment of the five groundwater supply wells. They are also responsible for water quality monitoring, sampling, distribution system repair and maintenance, meter reading, and regulatory reporting compliance. The delivery of water to the District's water customers is conveyed through a network of over 27 miles of water mainlines connected to approximately 2,770 water service lines and meters serving residences and commercial businesses. Included in the infrastructure are three water storage tanks, a booster pump station, 162 fire hydrants with 558 valves that require maintenance and inspection. These services provided by the Utilities Department personnel not only assure delivery of pure, wholesome potable drinking water, but also provide the water essential for firefighting.

LOS OSOS SOURCE WATER QUALITY (ALL TEST RESULTS ARE FROM JANUARY 1 - DECEMBER 31, 2014.)

PRIMARY STANDARDS HEALTH BASED (UNITS)	Primary MCL	PHG (MCLG) [MRDL]	Range of Detection	Average Level	Most Recent Sampling Year	Violation	Typical Source of Constituent
Chlorine (mg/L)	[4.0 (as Cl ₂)]	[4.0 (as Cl ₂)]	0.35 - 1.75	0.93	2014	No	Drinking water disinfectant added for treatment
Chromium VI (mg/L)	10	0.02	0.001 - 0.01	0.006	2014	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Nitrate [NO ₃] (mg/L)	45	45	1.9 - 32.2	17.4	2014	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

SECONDARY STANDARDS AESTHETICS BASED (UNITS)	Secondary MCL (units)	Range of Detection	Average Level	Most Recent Sampling Year	Violation	Typical Source of Constituent
Chloride (mg/L)	500	35.5 - 92.6	62.9	2014	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	15	<1 - 1	1	2014	No	Naturally-occurring organic materials
Iron [Fe] (µg/L)	300	10 - 210	66	2014	No	Leaching from natural deposits; industrial wastes
Manganese (µg/L)	50	<5 - 88	61.8	2014	No	Leaching from natural deposits
Odor Threshold (Units)	3	0 - 1	0.4	2014	No	Naturally-occurring organic materials
Specific Conductance (µS/cm)	1,600	270 - 810	561	2013	No	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	10.6 - 47.3	25.2	2014	No	Runoff/leaching from natural deposits; industrial wastes
Turbidity (NTU)	5	0.05 - 0.22	0.9	2014	No	Soil runoff
Total Dissolved Solids (mg/L)	1,000	170 - 490	263	2014	No	Runoff/leaching from natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

SUBSTANCE (UNIT OF MEASURE)	AL	PHG (MCGL)	Amount Detected (90th Percentile)	Sites Above AL / Total Sites	Year Sampled	Violation	Typical Source of Constituent
Copper (mg/L)	1.3	0.3	0.91	1/23	2013	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Lead (µg/L)	15	0.2	ND	0/23	2013	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
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OTHER SUBSTANCES WITH NO MCLS OR PHG	Amount Detected	Range	Year Sampled	Typical Source of Constituent
Hardness as CaCO ₃ (mg/L)	214	90-320	2014	"Hardness" is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
Sodium [Na] (mg/L)	35	23 - 53	2014	"Sodium" refers to the salt present in the water and is generally naturally occurring.

LOCS D DISTRIBUTION SYSTEM

PRIMARY STANDARDS HEALTH BASED (UNITS)	MCL	PHG (MCLG) [MRDL]	Range of Detection	Total Amount Detected	Most Recent Sampling Year	Violation	Typical Source of Constituent
TTHMs [Total Trihalomethanes] (µg/L)	80	N/A	1.5 - 6.9	3.25	2014	No	By-product of drinking water disinfection
Total Coliform Bacteria [Total Coliform Rule] (# positive samples)	No more than 1 positive monthly sample	0	0	0	2014	No	Naturally present in the environment
Chlorine [as Cl ₂] (mg/L)	[4.0 (as Cl ₂)]	[4.0 (as Cl ₂)]	0.5 - 1.46	0.82	2014	No	Drinking water disinfectant added for treatment

DEFINITIONS AL (REGULATORY ACTION LEVEL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

µS/CM (MICROSIEMENS PER CENTIMETER): A unit expressing the amount of electrical conductivity of a solution.

MCL (MAXIMUM CONTAMINANT LEVEL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

MCLG (MAXIMUM CONTAMINANT LEVEL GOAL): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

MRDL (MAXIMUM RESIDUAL DISINFECTANT LEVEL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: NOT APPLICABLE ND (NOT DETECTED): Indicates that the substance was not found by laboratory analysis.

NS: No standard

NTU (NEPHELOMETRIC TURBIDITY UNITS): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

PDWS (PRIMARY DRINKING WATER STANDARD): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

PHG (PUBLIC HEALTH GOAL): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

PPB (PARTS PER BILLION): One part substance per billion parts water (or micrograms per liter).

