

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

AGENDA
REGULAR MEETING
BOARD OF WATER COMMISSIONERS
Tuesday, JANUARY 19, 2016 – 9:30 a.m.
MARGARET H. CHANDLER WATER RECLAMATION PLANT
399 CHANDLER PLACE
San Bernardino, California

BOARD OF WATER COMMISSIONERS

TONI CALLICOTT
 President

Commissioners
 LOUIS A. FERNANDEZ
 WAYNE HENDRIX
 JUDITH VALLES
 DAVID E. MLYNARSKI



STACEY R. ALDSTADT
 General Manager
 ROBIN L. OHAMA
 Deputy General Manager
 MIGUEL GUERRERO, P.E.
 Director of Water Utility
 JOHN A. CLAUS
 Director of Water Reclamation
 TERRI WILLOUGHBY
 Director of Finance
 JENNIFER L. SHEPARDSON
 Director of Environmental &
 Regulatory Compliance

“Trusted, Quality Service since 1905”

Welcome to a meeting of the Board of Water Commissioners of the City of San Bernardino.

- The City of San Bernardino Municipal Water Department recognizes its obligation to provide equal access to those individuals with disabilities. Please contact the General Manager’s Office (909-384-5191) two working days prior to the meeting for any requests for reasonable accommodation, to include interpreters.
- All documents for public review are on file with the Water Department located on the 5th floor of City Hall, 300 North “D” Street, San Bernardino or may be accessed online at http://www.ci.san-bernardino.ca.us/water/newsalerts/agendas_n_minutes.asp
- Please turn off or mute your cell phone while the meeting is in session.
- Any member of the public desiring to speak to the Board of Water Commissioners concerning any matter not on the agenda, but which is within the subject matter jurisdiction of the Board of Water Commissioners, may address the body at the end of the meeting during the period reserved for public comments. Said total period for public comments shall not exceed forty-five (45) minutes, unless such time limit is extended by the Board of Water Commissioners. A three-minute limitation shall apply to each member of the public, unless such time limit is extended by the Board of Water Commissioners. No member of the public shall be permitted to “share” his/her three minutes with any other member of the public.
- The Board of Water Commissioners may refer any item raised by the public to staff for appropriate action or have the item placed on the next agenda of the Board of Water Commissioners. However, no other action shall be taken nor discussion held by the Board of Water Commissioners on any item which does not appear on the agenda unless the action is otherwise authorized in accordance with the provisions of subdivision (b) of Section 54954.2 of the Government Code.
- Public comments will not be received on any item on the agenda when a public hearing has been conducted and closed.

CALL TO ORDER: _____ a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

1. CLOSED SESSION: _____ a.m./p.m.

Pursuant to Government Code Section(s):

- A. Conference with legal counsel – existing litigation – pursuant to Government Code Section 54956.9(a): *In Re City of San Bernardino, California*, United States Bankruptcy Court, Central District of California (Riverside), Case No. 6: 12-bk-28006-MJ.
- B. Conference with legal counsel – anticipated litigation – significant exposure to litigation – pursuant to Subdivision (b) (1), (2), (3) (A-F) of Government Code Section 54956.9.
- C. Conference with legal counsel – anticipated litigation – initiation of litigation – pursuant to subdivision (d) (4) of Government Code Section 54956.9 (One Item).
- D. Conference with legal counsel – personnel – pursuant to Government Code Section 54957.
- E. Conference with legal counsel and security consultant on matters posing a threat to the security of essential public services, including water, drinking water, and wastewater treatment pursuant to Government Code Section 54957 (a).
- F. Conference with labor negotiator – pursuant to Government Code Section 54957.6(a).

**END OF CLOSED SESSION
RECONVENE MEETING**

CALL TO ORDER: _____ a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS:
3. CONSENT CALENDAR
- MOTION:** That the motions indicated by consent calendar items 3A through 3F be adopted, except for _____.
- MOTION:_____ SECONDED:_____
- A. WAIVE FULL READING OF RESOLUTIONS
- MOTION:** That full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners be waived.
- B. PAYROLL
- MOTION:** Approve the payroll for the pay periods November 30, 2015 through December 13, 2015; December 14, 2015 through December 27, 2015; and December 28, 2015 through January 10, 2016.
- C. CONTRACTS AND BILLS
- MOTION:** Approve the payment of contracts and bills to be presented at this meeting.
- D. MINUTES
- MOTION:** Approve the minutes of the meetings of January 5, 2016 of the Board of Water Commissioners.
- E. PERSONNEL ACTIONS:
1. APPOINTMENT: Maria Nazarian, Bilingual Customer Service Representative I, Section 2060, Range 133, effective January 19, 2016. This position is in the budget and based on the needs and staffing for this section, the position is still justifiable under the budget.
 2. PROMOTION: Ted Brunson, Engineering Technician, Range 147, to the position of Associate Engineer, Range 162, ratify effective January 18, 2016. This position is in the budget and based on the needs and staffing for this section, the position is still justifiable under the budget.
- MOTION:** Approve the Personnel Actions as submitted.
- F. NOTICE OF COMPLETION – CONTRACT NO. 1616 – RIX TERTIARY FILTER PUMP SYSTEM MODIFICATIONS PROJECT (CO 00155): The final acceptance date of October 15, 2015, direct staff to file a Notice of Completion, and release the retention in accordance with Contract No. 1616.

MOTION: Approve the Notice of Completion as submitted.

END OF CONSENT CALENDAR

4. ADDITIONS TO THE AGENDA: (if any) in accordance with Section 54954.2 (b) (2) of the Government Code (Brown Act), a two-thirds vote (or a unanimous vote if less than two-thirds are present) is required to add an item for action provided that there is a need to take immediate action and that the need for action came to the attention of the agency after the agenda was posted.

MOTION: Approve an additional item(s) to be added to the agenda in accordance with Government Code Section 54954.2(b) (2).

MOTION:_____ SECONDED:_____

5. APPROVAL OF EQUIPMENT PURCHASE AND INSTALLATION BY BEST PUMP AND DRILLING, INC. FOR MT. VERNON WELL REHABILITATION: Water Department staff issued a Request for Qualifications under Specification No. 1640 – Well Rehabilitation Assessment and Repair in December 2014. As a result, in February 2015, four (4) well rehabilitation contractors were pre-qualified. Staff recently requested rehabilitation proposals for the Mt. Vernon Well from these pre-approved contractors.

Rehabilitation of the Mt. Vernon Well was prompted by declining water levels in the groundwater basin due to the ongoing drought, equipment degradation, and a loss of efficiency. Furthermore, during the design phase, it was discovered that the 83 year old well has a 20-foot vertical deviation, making the installation of an above ground vertical turbine pump very difficult, if not impossible.

Best Pump and Drilling, Inc. was responsive and provided the lowest quotation in the amount of \$73,543.00. Due to the critical nature of this well with respect to its typical use and need for reliable water supply, staff is requesting Board approval of this work prior to staff procuring the equipment.

Staff is recommending that this expenditure be approved from existing funds in the FY 2015/16 Capital Budget under Annual Well Rehabilitation (CO 10755) with available funding of approximately \$463,000.00. Furthermore, Southern California Edison will provide an incentive rebate to the Department upon project completion of approximately \$11,500.00 to offset the capital costs.

MOTION: Approve the equipment and installation from Best Pump and Drilling, Inc. in the amount of \$73,543.00.

MOTION:_____ SECONDED:_____

6. DECEMBER 2015 DROUGHT MONITORING REPORT: This report continues to monitor and track the effects of the ongoing drought by monitoring groundwater levels in select wells located in the Department's service area. The Board implemented Stage IIA extreme mandatory restrictions as a result of the State Water Resources Control Board (SWRCB) emergency regulations. **(INFORMATION ONLY)**

7. REPORTS:

A. Report of the President:

B. Report of the Commissioners:

C. Report of the Directors:

D. Report of the General Manager:

7. PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA:8. ADJOURNMENT: The meeting adjourned at _____ a.m./p.m.

NOTE: The next regular meeting of the Board of Water Commissioners is scheduled for *9:30 a.m., February 2, 2016* in the Margaret H. Chandler Water Reclamation Plant Conference Room, 399 Chandler Place, San Bernardino, California, 92408.

ROLL CALL: Roll call was taken with the following present: President Callicott; Commissioners Fernández, Hendrix, and Mlynarski; staff Aldstadt, Ohama, Claus, Guerrero, and Willoughby; Henry Empeño, City Attorney's Office; Amy Smith, Executive Secretary.

ADJOURN CLOSED SESSION: At 10:22 a.m., the Closed Session of the Board of Water Commissioners adjourned to the Regular Meeting of the Board of Water Commissioners in the Water Department Board Room.

ROLL CALL: Roll call was taken by the Secretary with the following being present: President Callicott; Commissioners Fernández, Hendrix, and Mlynarski; staff Aldstadt, Ohama, Claus, Guerrero, and Willoughby; Henry Empeño, City Attorney's Office; Pat Rogers, Information Technology Manager; Amy Smith, Executive Secretary.

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS: None

3. CONSENT CALENDAR: Upon motion by Commissioner Hendrix, duly seconded by Commissioner Mlynarski, it was voted to approve the following Consent Calendar, Agenda Items 3A through 3E3:

A. WAIVE FULL READING OF RESOLUTIONS: Waive full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners.

B. PAYROLL

	<u>Water Fund</u>	<u>Sewer Fund</u>	<u>Total</u>
Claims: 266842-267154			
Accounts Payable	\$2,720,773.38	\$647,363.95	\$3,368,137.33
Gross Payroll: 11/16/15- 12/13/15	<u>517,371.37</u>	<u>374,510.87</u>	<u>891,882.24</u>
TOTALS	<u>\$3,238,144.75</u>	<u>\$1,021,874.82</u>	<u>\$4,260,019.57</u>

Payroll for the pay period November 30, 2015 to Dec 13, 2015.

C. CONTRACTS AND BILLS: Contracts and bills presented at this meeting.

D. MINUTES: December 1, 2015

E. PERSONNEL ACTIONS:

1. APPOINTMENT: Raymundo Ramirez, Water Reclamation Trainee, Section 4020, Range 128, effective January 4, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

2. PROMOTION: Beverly Castelazo, Customer Service Representative I, Range 133, to the position of Customer Service Representative II, Section 2060, Range 137, ratified effective December 14, 2015. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

3. PROMOTION: Kimberly Chacon, Office Assistant, Range 128, to the position of Bilingual Customer Service Representative I, Section 2060, Range 133, ratified effective December 14, 2015. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

END OF CONSENT CALENDAR

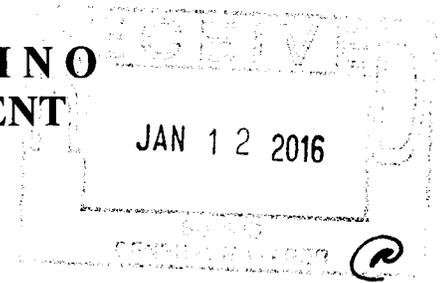
4. ADDITIONS TO THE AGENDA: None.
5. NOVEMBER 2015 DROUGHT MONITORING REPORT: This report continued to monitor and track the effects of the ongoing drought by monitoring groundwater levels in select wells located in the Department's service area. The Board implemented Stage IIA extreme mandatory restrictions as a result of the State Water Resources Control Board (SWRCB) emergency regulations. **(INFORMATION ONLY)**
6. REPORTS:
- A. Report of the President: None
 - B. Report of the Commissioners: None
 - C. Report of the Directors: None
 - D. Report of the General Manager: None
7. PUBLIC COMMENTS: This is the time specified for public comments concerning specific items not on the agenda or matters of general interest. There being none, the matter was closed.
8. ADJOURN MEETING: The meeting adjourned at 10:24 a.m. to the next Regular Meeting to be held on Tuesday, January 19, 2016, at 9:30 a.m. in Margaret H. Chandler Water Reclamation Plant Conference Room, 399 Chandler Place, San Bernardino, California, 92408.

BY: _____
TONI CALLICOTT
President

BY: _____
ROBIN L. OHAMA
Deputy City Clerk & Ex-Officio Secretary

**CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT**

**BOARD OF WATER COMMISSIONERS
STAFF REPORT**



TO: Stacey R. Aldstadt, General Manager
FROM: Robin L. Ohama, Deputy General Manager
SUBJECT: APPOINTMENT OF MARIA NAZARIAN TO BILINGUAL CUSTOMER SERVICE REPRESENTATIVE I
DATE: January 12, 2016
COPIES: K. Hernandez, Human Resources

BACKGROUND:

A vacancy exists within Section 2060, Customer Service, due to the recent promotion of Beverly Castelazo to Customer Service Representative II, effective December 14, 2015. This position provides direct customer contact and must be filled in order to continue to provide high levels of customer service. This position is budgeted.

An eligibility list was called for and interviews for this position were conducted on November 17 and November 18, 2015. From those interviews, Maria Nazarian was selected as the best candidate for the position.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

- Approve the appointment of Maria Nazarian to Bilingual Customer Service Representative I, Section 2060, Range 133, effective January 19, 2016.

Respectfully submitted,

A handwritten signature in cursive script that reads "Robin Ohama".

Robin L. Ohama
Deputy General Manager

sdm

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

JAN 11 2016

@for SWA

TO: Stacey R. Aldstadt
FROM: Miguel J. Guerrero
SUBJECT: PERSONNEL ACTION - PROMOTION OF TED BRUNSON TO ASSOCIATE ENGINEER (SECTION 3060)
DATE: January 6, 2016
COPIES: Greg Gage, Human Resources

BACKGROUND:

Due to the recent promotion of Michael Nevarez, a vacancy exists in Water Utility Engineering Section 3060 for an Associate Engineer. Selection interviews for this position were conducted on January 5, 2016 by Michael Nevarez, Emily Long, and Francisco Lopez-Jimenez. This position is in the budget. I have reviewed the needs of and staffing for this section and believe, based on those, that the position is still justifiable under the budget. The panel is recommending the promotion of Ted Brunson to fill this position.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

Approve the promotion of Ted Brunson from Engineering Technician, Range 147 to the position of Associate Engineer, Range 162, effective January 18, 2016.

Respectfully submitted,



Miguel J. Guerrero, P.E.
Director, Water Utility

MJG:swd

Agenda Item 3E2

**CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT**

**BOARD OF WATER COMMISSIONERS
STAFF REPORT**

TO: Stacey R. Aldstadt, General Manager

FROM: Robin L. Ohama, Deputy General Manager

SUBJECT: NOTICE OF COMPLETION – CONTRACT NO. 1616
RIX TERTIARY FILTER PUMP SYSTEM MODIFICATIONS PROJECT

DATE: January 12, 2016

CC: J. Claus, M. Honis

BACKGROUND:

Staff has completed a final inspection of the contract work performed by Davis Electric, Inc., for the RIX Tertiary Filter Pump System Modifications Project, and recommend acceptance of the project. Due to administrative error, there was a delay in filing a Notice of Completion for this project. The project was completed on October 15, 2015.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

- Approve the project with a Final Acceptance date of October 15, 2015, direct staff to file a Notice of Completion, and release the retention in accordance with Contract No. 1616.

Respectfully submitted,



Robin L. Ohama
Deputy General Manager

sdm
Attachment

FREE RECORDING REQUESTED PURSUANT
TO GOVERNMENT CODE SECTION 27383

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

NAME Robin L. Ohama
Deputy General Manager
STREET City of San Bernardino
ADDRESS Municipal Water Department
P. O. Box 710
CITY, STATE & ZIP CODE San Bernardino, CA 92402

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Accessor's Parcel Number: 0260-081-10

NOTICE OF COMPLETION

Notice, pursuant to Civil Code Section 3093, must be filed within 10 days after completion. (See reverse side for complete requirements.)

Notice is hereby given that:

1. The undersigned is owner or corporate officer of the owner of the interest or estate stated below in the property hereinafter described:
2. The full name of the owner is City of San Bernardino Municipal Water Department
3. The full address of the owner is 300 North D Street, San Bernardino, California 92402
4. The nature of the interest or estate of the owner is: In fee.

In Fee

(If other than fee, strike "in fee" and insert, for example, "Purchaser under contract of purchase," or "lessee")

5. The full names and full addresses of all persons, if any, who hold title with the undersigned as joint tenants or as tenants in common are:

NAMES	ADDRESSES
N/A	N/A

6. The full names and full addresses of the predecessors in interest of the undersigned, if the property was transferred subsequent to the commencement of the work or improvements herein referred to:

NAMES	ADDRESSES
N/A	N/A

7. A work of improvement on the property hereinafter described was completed on October 15, 2015. The work done was:

RIX Tertiary Filter Pump System Modifications, Specification No. 1616

8. The name of the contractor, if any, for such work of improvement was: Davis Electric, Inc.

May 4, 2015

(if no contractor for work of improvement as a whole, insert "none")

(Date of Contract)

9. The property on which said work of improvement was completed is in the City of Colton

County of San Bernardino, State of CA, and is described as follows:

10. The street address of said property is 1990 West Agua Mansa Road

(if no street address has been officially assigned, insert "none")

Dated: _____

(Signature of owner or corporate officer of owner named in paragraph 2 or his agent)

Stacey R. Aldstadt, General Manager, City of San Bernardino Municipal Water Department

VERIFICATION

I, the undersigned, say: I am the General Manager, the declarant of the foregoing notice of completion; ("President of", "Manager of", "Partner of", "Owner of", etc.)

I have read said notice of completion and know the contents thereof, the same is true of my own knowledge. I declare under penalty of perjury that the foregoing is true and correct.

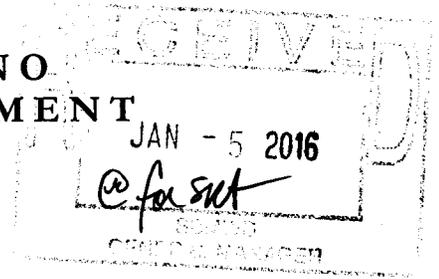
Executed on _____, 2016, at San Bernardino, CA
(City) (State)

(Personal signature of the individual who is swearing that the contents of the notice of completion are true)

Stacey R. Aldstadt, General Manager, City of San Bernardino Municipal Water Department

**CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT**

**BOARD OF WATER COMMISSIONERS
STAFF REPORT**



TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **APPROVAL OF EQUIPMENT PURCHASE AND INSTALLATION BY BEST PUMP AND DRILLING, INC. FOR MT. VERNON WELL REHABILITATION**

DATE: January 5, 2016

COPIES: Robin Ohama (w/o attach), Terri Willoughby (w/o attach), Mike Garland (w/attach), Susan Justice (w/o attach), Sally Duran (w/attach)

BACKGROUND:

Staff issued a Request for Qualifications (RFQ) under Specification No. 1640 – Well Rehabilitation Assessment and Repair in December 2014. As a result, in February 2015, four (4) well rehabilitation contractors were prequalified based on work experience, minimum insurance requirements, proper contractor's license, bonding capacity, experience level, and adequate staffing. Staff recently requested rehabilitation proposals for the Mt. Vernon Well from these preapproved contractors. Best Pump and Drilling, Inc. was responsive and provided the lowest quotation in the amount of \$73,543.00. A copy of the quotation is attached for reference.

Rehabilitation of the Mt. Vernon Well was prompted by declining water levels in the groundwater basin due to the ongoing drought, equipment degradation, and a loss of efficiency. As a result of these issues, production in the well has decreased by half from 1,000 gallon per minute (gpm) in 2011 to 500 gpm in 2015. Furthermore, during the design phase, it was discovered that the 83-year-old well has a 20-foot vertical deviation, making the installation of an above ground vertical turbine pump very difficult if not impossible. Instead, a submersible pump will be required to maintain water production needs.

Recent Southern California Edison (SCE) pump test results show the overall efficiency of the Mt. Vernon Well at 59%. New pumping equipment with improved motor efficiency will result in annual power savings of approximately \$6,000.00. In addition, SCE is currently offering a cash rebate incentive of approximately \$5,500.00 to replace the inefficient and failing equipment, and the well rehabilitation will translate to a 20-ton decrease in carbon dioxide emissions. The 2014 SCE pump test is attached for reference.

Stacey R. Aldstadt, General Manager

Page 2

January 5, 2016

**SUBJECT: APPROVAL OF EQUIPMENT PURCHASE AND INSTALLATION BY
BEST PUMP AND DRILLING, INC. FOR MT. VERNON WELL
REHABILITATION**

Due to the critical nature of this well, with respect to its typical use and need for reliable water supply, Staff is requesting Board approval of this work prior to staff procuring the equipment.

