

COASTSIDE COUNTY WATER DISTRICT

766 MAIN STREET

HALF MOON BAY, CA 94019

MEETING OF THE BOARD OF DIRECTORS

Tuesday, April 14, 2009 - 7:00 p.m.

AGENDA

The Coastside County Water District (CCWD) does not discriminate against persons with disabilities. Upon request, the agenda and agenda packet materials can be provided in a format to accommodate special needs. If you require a copy of the agenda or related materials in an alternative format to accommodate a disability, or if you wish to attend this public meeting and will require special assistance or other special equipment, please call the District at (650) 726-4405 in advance and we will make every reasonable attempt to provide such an accommodation.

All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the CCWD District Office, located at 766 Main Street, Half Moon Bay, CA at the same time that the public records are distributed or made available to the legislative body.

This agenda and accompanying materials can be viewed on Coastside County Water District's website located at: www.coastsidewater.org.

The Board of the Coastside County Water District reserves the right to take action on any item included on this agenda.

- 1) **ROLL CALL**
- 2) **PLEDGE OF ALLEGIANCE**
- 3) **PUBLIC ANNOUNCEMENTS**

Any person may address the Board of Directors at the commencement of the meeting on any matter within the jurisdiction of the Board that is not on the agenda for this meeting. Any person may address the Board on an agenda item when that item is called. The Chair requests that each person addressing the Board limits their presentation to three (3) minutes and complete and submit a Speaker Slip.

4) CONSENT CALENDAR

The following matters before the Board of Directors are recommended for action as stated by the General Manager.

All matters listed hereunder constitute a Consent Calendar, are considered as routine by the Board of Directors, and will be acted upon by a single vote of the Board. There will be no separate discussion of these items unless a member of the Board so requests, in which event the matter shall be removed from the Consent Calendar and considered as a separate item.

- A. Requesting the Board to review disbursements for the month Ending March 31, 2009 – Claims: \$513,826.34; Payroll: \$73,675.53; for a total of \$587,501.87 ([attachment](#))
- B. Acceptance of Financial Reports ([attachment](#))
- C. Minutes of the March 10, 2009 Board of Directors Meeting ([attachment](#))
- D. Monthly Water Transfer Report ([attachment](#))
- E. Installed Water Connection Capacity and Water Meters Report ([attachment](#))
- F. Total CCWD Production Report ([attachment](#))
- G. CCWD Monthly Sales by Category Report ([attachment](#))
- H. March 2009 Leak Report ([attachment](#))
- I. Rainfall Reports ([attachment](#))
- J. San Francisco Public Utilities Commission Hydrological Conditions Report for March 2009 ([attachment](#))
- K. Notice of Completion – Acceptance of Nunes Underground Storage Tank Removal and Above Ground Storage Tank Installation Project ([attachment](#))

5) DIRECTOR COMMENTS / MEETINGS ATTENDED

6) GENERAL BUSINESS

- A. Kennedy/Jenks report on Denniston Pretreatment Alternatives ([attachment](#))
- B. Kennedy/Jenks Proposal for Preliminary Design of Denniston Pretreatment and Washwater System Improvements ([attachment](#))
- C. Quarterly Financial Review ([attachment](#))

- D. Agreement for Emergency Water Supply between Coastside County Water District and Montara Water & Sanitary District ([attachment](#))
 - E. Water Reclamation Update ([attachment](#))
- 7) **GENERAL MANAGER'S REPORT INCLUDING MONTHLY INFORMATIONAL REPORTS** ([attachment](#))
- A. Monthly Water Resources Report ([attachment](#))
 - B. Water Shortage and Drought Contingency Plan Update ([attachment](#))
 - C. Operations Report ([attachment](#))
- 8) **ADJOURNMENT**

| <u>Check Number</u> | <u>Vendor No</u> | <u>Vendor Name</u> | <u>Check Date</u> | <u>Void Amount</u> | <u>Check Amount</u> |
|---------------------|------------------|--------------------------------------|-------------------|--------------------|---------------------|
| 11976 | ALL04 | ALLIED WASTE SERVICES #925 | 03/05/2009 | 0.00 | 205.65 |
| 11977 | ALV01 | ALVES PETROLEUM, INC. | 03/05/2009 | 0.00 | 1,284.84 |
| 11978 | ATT01 | AT&T MOBILITY | 03/05/2009 | 0.00 | 516.04 |
| 11979 | BFI02 | BFI OF CALIFORNIA, INC. | 03/05/2009 | 0.00 | 58.00 |
| 11980 | CAL08 | CALCON SYSTEMS, INC. | 03/05/2009 | 0.00 | 18,348.33 |
| 11981 | COA 15 | COASTSIDE NET, INC | 03/05/2009 | 0.00 | 59.95 |
| 11982 | COA19 | COASTSIDE COUNTY WATER DIST. | 03/05/2009 | 0.00 | 223.09 |
| 11983 | HAR03 | HARTFORD LIFE INSURANCE CO. | 03/05/2009 | 0.00 | 1,876.00 |
| 11984 | PAC01 | PACIFIC GAS & ELECTRIC CO. | 03/05/2009 | 0.00 | 417.42 |
| 11985 | PAC02 | PACIFICA CREDIT UNION | 03/05/2009 | 0.00 | 591.50 |
| 11986 | PUB01 | PUB. EMP. RETIRE SYSTEM | 03/05/2009 | 0.00 | 15,691.37 |
| 11987 | UNI08 | UNION BANK OF CALIFORNIA, N.A. | 03/05/2009 | 0.00 | 156,954.46 |
| 11988 | UNI09 | UNION BANK OF CALIFORNIA | 03/05/2009 | 0.00 | 30,402.88 |
| 11989 | VAL01 | VALIC | 03/05/2009 | 0.00 | 1,270.00 |
| 11990 | COU05 | RECORDER'S OFFICE | 03/19/2009 | 0.00 | 12.00 |
| 11991 | COU05 | RECORDER'S OFFICE | 03/19/2009 | 0.00 | 12.00 |
| 11992 | ASS01 | HEALTH BENEFITS AUTHORITY (HBA | 03/20/2009 | 0.00 | 17,996.66 |
| 11993 | ATT02 | AT&T | 03/20/2009 | 0.00 | 1,179.26 |
| 11994 | HAR03 | HARTFORD LIFE INSURANCE CO. | 03/20/2009 | 0.00 | 1,876.00 |
| 11995 | KAI01 | KAISER FOUNDATION HEALTH | 03/20/2009 | 0.00 | 8,609.00 |
| 11996 | MET06 | METLIFE SBC | 03/20/2009 | 0.00 | 1,307.25 |
| 11997 | PAC01 | PACIFIC GAS & ELECTRIC CO. | 03/20/2009 | 0.00 | 25,910.34 |
| 11998 | PAC02 | PACIFICA CREDIT UNION | 03/20/2009 | 0.00 | 591.50 |
| 11999 | PUB01 | PUB. EMP. RETIRE SYSTEM | 03/20/2009 | 0.00 | 15,723.36 |
| 12000 | SAN03 | SAN FRANCISCO WATER DEPT. | 03/20/2009 | 0.00 | 71,683.98 |
| 12001 | TEA02 | TEAMSTERS LOCAL UNION #856 | 03/20/2009 | 0.00 | 613.00 |
| 12002 | VAL01 | VALIC | 03/20/2009 | 0.00 | 1,270.00 |
| 12003 | HAL09 | HMB CHAMBER OF COMMERCE | 03/24/2009 | 0.00 | 275.00 |
| 12004 | ADP01 | ADP, INC. | 03/26/2009 | 0.00 | 592.35 |
| 12005 | AMC01 | AM CONSERVATION GROUP | 03/26/2009 | 0.00 | 477.00 |
| 12006 | AND01 | ANDREINI BROS. INC. | 03/26/2009 | 0.00 | 4,679.50 |
| 12007 | ANG01 | ANGELO'S MUFFLER | 03/26/2009 | 0.00 | 255.19 |
| 12008 | ASC01 | EVERETT ASCHER | 03/26/2009 | 0.00 | 340.69 |
| 12009 | ATT03 | AT&T LONG DISTANCE | 03/26/2009 | 0.00 | 53.39 |
| 12010 | AZT01 | AZTEC GARDENS | 03/26/2009 | 0.00 | 190.00 |
| 12011 | BAR03 | BARTLE WELLS ASSOCIATES | 03/26/2009 | 0.00 | 6,362.54 |
| 12012 | BAS01 | BASIC CHEMICAL SOLUTION, LLC | 03/26/2009 | 0.00 | 2,474.09 |
| 12013 | BAY05 | BAY AREA WATER SUPPLY & | 03/26/2009 | 0.00 | 1,117.00 |
| 12014 | BAY07 | BAY AREA WATER SUPPLY & | 03/26/2009 | 0.00 | 1,834.50 |
| 12015 | BAY10 | BAY ALARM COMPANY | 03/26/2009 | 0.00 | 712.11 |
| 12016 | BIG01 | BIG CREEK LUMBER | 03/26/2009 | 0.00 | 61.55 |
| 12017 | BIG02 | BIG ED'S CRANE SERVICE, INC | 03/26/2009 | 0.00 | 7,815.50 |
| 12018 | BIO01 | BIOVIR LABORATORIES, INC. | 03/26/2009 | 0.00 | 870.00 |
| 12019 | BRE01 | CATHLEEN BRENNAN | 03/26/2009 | 0.00 | 195.00 |
| 12020 | CAL07 | CALIFORNIA TANK LINES, INC. | 03/26/2009 | 0.00 | 485.76 |
| 12021 | CAR02 | CAROLYN STANFIELD | 03/26/2009 | 0.00 | 485.00 |
| 12022 | CIN01 | CINTAS FIRST AID & SAFETY | 03/26/2009 | 0.00 | 100.53 |
| 12023 | COA 14 | COASTSIDE CARPET CLEANERS | 03/26/2009 | 0.00 | 495.00 |
| 12024 | COA02 | JERRY GARCIA | 03/26/2009 | 0.00 | 125.66 |
| 12025 | COA19 | COASTSIDE COUNTY WATER DIST. | 03/26/2009 | 0.00 | 75.92 |
| 12026 | COM01 | COMMUNICATION LEASING SERVICES | 03/26/2009 | 0.00 | 1,462.40 |
| 12027 | CSI01 | CSI SERVICES, INC. | 03/26/2009 | 0.00 | 6,288.00 |
| 12028 | CUS01 | D/B/A CUSTOM TRUCK CUSTOM TOPS, INC. | 03/26/2009 | 0.00 | 831.88 |
| 12029 | DAT01 | DATAPROSE, INC | 03/26/2009 | 0.00 | 1,572.52 |
| 12030 | DEP07 | DEPARTMENT OF PUBLIC HEALTH | 03/26/2009 | 0.00 | 1,554.84 |
| 12031 | EME01 | EMERGENCY VEHICLE SYSTEMS | 03/26/2009 | 0.00 | 986.09 |
| 12032 | ERS01 | ERS INDUSTRIAL SERVICES INC. | 03/26/2009 | 0.00 | 5,870.00 |
| 12033 | FIR06 | FIRST NATIONAL BANK | 03/26/2009 | 0.00 | 2,904.48 |
| 12034 | FRI01 | FRISCH ENGINEERING, INC | 03/26/2009 | 0.00 | 7,337.50 |
| 12035 | FUR01 | JOHN FURTADO | 03/26/2009 | 0.00 | 75.00 |
| 12036 | GOL04 | GOLDEN STATE FLOW MEASUREMENT | 03/26/2009 | 0.00 | 4,130.82 |
| 12037 | GRA03 | GRAINGER, INC. | 03/26/2009 | 0.00 | 1,037.07 |