PPM (PARTS PER MILLION): One part substance per million parts water (or milligrams per liter).

SOURCE WATER ASSESSMENT

An assessment of the drinking water source(s) was completed in June 2001. All wells are considered most vulnerable to possible contaminating activities associated with high-density housing and associated septic systems, nearby storm water drainage, and some agricultural activities. Contaminants associated with these activities have not been detected in the water supply.

A copy of the complete assessment is available at the State Water Resources Control Board, Division of Drinking Water District Office, 1180 Eugenia Place, Suite 200, Carpinteria, CA 93013 or the Los Osos Community Services District, 2122 9th Street, Suite 102, Los Osos, CA 93402.

CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER INCLUDE:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

HEALTH INFORMATION ABOUT YOUR WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791). Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. LOCS D is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

STATISTICS FOR LOS OSOS CSD WATER SERVICE AREA:


- Water Production for the 2014 Calendar year was 206.6 Million Gallons (MG)
- The Average Daily Demand in 2014 was 506,066 gallons
- The Maximum Month Production was 20.9 MG in July 2014
- The Maximum Day Demand was July 20, 2014. On that day 889,500 gallons of water was produced.
- The District's total well capacity is 1,760 gallons per minute (gpm)
- The District's total storage capacity is 1.3 MG



MEMORANDUM

Los Osos Community Services District
384-0011-0500



Date: June 30, 2015
To: Kathy Kivley,
General Manager, Los Osos CSD
From: Rob Miller, PE 
Subject: Sea Water Intrusion

CIVIL AND
TRANSPORTATION
ENGINEERING

CONSTRUCTION
MANAGEMENT

LANDSCAPE
ARCHITECTURE

MECHANICAL
ENGINEERING

PLANNING

PUBLIC WORKS
ADMINISTRATION

SURVEYING /
GIS SOLUTIONS

WATER RESOURCES

The attached draft memorandum has been prepared by Cleath-Harris Geologists, Inc (CHG) to summarize the results of the semi-annual deep aquifer monitoring performed in April, 2015. The next monitoring event is planned for October, 2015. Seawater intrusion continues to advance in the lower aquifer, based on water levels and increasing chloride concentrations at key wells. Average rates of intrusion since 2009 in Zone D are estimated at 200-250 feet per year, and in Zone E are estimated at 100-170 feet per year. The chloride metric continues to rise, and increased from 175 mg/l to 190 mg/l between October 2014 and April 2015. The Basin Plan target for the chloride metric is 100 mg/l.

CHG does not recommend recalculating the rate of seawater intrusion every six months, given that the level of detail is insufficient to accurately perform the calculation. For the draft April 2015 monitoring report, the line shown on the map is the extrapolated inland movement of the intrusion front at the average rate calculated between 2009 and 2014. The chloride metric helps define where we are in reaching our goal, and can be more easily calculated every 6 months.



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San Luis Obispo, California 93401
(805) 543-1413



Technical Memorandum

Date: May 26, 2015
From: Spencer Harris, HG 633
To: Los Osos ISJ Group
SUBJECT: **April 2015 Lower Aquifer Monitoring, Los Osos Groundwater Basin.**

Lower aquifer groundwater monitoring in the Los Osos groundwater basin was performed by Cleath-Harris Geologists (CHG) in April 2015. Future monitoring events are planned on a semi-annual basis, and will implement monitoring recommendations included in the Los Osos Basin Plan. The purpose of groundwater monitoring is to collect and organize groundwater data on a regular basis for use in management of the basin, including the evaluation and mitigation of seawater intrusion.

Lower Aquifer Monitoring Program

Table 21 of the Updated Basin Plan (attached) lists 30 lower aquifer wells in the monitoring network, of which 20 are owned by the ISJ Parties (County of San Luis Obispo, S&T Mutual Water Company, Los Osos Community Services District and Golden State Water Company). Until agreements with the remaining ten private wells owners are in place, lower aquifer monitoring will be limited to wells owned by the ISJ Parties. Monitoring tasks are also listed in the attached Table 21 (with a few adjustments specific to seawater intrusion monitoring). Basin Plan monitoring network wells and tasks are also shown in the attached Figure 1.

Monitoring Results

Water levels for monitoring program wells are presented in the attached Table 1. The analytical results of groundwater samples collected from basin wells are presented in the attached Table 2, including the results of prior groundwater monitoring events. Chloride concentrations at lower aquifer monitoring wells are shown in the attached Figure 1.

One of the primary control points for the leading edge of the Lower aquifer Zone D isochlor is the LOCSD Palisades well (Basin Plan well LA15), which was out-of-service for a few months prior to the monitoring event. When this well is idle, upper aquifer water leaks down the annular space of the borehole and displaces lower aquifer water in the vicinity of the well. The April 2015 water quality result at Palisades is not representative of Lower aquifer conditions, and is therefore unsuitable for use in seawater intrusion interpretation.