FISCAL IMPACT:

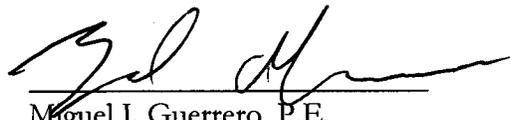
Staff is recommending that this expenditure of \$73,543.00 be approved from existing funds in the Fiscal Year 2015/2016 Capital Budget under *Annual Well Rehabilitation (CO 10755)* with available funding of approximately \$463,000.00. Furthermore, SCE will provide an incentive rebate to the Department upon project completion of approximately \$11,500.00 to offset the capital costs.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

- **Approve the equipment procurement and installation from Best Pump and Drilling, Inc. in the amount of \$73,543.00.**

Respectfully submitted,



Miguel J. Guerrero, P.E.
Director of Water Utility

MJG:swd
Attach.



Quotation Form

Customer: San Bernardino Municipal Water Department
 195 North D Street
 San Bernardino, CA 92401
 909-384-5087 F: 909-379-2618

Job No.: 20822
Contact: Michael Garland
Date: 11/9/2015

Well or Description of Work: MT Vernon Well Rehabilitation - R3

Terms: Due Upon Receipt

Quantity	Description	Price	Unit	Total
1000GPM @ 435'TDH @ 1800RPM				
1	Mobilization / Demobilization	\$540.00	L.S.	\$540.00
1	Goulds 12CLC 8-stage submersible turbine assembly with 316 stainless steel impellers	\$13,850.00	EA	\$13,850.00
1	SME 150HP 460V/3PH 2-pole 1800RPM HE submersible motor	\$34,819.00	EA	\$34,819.00
1	500' x 4/0 flat PVC jacketed submersible cable	\$11,484.00	EA	\$11,484.00
1	16" Sch. 80 PVC - motor cooling shroud	\$2,490.00	EA	\$2,490.00
1	500' x 1" schedule 40 flush-thread PVC sounding pipe	\$785.00	EA	\$785.00
1	500' x 1/4" PVC jacketed stainless steel airline assy.	\$1,380.00	EA	\$1,380.00
1	20" x 10" surface plate 10" 150# discharge flange	\$2,695.00	EA	\$2,695.00
1	Miscellaneous Materials	\$500.00	EA	\$500.00
1	Pump Rig, Crew and Fuel: Reinstall Pump Assembly*	\$5,000.00	L.S.	\$5,000.00
	*Owner shall supply 500' x 10" column pipe			
	Taxes and Freight Included	TOTAL		\$73,543.00

If above referenced quote meets your approval, please sign below and return.

Authorized Signature: _____ **Title:** _____

Date: _____ **Purchase Order No.:** _____

Best Drilling and Pump, Inc. does not assume liability for pump/motor suppliers delays in manufacturing, testing or deliveries. Best Drilling and Pump is not responsible for labor or rig cost associated with replacement of manufactures equipment failures or warranty replacement. Best does not take any responsibility for any damage to the well casing, screen, gravel pack, pump equipment, motors, valves, pump house and any other damage arising in the course of any well work including but not limited to: inspection, cleaning, repairing, chemical treatment, brushing, bailing, or replacement of any new or defective parts manufactured or installed by others.

1640 Pellisier Road, Colton, CA 92324
 Telephone: (951) 684-1952 Fax: (951) 684-3852 Email: TGarcia@BestDrillingandPump.com
 Contractor No.: C-57, 826672

**Confidential/Proprietary Information**

August 22, 2014

MIKE GARLAND
SAN BERNARDINO WATER DEPT
195 N. D STREET
SAN BERNARDINO, CA 92401**HYDRAULIC TEST RESULTS: MT VERNON WELL**

Location: 1993 W HIGHLAND AVE, SAN BDNO, CA 92407-6503

Cust #: 0-999-2954 Serv. Acct. #: 000-6848-54

Meter: 259000-003426 Pump Ref. #: 6265

In accordance with your request, an energy efficiency test was performed on your turbine well pump on August 6, 2014. If you have any questions regarding the results which follow, please contact ADAM MCCAMISH at (951)233-8957.

Equipment

HP: 200.0

Pump: N/A

Motor: US

No: N/A

No: G08BF82AMA3

Results	Test 1	Test 2
Discharge Pressure, PSI	13.1	21.5
Standing Water Level, Feet	348.7	348.7
Drawdown, Feet	11.9	8.4
Discharge Head, Feet	30.3	49.7
Pumping Water Level, Feet	360.6	357.1
Total Head, Feet	390.9	406.8
Capacity, GPM	689	531
GPM per Foot Drawdown	57.9	63.2
Acre Feet Pumped in 24 Hours	3.045	2.347
kW Input to Motor	85.0	75.5
HP Input to Motor	114.0	101.2
Motor Load (%)	53.3	47.3
Measured Speed of Pump, RPM	1,792	
Customer Meter, GPM	682	494
kWh per Acre Foot	670	772
Overall Plant Efficiency (%)	59.7	53.9

Test 1 is the normal operation of this pump at the time of the above test(s). The other results were obtained by throttling the discharge. Well runs slightly throttled.

RON FORD
Manager
Hydraulic Services**RECEIVED**
OPERATIONS
SEP 18 2014
CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPT.



Confidential/Proprietary Information

August 22, 2014

MIKE GARLAND
 SAN BERNARDINO WATER DEPT
 195 N. D STREET
 SAN BERNARDINO, CA 92401

PUMPING COST ANALYSIS: MT VERNON WELL
 Location: 1993 W HIGHLAND AVE, SAN BDNO, CA 92407-6503
 Cust #: 0-999-2954 Serv. Acct. #: 000-6848-54
 Meter: 259000-003426 Pump Ref. #: 6265

The following energy efficiency analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on August 6, 2014, billing history for the past 12 months, and your current rate of TOU-PA2B.

Assuming that water requirements will be the same as for the past year, and all operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test, it is estimated that:

1. Overall plant efficiency can be improved from 59.7% to 70.0%.
2. This can save you up to 46,108 kWh and \$5,870.41 annually.
3. These kWh savings translate to a 20-ton decrease in CO₂ emissions.

	<u>Existing</u>	<u>Plant Efficiency Improved</u>	<u>Savings</u>
Total kWh	312,384	266,276	46,108
kW Input	85.0	72.5	12.5
kWh per Acre Foot	670	571	99
Acre Feet per Year	466.3		
Average Cost per kWh	\$0.13		
Average Cost per Acre Foot	\$85.30	\$72.71	\$12.59
Overall Plant Efficiency (%)	59.7	70.0	
Total Annual Cost	\$39,772.73	\$33,902.32	\$5,870.41

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact ADAM MCCAMISH at (951)233-8957.

RON FORD
 Manager
 Hydraulic Services



**Save Energy,
Save Money. . .
Your test results show that you can!**

August 22, 2014

**MIKE GARLAND
SAN BERNARDINO WATER DEPT
195 N. D STREET
SAN BERNARDINO, CA 92401**

**PUMPING COST ANALYSIS
MT VERNON WELL**

Location: 1993 W HIGHLAND AVE, SAN BDNO, CA 92407-
Cust #: 0-999-2954 Serv. Acct. #: 000-6848-54
Meter: 259000-003426 Pump Ref. #: 6265

Dear SCE Customer:

Helping California businesses save energy and money is a major goal at SCE. As you know, our Technical Specialist performed a free energy efficiency test on one or more pumps at your facility on August 6, 2014. We thank you for the opportunity to provide this service, and appreciate your interest in the performance of your pumps.

The results of the testing, shown in the table below, indicate that the turbine well pump listed above has the potential for improved Overall Plant Efficiency (OPE), lower energy costs, and a cash incentive.

	Projected Incentive, Energy, and Cost Savings			
	<u>Existing</u>	<u>Improved</u>	<u>Savings</u>	<u>Cash Incentive</u>
Total kWh	312,384	266,276	46,108	\$3,688.60
kW Input	85.0	72.5	12.5	
kW on-peak activity factor *			11.0	\$1,656.06
Acre Feet per Year	466.3			
kWh per Acre Foot	670	571	99	
Average Cost per Acre Foot	\$85.30	\$72.71	\$12.59	
Overall Plant Efficiency (%)	59.7	70.0		
Annual Total	\$39,772.73	\$33,902.32	\$5,870.41	\$5,344.67

(*The kW on-peak activity factor represents how the kW impacts the SCE system during on-peak periods as determined by SCE's agricultural and water pumping customers' average load profiles. By improving efficiency, your expected kW savings is 12.5 kW, and the savings used for incentive calculations is 88% of 12.5, or 11.0 kW.)

Actual kW savings may vary at time of application validation.

Case studies have shown that repairing, retrofitting, or replacing inefficient pumps can save energy and money, and may even help you avoid serious operational problems. For your business, this could mean the following:

- **Improved Plant Efficiency:** Your OPE can be improved from 59.7% to 70.0%.
- **Lower Energy Costs:** Based on the test data, your past energy usage, and your current rate of TOU-PA2B, we estimate that you may save up to 46,108 kWh annually, resulting in energy cost savings of \$5,870.41.
- **Cash Incentive:** Through the retrofit and installation of more energy-efficient equipment, you have the potential to receive an incentive of \$0.08 per kWh and \$150 per on-peak activity factored kW reduced, courtesy of SCE's Customized Efficiency Program. Based on your estimated kWh and kW, you would be eligible for a Potential Cash Incentive of \$5,344.67, capped at 50% of your project cost. (See contract for details.)

If you are interested in an incentive for this pump, please contact **GERALD WILSON** at (909)421-6451 to complete a project application. All applicants must receive a written approval authorization before implementing any project; failure to comply will result in forfeiture of incentive funding.

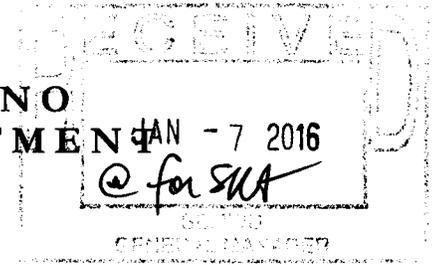
We encourage you to review your results and take advantage of SCE's energy efficiency expertise and incentives. Visit www.sce.com/rebatesandsavings, or give us a call and let us know how we can be of further service to you.

Sincerely,

Southern California Edison

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT



TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: INFORMATIONAL ITEM ONLY – DECEMBER 2015 DROUGHT MONITORING REPORT

DATE: January 7, 2016

COPIES: Robin Ohama (w/o attach), Mike Garland (w/attach), Con Arrieta (w/attach), Greg Gage (w/attach), Sally Duran (w/attach)

BACKGROUND:

Staff continues to monitor and track the effects of the ongoing drought by monitoring groundwater levels in select wells located in the Department's service area. The purpose of this monitoring is to track groundwater level trends as pumping continues during extreme drought conditions. This monthly report to the Board of Water Commissioners (Board) will provide valuable data needed to contemplate important policy decisions related to Water Supply Shortage Stages outlined in Rule and Regulation No. 21 (Rule).

In May 2015, the Board implemented Stage IIA extreme mandatory restrictions as a result of the State Water Resources Control Board (SWRCB) emergency regulations. The State's emergency regulations outlined percentage reduction tiers in gross water production for each urban water retailer in the State. The San Bernardino Municipal Water Department must reduce its gross water production by 28% or face possible enforcement actions from the State, including monetary fines. Stage IIA requires a 28% reduction in potable water use by all of its customers. Stage IIA also restricts outdoor watering to three days per week, prohibits public medians with turf irrigation to be irrigated, and prohibits outdoor irrigation 48 hours after a significant rainfall event.

STAFF ANALYSIS – BASIN CONDITIONS/HYDROGRAPHS:

In order for staff to effectively monitor the basin conditions, index wells within defined sub-regions were selected and are shown on the attached overall figure as well as regional figures along with each well's hydrograph in **Exhibit A**. A well hydrograph graphically depicts the wells water level over time.

Stacey R. Aldstadt, General Manager

Page 2

January 7, 2016

SUBJECT: INFORMATIONAL ITEM ONLY – DECEMBER 2015 DROUGHT MONITORING REPORT

The attached hydrographs indicate a continued gradual decline of water levels across the entire service area. Due to the lack of rainfall and snowmelt and ensuing recharge for the past four years, the rate of decline in the basin has accelerated. However, it should be noted that water demands in the distribution system have drastically decreased as the public has responded to the drought message. Many wells that typically are running this time of year are idle, and those particular wells are experiencing water level increases as a result.

Although not as drastic as previous years, water levels in the northwest portion of the Department's service area west and northwest of California State University San Bernardino (Cal State SB) region (Cajon 3, DC-1, and Mallory Well) continued to drop for most of 2016. For the past few months water levels stabilized and have recently showed a slight increase, likely due to the low demand season.

Wells located just south of Cal State SB, such as Newmark 3, and EPA Wells 006 and 007, are typically shallow wells and are stabilizing with gradual decreases/increases in water levels over the past few months.

Wells situated near the I-210 corridor, notably the 31st Street Well, 40th Street Well, Mt. View Well, and Gilbert Street Well, are now experiencing stabilizing water levels. Some of these wells are seasonably operated (only operated during hot summer months) and are typically not running this time of year, thus the stabilizing water levels.

EPA 001, 002, 003, 004, and 005 wells are operational and are showing slight increases in water levels. It appears that the seasonal trend of declining levels in these wells has passed. Water levels are still 20 to 40 feet higher in these wells than the recent low levels experienced during the 2008 and 2009 timeframe.

EPA wells along the western edge of the Muscoy OU (EPA Wells 109 through 112) are showing slight decreases in water levels, adding to the extreme decline in the shallow and intermediate aquifer levels over the last two years. Water levels in the deep aquifer remain steady.

Wells in the Cajon Creek and Lytle Creek areas are experiencing the most severe declines in the service area. This is in large part due to the fact that the Department has no means by which to artificially recharge this part of the basin. Staff is looking into long-term solutions to this recharge deficiency and will be briefing the Board in the future on a plan to recharge this part of the basin.

Exhibit B contains a report generated from the Department's database for all of the production well water levels. This report contains calculations to determine the depth of water over pump equipment in each well. The depth of water over pumping equipment is critical to ensure adequate positive suction head for each pumping unit. If the water levels in a well decline to the same elevation as the pumping equipment, the pump will begin to pull air into the pump bowls, inducing

Stacey R. Aldstadt, General Manager

Page 3

January 7, 2016

SUBJECT: INFORMATIONAL ITEM ONLY – DECEMBER 2015 DROUGHT MONITORING REPORT

equipment damage. If water levels in wells decline to these levels, it prompts the need to rehabilitate the well by pulling the old pump equipment and replacing with new pumping equipment and placing the pump deeper in the well. Staff monitors these water level depths closely to ensure no failures occur and to estimate if and when pump equipment needs to be pulled and replaced to effectively “chase” the declining water levels.

Exhibit C contains a report of total cumulative rainfall at the five (5) rain gauges operated and maintained by the Department. These five (5) gauges are located at the Water Utility Yards, Mill and D Plant, Newmark Plant, Lytle Creek Plant, and Devil Canyon Plant. The report includes calendar year and fiscal year totals. It shows that there was less than an inch of rain in south part of the City and more than an inch along the foothills in December 2015.

COMPLETED AND PENDING WELL REHABILITATIONS:

The rehabilitation of EPA Well 003 was completed in December. The well is currently in operation. Planning and preliminary design for the rehabilitation of Mt. Vernon began in November, with the rehabilitation work expected to commence early February with Board approval. Other wells slated to be rehabilitated in the near future are EPA 001 and 16th St./Sierra Way.

SERVICE AREA WATER DEMAND REDUCTIONS:

The Department has been reporting monthly production data to the SWRCB as required by the emergency regulations. SWRCB also required all urban water suppliers to track gallons per capita per day (GPCD) beginning in October 2014 for the September 2014 reporting period. The response by the Department’s customers to the Board’s Stage II and Stage IIA declarations and the mandatory outdoor water use restrictions has been a success, despite some months showing water demand has increased as compared to 2013. GPCD values and percent water reduction as compared to 2013 values are shown below.

Month/Year	GPCD	% Change in Gross Production vs. 2013
December 2014	66.84	-19.12%
January 2015	80.09	-1.60%
February 2015	93.55	+6.33%
March 2015	84.94	+2.75%
April 2015	97.27	-9.52%
May 2015	86.21	-30.52%
June 2015	101.00	-28.11%
July 2015	121.57	-29.83%

Stacey R. Aldstadt, General Manager

Page 4

January 7, 2016

SUBJECT: INFORMATIONAL ITEM ONLY – DECEMBER 2015 DROUGHT MONITORING REPORT

August 2015	125.59	-33.56%
September 2015	115.22	-30.88%
October 2015	100.63	-23.44%
November 2015	92.50	-16.60%
December 2015	82.45	-17.08%
Cumulative Compliance	-	-27.00%

The Department experienced a decrease in gross water production of approximately 17.1% in December 2015 compared to December 2013 production. SWRCB tracks compliance on a cumulative basis beginning with June 2015. Cumulative tracking means that the conservation savings will be added together from one month to the next and compared to the amount of water used during the same months in 2013. The cumulative reduction through December 2015 is approximately 27%. Despite falling below the 28% reduction goal, the Department remains in compliance as it is within 1% of the target.

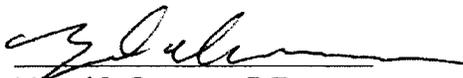
The Department's local and regional outreach efforts regarding the drought continue to have an effect on customer water usage. Internally, Water Staff have been directed to make operational changes to minimize water loss from the system, including curtailing certain hydrant flushing programs temporarily. A graph depicting the Department's 2015 monthly gross water production versus the same production in 2013 along with the 28% reduction target is attached for reference.

As is typically during this time of the year, there is currently no Department recharge activity. Recharge activity is anticipated to continue late spring of 2016.

STAFF'S RECOMMENDATION:

No action is recommended at this time. Staff will continue to monitor the State's continued response to the drought and monitor water level trends of all production wells and provide monthly updates to the Board.

Respectfully submitted,



Miguel J. Guerrero, P.E.
Director, Water Utility

MJG:swd
Attach.