| <u>Check Number</u> | <u>Vendor No</u> | <u>Vendor Name</u> | <u>Check Date</u> | <u>Void Amount</u> | <u>Check Amount</u> |
|----------------------|------------------|--------------------------------|------------------------|--------------------|---------------------|
| 12038 | HAC01 | HACH CO., INC. | 03/26/2009 | 0.00 | 437.23 |
| 12039 | HAL01 | HMB BLDG. & GARDEN INC. | 03/26/2009 | 0.00 | 89.67 |
| 12040 | HAL09 | HMB CHAMBER OF COMMERCE | 03/26/2009 | 0.00 | 487.00 |
| 12041 | HAL24 | H.M.B.AUTO PARTS | 03/26/2009 | 0.00 | 195.96 |
| 12042 | HAN01 | HANSONBRIDGETT. LLP | 03/26/2009 | 0.00 | 7,952.50 |
| 12043 | HOM01 | HOME DEPOT | 03/26/2009 | 0.00 | 48.63 |
| 12044 | IED01 | IEDA, INC. | 03/26/2009 | 0.00 | 1,000.00 |
| 12045 | IRO01 | IRON MOUNTAIN | 03/26/2009 | 0.00 | 271.00 |
| 12046 | IRV01 | IRVINE CONSULTING SERVICES, IN | 03/26/2009 | 0.00 | 4,580.00 |
| 12047 | JAM01 | JAMES FORD, INC. | 03/26/2009 | 0.00 | 16,442.71 |
| 12048 | KRU01 | KRUG-BIXBY-LONG ASSOC., INC. | 03/26/2009 | 0.00 | 780.00 |
| 12049 | KUL01 | ROBERT KULDA | 03/26/2009 | 0.00 | 266.60 |
| 12050 | MCT01 | MCTV6 | 03/26/2009 | 0.00 | 375.00 |
| 12051 | MIR07 | MIRAMAR EVENTS | 03/26/2009 | 0.00 | 500.00 |
| 12052 | MIS01 | MISSION UNIFORM SERVICES INC. | 03/26/2009 | 0.00 | 155.04 |
| 12053 | MON01 | DARIN BOVILLE | 03/26/2009 | 0.00 | 495.00 |
| 12054 | MON07 | MONTEREY COUNTY LAB | 03/26/2009 | 0.00 | 7,351.00 |
| 12055 | MUL03 | JOAN MULLINS | 03/26/2009 | 0.00 | 144.00 |
| 12056 | NAT02 | NATIONAL METER & AUTOMATION | 03/26/2009 | 0.00 | 876.83 |
| 12057 | OCE04 | OCEAN SHORE CO. | 03/26/2009 | 0.00 | 1,491.70 |
| 12058 | OFF01 | OFFICE DEPOT | 03/26/2009 | 0.00 | 602.51 |
| 12059 | ONT01 | ONTRAC | 03/26/2009 | 0.00 | 113.67 |
| 12060 | PAU01 | PAULO'S AUTO CARE | 03/26/2009 | 0.00 | 160.04 |
| 12061 | PIT04 | PITNEY BOWES | 03/26/2009 | 0.00 | 231.00 |
| 12062 | PUM01 | PUMP REPAIR SERVICE CO. INC. | 03/26/2009 | 0.00 | 3,491.90 |
| 12063 | RIC01 | RICOH AMERICAS CORPORATION | 03/26/2009 | 0.00 | 794.47 |
| 12064 | RIC04 | RICE TRUCKING--SOIL FARM | 03/26/2009 | 0.00 | 1,964.72 |
| 12065 | ROB01 | ROBERTS & BRUNE CO. | 03/26/2009 | 0.00 | 1,196.11 |
| 12066 | ROG01 | ROGUE WEB WORKS, LLC | 03/26/2009 | 0.00 | 330.00 |
| 12067 | SAN05 | SAN MATEO CTY PUBLIC HEALTH LA | 03/26/2009 | 0.00 | 996.70 |
| 12068 | SEW01 | SEWER AUTH. MID- COASTSIDE | 03/26/2009 | 0.00 | 570.00 |
| 12069 | SIE02 | SIERRA CHEMICAL CO. | 03/26/2009 | 0.00 | 1,848.33 |
| 12070 | SIG01 | SIGNET TESTING LABS, INC | 03/26/2009 | 0.00 | 1,805.00 |
| 12071 | SOU05 | SOUTH SAN FRANCISCO TIRE | 03/26/2009 | 0.00 | 1,354.10 |
| 12072 | STE02 | JIM STEELE | 03/26/2009 | 0.00 | 750.00 |
| 12073 | STR02 | STRAWFLOWER ELECTRONICS | 03/26/2009 | 0.00 | 29.07 |
| 12074 | TET01 | JAMES TETER | 03/26/2009 | 0.00 | 12,966.91 |
| 12075 | TWI01 | STEVE TWITCHELL | 03/26/2009 | 0.00 | 142.06 |
| 12076 | UB*00598 | MICHELLE SIMPSON | 03/26/2009 | 0.00 | 75.00 |
| 12077 | UB*00599 | ANDREA STARIHA | 03/26/2009 | 0.00 | 48.54 |
| 12078 | UB*00600 | DIANA STELLA | 03/26/2009 | 0.00 | 20.63 |
| 12079 | UB*00601 | MATHEW/MANDY CROW | VOID 03/26/2009 | 123.17 | 0.00 |
| 12080 | UB*00602 | EDDY KLIER/MOLLY O'LEARY | 03/26/2009 | 0.00 | 49.14 |
| 12081 | UB*00603 | TODD WILDER | 03/26/2009 | 0.00 | 50.88 |
| 12082 | UB*00604 | ROSIE YEH | 03/26/2009 | 0.00 | 21.58 |
| 12083 | UB*00605 | COLLEEN THOMPSON | 03/26/2009 | 0.00 | 14.52 |
| 12084 | UB*00606 | JANICE KELLY | 03/26/2009 | 0.00 | 67.71 |
| 12085 | UB*00607 | A to B REALTY | 03/26/2009 | 0.00 | 75.00 |
| 12086 | UB*00608 | DOWNEY SAVINGS & LOAN | 03/26/2009 | 0.00 | 61.88 |
| 12087 | UNI07 | UNITED STATES POSTAL SERV. | 03/26/2009 | 0.00 | 600.00 |
| 12088 | VER02 | VERIZON WIRELESS | 03/26/2009 | 0.00 | 168.35 |
| 12089 | WES11 | WEST COAST AGGREGATES, INC. | 03/26/2009 | 0.00 | 478.89 |
| Report Total: | | | | 123.17 | 513,826.34 |

COASTSIDE COUNTY WATER DISTRICT - PERIOD BUDGET ANALYSIS
31-Mar-09

| ACCOUNT | DESCRIPTION | CURRENT ACTUAL | CURRENT BUDGET | B/(W) VARIANCE | B/(W) % VAR | YTD ACTUAL | YTD BUDGET | B/(W) VARIANCE | B/(W) % VAR |
|-----------------------|--------------------------------|---------------------------|---------------------------|---------------------------|------------------------|-----------------------|-----------------------|---------------------------|------------------------|
| REVENUE | | | | | | | | | |
| 1-0-4120-00 | Water Revenue -All Areas | 338,813 | 394,387 | (55,574) | (14.1%) | 4,034,653 | 4,472,374 | (437,721) | (9.8%) |
| 1-0-4170-00 | Water Taken From Hydrants | 2,223 | 2,083 | 140 | 6.7% | 28,425 | 18,750 | 9,675 | 51.6% |
| 1-0-4180-00 | Late Notice -10% Penalty | 7,232 | 4,167 | 3,066 | 73.6% | 38,368 | 37,500 | 868 | 2.3% |
| 1-0-4230-00 | Service Connections | 289 | 667 | (377) | (56.6%) | 6,523 | 6,000 | 523 | 8.7% |
| 1-0-4235-00 | CSP Connection T & S Fees | 0 | 0 | 0 | 0.0% | 13,940 | 0 | 13,940 | 0.0% |
| 1-0-4920-00 | Interest Earned | 0 | 0 | 0 | 0.0% | 71,124 | 75,093 | (3,969) | (5.3%) |
| 1-0-4925-00 | Interest Revenue T&S Fees | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| 1-0-4927-00 | Inerest Revenue Bond Funds | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| 1-0-4930-00 | Tax Apportionments/Cnty Checks | 1,064 | 5,000 | (3,936) | (78.7%) | 395,078 | 385,000 | 10,078 | 2.6% |
| 1-0-4950-00 | Miscellaneous Income | 7,942 | 6,333 | 1,609 | 25.4% | 125,465 | 57,000 | 68,465 | 120.1% |
| 1-0-4960-00 | CSP Assm. Dist. Processing Fee | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| 1-0-4965-00 | ERAF REFUND -County Taxes | 236,700 | 0 | 236,700 | 0.0% | 236,700 | 100,000 | 136,700 | 136.7% |
| 1-0-4970-00 | Wavecrest Reserve Conn. Fees | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| REVENUE TOTALS | | 594,264 | 412,637 | 181,627.13 | 44.0% | 4,950,275 | 5,151,717 | (201,442) | (3.9%) |
| EXPENSES | | | | | | | | | |
| 1-1-5130-00 | Water Purchased | 71,684 | 84,055 | 12,371 | 14.7% | 991,564 | 1,055,698 | 64,134 | 6.1% |
| 1-1-5230-00 | Pump Exp, Nunes T P | 1,532 | 1,667 | 135 | 8.1% | 13,234 | 15,000 | 1,766 | 11.8% |
| 1-1-5231-00 | Pump Exp, CSP Pump Station | 20,977 | 230 | (20,747) | (9020.6%) | 283,675 | 180,404 | (103,271) | (57.2%) |
| 1-1-5232-00 | Pump Exp, Trans. & Dist. | 1,062 | 1,378 | 316 | 23.0% | 16,726 | 18,603 | 1,877 | 10.1% |
| 1-1-5233-00 | Pump Exp, Pilarcitos Can. | 1,460 | 2,400 | 940 | 39.2% | 3,975 | 7,500 | 3,525 | 47.0% |
| 1-1-5234-00 | Pump Exp. Denniston Proj. | 880 | 6,208 | 5,328 | 85.8% | 12,830 | 55,872 | 43,042 | 77.0% |
| 1-1-5235-00 | Denniston T.P. Operations | 5,138 | 7,463 | 2,325 | 31.2% | 39,454 | 67,167 | 27,713 | 41.3% |
| 1-1-5236-00 | Denniston T.P. Maintenance | 6,536 | 3,000 | (3,536) | (117.9%) | 35,632 | 27,000 | (8,632) | (32.0%) |
| 1-1-5240-00 | Nunes T P Operations | 10,341 | 7,022 | (3,319) | (47.3%) | 90,417 | 94,797 | 4,380 | 4.6% |
| 1-1-5241-00 | Nunes T P Maintenance | 4,239 | 4,308 | 69 | 1.6% | 25,324 | 38,772 | 13,448 | 34.7% |
| 1-1-5242-00 | CSP Pump Station Operations | 589 | 708 | 119 | 16.8% | 5,763 | 6,372 | 609 | 9.6% |
| 1-1-5243-00 | CSP Pump Station Maintenance | 433 | 10,000 | 9,567 | 95.7% | 12,346 | 44,000 | 31,654 | 71.9% |
| 1-1-5318-00 | Studies/Surveys/Consulting | 7,825 | 4,167 | (3,658) | (87.8%) | 33,999 | 37,503 | 3,504 | 9.3% |
| 1-1-5321-00 | Water Conservation | 4,148 | 3,333 | (815) | (24.4%) | 26,219 | 29,997 | 3,778 | 12.6% |
| 1-1-5322-00 | Community Outreach | 870 | 2,641 | 1,771 | 67.1% | 10,884 | 23,769 | 12,885 | 54.2% |
| 1-1-5411-00 | Salaries & Wages -Field | 66,184 | 63,338 | (2,846) | (4.5%) | 624,592 | 601,713 | (22,878) | (3.8%) |
| 1-1-5412-00 | Maintenance -General | 9,807 | 15,066 | 5,259 | 34.9% | 135,993 | 135,594 | (399) | (0.3%) |
| 1-1-5414-00 | Motor Vehicle Expense | 5,795 | 4,833 | (962) | (19.9%) | 30,196 | 43,497 | 13,301 | 30.6% |
| 1-1-5415-00 | Maintenance -Well Fields | 0 | 2,117 | 2,117 | 100.0% | 9,507 | 19,053 | 9,546 | 50.1% |