Rate and Extent of Seawater Intrusion

As reported in the technical memorandum dated October 7, 2014, the estimated rate of Lower aquifer seawater intrusion since 2005 has been approximately 200-250 feet per year in Zone D, and approximately 100-170 feet per year in Zone E (the higher rate of intrusion occurring along a preferential pathway toward the LOCS D Palisades well). Based on the April 2015 monitoring event results, seawater intrusion in Zones D and E is continuing to advance inland, although the leading edge of seawater intrusion in Zone E along the preferential pathway is interpreted to have slowed or stalled at Palisades Avenue. Figure 1 presents the inferred extent of seawater intrusion in Zone D.

Continued inland advance of seawater intrusion in Zone D and Zone E is inferred based on groundwater levels and increasing chloride concentrations at the chloride metric wells (Table 1). As mentioned above, the April 2015 decline in Zone D chloride concentration at the LOCS D Palisades well was a result of upper aquifer borehole leakage which takes place when the well is idle for extended periods. The overall trend of increasing chlorides is expected to continue once the well resumes production.

Zone E Intrusion at Palisades

Production from Lower aquifer Zone E at the LOCS D Palisades well was permanently eliminated in 2013 through well modification. The only other purveyor well currently producing from Zone E is GSWC South Bay #1 (Basin Plan well LA20). A monitoring well constructed in Zone E at 10th Street (30S/11E-18K8; Basin Plan well LA18) lies between LOCS D Palisades and GSWC South Bay #1, and has not shown any significant increase in chlorides since first sampled 2005. This information indicates that when the accelerated Zone E intrusion along preferential pathways (permeable gravel lenses) reached the LOCS D Palisades well in 2004, it was essentially captured by the pumping depression created at the well. Now that Zone E production at the Palisades well has ceased, the accelerated intrusion into the area has slowed or stalled. Concurrently, however, the capture zone created by the Palisades well in Zone E has also subsided, which would allow existing intrusion in the area to begin moving east. No evidence of seawater intrusion has been observed at the Zone E well on 10th Street through April 2015.

Chloride Metric

The chloride metric graph has been updated with the current monitoring results (Figure 2). The metric continues to rise, reaching 190 mg/l chloride in April 2015.



Comparing Monitoring Events

Rates of seawater intrusion are affected primarily by water levels (pressure gradients) and aquifer permeability. The rate of intrusion is typically not uniform over time, but varies seasonally according to pumping cycles, and is accelerated during drought periods. Intrusion may also not be uniform within the aquifer zones, but may follow preferential pathways along discrete sand and gravel layers being tapped by pumping wells.

The recommended method for indexing seawater intrusion monitoring events for comparison purposes is to perform monitoring in the fall (October) and to match events using cumulative departure from mean precipitation. Monitoring in October will minimize seasonal variations and is also when fall water level readings are collected. When two monitoring events are in similar positions on the cumulative departure from mean precipitation curve, they are more directly comparable for assessing long-term trends in seawater intrusion. Figure 3 shows the cumulative departure from mean precipitation curve for the Morro Bay Fire Department. The rainfall years corresponding to the four seawater intrusion monitoring events (2004, 2009, 2014, and 2015) are successively drier years when compared to each other.

The ISJ Group has initiated both April and October water quality monitoring due to critical drought conditions. The last four years have been drought years. The drought influence on lower aquifer seawater intrusion would be directly related to declining fresh water pressures due to less upper aquifer leakage and less creek valley recharge. The other main factor affecting water levels and seawater intrusion is lower aquifer well production, which has declined since the last monitoring event in 2009-10. Based on the cumulative departure from mean precipitation curve, potential reductions in seawater intrusion due to reduced groundwater production appear to have been offset by declining fresh water recharge to the lower aquifer since 2009.

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ATTACHMENTS

Table 21 from Updated Basin Plan

Table 1 - Groundwater levels April 2015

Table 2 - Water Quality Results

Figure 1 - Lower Aquifer Chloride Concentrations

Figure 2 - Chloride Metric

Figure 3 - Cumulative Departure from Mean Rainfall

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SOURCE: 2015 UPDATED LOS OSOS BASIN PLAN (CHG Adjustments in RED)