**SWRCB Emergency Regulations Compliance Tracking
San Bernardino Municipal Water Department (28% Target)**

December 2015

Cumulative Compliance = 27.0%

**2013 Gross Monthly
Production vs. 2015
Gross Production**

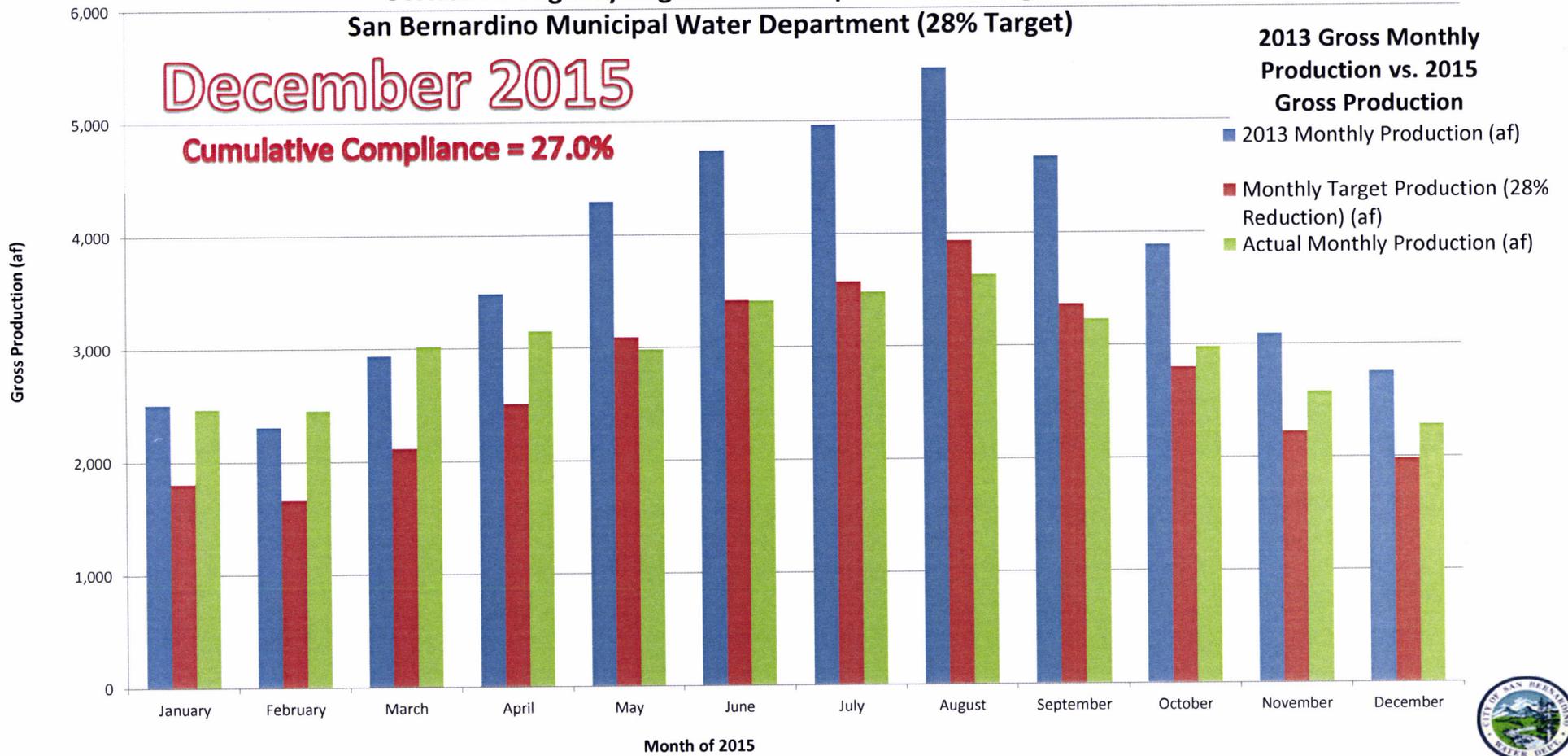
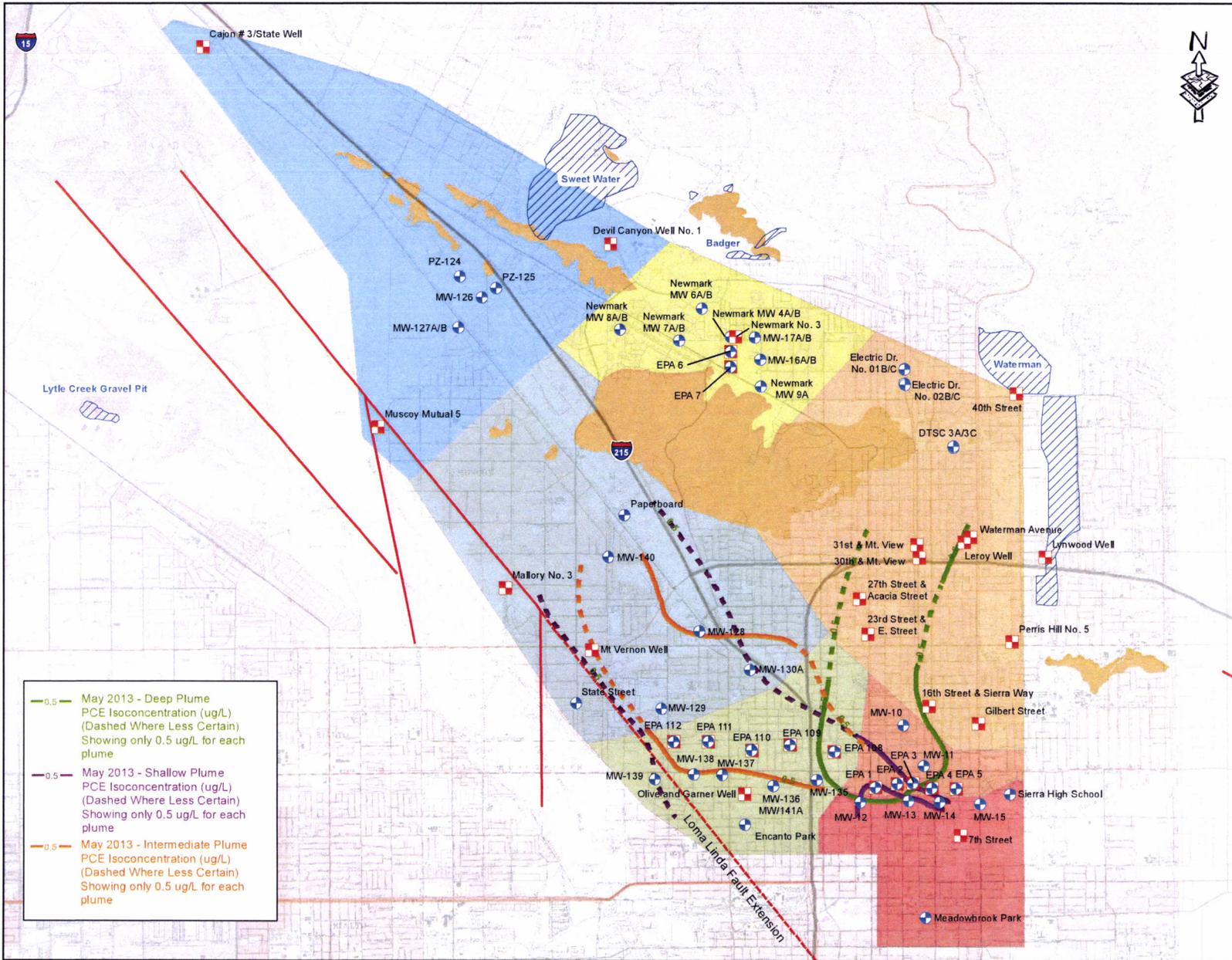


EXHIBIT A



Legend

Hydrograph Wells

- Extraction/Production Well
- Monitoring Well

Hydrograph Areas

- Upgradient
- Muscoy Mid-Plume
- Muscoy Plume
- Newmark North
- Newmark Mid-Plume
- Newmark Plume Front
- Newmark Downgradient

— Faults/Hydraulic Barriers

0 2,250 4,500 9,000
Feet

Datum: NAD 1983 State Plane CA V

- 0.5 — May 2013 - Deep Plume PCE Isoconcentration (ug/L) (Dashed Where Less Certain) Showing only 0.5 ug/L for each plume
- 0.5 — May 2013 - Shallow Plume PCE Isoconcentration (ug/L) (Dashed Where Less Certain) Showing only 0.5 ug/L for each plume
- 0.5 — May 2013 - Intermediate Plume PCE Isoconcentration (ug/L) (Dashed Where Less Certain) Showing only 0.5 ug/L for each plume

Job Number: 185902557

PREPARED BY: Stanlec Consulting, Inc. 290 Conejo Ridge Ave, Suite 200 Thousand Oaks, Ca 91321 (805) 230-1266/230-1277 (fax)

Data Generated by: M. Bartosek

For: **City of San Bernardino Municipal Water Department**

Approved By: M. Eisen

Hydrograph Areas San Bernardino, California

Date: 3/24/14 Figure: **1-1**

Hydrographs

Region: Cajon Creek

Upgradient Production and Monitoring Wells

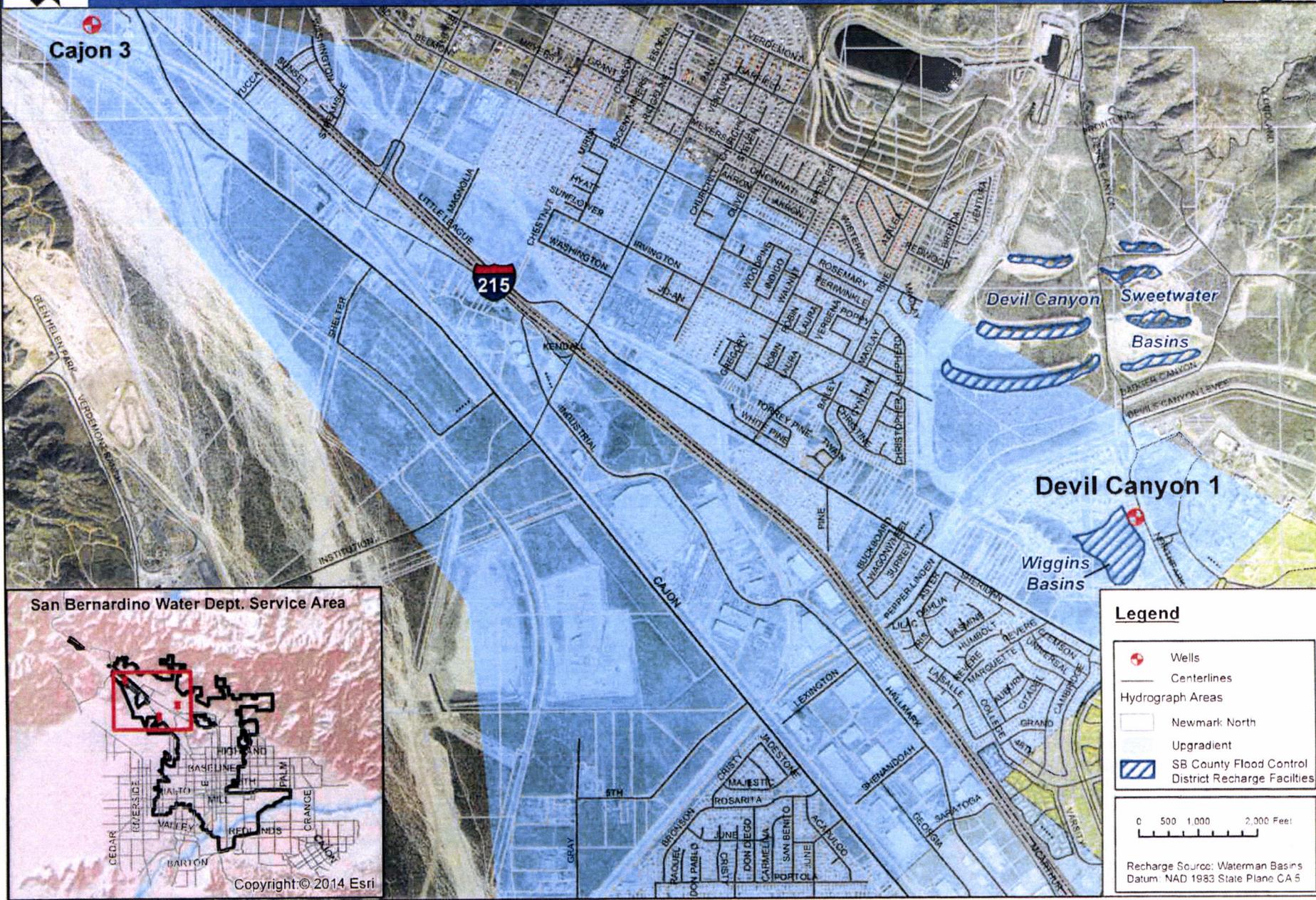
Recharge Source:

Cajon Creek (No Artificial Recharge)

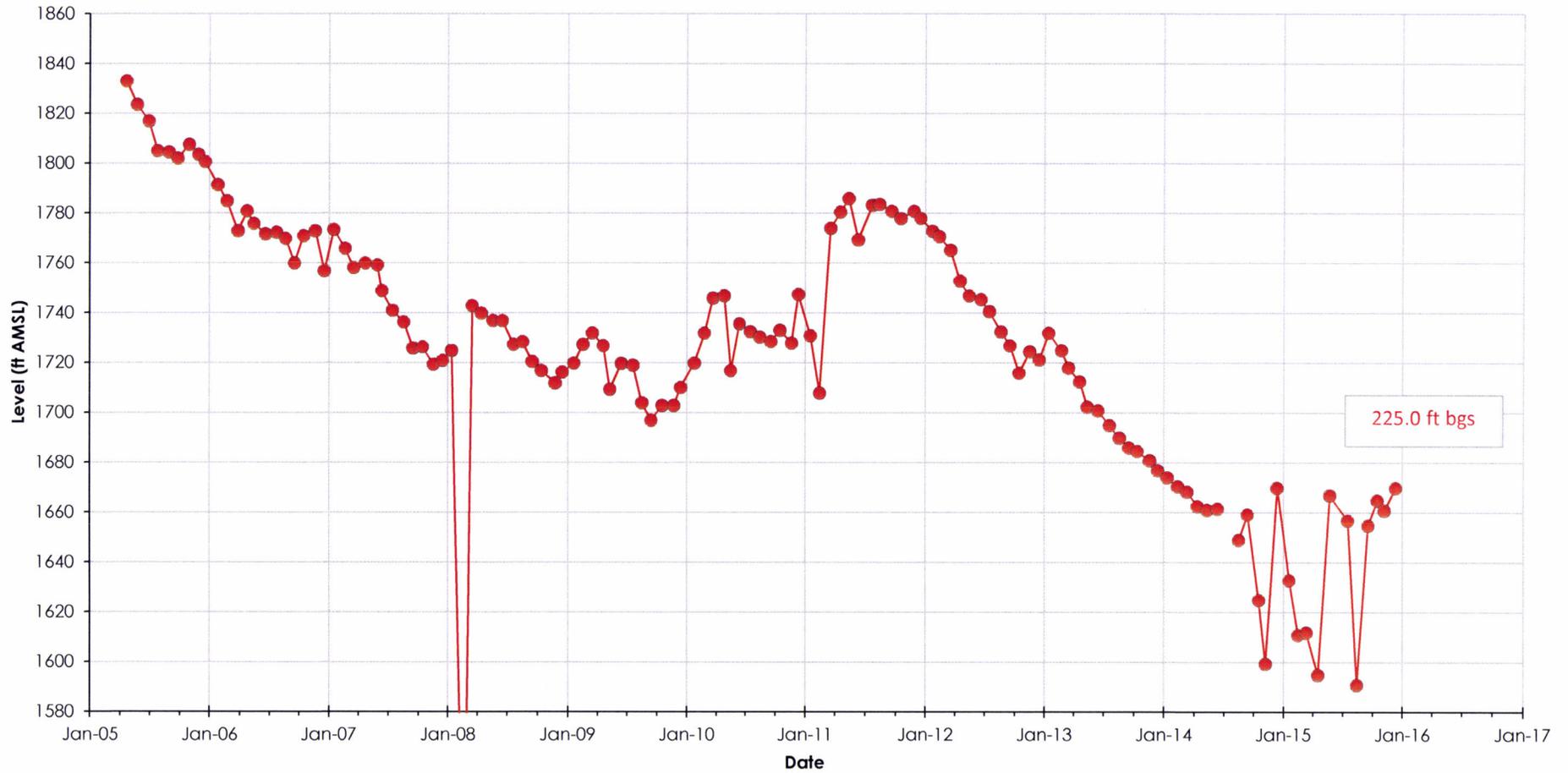


CAJON CREEK REGION

Upgradient Production and Monitoring Wells



1894.9
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

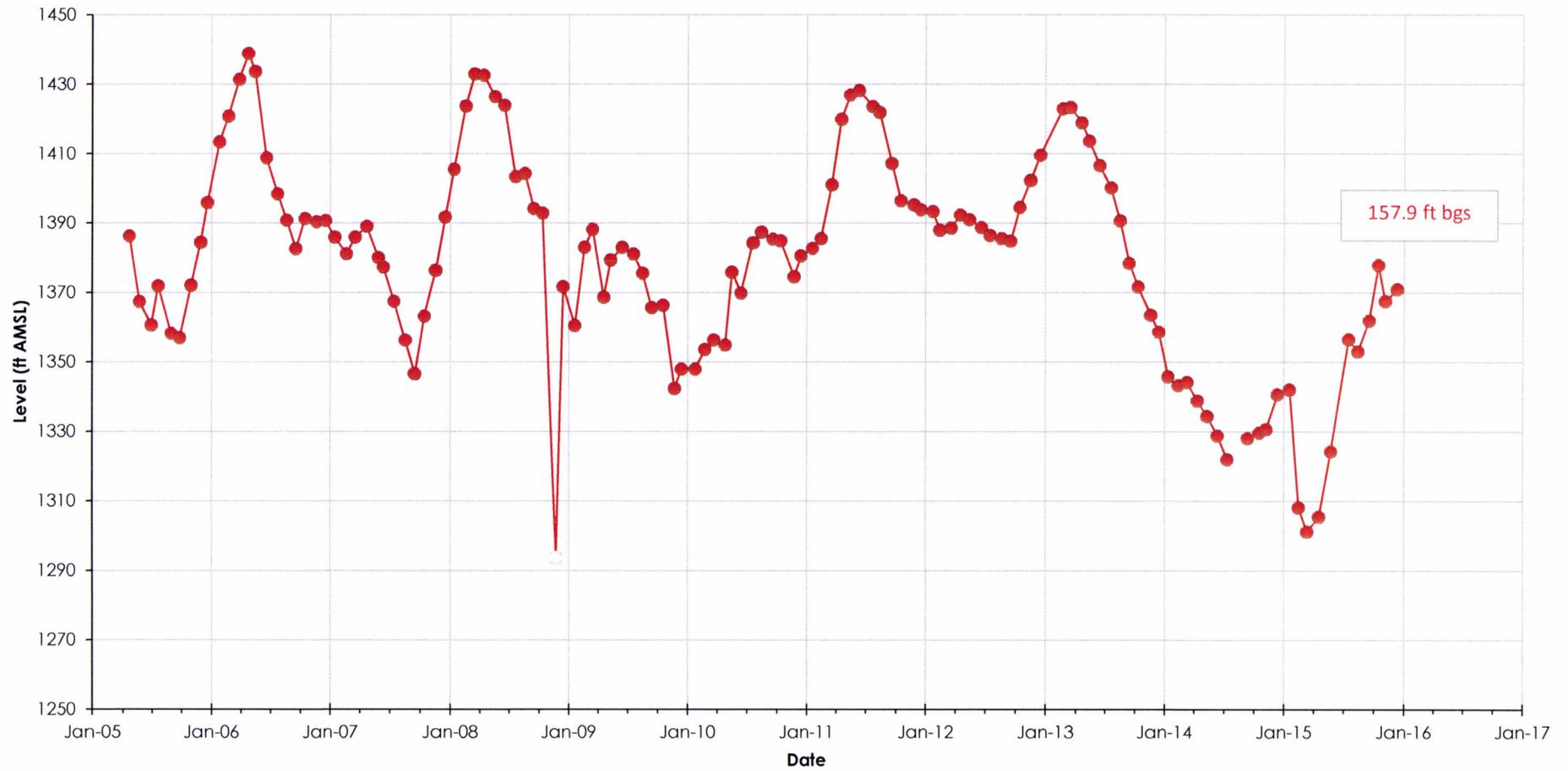
Cajon 3

Title

Water Level Elevations



1528.9
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Devil Canyon 1

Title

Water Level Elevations



Hydrographs

Region: Newmark North

Extraction and Monitoring Wells

Recharge Source:

Sweetwater/Devil Canyon Basins and Badger Basins



NEWMARK NORTH REGION

Extraction and Monitoring Wells

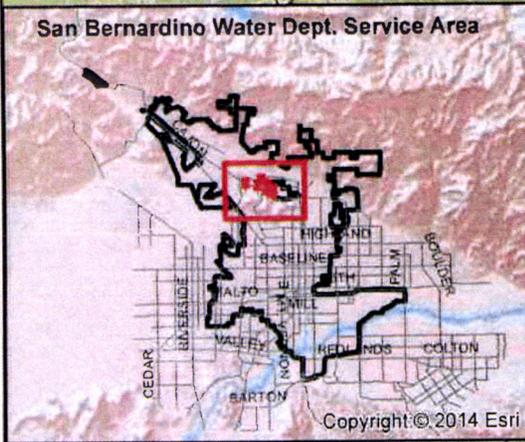


Legend

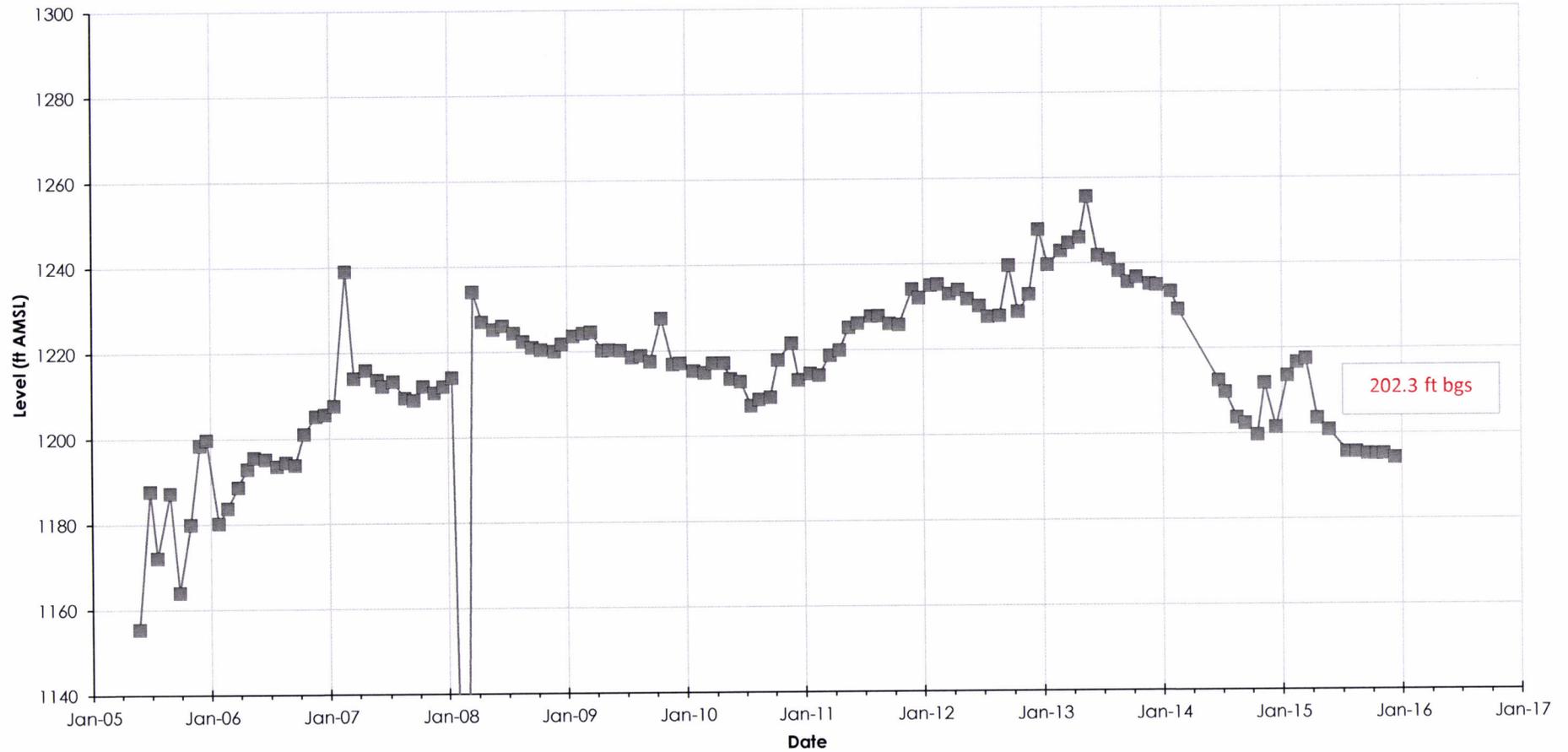
- Wells
- Centerlines
- Hydrograph Areas
- Newmark North