| ACCOUNT | DESCRIPTION | CURRENT ACTUAL | CURRENT BUDGET | B/(W) VARIANCE | B/(W) % VAR | YTD ACTUAL | YTD BUDGET | B/(W) VARIANCE | B/(W) % VAR |
|-----------------------|--------------------------------|-------------------|-------------------|-------------------|----------------|------------------|------------------|-------------------|----------------|
| 1-1-5610-00 | Salaries/Wages-Administration | 47,096 | 47,517 | 421 | 0.9% | 433,880 | 451,410 | 17,530 | 3.9% |
| 1-1-5620-00 | Office Supplies & Expense | 7,318 | 11,613 | 4,295 | 37.0% | 72,803 | 104,513 | 31,709 | 30.3% |
| 1-1-5621-00 | Computer Services | 5,119 | 4,492 | (628) | (14.0%) | 39,108 | 40,425 | 1,317 | 3.3% |
| 1-1-5625-00 | Meetings / Training / Seminars | 2,934 | 2,708 | (225) | (8.3%) | 16,275 | 24,375 | 8,100 | 33.2% |
| 1-1-5630-00 | Insurance | 31,254 | 41,112 | 9,859 | 24.0% | 374,285 | 370,012 | (4,273) | (1.2%) |
| 1-1-5640-00 | Employees Retirement Plan | 30,416 | 30,406 | (10) | (0.0%) | 293,652 | 288,859 | (4,793) | (1.7%) |
| 1-1-5681-00 | Legal | 4,212 | 4,750 | 538 | 11.3% | 20,094 | 42,750 | 22,656 | 53.0% |
| 1-1-5682-00 | Engineering | 1,071 | 2,083 | 1,013 | 48.6% | 9,870 | 18,750 | 8,880 | 47.4% |
| 1-1-5683-00 | Financial Services | 0 | 3,948 | 3,948 | 100.0% | 18,356 | 35,531 | 17,175 | 48.3% |
| 1-1-5684-00 | Payroll Tax Expense | 8,677 | 8,119 | (559) | (6.9%) | 74,399 | 77,126 | 2,727 | 3.5% |
| 1-1-5687-00 | Membership, Dues, Subscript. | 1,524 | 4,330 | 2,806 | 64.8% | 35,500 | 38,974 | 3,474 | 8.9% |
| 1-1-5688-00 | Election Expenses | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| 1-1-5689-00 | Labor Relations | 1,000 | 1,250 | 250 | 20.0% | 9,000 | 11,250 | 2,250 | 20.0% |
| 1-1-5700-00 | San Mateo County Fees | 0 | 0 | 0 | 0.0% | 8,798 | 9,200 | 402 | 4.4% |
| 1-1-5705-00 | State Fees | 1,555 | 0 | (1,555) | 0.0% | 10,711 | 23,000 | 12,289 | 53.4% |
| 1-1-5710-00 | Deprec, Trucks, Tools, Equipt. | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| 1-1-5711-00 | Debt Svc/Existing Bonds 1998A | 30,403 | 30,610 | 207 | 0.0% | 265,981 | 266,220 | 239 | 0.1% |
| 1-1-5712-00 | Debt Svc/Existing Bonds 2006B | 156,954 | 157,286 | 332 | 0.0% | 483,305 | 482,460 | (845) | (0.2%) |
| 1-1-5713-00 | Contribution to CIP & Reserves | 36,167 | 36,167 | 0 | 0.0% | 325,500 | 325,500 | (0) | (0.0%) |
| 1-1-5745-00 | CSP Connect. Reserve Contribu. | 0 | 0 | 0 | 0.0% | 13,940 | 0 | (13,940) | 0.0% |
| 1-1-5746-00 | Wavcrest CSP Connt. Reserve | 0 | 0 | 0 | 0.0% | 0 | 0 | 0 | 0.0% |
| EXPENSE TOTALS | | 585,197 | 610,325 | 25,128 | 4.1% | 4,907,787 | 5,112,665 | 204,879 | 4.0% |
| NET INCOME | | 9,067 | (197,688) | 206,755 | | 42,488 | 39,052 | 3,436 | |

COASTSIDE COUNTY WATER DISTRICT

INVESTMENT REPORT

March 31, 2009

| | | <i>Restricted</i> | <i>Restricted</i> | <i>Restricted for CSP CIP Projects</i> | | |
|---|--|-------------------------------|---------------------------------|--|-------------------------|-----------------------|
| | CASH FLOW & OPERATING RESERVE | EMERGENCY RESERVES | CAPITAL EXPENDITURES | DISTRICT CSP CONTRIBUTION | CSP T&S FEES | TOTAL |
| DISTRICT BALANCES | | | | | | |
| <u>CASH IN FNB</u> | | | | | | |
| OPERATING ACCOUNT | | | \$908,238.93 | | | \$908,238.93 |
| CSP T&S ACCOUNT | | | | | \$22,720.52 | \$22,720.52 |
| TOTAL FIRST NATIONAL BANK | \$0.00 | \$0.00 | \$908,238.93 | \$0.00 | \$22,720.52 | \$930,959.45 |
| CASH WITH L.A.I.F | \$297,900.00 | \$1,564,103.00 | \$1,607,558.59 | \$0.00 | \$20,613.32 | \$3,490,174.91 |
| UNION BANK - Project Fund Balance | | | \$2,324,802.66 | | | \$2,324,802.66 |
| CASH ON HAND | \$2,130.00 | | | | | \$2,130.00 |
| TOTAL DISTRICT CASH BALANCES | \$300,030.00 | \$1,564,103.00 | \$4,840,600.18 | \$0.00 | \$43,333.84 | \$6,748,067.02 |
| | | | | | | |
| | | | | | | |
| ASSESSMENT DISTRICT BALANCES | | | | | | |
| <u>CASH IN FIRST NATIONAL BANK (FNB)</u> | | | | | | |
| REDEMPTION ACCOUNT | | \$ 86,213.86 | | | | |
| RESERVE ACCOUNT (Closed Account 8-4-04) | | \$ - | | | | |
| TOTAL ASSESSMENT DISTRICT CASH | | \$ 86,213.86 | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| <i>This report is in conformity with CCWD's Investment Policy and there are sufficient funds to meet CCWD's expenditure requirements for the next three months.</i> | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**COASTSIDE COUNTY WATER DISTRICT
CRYSTAL SPRINGS PROJECT
CAPITAL PROJECTS FY 08/09**

March 31, 2009

| <u>PROJECT</u> | <u>Actual to date</u> | <u>FY 08/09 CIP Budget</u> | <u>% Completed</u> |
|---|------------------------------|-----------------------------------|---------------------------|
| El Granada Pipeline Phase 3 1128-03 | \$2,508,842 | \$2,300,000 | 109.1% |
| TOTALS | \$2,508,842 | \$2,300,000 | 109.1% |

**COASTSIDE COUNTY WATER DISTRICT
 APPROVED CAPITAL IMPROVEMENT PROJECTS
 FISCAL YEAR 2008-2009**

31-Mar-09

| Acct No. | Approved CIP Budget FY 08/09 | Actual To Date FY 08-09 | % Completed |
|----------|------------------------------------|-------------------------------|----------------|
|----------|------------------------------------|-------------------------------|----------------|

PIPELINE PROJECTS

| | | | | |
|--|---------|------------|-----------|-------|
| Highway #1 South Phase I / II | 1121-46 | \$ 100,000 | \$ 39,193 | 39.2% |
| Highway 92 - Main Line Replacement (Spanishtown) | | \$ 100,000 | | 0.0% |
| Main Street/Hwy 92 Widening Project | 1120-93 | \$ 50,000 | \$ 4,600 | 9.2% |