CHAPTER 7: GROUNDWATER MONITORING PROGRAM

Table 21. Lower Aquifer Monitoring Network					
Program ID	Well Number	Area	Well Type	Monitoring*	
LA1	30S/10E-2A1	Dunes and Bay	Monitoring	L	
LA2	30S/10E-11A2	Dunes and Bay	Monitoring	L add G in Oct.	
LA3	30S/10E-14B2	Dunes and Bay	Monitoring	L add G in Oct.	
LA4	30S/10E-13M1	Western	Monitoring	L, GL	
LA5	30S/10E-13L7	Western	Municipal	L	
LA6	30S/10E-13L4	Western	Municipal	L, & remove G	
LA7	Private	Western	Private	TL	
LA8	30S/10E-13N	Western	Municipal	L, G	
LA9	30S/10E-24C1	Western	Municipal	L add G	
LA10	30S/10E-13J4	Western	Municipal	L, G	
LA11	30S/10E-12J1	Central	Monitoring	L, G	
LA12	30S/11E-7Q3	Central	Municipal	L, G	
LA13	30S/11E-18F2	Central	Municipal	TL	
LA14	30S/11E-18L6	Western	Monitoring	L	
LA15	30S/11E-18L2	Western	Municipal	L, G	
LA16	Private	Western	Private	L	
LA17	30S/11E-24A2	Western	Monitoring	L	
LA18	30S/11E-18K8	Central	Monitoring	L, G	
LA19	30S/11E-19H2	Central	Monitoring	L	
LA20	30S/11E-17N10	Central	Municipal	L, G	
LA21	30S/11E-17E7	Central	Monitoring	L	
LA22	30S/11E-17E8	Central	Monitoring	L add G	
Private	LA23	30S/11E-17C1	Central	Monitoring	L, G
LA24	Private	Eastern	Private	L	
LA25	Private	Eastern	Private	L	
LA26	Private	Eastern	Private	L	
LA27	Private	Eastern	Private	TL	
LA28	Private	Eastern	Private	L, G	
LA29	Private	Eastern	Private	L	
LA30	Private	Eastern	Private	L, G	

Legend: L = groundwater level; GL = geophysical logging; G = groundwater quality; general mineral suite; TL = transducer site for groundwater level.

Add groundwater sampling at mixed aquifer (C/D) wells:
 LOCS D 10th Street (18K9) and Sea Pines (13M2)

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Table 1
Groundwater Levels - April 2015

Program ID	Well Number	Date	Depth to Water	Reference point elevation (ft)*	Groundwater elevation (ft)*	Monitoring data source
LA1	30S/10E-2A1			16.0*		COUNTY (pending)
LA2	30S/10E-11A2			16.4*		COUNTY (pending)
LA3	30S/10E-14B2			16.8*		COUNTY (pending)
LA4	30S/10E-13M1	4/21/2015	45.32	41.2	-4.1	CHG
(none)	30S/10E-13M2	4/21/2015	39.41	40.2	0.8	CHG
LA5	30S/10E-13L7	4/23/2015	33			S&T
LA6	30S/10E-13L4	4/13/2015	63.7	68	4.3	GSWC
LA7	30S/10E-13P2	Private well - program participation to be determined				
LA8	30S/10E-13N	4/23/2015	133			S&T
LA9	30S/10E-24C1	4/14/2015	176	178.3	2.3	GSWC
LA10	30S/10E-13J4	4/2/2015	98	95.3	-2.7	GSWC
LA11	30S/10E-12J1	4/22/2015	7.65	8.4*	0.75*	CHG
LA12	30S/11E-7Q3	4/14/2015	36.7	24	-12.7	LOCSD
LA13	30S/11E-18F2	4/29/2015	105.5	100	-5.5	LOCSD
LA14	30S/11E-18L6			76		COUNTY (pending)
LA15	30S/11E-18L2	4/14/2015	92.55	85	-7.6	LOCSD
LA16	30S/11E-18M1	Private well - program participation to be determined				
LA17	30S/10E-24A2			210.4		COUNTY (pending)
LA18	30S/11E-18K8	4/21/2015	146.1	135.7	-10.4	CHG
(none)	30S/11E-18K9	4/14/2015	156.6	135	-21.6	LOCSD
LA19	30S/11E-19H2			256.2		COUNTY (pending)
LA20	30S/11E-17N10	4/23/2015	144			GSWC
LA21	30S/11E-17E7	4/21/2015	115.54	105.9	-9.6	CHG
LA22	30S/11E-17E8	4/21/2015	124.62	105.9	-18.7	CHG
LA23	30S/11E-17C1	Private well - program participation to be determined				
LA24	30S/11E-17J2	Private well - program participation to be determined				
LA25	30S/11E-20Aa	Private well - program participation to be determined				
LA26	30S/11E-20G2	Private well - program participation to be determined				
LA27	30S/11E-16Ma	Private well - program participation to be determined				
LA28	30S/11E-16Mb	Private well - program participation to be determined				
LA29	30S/11E-21E3	Private well - program participation to be determined				
LA30	30S/11E-21H1	Private well - program participation to be determined				

Water Level Metric Wells in Blue

*Elevations with astrix are reported in NAVD 88. All others are reported in NAVD 29.