0 195 390 780 Feet

Recharge Source: Sweetwater/Devil Canyon & Badger Basins
Datum: NAD 1983 State Plane CA 5



1396.6
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

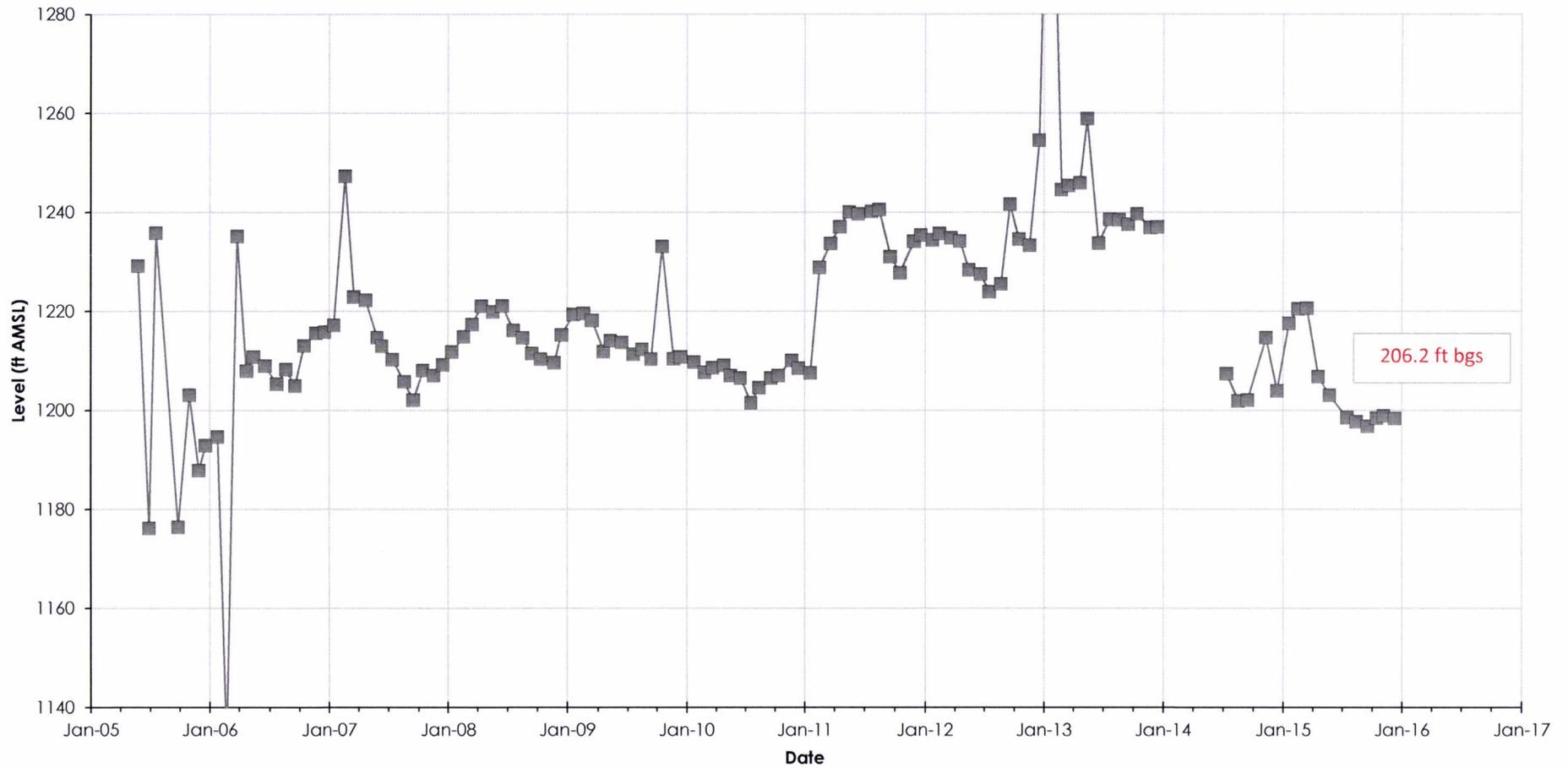
EPA 006

Title

Water Level Elevations



1404.5
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

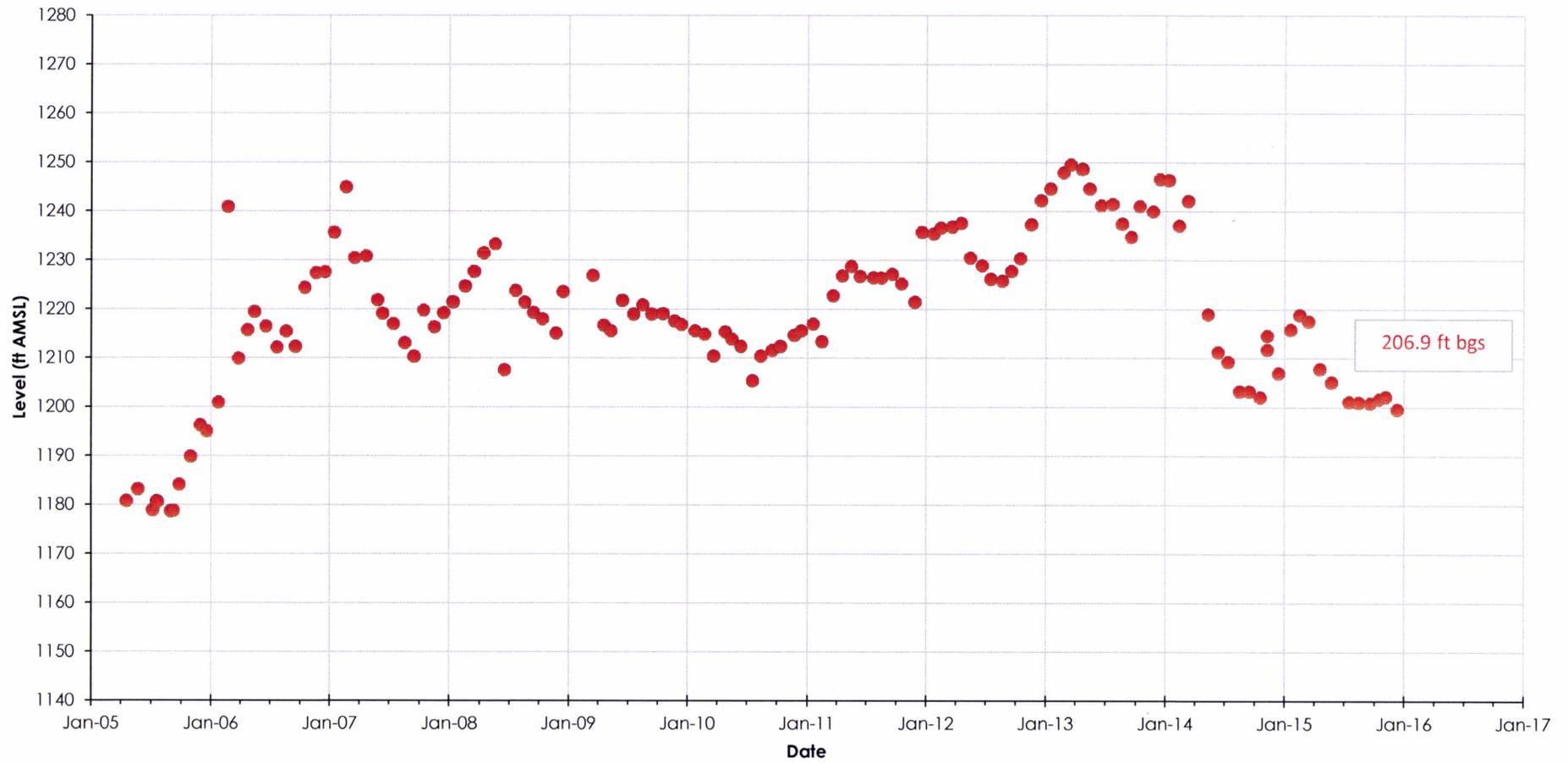
EPA 007

Title

Water Level Elevations



1407.9
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Newmark 3

Title

Water Level Elevations

Hydrographs

Region: Newmark Mid-Plume

Production and Monitoring Wells

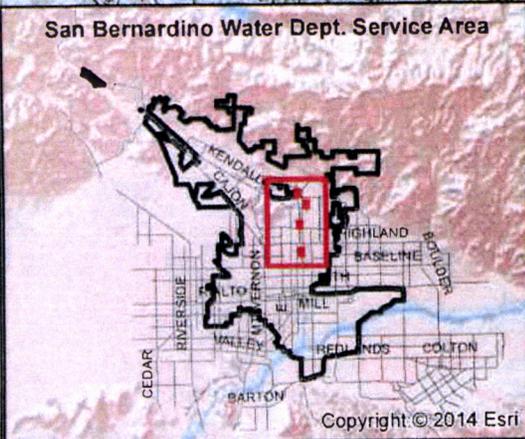
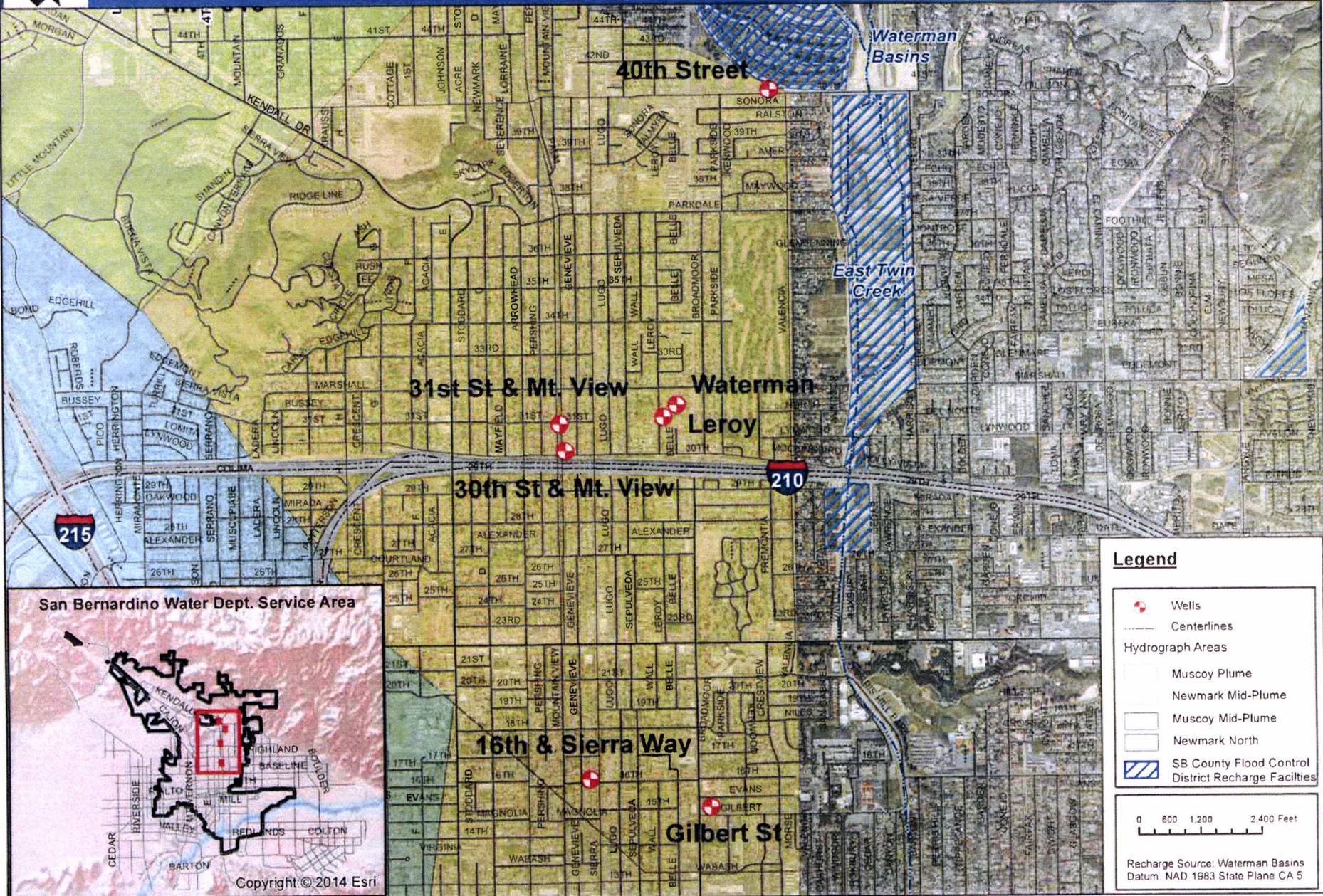
Recharge Source:

Waterman Basins



NEWMARK MID-PLUME REGION

Production and Monitoring Wells



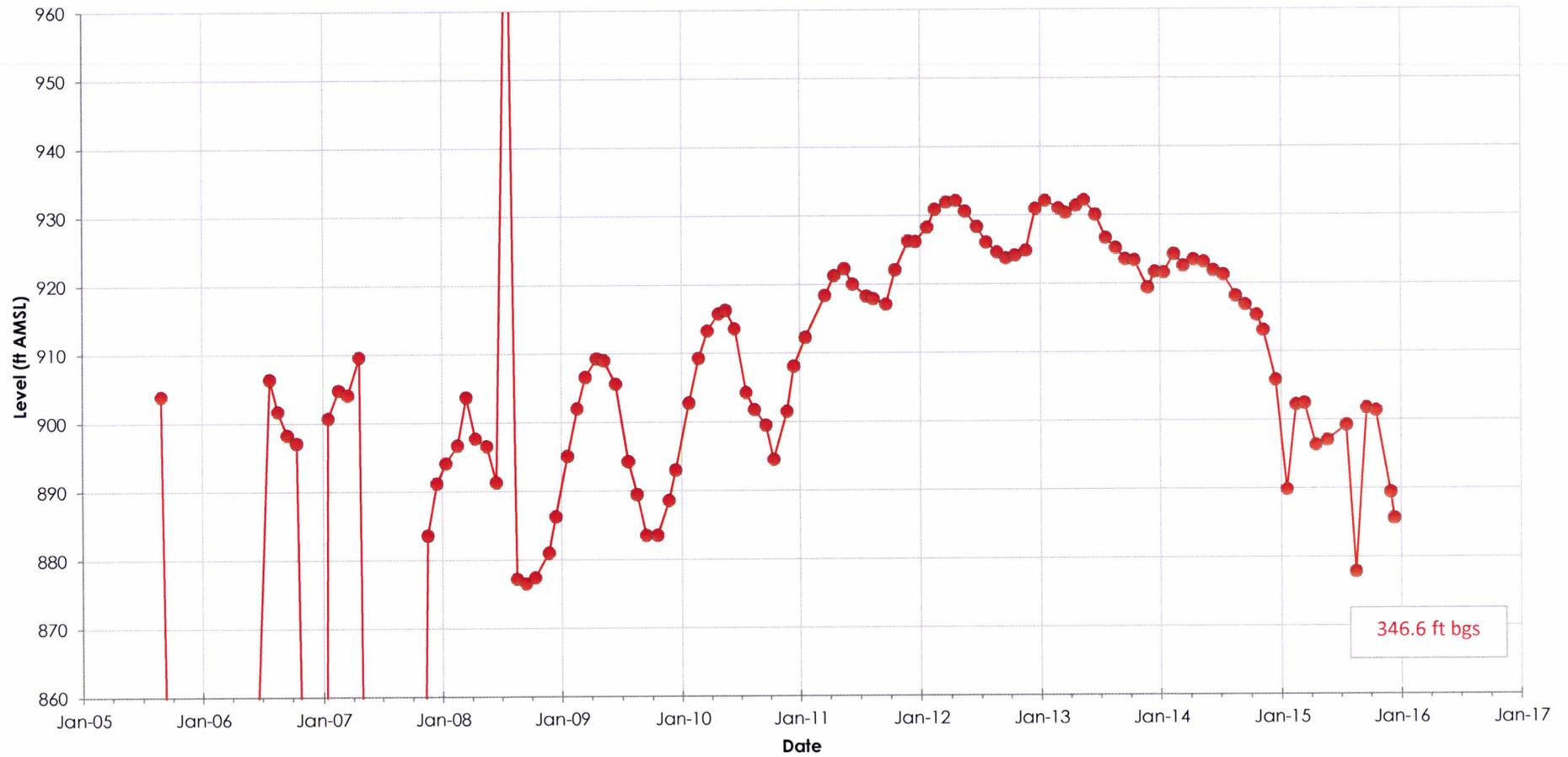
Legend

- Wells
- Centerlines
- Hydrograph Areas**
- Muscoy Plume
- Newmark Mid-Plume
- Muscoy Mid-Plume
- Newmark North
- SB County Flood Control District Recharge Facilities