WATER TREATMENT PLANTS

| | | | | |
|--|---------|------------|-----------|--------|
| Denniston Intake Maintenance | 1120-03 | \$ 27,000 | \$ 39,205 | 145.2% |
| Denniston Sludge Ponds | | \$ 100,000 | | 0.0% |
| Denniston WTP- Filter Flow Meters | | \$ 6,000 | \$ 7,198 | 120.0% |
| Nunes- Replace Cl2/pH Analyzer | 1118-10 | \$ 15,000 | \$ 4,131 | 27.5% |
| Nunes Filter Media Replacement | 1121-25 | \$ 50,000 | \$ 53,327 | 106.7% |
| Nunes UST removal and replaced with AGST | 1121-44 | \$ 15,000 | \$ 54,660 | 364.4% |
| Nunes WTP - Head Loss System Replacement | 1118-10 | \$ 15,000 | \$ 15,064 | 100.4% |

FACILITIES & MAINTENANCE

| | | | | |
|--|---------|------------|-----------|--------|
| AMR Program | 1121-41 | \$ 50,000 | \$ 45,761 | 91.5% |
| PRV Valves Replacement Project | 1121-43 | \$ 20,000 | \$ 17,000 | 85.0% |
| Meter Change Program | 1117-06 | \$ 17,000 | \$ 18,607 | 109.5% |
| Main Office - Replace Skylights (repair leaks) | | \$ 25,000 | | 0.0% |
| Fire Hydrant Replacement | 1121-49 | \$ 40,000 | \$ 27,915 | 69.8% |
| Pilarcitos Culvert Repair | 1121-48 | \$ 100,000 | \$ 8,607 | 8.6% |
| District Digital Mapping | | \$ 75,000 | | 0.0% |

EQUIPMENT PURCHASE & REPLACEMENT

| | | | | |
|----------------------------|---------|------------|-----------|--------|
| Vehicle Replacement | 1118-04 | \$ 27,000 | \$ 16,443 | 60.9% |
| Computer System | 1118-02 | \$ 25,000 | \$ 25,094 | 100.4% |
| Office Equipment/Furniture | 1118-02 | \$ 20,000 | \$ 1,435 | 7.2% |
| SCADA/Telemetry | 1120-82 | \$ 500,000 | \$ 13,357 | 2.7% |

PUMP STATIONS / TANKS / WELLS

| | | | | |
|-----------------------------|--|-----------|--|------|
| Crystal Springs VFD Project | | \$ 68,000 | | 0.0% |
|-----------------------------|--|-----------|--|------|

**COASTSIDE COUNTY WATER DISTRICT
 APPROVED CAPITAL IMPROVEMENT PROJECTS
 FISCAL YEAR 2008-2009**

31-Mar-09

| | Acct No. | Approved CIP Budget FY 08/09 | Actual To Date FY 08-09 | % Completed |
|--|-----------------|---|--|------------------------|
| Well Rehabilitation | 1121-38 | \$ 60,000 | \$ 20,027 | 33.4% |
| Alves Tank Recoating, Interior+Exterior | | \$ 150,000 | | 0.0% |
| Miramar Tank Interior Recoat + Mixing | | \$ 300,000 | | 0.0% |
| Cahill Tank Exterior Recoat + Ladder | | \$ 160,000 | | 0.0% |
| El Granada Pump Station #2 Removal Project | 1120-48 | \$ 50,000 | \$ 1,288 | 2.6% |
| EG Tank #3 Recoating Interior + Exterior | | \$ 260,000 | | 0.0% |
| CSP Pump #2 Rehabilitation | 1121-30 | \$ 75,000 | \$ 7,816 | 10.4% |
| Tank Staff Gauge Repair | | \$ 15,000 | | 0.0% |
| Intrusion Alarms at all Tanks | | \$ 50,000 | | 0.0% |
| New Pilarcitos Well | | \$ 10,000 | | 0.0% |
| Pilarcitos Canyon Blending Station | | \$ 50,000 | | 0.0% |
| Tank Ladder Project | | \$ 50,000 | | 0.0% |

NUNES/ DENNISTON WTP PRIORITY (SHORT-TERM) IMPROVEMENTS

| | | | | |
|--|---------|--------------|------------|------|
| Nunes / Denniston Short Term WTP Modifications | 1121-21 | \$ 1,651,000 | \$ 130,081 | 7.9% |
|--|---------|--------------|------------|------|

DENNISTON WTP PRIORITY (SHORT-TERM) IMPROVEMENTS

| | | | | |
|---|--|------------|-----------|------|
| Denniston Storage Tank Modification Project | | \$ 686,000 | \$ 29,490 | 4.3% |
|---|--|------------|-----------|------|

DENNISTON WTP (LONG-TERM) IMPROVEMENTS (MEMBRANE FILTRATION)

| | | | | |
|---|---------|------------|-----------|-------|
| Denniston Electrical System Upgrade/Expansion | | \$ 30,000 | | 0.0% |
| Denniston Pre/Post Treatment Study | 1127-04 | \$ 200,000 | \$ 24,422 | 12.2% |

NUNES WTP (LONG-TERM) IMPROVEMENTS (UV DISINFECTION)

| | | | | |
|---|--|-----------|--|------|
| Modify Filters for Rate of Flow Control | | \$ 10,000 | | 0.0% |
|---|--|-----------|--|------|

WATER SUPPLY DEVELOPMENT

| | | | | |
|--------------------------------------|---------|------------|------------|--------|
| Reclamation Project Planning | 1127-00 | \$ 100,000 | \$ 190,118 | 190.1% |
| Water Supply Alternatives Evaluation | | \$ 50,000 | | 0.0% |

| | | | | |
|---------------|--|---------------------|-------------------|--------------|
| TOTALS | | \$ 5,402,000 | \$ 794,837 | 14.7% |
|---------------|--|---------------------|-------------------|--------------|

**COASTSIDE COUNTY WATER DISTRICT
 APPROVED CAPITAL IMPROVEMENT PROJECTS
 FISCAL YEAR 2008-2009**

31-Mar-09

| Acct No. | Approved CIP Budget FY 08/09 | Actual To Date FY 08-09 | % Completed |
|----------|------------------------------------|-------------------------------|----------------|
|----------|------------------------------------|-------------------------------|----------------|

FY 07/08 CIP Projects - paid in FY 08/09

Nunes WTP Raw Water Turbidimeter

\$ 10,000 \$ 8,016

NON-BUDGETED ITEMS (CAPITAL EXPEDITURES)

Denniston Emergency Shut Down

\$ 11,204

Denniston Valve Replacement

1118-11 \$ 14,397

EG Tank #1 Modification Project

1121-42 \$ 117

**Legal Cost Tracking Report
12 Months At-A-Glance**

**Acct. No.5681
Patrick Miyaki - HansonBridgett, LLP
Legal**

| Month | Admin (General Legal Fees) | Recycle Water Analysis | Transfer Program | CIP | Personnel | Lawsuits | Infrastructure Project Review (Reimbursable) | TOTAL |
|---------------|---|---------------------------------------|-----------------------------|--------------|------------------|-----------------|--|---------------|
| Dec-08 | 4,167 | 182 | | | | | | 4,349 |
| Jan-09 | 1,354 | | 1,508 | 2,193 | | | | 5,055 |
| Feb-09 | 2,651 | | | 494 | | | 3,978 | 7,123 |
| Mar-09 | 4,212 | 494 | | 113 | | | 3,134 | 7,953 |
| | | | | | | | | 0 |
| | | | | | | | | 0 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| TOTAL | 12,384 | 676 | 1,508 | 2,800 | 0 | 0 | 7,112 | 24,480 |

**Engineer Cost Tracking Report
12 Months At-A-Glance**

**Acct. No. 5682
JAMES TETER
Engineer**

| Month | Admin & Retainer | Phase 3 EG Pipeline | CIP | Short Term WTP Imprv. | Studies & Projects | TOTAL | Reimbursable from Projects |
|---------------|---------------------------------|--------------------------------|---------------|--------------------------------------|-----------------------------------|----------------|---|
| Apr-08 | 2,210 | 1,413 | 5,535 | 15,681 | 1,131 | 25,970 | 1,131 |
| May-08 | 611 | | | 14,644 | | 15,255 | |
| Jun-08 | 454 | | 1,440 | 9,392 | 2,544 | 13,829 | 2,544 |
| Jul-08 | 963 | 681 | | 403 | 2,254 | 4,300 | 2,254 |
| Aug-08 | 1,563 | | 782 | 8,782 | 1,486 | 12,613 | 1,486 |
| Sep-08 | 641 | | 531 | 12,930 | 2,887 | 16,988 | 2,887 |
| Oct-08 | 480 | | 11,603 | 3,220 | 1,771 | 17,074 | 1,771 |
| Nov-08 | 480 | | 11,849 | 81 | 1,820 | 14,229 | 1,820 |
| Dec-08 | 281 | | 14,110 | 81 | 3,740 | 18,211 | 1,820 |
| Jan-09 | 2,825 | | 566 | 2,372 | 5,022 | 10,784 | 5,022 |
| Feb-09 | 2,529 | | | 14,082 | 1,501 | 18,112 | 1,501 |
| Mar-09 | 1,071 | | 825 | 9,703 | 1,369 | 12,967 | 1,369 |
| TOTAL | 14,108 | 2,094 | 47,240 | 91,369 | 25,522 | 180,333 | 23,604 |

COASTSIDE COUNTY WATER DISTRICT

766 MAIN STREET

HALF MOON BAY, CA 94019

MINUTES OF THE BOARD OF DIRECTORS MEETING

Tuesday, March 10, 2009

- 1) **ROLL CALL:** President Mickelsen called the meeting to order at 7:12 p.m. Present at roll call were Directors Ken Coverdell, Bob Feldman, Jim Larimer, and Everett Ascher.

Also present were: David Dickson, General Manager; Patrick Miyaki, Legal Counsel; Steve Twitchell, Water Treatment Plant Supervisor; Cathleen Brennan, Public Outreach/Program Development /Water Resources Analyst; JoAnne Whelen, Administrative Assistant/Recording Secretary; and Gina Brazil, Office Manager.

- 2) **PLEDGE OF ALLEGIANCE**

- 3) **PUBLIC ANNOUNCEMENTS:**

George Muteff - 408 Redondo Beach Board, Half Moon Bay - Commented on the upcoming California Coastal Commission Hearing regarding the Half Moon Bay Local Coastal Program (LCP) Amendment and the associated staff report, referencing page 8 of 23, which addresses future increases in water supply, and page 11 of 23 regarding residential growth.