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Table 2 Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3	SO4	Ca	Mg	K	Na
					mg/l	mg/l	mg/l		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-12J1	MBO5 DWR Obs.	LA11	E	2/14/2005	350	370	1300	8.1	840	77	ND	190	51	58	6.1	110
				11/20/2009	300	360	1150	7.5	732	83	ND	190	51	58	4.4	95
				7/24/2014	360	489	1290	7.7	780	105	ND	212	69	77	5	88
				4/22/2015	360	475	1290	7.8	810	112	ND	189	65	76	5	88
30S/10E-13J4*	GSWC Rosina	LA10	D	12/20/2004	72	230	720	7.1	410	150	7	14	38	33	1.4	29
				1/14/2010	35	260	778	6	435	200	7.1	13	41	38	1.5	33
				7/24/2014	80	418	1200	7.3	910	303	7.6	16	67	61	2	39
				4/22/2015	80	431	1230	7.1	750	331	8.3	20	69	63	2	39
30S/10E-13M2	Howard East	none	C,D	11/22/2004	51	810	2900	7.3	1500	810	2.4	140	130	120	4.7	210
				12/9/2009	55	1100	3740	7.1	2170	1100	2.2	220	160	160	4.8	370
				8/4/2014	60	757	3340	7.1	2450	990	2.5	178	117	113	5	382
				4/21/2015	60	739	3430	7.3	1930	950	2.5	178	117	113	5	382
30S/10E-13N	S&T #5	LA8	D	11/23/2004	42	80	390	6.9	200	67	26	9.2	13	12	1.7	38
				11/19/2009	41	89	386	6.8	267	73	27	11	15	13	1.4	38
				7/24/2014	50	100	438	7.4	270	76	31	10	17	14	2	38
				4/21/2015	50	98	445	6.9	280	77	33.9	11	16	14	2	38
30S/10E-24C1	GSWC Cabrillo	LA9	D	12/20/2004	64	130	610	7	310	110	20	19	22	19	1.6	50
				11/20/2009	60	150	611	7.1	347	130	18	22	23	22	1.6	52
				7/24/2014	40	69	339	7.6	240	46	37	6	11	10	1	32
				4/22/2015	70	117	530	7.3	320	95	24.2	16	19	17	2	45
30S/11E-7Q3	LOCSD 8th St.	LA12	D	11/18/2004	250	270	790	7.5	410	73	ND	39	44	40	2.3	48
				11/19/2009	220	290	782	7.4	465	92	ND	46	46	42	1.9	53
				7/23/2014	290	303	876	7.6	460	91	ND	43	49	44	2	54
				4/21/2015	290	305	897	7.7	500	101	ND	55	48	45	2	59
30S/11E-17E8	So. Bay Obs. Middle	LA22	D	1/14/2005	150	150	440	7.5	290	34	9.7	11	24	22	1.4	28
				11/20/2009	120	160	455	7.3	255	42	19	12	25	23	1.3	29
				7/23/2014	150	166	500	7.6	270	43	28	10	27	24	2	28
				4/21/2015	150	157	481	7.6	270	49	31.4	13	25	23	1	28
30S/11E-17N10	GSWC So. Bay #1	LA20	C,D,E	Jan 2003	250	--	510	7.1	290	37	ND	21	41	25	1.3	35
				11/20/2009	230	220	638	7.3	357	41	2.4	30	35	33	1.7	37
				7/24/2014	280	232	646	7.7	370	37	2.3	24	37	34	2	41
				4/22/2015	290	234	653	7.4	360	43	2.5	27	36	35	2	42
30S/11E-18K8	10th St. Obs. East (Deep)	LA18	E	1/19/2005	260	290	650	7.5	370	33	ND	38	62	33	2.5	28
				11/20/2009	230	220	620	7.5	378	32	ND	40	51	24	1.8	23
				7/24/2014	290	271	647	7.5	380	28	ND	34	56	32	2	27
				4/21/2015	290	265	634	7.7	400	33	ND	39	55	31	2	27
30S/11E-18K9	LOCSD 10th St.	none	C,D	May 2002	250	--	550	6.9	320	37	1	26	31	32	--	39
				11/20/2009	180	160	539	7.2	307	36	4.6	27	27	24	1.3	32
				7/23/2014	220	190	546	7.7	300	32	4.3	20	30	28	1	35
				4/21/2015	190	108	504	7.6	270	38	7	20	17	16	1	27
30S/11E-18L2**	LOCSD Palisades	LA15	D,E	11/18/2004	220	330	880	7.3	420	120	ND	31	54	48	2.2	40
			D,E	11/19/2009	200	590	1460	7.2	890	360	1.8	39	94	86	2	44
			D	7/23/2014	250	293	783	7.8	390	90	1.8	26	48	42	2	40
			D	4/29/2015	80	78	348	7.4	230	43	22	10	13	11	ND	30