0 600 1,200 2,400 Feet

Recharge Source: Waterman Basins
Datum NAD 1983 State Plane CA 5

1232.3
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

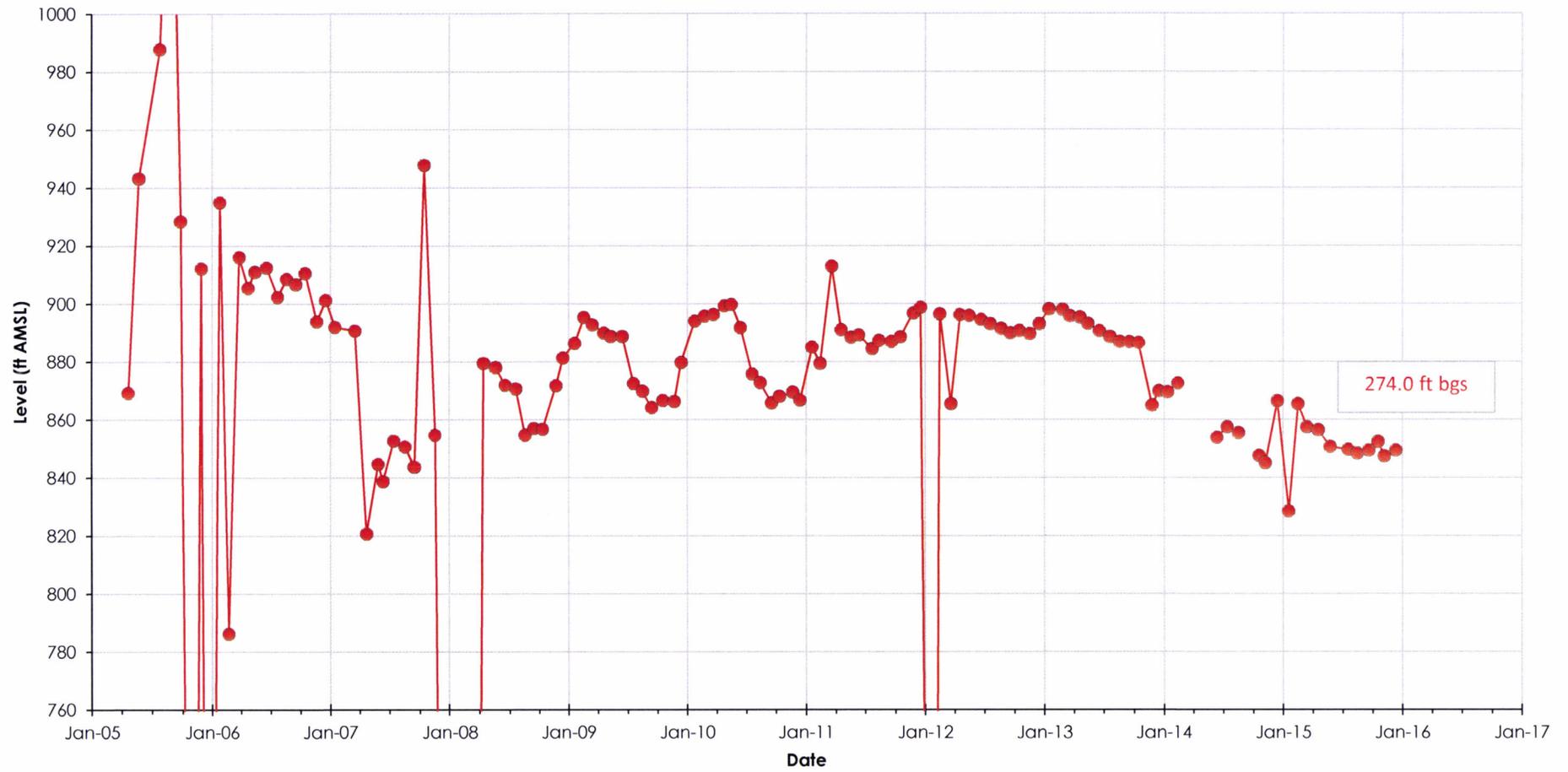
31st & Mt. View

Title

Water Level Elevations



1123.5
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

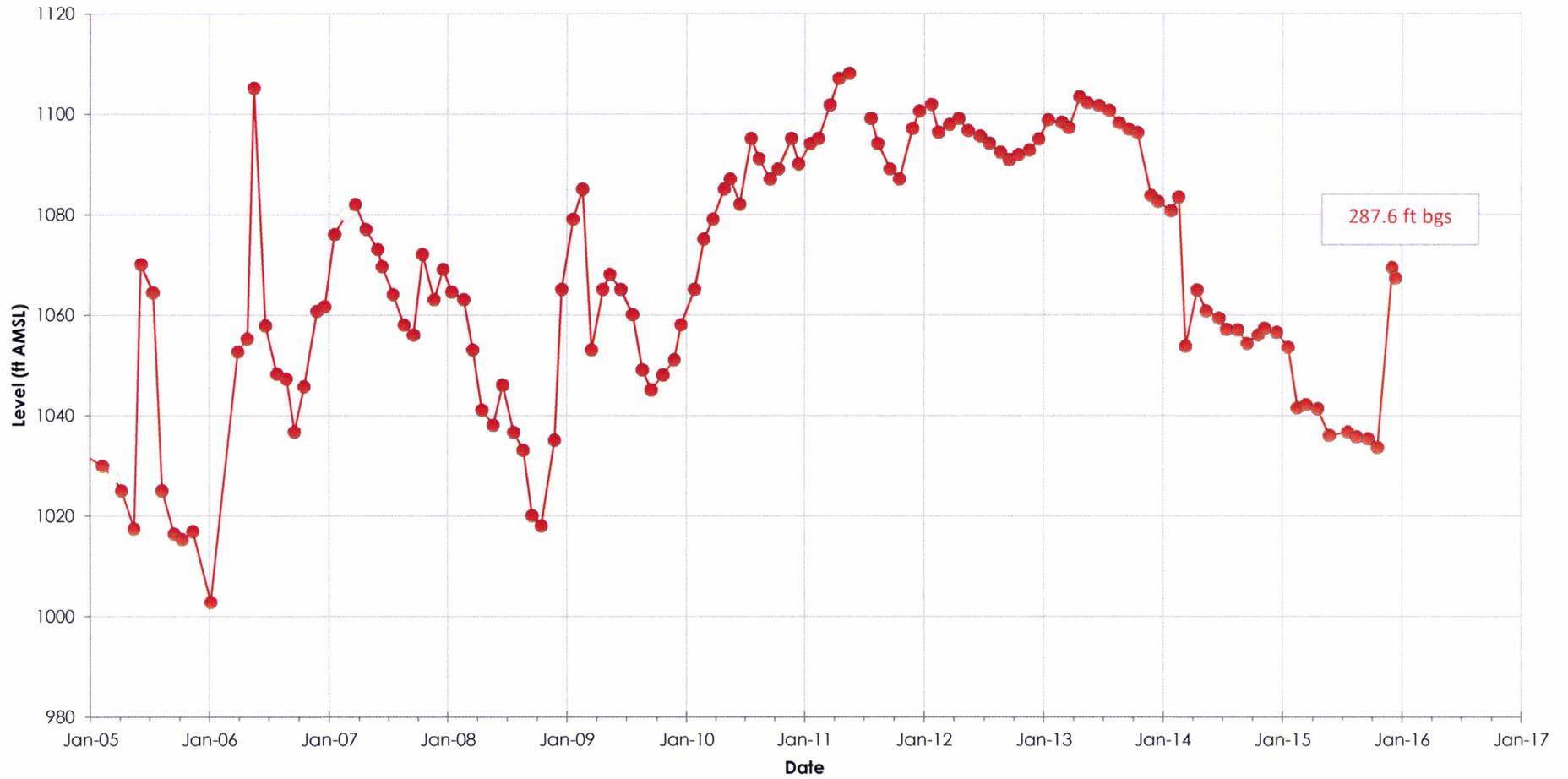
Gilbert

Title

Water Level Elevations



1355.0
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

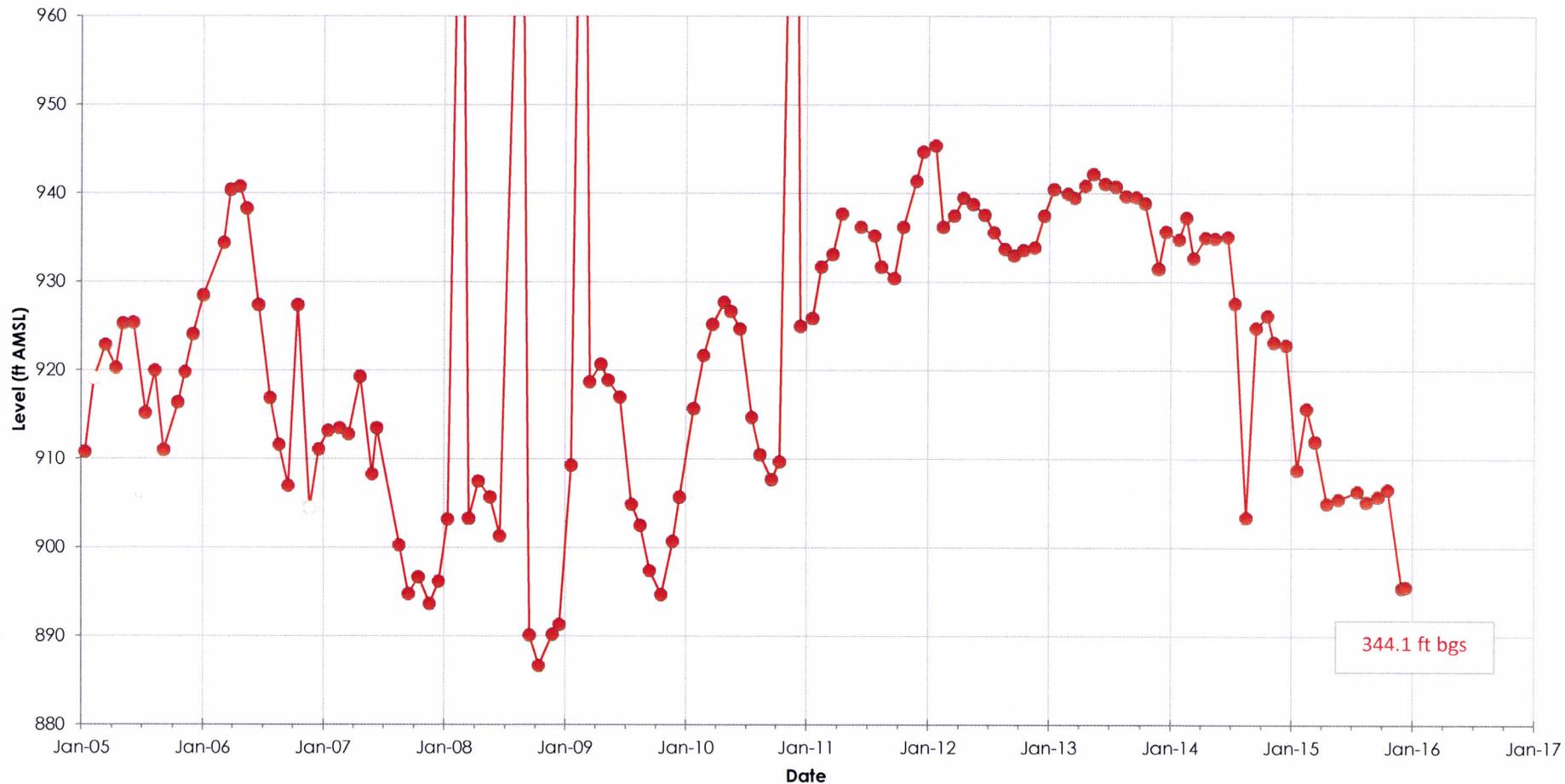
40th Street Well

Title

Water Level Elevations



1239.7
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

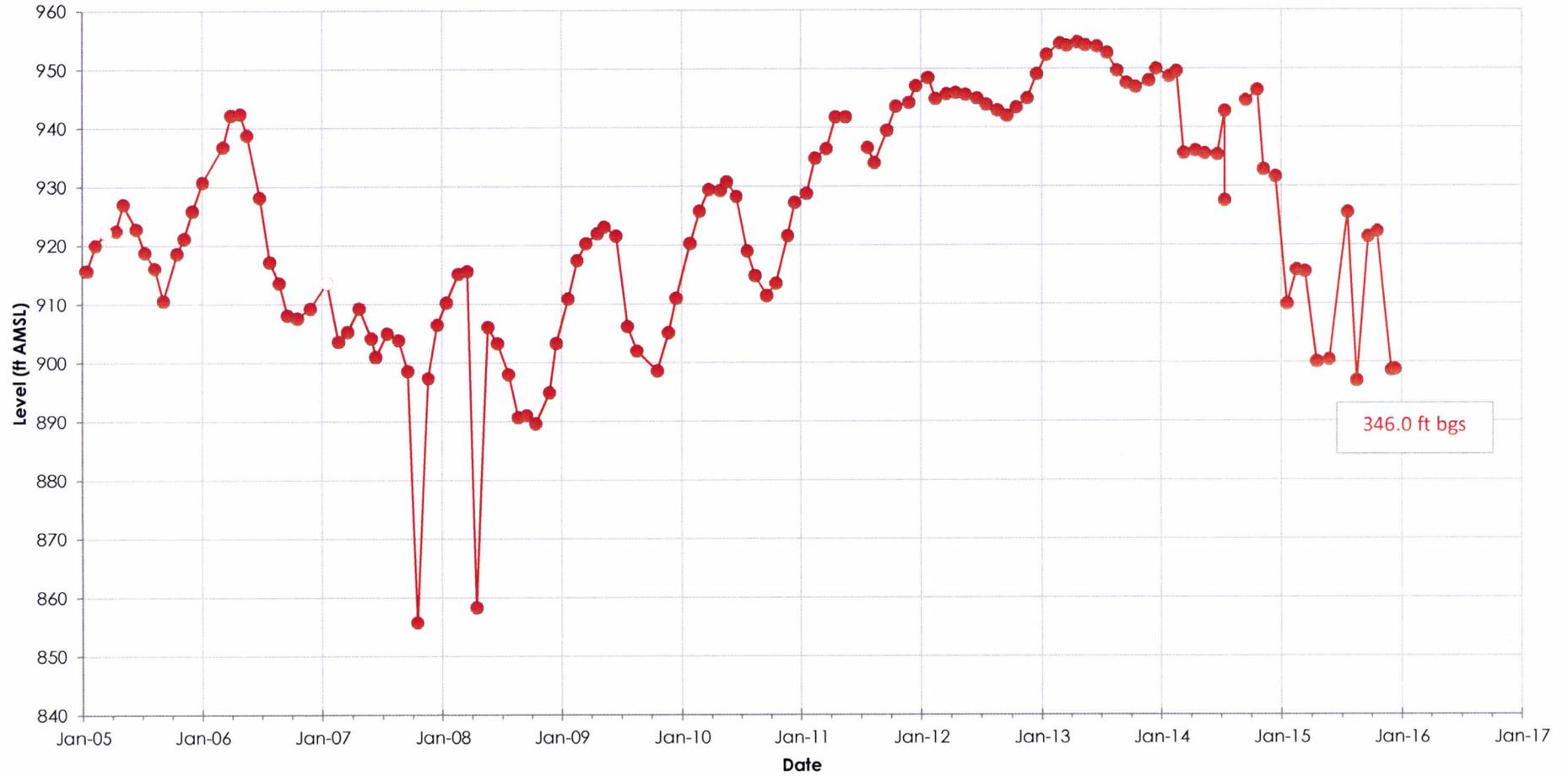
Leroy Well

Title

Water Level Elevations



1244.8
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Waterman Well

Title

Water Level Elevations

Hydrographs

Region: Newmark Plume Front

Extraction and Monitoring Wells

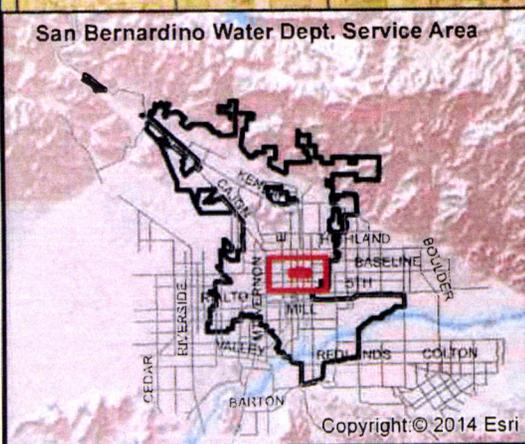
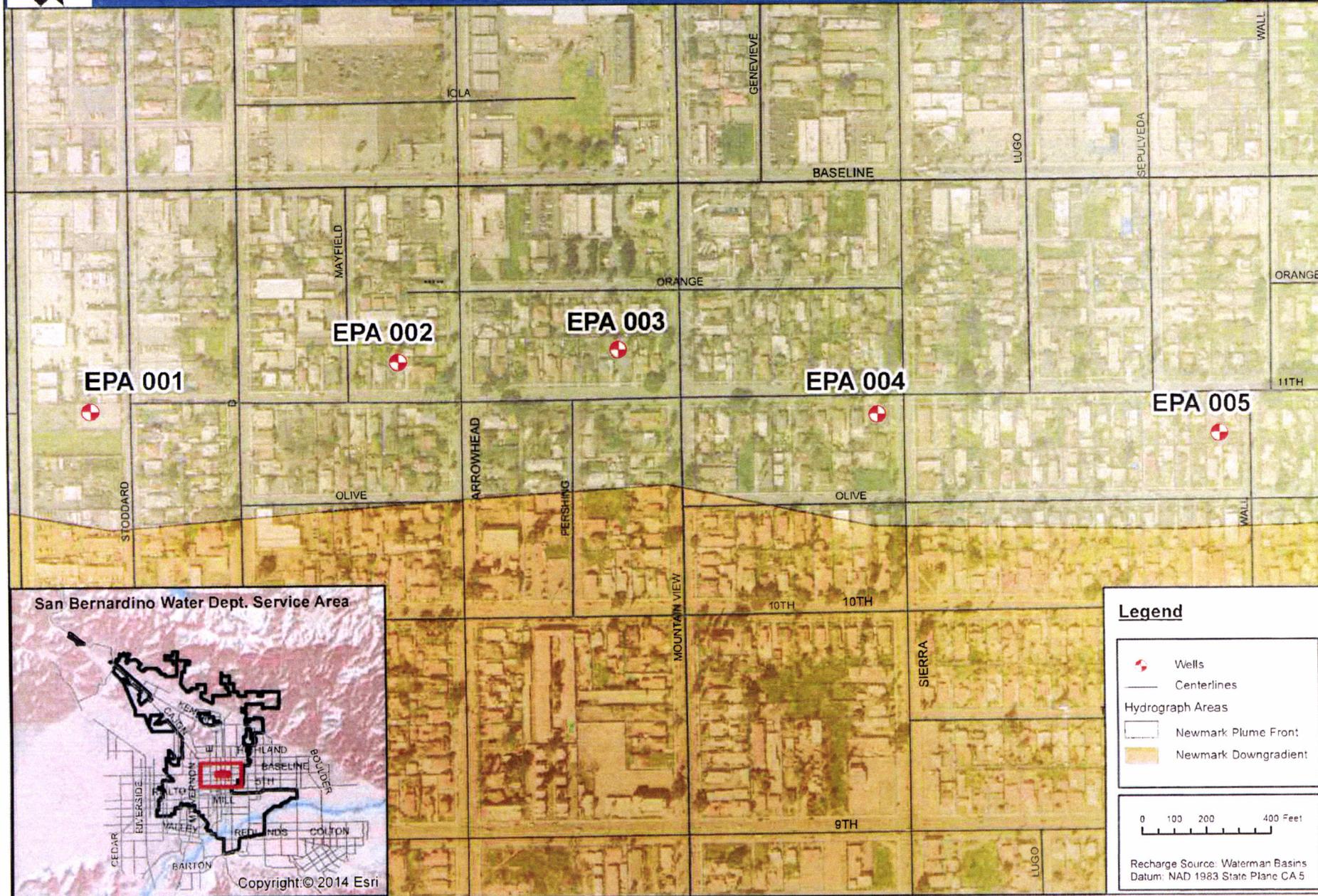
Recharge Source:

Waterman Basins

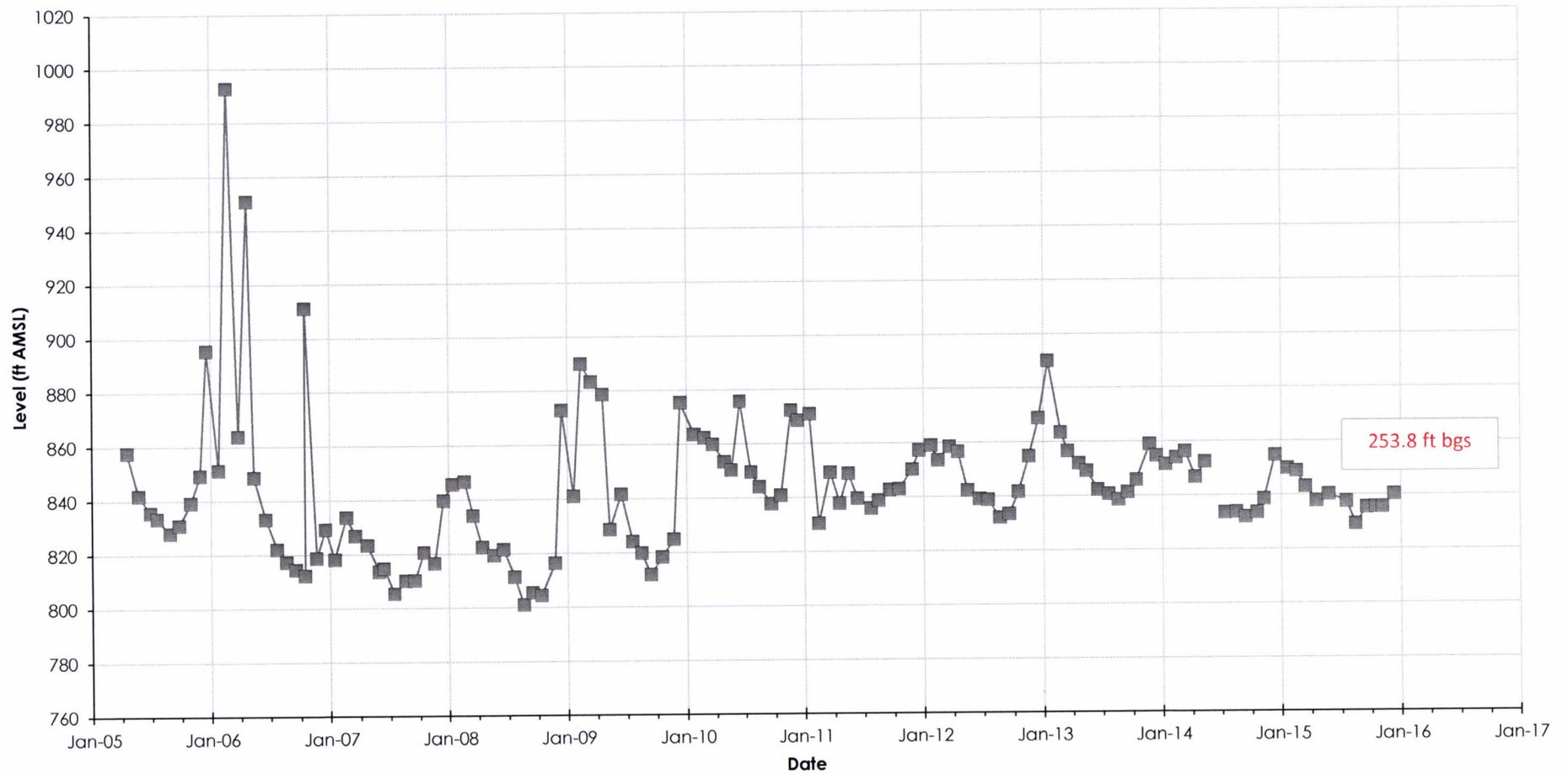


NEWMARK PLUME FRONT REGION

Extraction and Monitoring Wells



1093.9
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

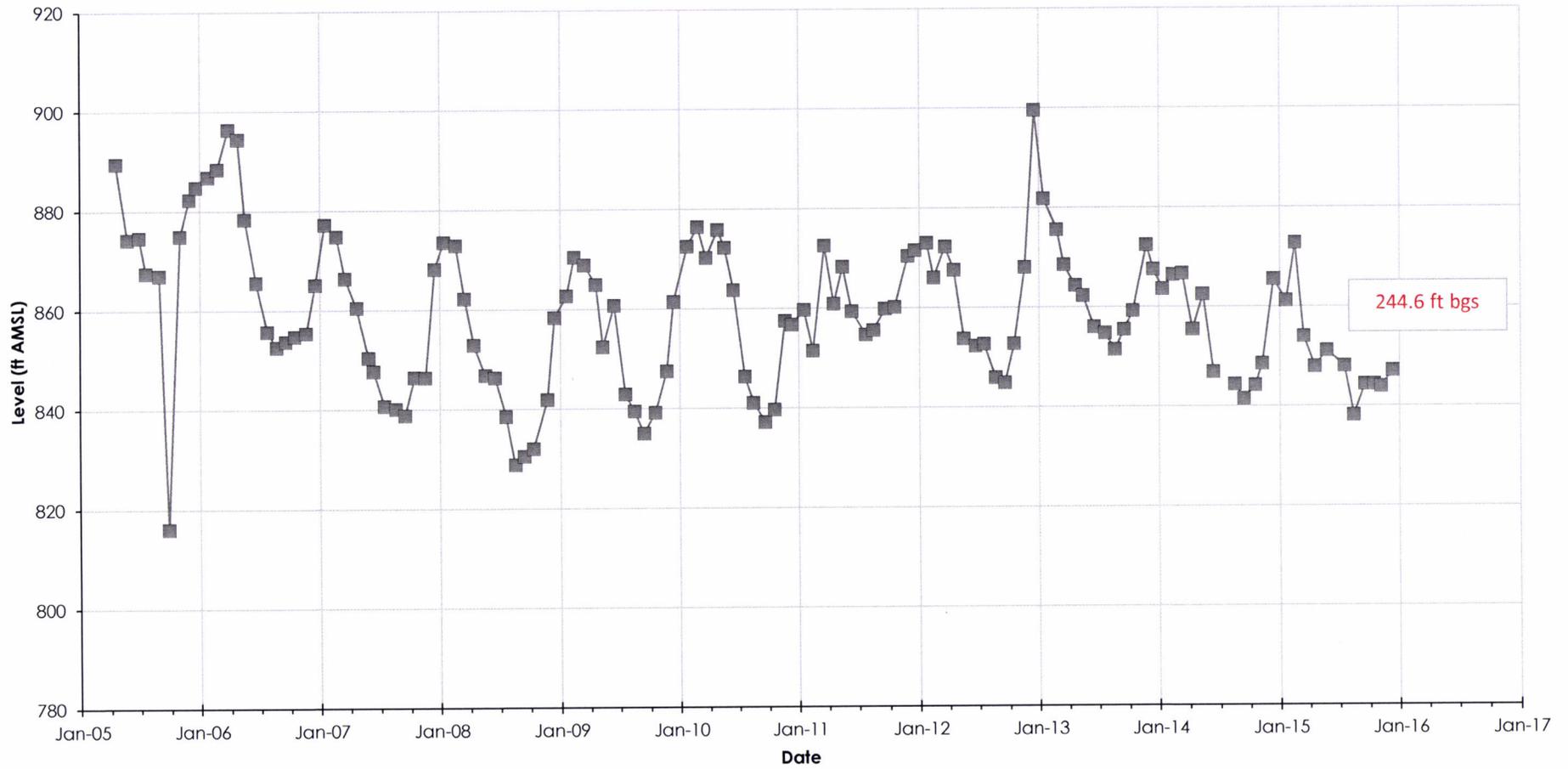
EPA 001

Title

Water Level Elevations



1091.7
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

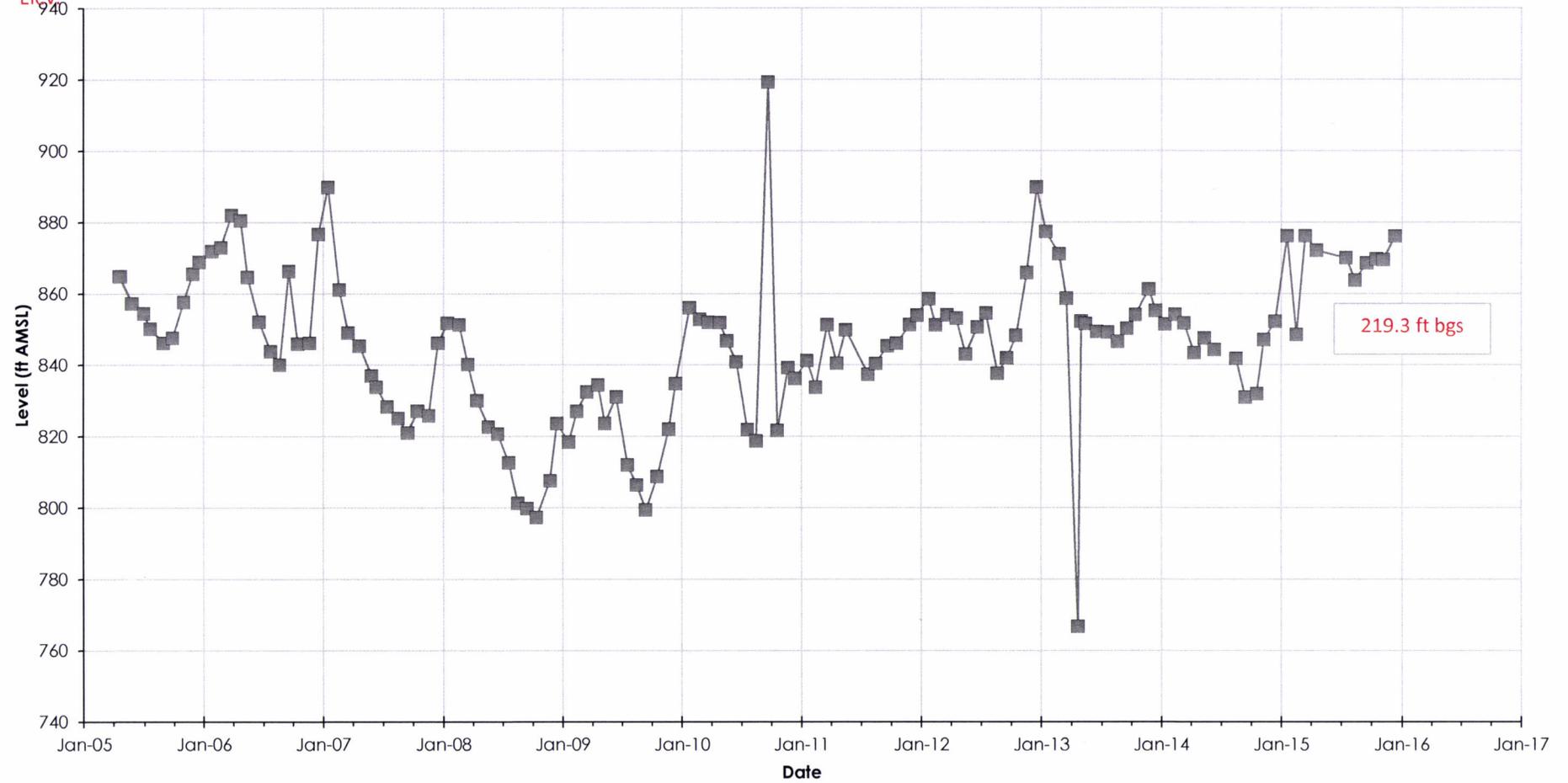
EPA 002

Title

Water Level Elevations



1090.2
Ground
Elev



Client/Project

Water Level Monitoring Program
City of San Bernardino California

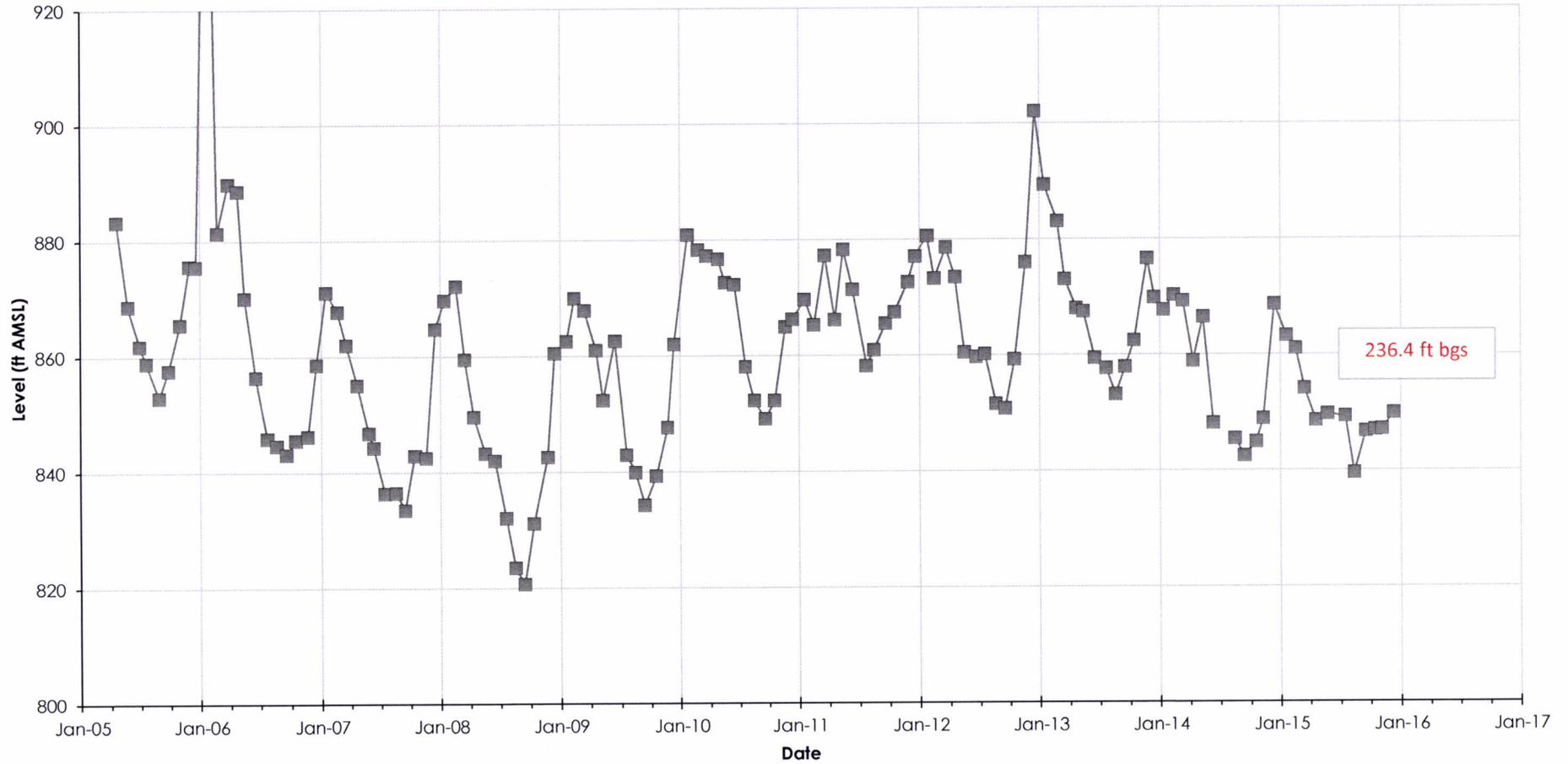
Figure/Well No.

EPA 003

Title

Water Level Elevations

1086.3
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

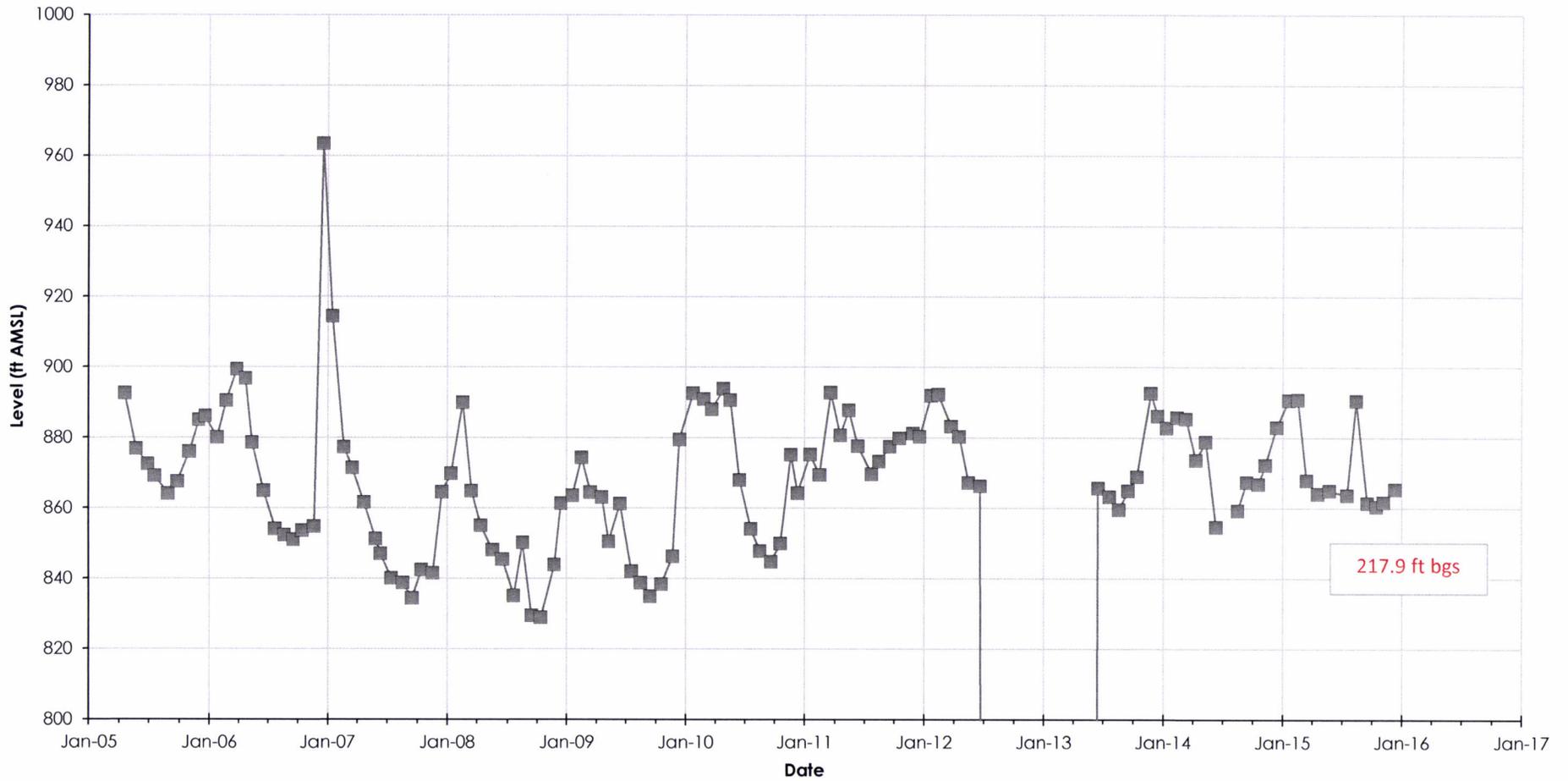
EPA 004

Title

Water Level Elevations



1083.3
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 005

Title

Water Level Elevations

Hydrographs

Region: Muscoy Mid-Plume

Production and Monitoring Wells

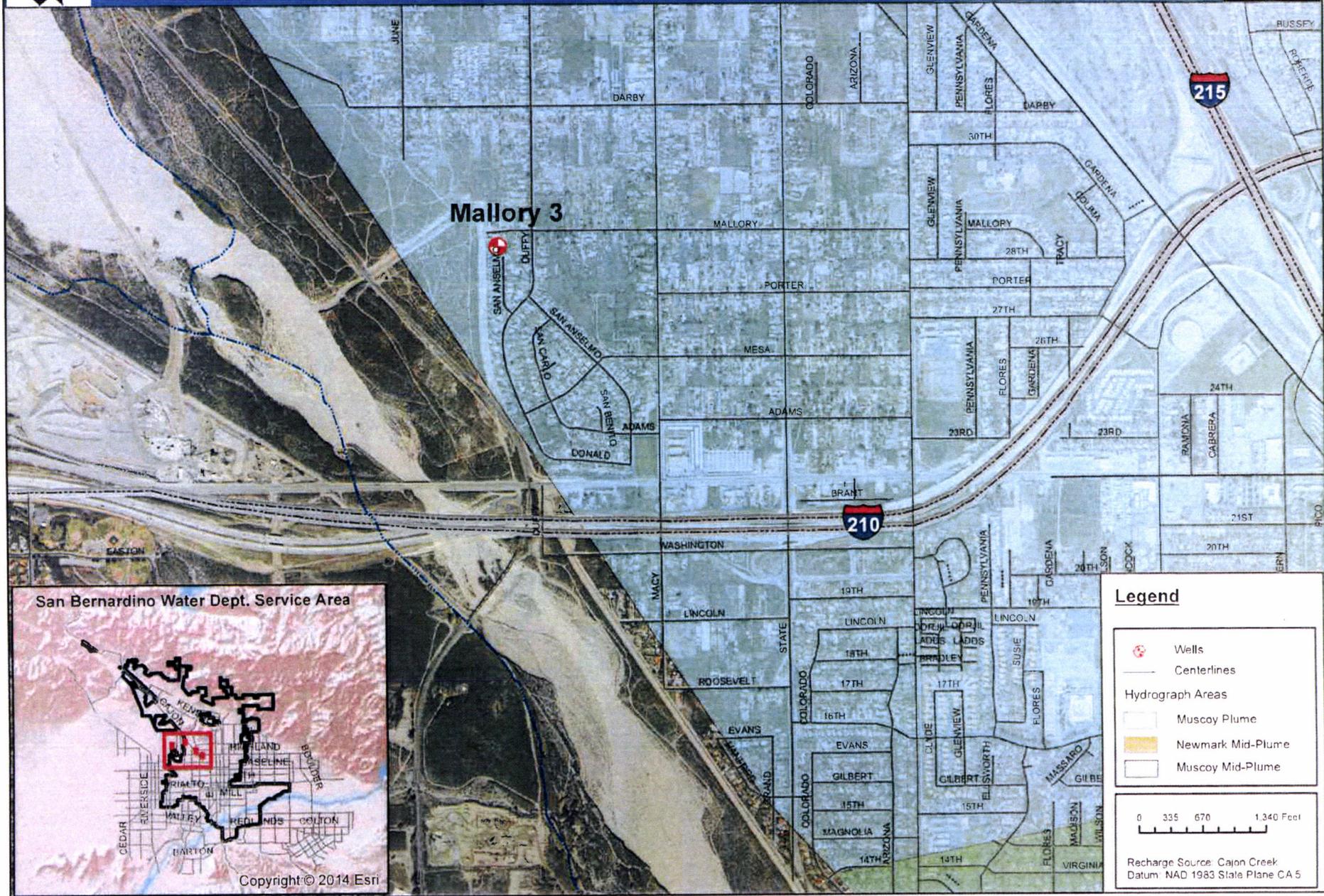
Recharge Source:

Cajon Creek (No Artificial Recharge)



Muscoy Mid-Plume Region

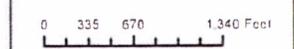
Production and Monitoring Wells



San Bernardino Water Dept. Service Area

Legend

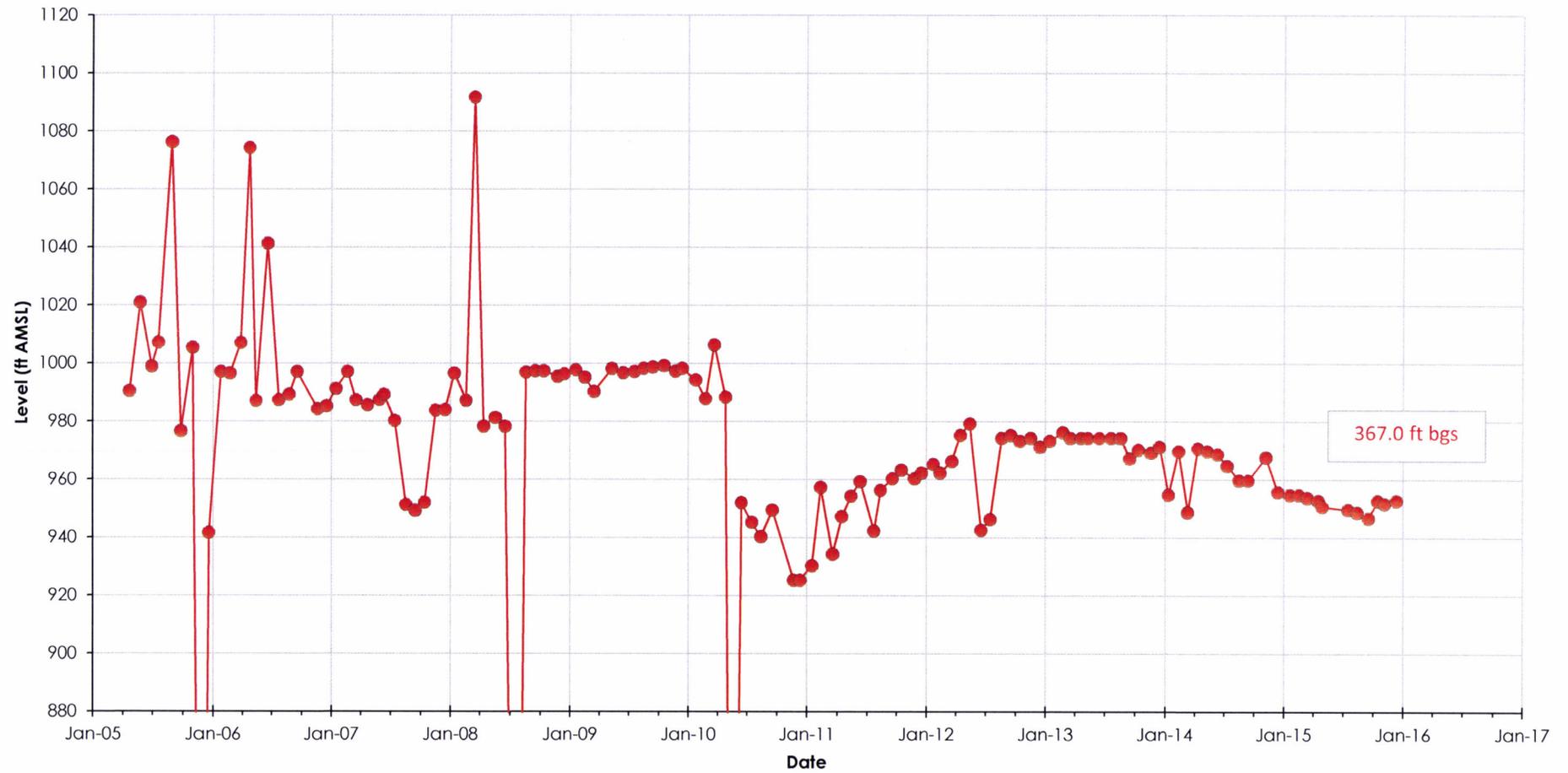
- Wells
- Centerlines
- Hydrograph Areas
 - Muscoy Plume
 - Newmark Mid-Plume
 - Muscoy Mid-Plume



Recharge Source: Cajon Creek
Datum: NAD 1983 State Plane CA 5

Copyright © 2014 Esri

1319.8
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Mallory 3

Title

Water Level Elevations



Hydrographs

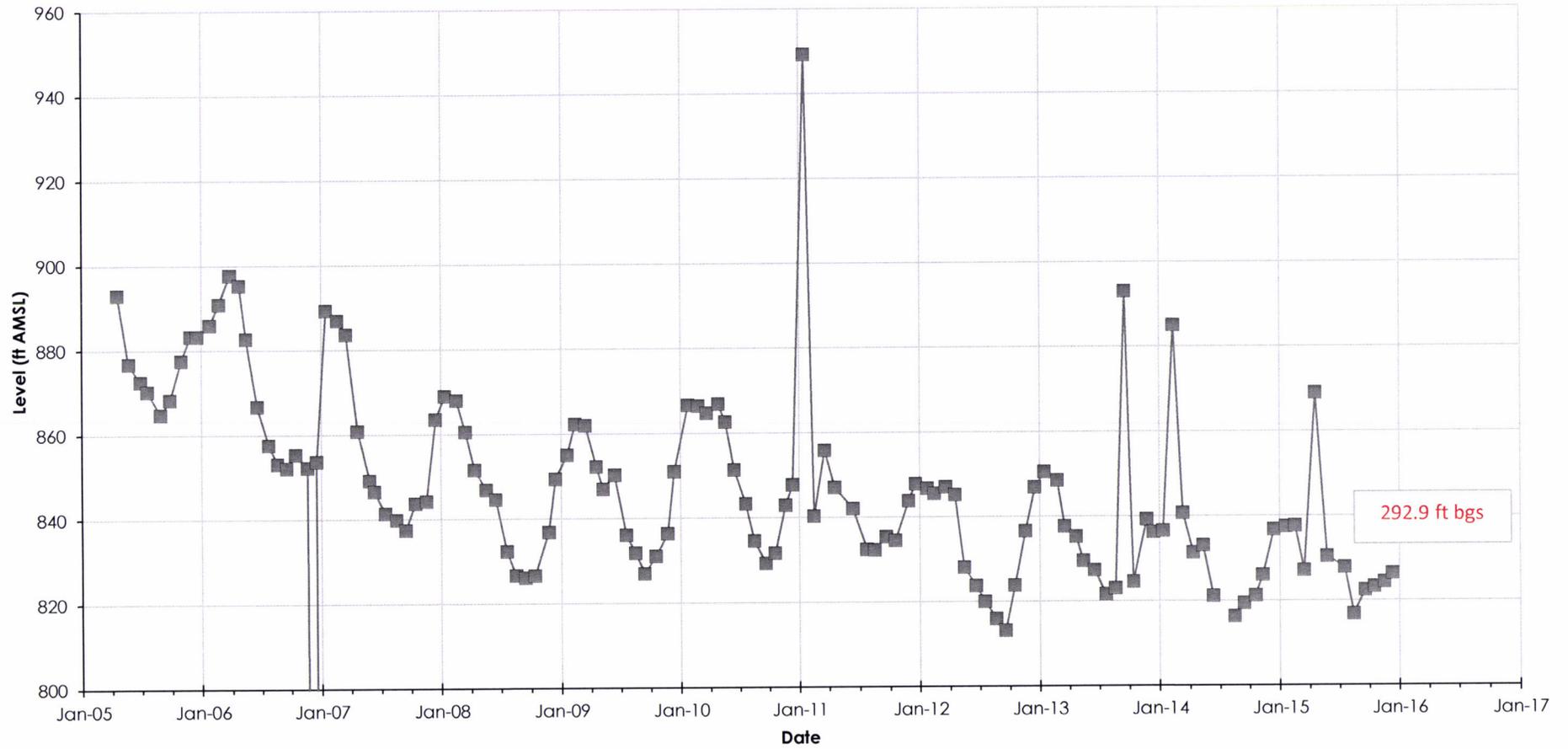
Region: Muscoy Plume

Production, Extraction, and Monitoring Wells

Recharge Source:

Cajon Creek (No Artificial Recharge)