- 4) **CONSENT CALENDAR**

- A. Requesting the Board to review disbursements for the month Ending February 28, 2009 - Claims: \$383,346.51; Payroll: \$68,767.92; for a total of \$452,114.43
- B. Acceptance of Financial Reports
- C. Minutes of the February 10, 2009 Board of Directors Meeting
- D. Minutes of the February 26, 2009 Special Board of Directors Meeting - Financing the District Strategic Planning Workshop
- E. Installed Water Connection Capacity and Water Meters Report

- F. Total CCWD Production Report
- G. CCWD Monthly Sales by Category Report
- H. February 2009 Leak Report
- I. Rainfall Reports
- J. San Francisco Public Utilities Commission Hydrological Conditions Report for February 2009

Director Ascher stated that he had reviewed the monthly claims and found all to be in order.

Director Larimer stated that he had two questions related to items 4-F, Total Production Report and 4-G, Monthly Sales by Category Report. He noted the change in format of the Production Report and requested that staff revert to the previous format of the report, noting that he felt it was a better way of reporting the results. Regarding the Monthly Sales Report, he inquired when the report would be reflecting the monthly readings from the automatic meter reading devices recently installed on the high water consumption customers. Mr. Dickson advised that due to the necessary upgrades in software, staff anticipated instituting monthly billing for these customers in July 2009.

Director Coverdell commented that although the District was below what was originally predicted for revenue, that expenses were reasonable and felt that staff was doing an excellent job with managing the budget. Additionally Director Coverdell requested that staff revise formats of the Rainfall by Month, Rainfall Totals for 2008-2009, and Rain Totals reports for improved clarity. Mr. Dickson advised the Board that the requested revisions would be incorporated into the reports.

ON MOTION by Director Larimer and seconded by Director Ascher, the Board voted as follows, by roll call vote, to accept the Consent Calendar in its entirety:

| | |
|-------------------------------|------------|
| Director Coverdell | Aye |
| Vice-President Feldman | Aye |
| Director Larimer | Aye |
| Director Ascher | Aye |
| President Mickelsen | Aye |

5) DIRECTOR COMMENTS / MEETINGS ATTENDED

Director Ascher reported on a recent California Special Districts Association Legislative Committee meeting in Sacramento.

President Mickelsen announced that he would be attending the upcoming Bay Area Water Supply and Conservation Agency (BAWSCA) Board of Directors meeting.

6) GENERAL BUSINESS

A. Discussion and Possible Direction to Staff Regarding Water Reclamation

Mr. Dickson introduced this item and provided the background, including a recap of the recent meetings with the Sewer Authority Mid-Coastside's (SAM) Water Reclamation Committee and the Half Moon Bay City Council. He referenced the passing of the Half Moon Bay City Council's Resolution, authorizing the City Manager to negotiate with the SAM, a work plan and pay up to 50% cost share, up to a maximum amount of \$75,000, for its implementation for the development and use of recycled water to the Ocean Colony Golf Course. He also advised the Board that at the City was organizing a meeting of agency managers and attorneys, scheduled to take place March 17.

Mr. Dickson then distributed an excerpt (page 30 of 156) from the California Coastal Commission Staff Report regarding the San Mateo County Midcoast Local Coastal Program (LCP) Update. President Mickelsen expressed concerns with the language contained in the report, specifically that providing recycled water to the existing Ocean Colony Golf Course would not induce growth, nor provide additional water connections to other commercial, residential, or industrial water users.

Mr. Miyaki commented that this language was contained within one paragraph of a document consisting of a 156-page staff report, which the District just recently obtained. He expressed that he had significant concerns and issues with the content of the entire document and that a review in further detail is required.

Each of the Board members shared their comments, and discussion of the specific language ensued. Director Coverdell requested that it be incorporated into the record that CCWD is enthusiastic and supportive of this project and does not want to get in the way of the project. However, he thought it was important for everyone to realize that CCWD is legally bound to protect the interests of its customers.

President Mickelsen also reported on the results of the recent meeting with Bruce Russell of Ocean Colony Partners in regard to the potential recycling project. The Board continued to discuss many aspects of the potential project, asked questions, and provided suggestions to Mr. Dickson.

John Muller, 923 Miramontes Street, Half Moon Bay – stated that he appreciated all of the Board’s comments and concerns. He supported a meeting at the staff level of all of the involved agencies and stressed the importance of continuing to look at other local water sources.

7) **GENERAL MANAGER’S REPORT INCLUDING MONTHLY INFORMATIONAL REPORTS**

Mr. Dickson informed the Board that the District has recently applied for stimulus funding for the water treatment plant short-term improvements project, which is currently in the approval process with the Department of Public Health. He also updated the Board on continuing drought planning activities. Additionally Mr. Dickson commented on the San Mateo County Mid-coastside Local Coastal Program Update document discussed earlier in the meeting, and informed the Board that this has been a long process, originally started approximately five years ago. He advised that the Coastal Commission Hearing on this matter had been postponed from the scheduled date of March 12, 2009, and was anticipated to be rescheduled in approximately August of 2009. Mr. Dickson also addressed questions and provided clarification on Governor Schwarzenegger’s Proclamation, referencing the State of Emergency due to the drought conditions. Mr. Miyaki also shared some comments on his interpretation of the Governor’s Proclamation.

- A. Monthly Water Resources Report
- B. Water Shortage and Drought Contingency Plan Update
- C. Operations Report

Director Larimer referenced the Superintendent of Operations report, requesting that acronyms be avoided.

8) ADJOURNMENT

ON MOTION by Director Coverdell and seconded by Director Ascher, the Board voted unanimously to adjourn the March 10th 2009 Meeting of the Coastside County Water District's Board of Directors:

| | |
|-------------------------------|------------|
| Director Coverdell | Aye |
| Vice-President Feldman | Aye |
| Director Larimer | Aye |
| Director Ascher | Aye |
| President Mickelsen | Aye |

The meeting was adjourned at 8:59 p.m. The next regular meeting of the Coastside County Water District's Board of Directors is scheduled for Tuesday, April 14, 2009.

Respectfully submitted,

David R. Dickson, General Manager
Secretary of the Board

Chris R. Mickelsen, President
Board of Directors
Coastside County Water District

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: March 27, 2009

Report

Date: April 14, 2009

Subject: Monthly Water Transfer Report

Recommendation:

None. For Board information purposes only.

Background:

At the December 10, 2002 Board meeting and November 18, 2003 Special Board meeting, the Board made several changes to the District's water transfer policy. One of the changes directed the General Manager to approve routine water transfer applications that met the District's criteria as embodied in Resolution 2002-17 and Resolution 2003-19. The General Manager was also directed to report the number of water transfers approved each month as part of the monthly Board packet information.

Since the previous Board meeting in November 2008, two transfer applications were approved for one---3/4" (30 gpm) and one—5/8" (20 gpm) non-priority water service connections. A spreadsheet reporting the transfers for the month of March 2009 follows this report as well as the approvals from Patrick Miyaki and the confirmation letters from Glenna Lombardi.

**APPROVED NON-PRIORITY WATER SERVICE CONNECTION TRANSFERS
CALENDAR YEAR 2009**

| DONATING APN | RECIPIENT APN | PROPERTY OWNERS | # OF CONNECTIONS | DATE |
|---------------------|----------------------|--|-------------------------|-------------|
| 037-320-270 | 048-111-090 | Corado-McComas LP to Sarkis | one--3/4" non-priority | Oct-08 |
| 037-320-270 | 056-161-210 | Corado-McComas LP to R.E. Jeffs & Assoc. | one--5/8" non-priority | Oct-08 |

Memorandum

VIA ELECTRONIC MAIL

TO: Glenna Lombardi

FROM: Patrick T. Miyaki

DATE: March 18, 2009

RE: **Application to Transfer an Uninstalled Non-Priority Water Service Connection**

Glenna, I reviewed the Application to transfer an uninstalled non-priority water service connection from Corado McComas, L.P. to Eshmail M. Sarkis. The Application is generally in order and satisfies the requirements of the District's General Regulations Regarding Water Service, Section U, Transfer of Uninstalled Water Service Connection Rights.

Please do not hesitate to contact me if you have any questions or want to discuss this matter in more detail.

PTM:cxa

cc: David Dickson

March 19, 2009

Corado, Inc./Corado-McComas L.P.
1717 N. Bayshore Drive #1432
Miami, FL 33132

Eshmail M. Sarkis
60 Romer Road
Staten Island, NY 10304-1227

RE: Request to Transfer An Uninstalled Non-Priority Crystal Springs Project Water Service Connection

Dear Property Owners:

We are pleased to confirm that the Coastside County Water District has **approved** your request to transfer a one---3/4" (30 gpm) uninstalled, non-priority Crystal Springs Project water service connection. The result of this transfer is as follows:

- **APN 037-320-270** has the remaining rights to sixteen and one-half---5/8" (20 gpm) uninstalled, non-priority water service connections which are assigned to it from the Crystal Springs Project; and
- **APN 048-111-090** now has a one---3/4" (30 gpm) uninstalled non-priority water service connection assigned to it from the Crystal Springs Project.

Please be advised that the City Council of the City of Half Moon Bay has taken the position that the transfer of a water service connection meets the definition of "development" so as to require a coastal development permit from the City. Applicants are advised to investigate this issue further with the Half Moon Bay Planning Department if applicable. The Coastside County Water District, in approving this application, does not make any representations or warranties with respect to further permits or approvals required by other governmental agencies, including the City of Half Moon Bay.

Sincerely,

Glenna Lombardi

Cc: David Dickson, General Manager

Memorandum

VIA ELECTRONIC MAIL

TO: Glenna Lombardi

FROM: Patrick T. Miyaki

DATE: March 18, 2009

RE: Application to Transfer an Uninstalled Non-Priority Water Service Connection

Glenna, I reviewed the Application to transfer an uninstalled non-priority water service connection from Corado McComas, L.P. to R.E. Jeffs & Associates, Inc. The Application is generally in order and satisfies the requirements of the District's General Regulations Regarding Water Service, Section U, Transfer of Uninstalled Water Service Connection Rights.

Please do not hesitate to contact me if you have any questions or want to discuss this matter in more detail.

PTM:cxa

cc: David Dickson

March 19, 2009

Corado, Inc./Corado-McComas L.P.
1717 N. Bayshore Drive #1432
Miami, FL 33132

Cameron Jeffs
R.E. Jeffs and Associates, Inc.
6 Ashdown Place
Half Moon Bay, CA 94019

RE: Request to Transfer An Uninstalled Non-Priority Crystal Springs Project Water Service Connection

Dear Property Owners:

We are pleased to confirm that the Coastside County Water District has **approved** your request to transfer a one---5/8" (20 gpm) uninstalled, non-priority Crystal Springs Project water service connection. The result of this transfer is as follows:

- **APN 037-320-270** has the remaining rights to fifteen and one-half---5/8" (20 gpm) uninstalled, non-priority water service connections which are assigned to it from the Crystal Springs Project; and
- **APN 056-161-210** now has a one---5/8" (20 gpm) uninstalled non-priority water service connection assigned to it from the Crystal Springs Project.