ND = Not Detected

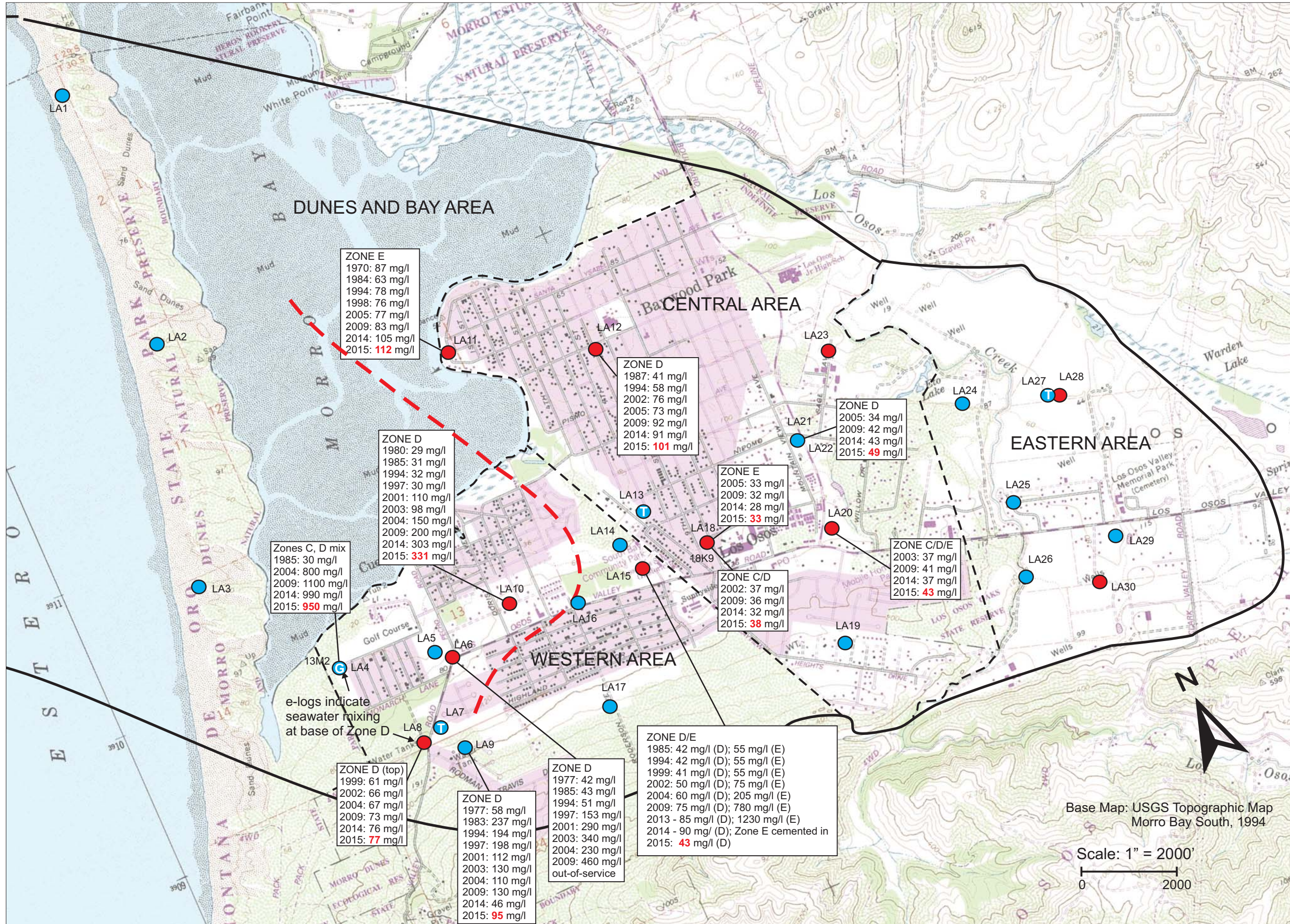
Chloride Metric Wells in Green (13J4 weighted x2); current chloride concentrations in red

*Chloride concentrations at 13J4 have varied seasonally by 100+ mg/l, and are affected by well production, so fluctuations are expected.