1119.3
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

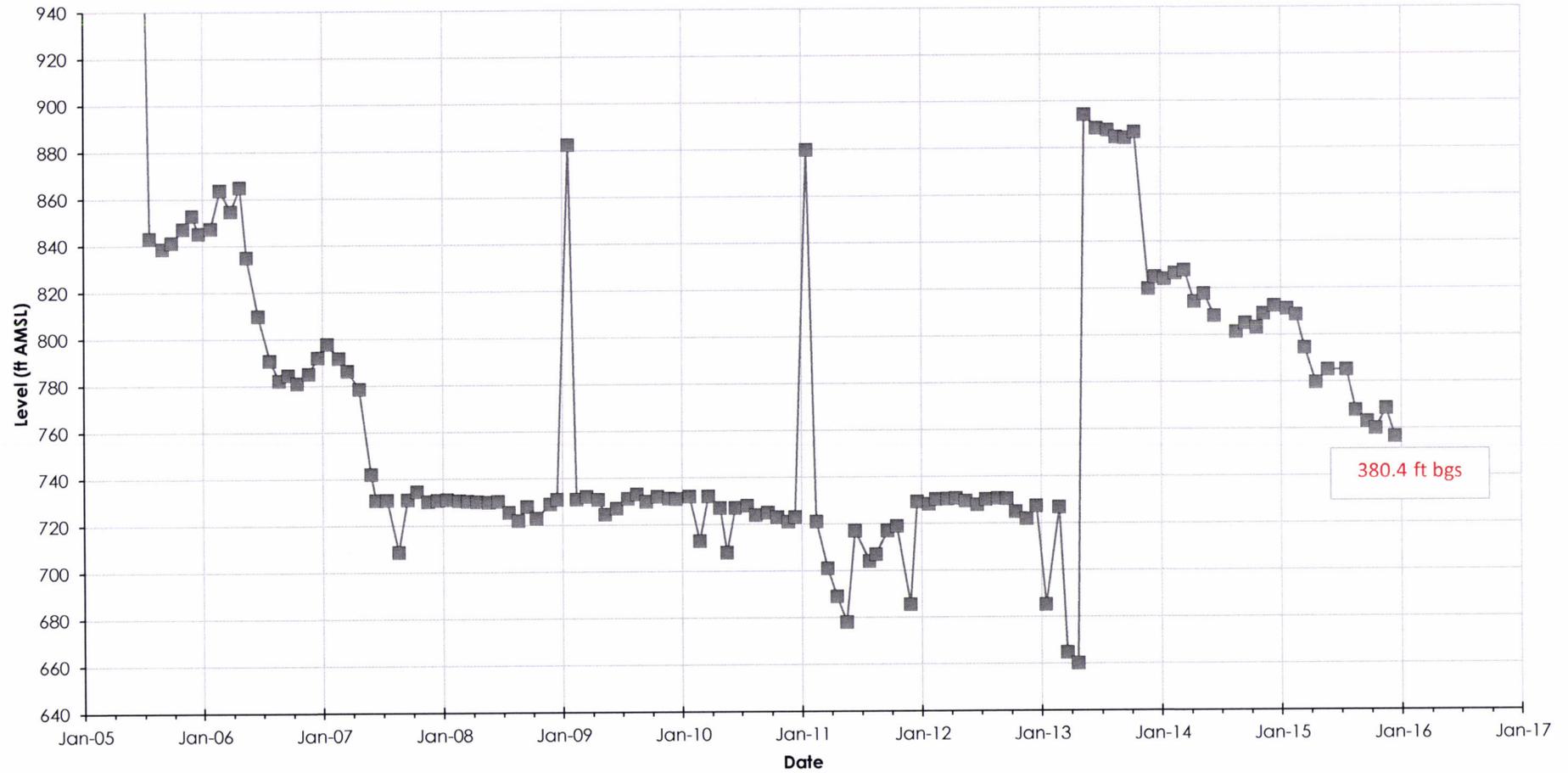
EPA 108

Title

Water Level Elevations



1137.0
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

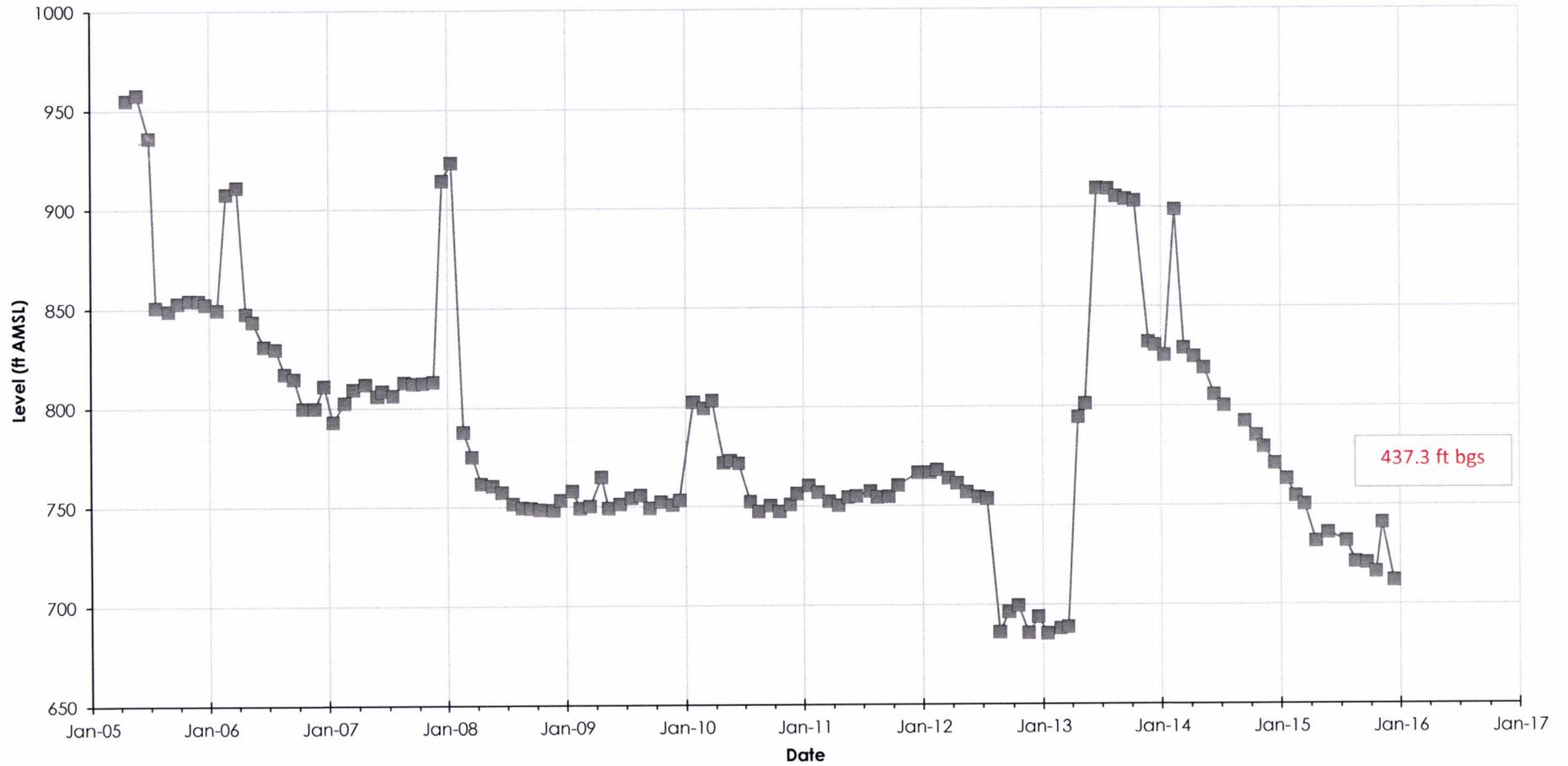
EPA 109

Title

Water Level Elevations



1149.3
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

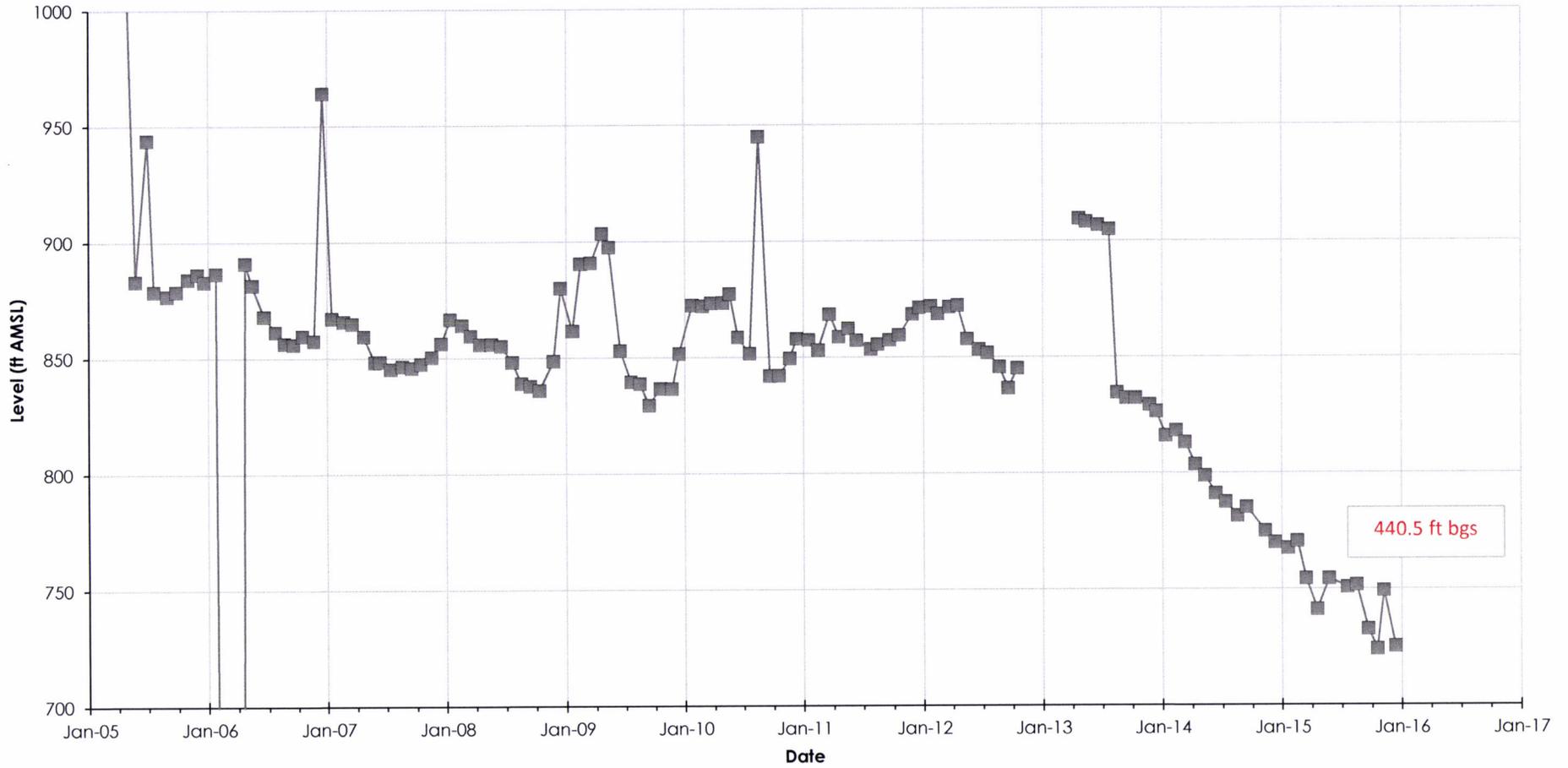
EPA 110

Title

Water Level Elevations



1165.7
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California



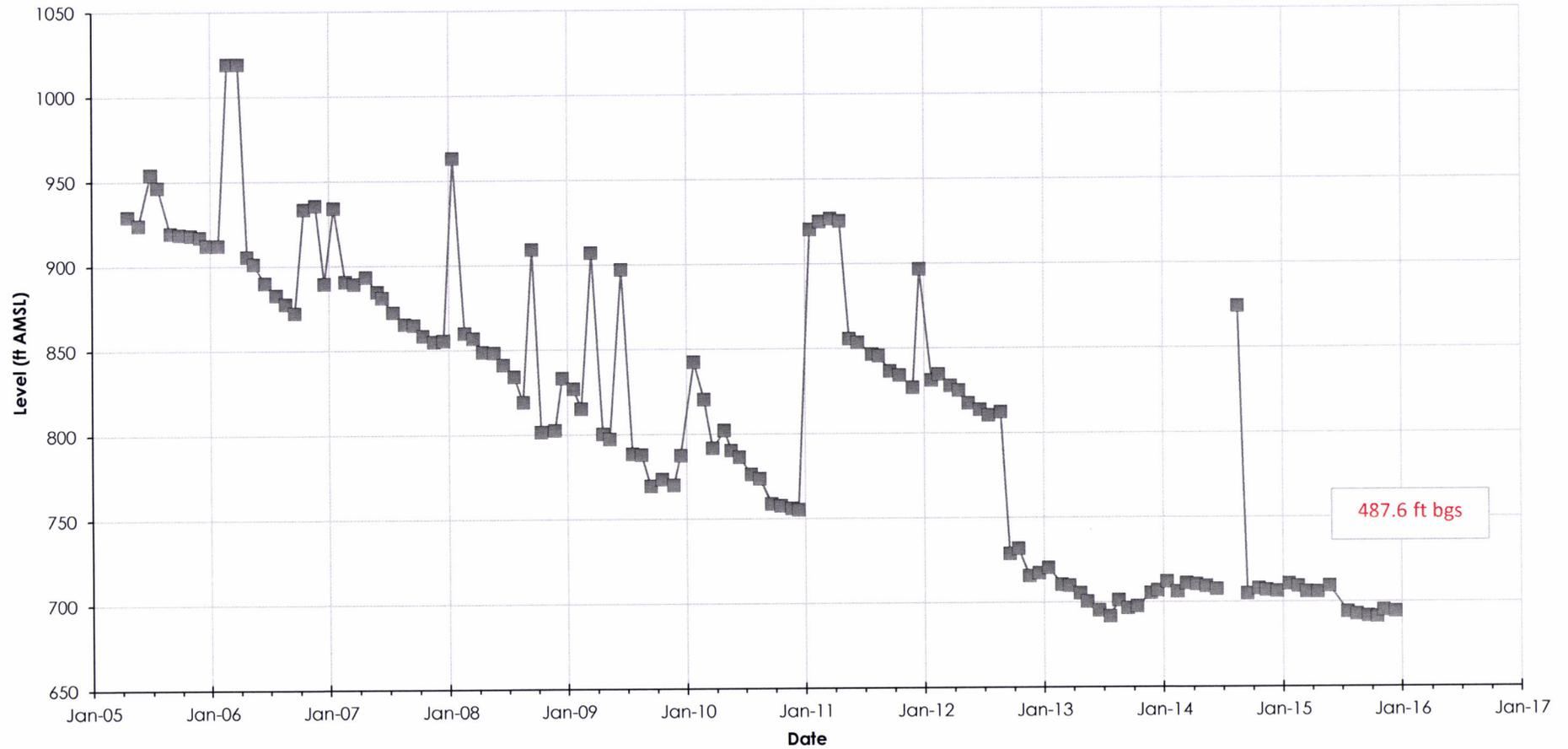
Figure/Well No.

EPA 111

Title

Water Level Elevations

1181.8
Ground
Elev.



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 112

Title

Water Level Elevations



EXHIBIT B

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
Monthly Depth To Water For Wells Maintained By Operations
December 2015

Well Name	State Well Number Rec. Number	Reading Date	Depth to Water	Ref. Point Elev.	WL Elev.	Pump Elev.	WL-Pump Elev.	Tech	Not Measured/Why	Status/ Method
10TH & J ST	01S/04W-B04S 3603207	12/15/2015	259.00	1112.8	853.8	762.8	91.0	TR	[]	Static Airline
16TH & SIERRA WAY	01N/04W-34G03 S 3600726	12/14/2015	262.60	1135.3	872.7	757.3	115.4	JMA	[]	Static Electric Wire Sounder
16TH & SIERRA WAY	01N/04W-34G03 S 3600726	12/14/2015	276.50	1135.3	858.8	757.3	101.5	JMA	[]	Pumping Electric Wire Sounder
17TH & SIERRA WAY 2	01N/04W-34G01 S 3603208	12/15/2015				766.9	0.0	JMA	[X] Well Blocked	N/A Electric Wire Sounder
19TH ST 1	01N/04W-32D03 S 3600717	12/15/2015	338.60	1231.2	892.6	881.2	11.4	JMA	[]	Static Electric Wire Sounder
19TH ST 2	01N/04W-32D04 S 3600718	12/15/2015	495.30	1236.1	740.8	616.1	124.7	JMA	[]	Pumping Electric Wire Sounder
19TH ST 2	01N/04W-32D04 S 3600718	12/15/2015	345.10	1236.1	891.0	616.1	274.9	JMA	[]	Static Electric Wire Sounder
25TH & NORTH E ST	01N/04W-27M01 S 3600721	12/14/2015	317.00	1192.1	875.1	912.1	37.0	JMA	[]	Static Electric Wire Sounder
27TH & ACACIA	01N/04W-27M02 S 3600720	12/14/2015	303.40	1183.4	880.0	843.4	36.6	JMA	[]	Static Electric Wire Sounder
30TH ST	01N/04W-27G01 S 3600719	12/15/2015	339.70	1226.8	887.1	826.8	60.3	JMA	[]	Static Electric Wire Sounder
31ST ST & MT. VIEW	01N/04W-27B01 S 3602081	12/15/2015	346.60	1232.3	885.7	792.3	93.4	JMA	[]	Static Electric Wire Sounder
40TH & VALENCIA	01N/04W-14P01 3603472	12/14/2015	287.60	1355.0	1067.4	905.0	162.4	JMA	[]	Static Electric Wire Sounder

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7TH STREET	01S/04W-03J05 S 3602265	12/14/2015	193.80	1056.5	862.7	726.5	136.2	JMA	[]	Static Electric Wire Sounder
ANTIL 5	01S/04W-02K02 S 3600731	12/14/2015				787.8	0.0	JMA	[X] Well Blocked	N/A Electric Wire Sounder
ANTIL 6	01S/04W-02K08 S 3602422	12/14/2015	185.00	1052.5	867.5	777.5	90.0	JMA	[]	Static Electric Wire Sounder
BASELINE & CALIFORNIA	01N/04W-32N01 S 3602400	12/14/2015	334.00	1184.9	850.9	799.9	51.0	AO	[]	Static Airline
CAJON 2	01N/05W-03HO2 S 3601844	12/14/2015	234.00	1887.1	1653.1	1537.1	116.0	AO	[]	Static Airline
CAJON 3	01N/05W-03A02 S 3602821	12/14/2015	225.00	1894.9	1669.9	1537.9	132.0	AO	[]	Static Airline
CAJON 4	01N/05W-03A-S G363792	12/14/2015	231.80	1923.0	1691.2	1523.0	168.2	AO	[]	Static Electric Wire Sounder
CAJON CANYON	02N/05W-19K02 S 3600710	12/14/2015	91.85	2328.0	2236.2	2178.0	58.1	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 1	01N/04W-08M01 S 3600712	12/14/2015	157.94	1528.9	1371.0	1278.9	92.1	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 2	01N/04W-07F01 S 3600711	12/14/2015	155.54	1622.0	1466.5	1370.5	96.0	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 3	01N/04W-06H02 S 3602206	12/14/2015	27.82	1888.5	1860.7	1853.5	7.2	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 4	01N/04W-06H01 S 3602205	12/14/2015	39.04	1903.4	1864.4	1848.4	16.0	AO	[]	Static Electric Wire Sounder

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
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Well Name	State Well Number Rec. Number	Reading Date	Depth to Water	Ref. Point Elev.	WL Elev.	Pump Elev.	WL-Pump Elev.	Tech	Not Measured/Why	Status/ Method
DEVIL CANYON 5	01N/04W-08M02 S 3602844	12/14/2015	156.12	1561.7	1405.5	1261.7	143.9	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 6	01N/04W-06A01 S 3603580	12/14/2015	17.65	2039.3	2021.7	1994.3	27.4	AO	[]	Static Electric Wire Sounder
DEVIL CANYON 7	01N/04W-06A02 S 3603579	12/14/2015	18.15	2041.9	2023.7	1996.9	26.8	AO	[]	Static Electric Wire Sounder
ELLENA BROTHERS	01N/04W-08P01 S 3602712	12/14/2015	180.50	1476.7	1296.2	1175.7	120.5	AO	[]	Static Electric Wire Sounder
EPA 001	01S/04W-03D04 S G3603688	12/14/2015	253.75	1093.9	840.2	731.9	108.3	WB	[]	Pumping Electric Wire Sounder
EPA 002	01S/04W-03C03 S G3603689	12/14/2015	244.60	1091.7	847.1	791.7	55.4	WB	[]	Pumping Electric Wire Sounder
EPA 003	01S/04W-03C04 S G3603690	12/14/2015	219.32	1095.4	876.1	660.4	215.7	WB	[]	Static Electric Wire Sounder
EPA 004	01S/04W-03B03 S G3603691	12/14/2015	236.36	1086.3	849.9	786.3	63.6	WB	[]	Pumping Electric Wire Sounder
EPA 005	01S/04W-03A04 S G3603692	12/14/2015	217.86	1083.3	865.4	779.3	86.1	WB	[]	Static Electric Wire Sounder
EPA 006	01N/04W-16M03 S G3603693	12/14/2015	202.32	1396.6	1194.2	1096.6	97.7	WB	[]	Pumping Electric Wire Sounder
EPA 007	01N/04W-16M04 S G3603694	12/14/2015	206.21	1404.5	1198.3	1144.5	53.8	WB	[]	Pumping Electric Wire Sounder
EPA 108	01N/04W-33Q-S G363786	12/14/2015	292.91	1119.3	826.4	654.3	172.1	WB	[]	Pumping Electric Wire Sounder

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Well Name	State Well Number Rec. Number	Reading Date	Depth to Water	Ref. Point Elev.	WL Elev.	Pump Elev.	WL-Pump Elev.	Tech	Not Measured/Why	Status/ Method
EPA 108S	01N/04W-33R003S G3603917	12/14/2015	273.02	1119.3	846.2	669.3	177.0	WB	[]	Static Electric Wire Sounder
EPA 109	01N/04W-33P-S G363787	12/16/2015	380.44	1137.0	756.6	482.0	274.6	TR	[]	Pumping Electric Wire Sounder
EPA 110	01N/04W-33N-S G363788	12/16/2015	437.30	1149.3	712.0	589.3	122.7	TR	[]	Pumping Electric Wire Sounder
EPA 111	01N/04W-32R-S G363789	12/16/2015	440.50	1165.7	725.2	625.7	99.5	TR	[]	Pumping Electric Wire Sounder
EPA 112	01N/04W-32P-S G363790	12/16/2015	487.55	1181.8	694.2	616.8	77.4	TR	[]	Pumping Electric Wire Sounder
GILBERT ST .	01N/04W-35M03 S 3600729	12/15/2015	274.00	1123.5	849.5	783.5	66.0	JMA	[]	Pumping Airline
INTER CITY IRRIGATION		12/14/2015		-999.0		-999.0	0.0		[X] No Data	
INTER CITY MUTUAL 08	01S/04W-23N 3601316	12/15/2015	150.20	1028.0	877.8	1028.0	0.0	JMA	[]	Static Electric Wire Sounder
IVDA 11	01S/03W-07A06 S 3603649	12/15/2015	225.50	1140.0	914.5	910.0	4.5	JMA	[]	Static Electric Wire Sounder
KENWOOD 1	02N/05W-19R01S 3603471	12/14/2015	233.52	2350.8	2117.3	2027.8	89.5	AO	[]	Pumping Electric Wire Sounder
KENWOOD 2	02N/05W-19R-S G363791	12/14/2015	161.36	2289.0	2127.6	2089.0	38.6	AO	[]	Static Electric Wire Sounder
LEROY	01N/04W-27A02 S 3602401	12/15/2015	344.10	1239.7	895.6	859.7	35.9	JMA	[]	Static Electric Wire Sounder

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Monthly Depth To Water For Wells Maintained By Operations
December 2015

Well Name	State Well Number Rec. Number	Reading Date	Depth to Water	Ref. Point Elev.	WL Elev.	Pump Elev.	WL-Pump Elev.	Tech	Not Measured/Why	Status/ Method
LYNWOOD	01N/04W-26E02 S 3600727	12/15/2015	329.40	1236.2	906.8	791.2	115.6	JMA	[]	Static Electric Wire Sounder
LYTLE CREEK 2	01N/05W-36J01 3603027	12/14/2015				722.2	0.0	AO	[X] Well Blocked	Pumping Electric Wire Sounder
LYTLE CREEK 3-1	01N/05W-36R01 3600713	12/15/2015				1247.8	0.0	AO	[X] Well Blocked	Static Electric Wire Sounder
MALLORY NO.3	01N/04W-30M01S 3601845	12/15/2015	372.00	1319.8	947.8	829.8	118.0	TR	[]	Pumping Airline
MALLORY NO.3	01N/04W-30M01S 3601845	12/15/2015	367.00	1319.8	952.8	829.8	123.0	TR	[]	Static Airline
MILL & D	01S/04W-10N06 S 3600737	12/14/2015	107.80	1001.1	893.3	711.1	182.2	JMA	[]	Static Electric Wire Sounder
MT VERNON WATER CO	01N/04W-31A01 S 3600319	12/14/2015	363.35	1258.8	895.5	838.8	56.6	AO	[]	Static Electric Wire Sounder
NEWMARK 1	01N/04W-16E01 S 3600714	12/14/2015	203.90	1412.7	1208.8	1092.7	116.1	AO	[]	Static Electric Wire Sounder
NEWMARK 2	01N/04W-16E02 S 3600715	12/14/2015	202.00	1405.3	1203.3	1065.3	138.0	AO	[]	Static Steel Tape
NEWMARK 3	01N/04W-16E03 S 3600716	12/14/2015	206.86	1406.4	1199.6	1086.4	113.1	WB	[]	Pumping Electric Wire Sounder
NEWMARK 4	01N/04W-16E04 S 3602399	12/14/2015	200.70	1413.6	1212.9	1113.6	99.3	AO	[]	Static Electric Wire Sounder
OLIVE & GARNER	01S/04W-04D02S 3603206	12/16/2015	262.18	1132.5	870.4	682.5	187.8	TR	[]	Static Airline

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
Monthly Depth To Water For Wells Maintained By Operations
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PERRIS HILL 4	01N/04W-35C03 S 3601117	12/14/2015	288.40	1168.3	879.9	898.3	18.4	JMA	[]	Static Electric Wire Sounder
PERRIS HILL 5	01N/04W-26P03 S 3601115	12/14/2015	287.70	1173.5	885.8	873.5	12.3	JMA	[]	Static Electric Wire Sounder
SB COUNTY 1-34A	01S/04W-03Q	12/16/2015				47.0	0.0	WB	[X] Dry	Static Electric Wire Sounder
VINCENT	02N/05W-19Q01 S 3602426	12/14/2015	103.44	2314.3	2210.9	2144.3	66.6	AO	[]	Static Electric Wire Sounder
WATERMAN AVE.	01N/04W-27A01 S 3600728	12/15/2015	346.00	1244.8	898.8	794.8	104.0	JMA	[]	Static Electric Wire Sounder

EXHIBIT C

City of San Bernardino Municipal Water Department

Monthly Weather Report

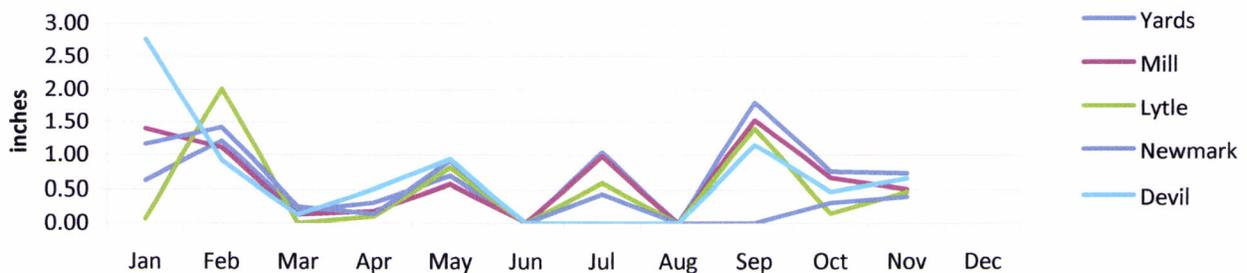
December 2015

Location	Yards			Mill & D	Lytle Creek	Newmark	Devil Canyon
Date	Max Temp deg F	Min Temp deg F	1/100 of an inch increments				
1	79.3	41.0	0.00	0.00	0.00	0.00	0.00
2	83.2	45.2	0.00	0.00	0.00	0.00	0.00
3	80.1	49.2	0.00	0.00	0.00	0.00	0.00
4	70.2	46.0	0.00	0.00	0.00	0.00	0.00
5	77.6	43.2	0.00	0.00	0.00	0.00	0.00
6	85.0	49.8	0.00	0.00	0.00	0.00	0.00
7	84.8	49.2	0.00	0.00	0.00	0.00	0.00
8	87.0	54.7	0.00	0.00	0.00	0.00	0.00
9	82.7	53.8	0.00	0.00	0.00	0.00	0.00
10	74.5	49.6	0.05	0.05	0.15	0.13	0.27
11	60.3	51.2	0.25	0.18	0.07	0.29	0.17
12	66.2	49.2	0.00	0.00	0.00	0.00	0.00
13	67.7	42.8	0.23	0.19	0.25	0.18	0.24
14	59.3	43.1	0.00	0.00	0.00	0.00	0.00
15	61.1	46.8	0.00	0.00	0.00	0.00	0.00
16	66.7	40.0	0.00	0.00	0.00	0.00	0.00
17	76.3	0.0	0.00	0.00	0.00	0.00	0.00
18	78.0	43.0	0.00	0.00	0.00	0.00	0.00
19	65.9	42.4	0.18	0.13	0.22	0.20	0.27
20	65.4	46.6	0.00	0.00	0.00	0.00	0.00
21	63.2	43.1	0.00	0.00	0.00	0.00	0.00
22	65.6	0.0	0.18	0.29	0.54	0.31	0.25
23	68.4	55.0	0.01	0.00	0.00	0.01	0.02
24	65.3	47.2	0.00	0.00	0.00	0.00	0.00
25	60.2	45.7	0.00	0.00	0.00	0.00	0.00
26	59.2	44.1	0.00	0.00	0.00	0.00	0.08
27	67.2	35.9	0.00	0.00	0.00	0.00	0.03
28	57.8	33.9	0.03	0.03	0.01	0.00	0.01
29	66.6	41.2	0.00	0.00	0.00	0.00	0.00
30	67.3	37.6	0.00	0.00	0.00	0.00	0.00
31	63.4	40.1	0.00	0.00	0.00	0.00	0.00

Max Min

TOTALS	87.0	0.0	0.93	0.87	1.24	1.12	1.34
YTD			7.37	7.10	5.61	5.04	7.54

Monthly Rain Totals



SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

FISCAL YEAR 2015-2016
RAIN READS

DATE	MILL & D	LOWER YARDS	D.C.	L.C.	NEWMARK	AVERAGE
Jul-15	0.95	1.02	0.71	0.59	0.41	0.74
Aug-15	0.00	0.00	0.00	0.00	0.00	0
Sep-15	1.53	1.80	1.15	1.40	0.89	1.35
Oct-15	0.62	0.69	0.38	0.15	0.30	0.43
Nov-15	0.53	0.21	0.71	0.50	0.43	0.48
Dec-15	0.87	0.93	1.34	1.24	1.12	1.10
TOTAL	4.50	4.65	4.29	3.88	3.15	4.09

All values are in inches

MICHAEL GARLAND
Water Utility
Operations Superintendent

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
RAINFALL
July 2015 THROUGH June 2016