Please be advised that the City Council of the City of Half Moon Bay has taken the position that the transfer of a water service connection meets the definition of "development" so as to require a coastal development permit from the City. Applicants are advised to investigate this issue further with the Half Moon Bay Planning Department if applicable. The Coastside County Water District, in approving this application, does not make any representations or warranties with respect to further permits or approvals required by other governmental agencies, including the City of Half Moon Bay.

Sincerely,

Glenna Lombardi

Cc: David Dickson, General Manager

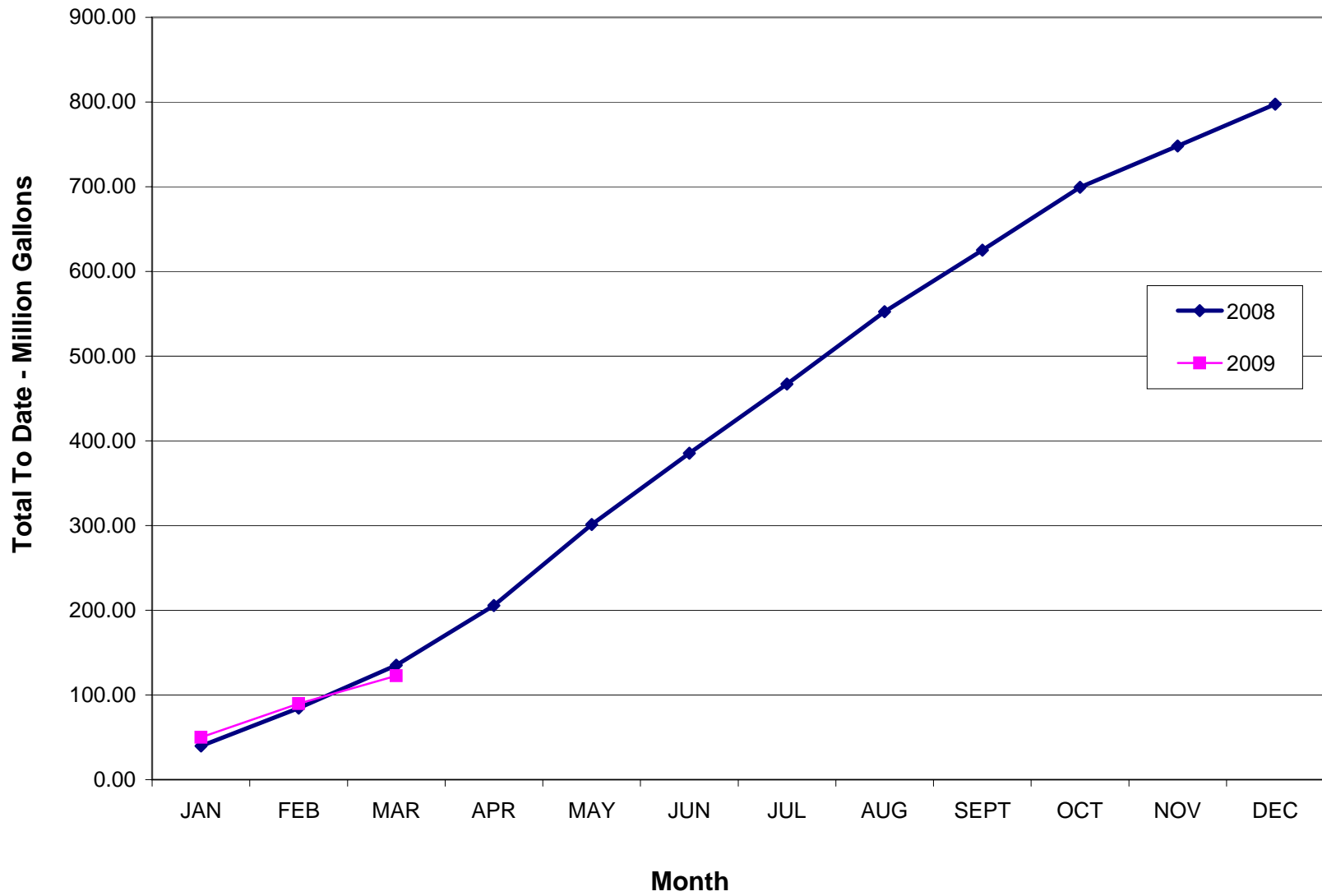
TOTAL CCWD PRODUCTION (MG) ALL SOURCES-2009

| | PILARCITOS WELLS | PILARCITOS LAKE | DENNISTON WELLS | DENNISTON RESERVOIR | CRYSTAL SPRINGS RESERVOIR | RAW WATER TOTAL | IN-PLANT USAGE AND UNMETERED WATER | TREATED TOTAL |
|----------------|-----------------------------|----------------------------|----------------------------|--------------------------------|--------------------------------------|----------------------------|---|--------------------------|
| JAN | 1.56 | 0.00 | 0.00 | 0.78 | 52.21 | 54.55 | 4.46 | 50.09 |
| FEB | 4.19 | 5.11 | 0.00 | 0.00 | 33.52 | 42.82 | 3.08 | 39.74 |
| MAR | 1.12 | 35.08 | 0.00 | 0.00 | 0.00 | 36.20 | 3.21 | 32.99 |
| APR | | | | | | | | |
| MAY | | | | | | | | |
| JUN | | | | | | | | |
| JUL | | | | | | | | |
| AUG | | | | | | | | |
| SEPT | | | | | | | | |
| OCT | | | | | | | | |
| NOV | | | | | | | | |
| DEC | | | | | | | | |
| TOTAL | 6.87 | 40.19 | 0.00 | 0.78 | 85.73 | 133.57 | 10.749 | 122.82 |
| % TOTAL | 5.1% | 30.1% | 0.0% | 0.6% | 64.2% | 100.0% | 8.0% | 92.0% |

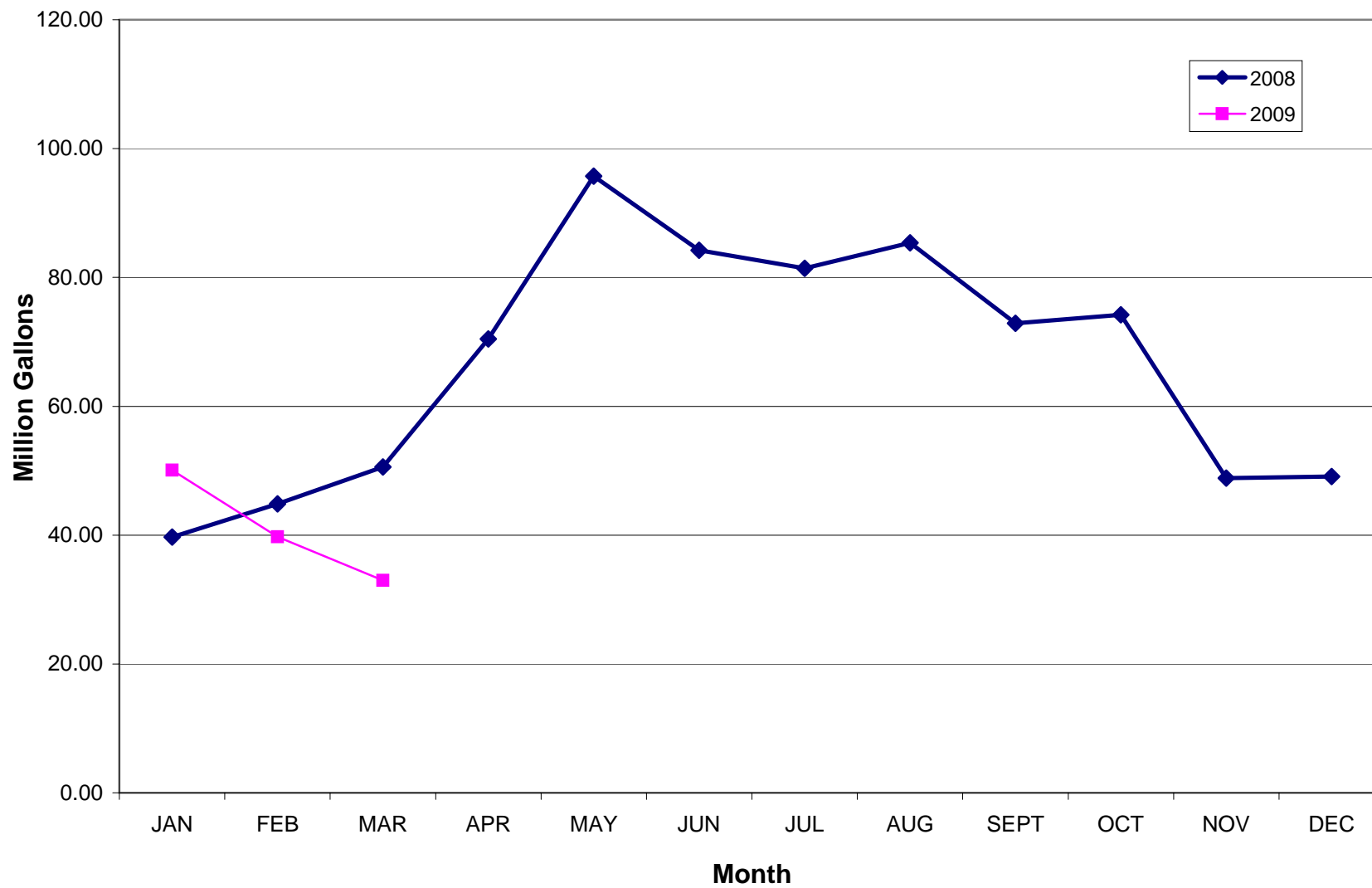
12 Month Running Treated Total

785.07

Cumulative Production 2009 vs. 2008



Monthly Production 2009 vs. 2008



**Coastside County Water District Monthly Sales By Category (MG)
2009**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV | DEC | MG to Date |
|-------------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| RESIDENTIAL | 23.097 | 35.336 | 18.88 | | | | | | | | | | 77.31 |
| COMMERCIAL | 5.456 | 0.952 | 4.953 | | | | | | | | | | 11.36 |
| RESTAURANT | 2.623 | 0.123 | 2.585 | | | | | | | | | | 5.33 |
| HOTELS/MOTELS | 3.755 | 0.085 | 3.39 | | | | | | | | | | 7.23 |
| SCHOOLS | 0.737 | 0.034 | 0.509 | | | | | | | | | | 1.28 |
| MULTI DWELL | 1.863 | 1.331 | 2.533 | | | | | | | | | | 5.73 |
| BEACHES/PARKS | 0.405 | 0.017 | 0.305 | | | | | | | | | | 0.73 |
| FLORAL | 9.622 | 0.242 | 11.549 | | | | | | | | | | 21.41 |
| RECREATIONAL | 0 | 0.17 | 0.046 | | | | | | | | | | 0.22 |
| MARINE | 1.006 | 0 | 0.812 | | | | | | | | | | 1.82 |
| IRRIGATION | 2.042 | 1.247 | 1.076 | | | | | | | | | | 4.37 |
| Portable Meters | 1.616 | 0 | 1.601 | | | | | | | | | | 3.22 |
| TOTAL - MG | 52.22 | 39.54 | 48.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 140.00 |