**Water from 18L2 affected by borehole leakage/upper aquifer influence when inactive

Table 1 Legend and Detection Limits

Constituent	Description	Practical Quantitation Limit (2014)
HCO3	Bicarbonate Alkalinity in mg/L CaCO3	10.0
Total Hardness	Total Hardness in mg/L CaCO3	--
Cond	Electrical Conductance in μ mhos/cm	1.0
pH	pH in pH units	--
TDS	Total Dissolved Solids in mg/L	20.0
Cl	Chloride concentration in mg/L	1.0
NO3	Nitrate concentration in mg/L	0.4
SO4	Sulfate concentration in mg/L	0.5
Ca	Calcium concentration in mg/L	1.0
Mg	Magnesium concentration in mg/L	1.0
K	Potassium concentration in mg/L	1.0
Na	Sodium concentration in mg/L	1.0



Explanation

Basin Plan Monitoring Tasks:

- Water level only
- Ⓧ Water level transducer
- Ⓞ Water level with geophysics
- Water level and water quality

101 April 2015 chloride concentration in mg/l shown in red

● Well location

--- Inferred extent of 250 mg/l Zone D isochlor

NOTE: the isochlor lines are interpreted from water quality and geophysical data, and include consideration of well construction and use.

--- approx. basin limits

Figure 1

Lower Aquifer Chloride Concentrations
April 2015 Groundwater Monitoring
Los Osos ISJ

Cleath-Harris Geologists

Base Map: USGS Topographic Map
Morro Bay South, 1994

Scale: 1" = 2000'



DRAFT

Lower Aquifer Seawater Intrusion
Chloride Metric 1980-2015

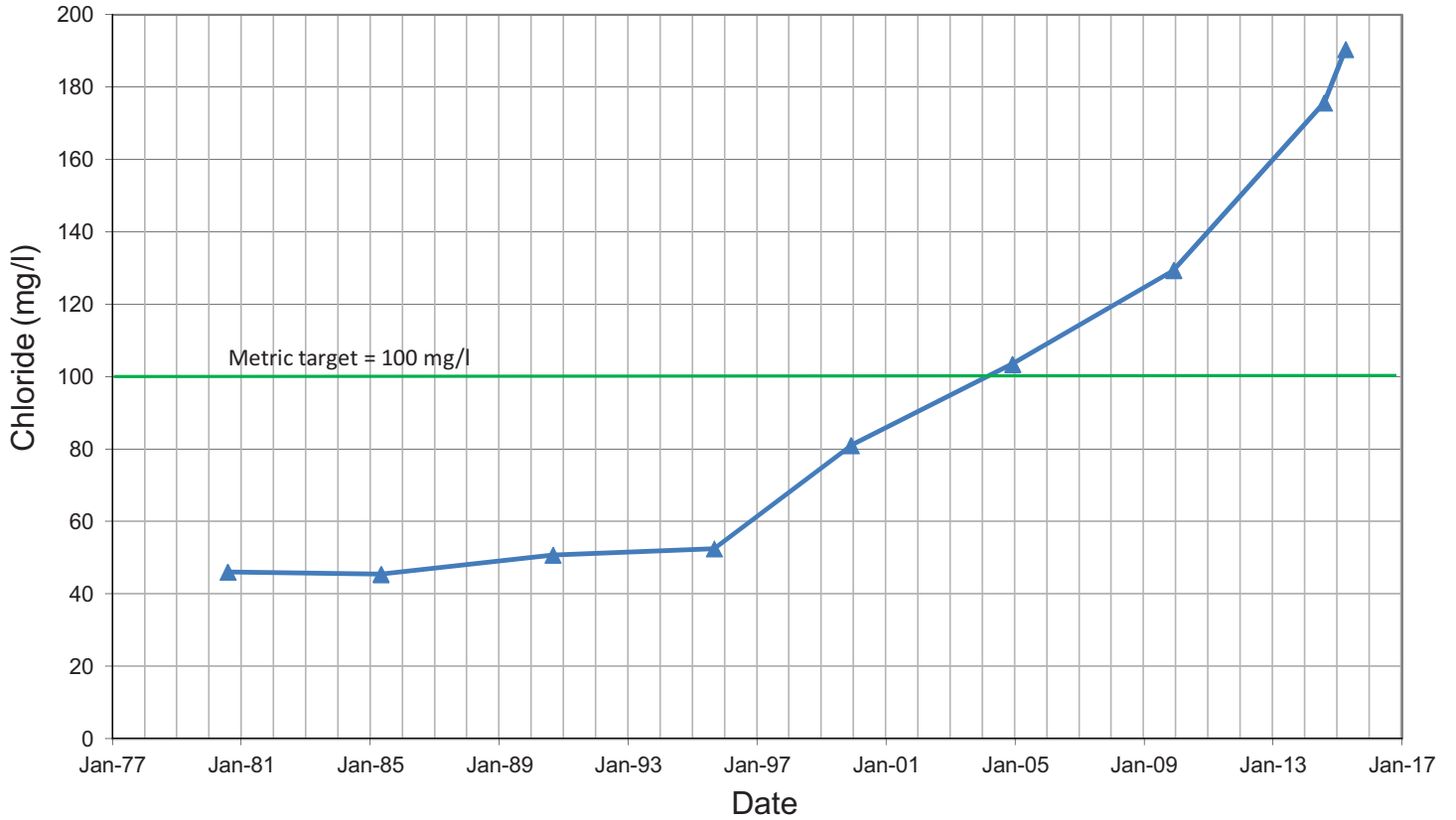
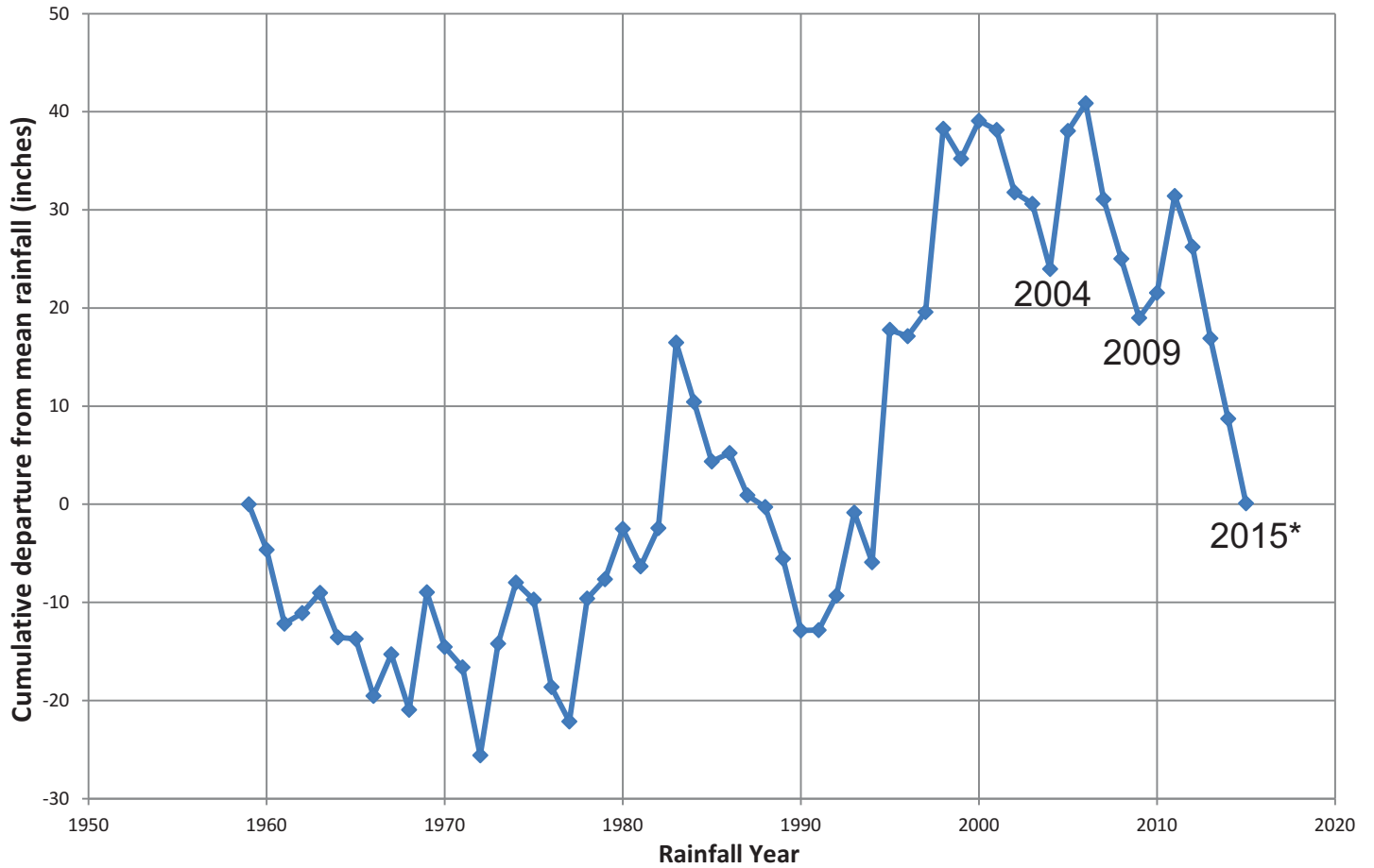


Figure 2
Chloride Metric
April 2015 Groundwater Monitoring
Los Osos ISJ

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Cumulative Departure from Mean Rainfall Morro Bay Fire Department 1959-2015



*NOTE: 2015 rainfall year provisional (year ends June 30, 2015)

Figure 3
Cumulative Departure from
Mean Rainfall at Morro Bay
April 2015 Groundwater Monitoring
Los Osos ISJ

Cleath-Harris Geologists