Running 12 Month Total

751.69

**Coastside County Water District Monthly Sales By Category (MG)
2008**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV | DEC | MG to Date |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|
| RESIDENTIAL | 21.17 | 31.05 | 19.64 | 36.623 | 28.871 | 53.578 | 30.064 | 53.703 | 29.785 | 46.449 | 23.142 | 36.05 | 410.13 |
| COMMERCIAL | 5.38 | 1.1 | 6.17 | 1.23 | 6.781 | 1.477 | 7.938 | 1.441 | 7.877 | 1.238 | 5.593 | 1.026 | 47.25 |
| RESTAURANT | 1.96 | 0.04 | 2.13 | 0.053 | 2.887 | 0.045 | 3.231 | 0.026 | 2.673 | 0.127 | 3.722 | 0.123 | 17.02 |
| HOTELS/MOTELS | 4.48 | 0.24 | 4.5 | 0.138 | 5.305 | 0.136 | 5.671 | 0.158 | 5.778 | 0.126 | 1.831 | 0.088 | 28.45 |
| SCHOOLS | 0.93 | 0.07 | 0.86 | 0.068 | 2.224 | 0.171 | 3.515 | 0.115 | 3.428 | 0.103 | 0.332 | 0.052 | 11.87 |
| MULTI DWELL | 4.51 | 6.08 | 4.38 | 5.921 | 5.146 | 6.365 | 5.762 | 6.217 | 5.382 | 6.054 | 2.759 | 2.828 | 61.40 |
| BEACHES/PARKS | 0.38 | 0.01 | 0.28 | 0.025 | 0.786 | 0.064 | 1.173 | 0.079 | 0.993 | 0.094 | 0.568 | 0.009 | 4.46 |
| FLORAL | 17.55 | 0.21 | 17.31 | 0.227 | 22.968 | 0.293 | 16.961 | 0.35 | 15.601 | 0.306 | 6.556 | 0.292 | 98.62 |
| RECREATIONAL | 0.07 | 0.16 | 0.06 | 0.174 | 0.096 | 0.209 | 0.111 | 0.228 | 0.12 | 0.2 | 0.065 | 0.167 | 1.66 |
| MARINE | 1.15 | 0 | 0.32 | 0 | 0.402 | 0 | 0.37 | 0 | 1.143 | 0 | 0.943 | 0 | 4.33 |
| IRRIGATION | 3.12 | 0.48 | 0.12 | 1.476 | 14.77 | 3.251 | 28.197 | 3.333 | 17.651 | 2.634 | 0.382 | 1.695 | 77.11 |
| PORTABLE METERS | 0 | 0.33 | 0 | 0.284 | 0 | 1.296 | 0 | 1.587 | 0 | 1.735 | 0 | 0.403 | |
| MG | 60.70 | 39.77 | 55.77 | 46.22 | 90.24 | 66.89 | 102.99 | 67.24 | 90.43 | 59.07 | 45.89 | 42.73 | 767.93 |

**Coastside County Water District
Monthly Leak Report
March 2009**

| Date | Location | City | Pipe Type/Size | Repair Material | Estimated Water Loss (gallons) | Repair Material Costs | Manpower and Equipment Costs | Estimated Cost of Repair (dollars) |
|-------------|------------------------|-------------|-----------------------------|------------------------------------|---|----------------------------------|---|---|
| 10-Mar-09 | 900 Avenue Alhambra | EG | 2" galv | 1 - 2"x15" full circle/ 6 ton rock | 9,000 | \$120.00 | \$1,300.00 | \$1,420 |
| 11-Mar-09 | 1004 Grandview | HMB | 2" black plastic service | 1 - 2" x 2" half clamp | 2600 | 100.00 | \$800.00 | \$900 |
| 11-Mar-09 | 1004 Grandview | HMB | 2" black plastic service | 1 - 2" x 2" half clamp | 1600 | 100.00 | \$800.00 | \$900 |
| | | | | | | | | \$0 |
| | | | | TOTAL | 13,200.00 | 320.00 | | \$3,220 |

Coastside County Water District
 766 Main Street
 July 2007 - June 2008

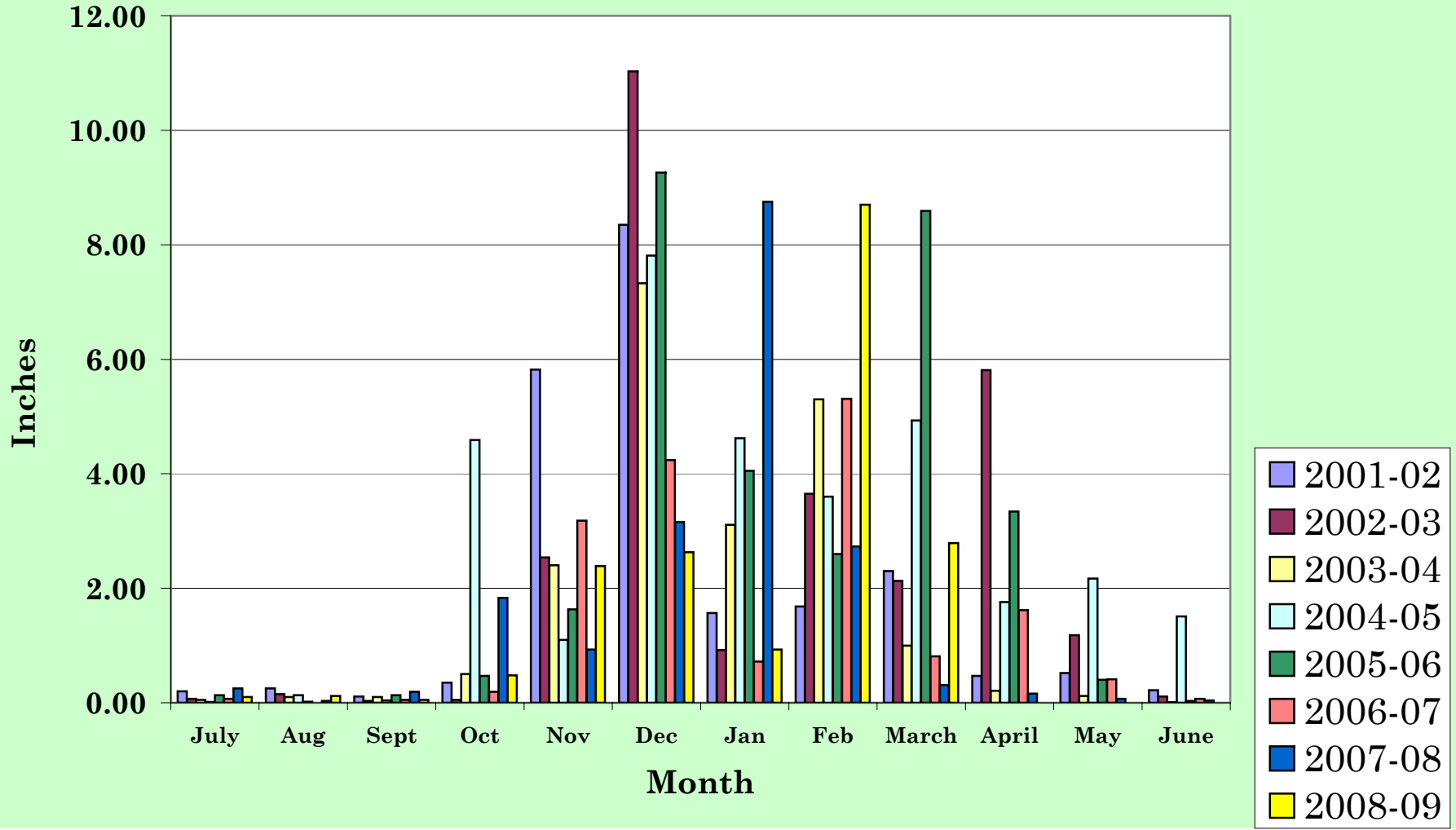
District Office
 Rainfall in Inches

| | 2008 | | | | | | 2009 | | | | | |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|-------------|-------------|-------------|
| | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | March | April | May | June |
| 1 | 0 | 0 | 0 | 0 | 1.63 | 0.01 | 0 | 0.01 | 0.32 | | | |
| 2 | 0 | 0 | 0 | 0 | 0 | 0.01 | 0.14 | 0 | 0.74 | | | |
| 3 | 0 | 0 | 0 | 0.21 | 0.31 | 0.01 | 0.01 | 0 | 0.54 | | | |
| 4 | 0.01 | 0 | 0 | 0.05 | 0.01 | 0 | 0 | 0 | 0.14 | | | |
| 5 | 0.01 | 0.01 | 0 | 0 | 0 | 0 | 0.02 | 0.13 | 0.42 | | | |
| 6 | 0.01 | 0 | 0 | 0 | 0 | 0 | 0 | 0.36 | 0.03 | | | |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 8 | 0 | 0 | 0 | 0 | 0.21 | 0 | 0 | 0.4 | 0 | | | |
| 9 | 0 | 0.03 | 0 | 0.01 | 0 | 0 | 0.01 | 0.03 | 0 | | | |
| 10 | 0 | 0 | 0.01 | 0 | 0 | 0 | 0 | 0.23 | 0 | | | |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.24 | 0 | | | |
| 12 | 0 | 0.01 | 0 | 0 | 0 | 0.03 | 0 | 0.1 | 0 | | | |
| 13 | 0 | 0 | 0 | 0 | 0 | 0.04 | 0 | 0.87 | 0 | | | |
| 14 | 0 | 0 | 0 | 0 | 0.01 | 0.52 | 0 | 0.41 | 0 | | | |
| 15 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 2.61 | 0.17 | | | |
| 16 | 0 | 0 | 0 | 0 | 0 | 0.18 | 0 | 1.07 | 0.12 | | | |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.18 | 0.02 | | | |
| 18 | 0 | 0.01 | 0 | 0 | 0 | 0.01 | 0 | 0.01 | 0 | | | |
| 19 | 0 | 0.01 | 0.01 | 0 | 0 | 0.23 | 0 | 0 | 0.01 | | | |
| 20 | 0 | 0 | 0.01 | 0 | 0 | 0.01 | 0 | 0 | 0 | | | |
| 21 | 0.01 | 0.02 | 0 | 0 | 0.01 | 0.41 | 0.11 | 0.01 | 0.13 | | | |
| 22 | 0 | 0 | 0 | 0 | 0.01 | 0.22 | 0.32 | 1.5 | 0.14 | | | |
| 23 | 0 | 0 | 0.01 | 0 | 0 | 0.04 | 0.21 | 0.24 | 0 | | | |
| 24 | 0 | 0.01 | 0 | 0 | 0 | 0.05 | 0.04 | 0.1 | 0 | | | |
| 25 | 0 | 0 | 0 | 0 | 0 | 0.53 | 0.07 | 0.08 | 0 | | | |
| 26 | 0 | 0.01 | 0 | 0 | 0.2 | 0 | 0 | 0.11 | 0 | | | |
| 27 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01 | 0 | | | |
| 28 | 0.03 | 0 | 0 | 0 | 0 | 0.01 | 0 | 0 | 0.01 | | | |
| 29 | 0 | 0 | 0.01 | 0 | 0 | 0 | 0 | | 0 | | | |
| 30 | 0 | 0.01 | 0 | 0.02 | 0 | 0.01 | 0 | | 0 | | | |
| 31 | 0 | 0 | | 0.19 | | 0.01 | 0 | | 0 | | | |
| Mon.Total | 0.10 | 0.12 | 0.05 | 0.48 | 2.39 | 2.63 | 0.93 | 8.70 | 2.79 | 0.00 | 0.00 | 0.00 |
| Year Total | 0.10 | 0.22 | 0.27 | 0.75 | 3.14 | 5.77 | 6.70 | 15.40 | 18.09 | | | |

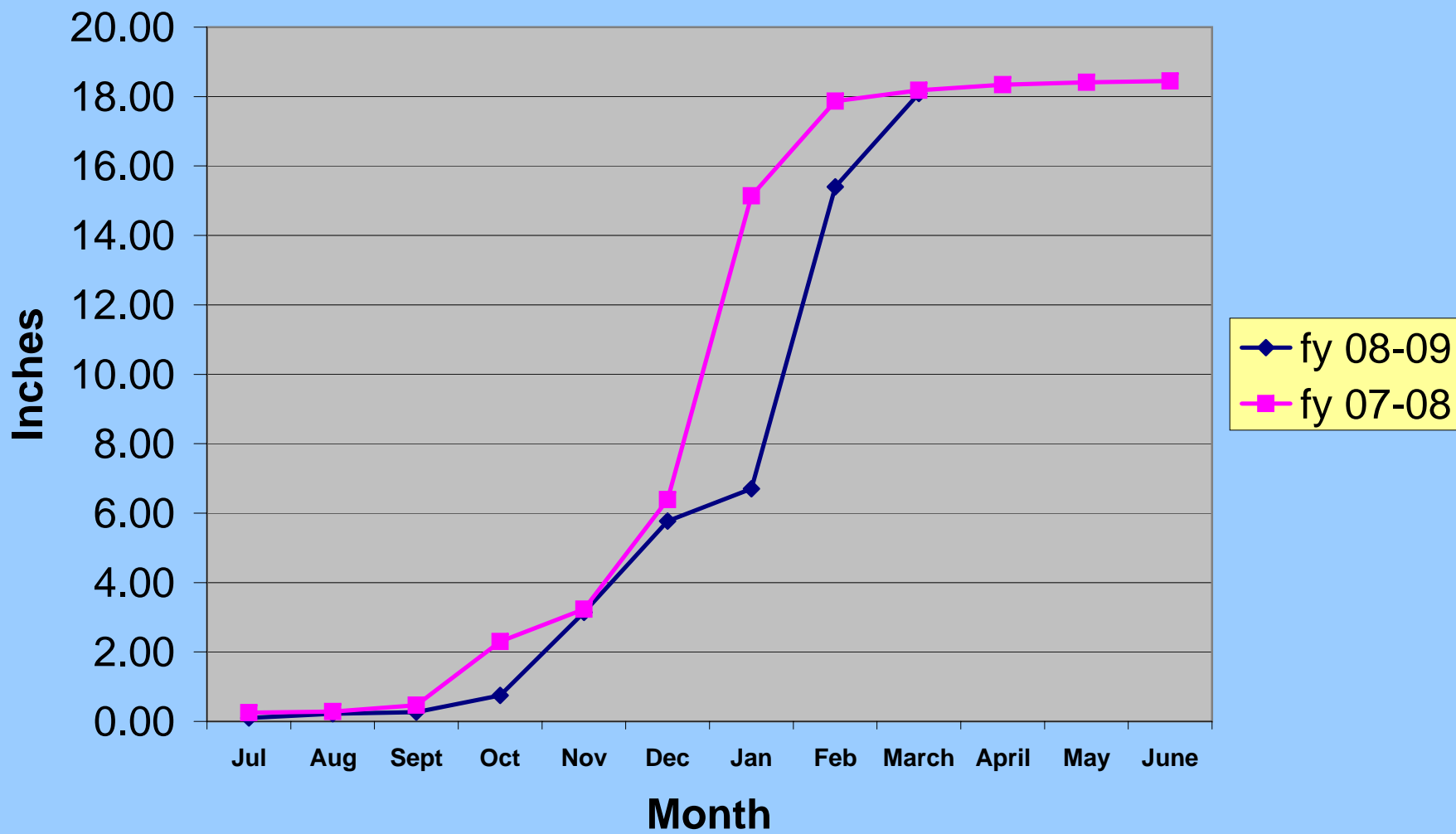
Coastside County Water District

Rainfall by Month

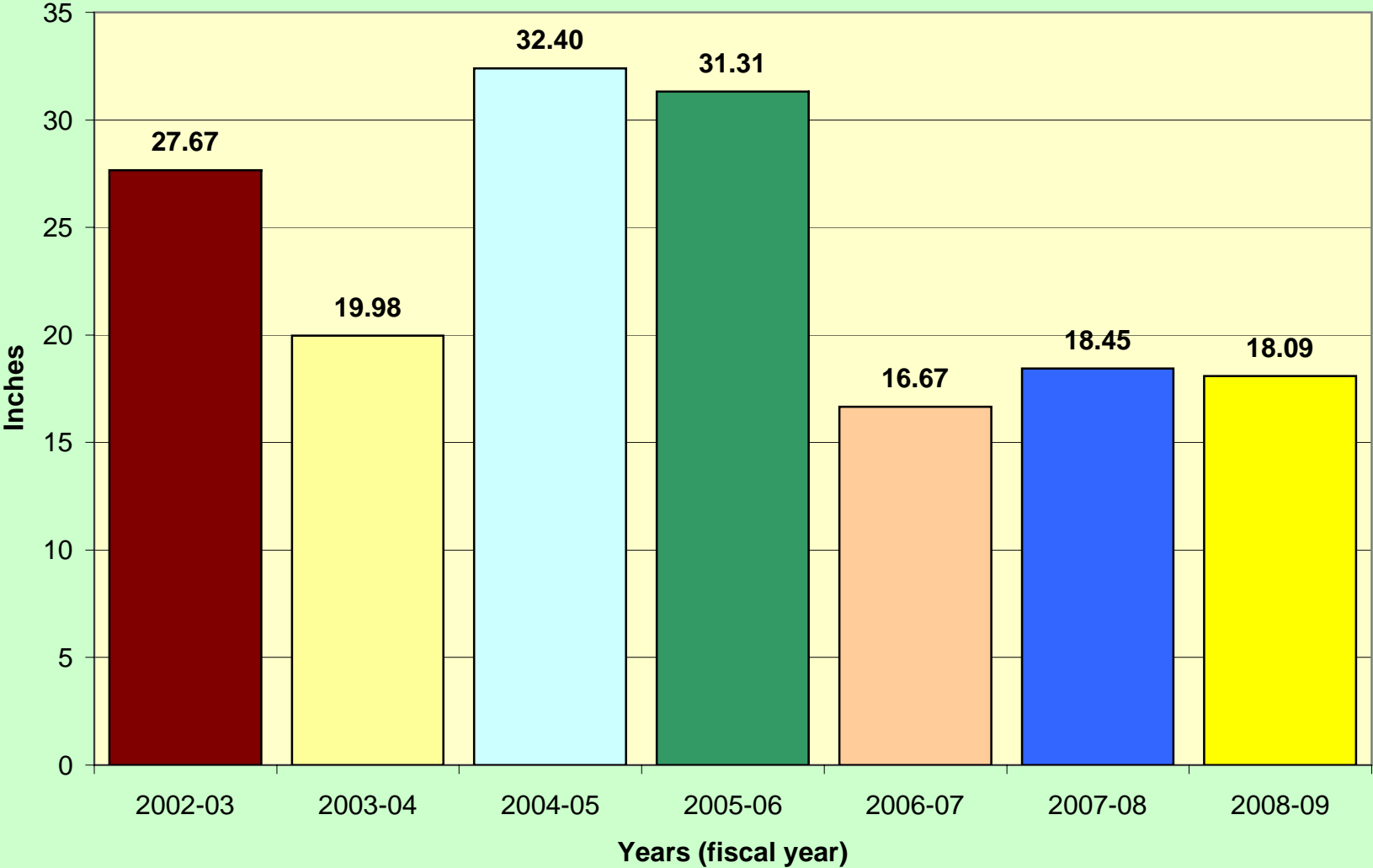
July '08 thru Jun '09



Rainfall Totals fy 08 - 09



Rain Totals



MONTHLY CLIMATOLOGICAL SUMMARY for MAR. 2009

NAME: Office CITY: Half Moon Bay STATE: CA ELEV: 80 LAT: 37 38' 00" LONG: 122 25'59"

TEMPERATURE (°F), RAIN (in), WIND SPEED (mph)

| DAY | MEAN TEMP | HIGH | TIME | LOW | TIME | HEAT DEG DAYS | COOL DEG DAYS | RAIN | AVG WIND SPEED | HIGH | TIME | DOM DIR |
|-----|-----------|------|--------|------|--------|---------------|---------------|------|----------------|------|--------|---------|
| 1 | 58.6 | 62.3 | 9:00p | 54.7 | 8:30a | 6.4 | 0.0 | 0.32 | 3.7 | 27.0 | 9:30p | ESE |
| 2 | 59.1 | 65.8 | 2:00p | 54.2 | 12:00m | 5.9 | 0.0 | 0.74 | 5.5 | 23.0 | 3:30p | SE |
| 3 | 56.8 | 65.9 | 1:30p | 50.3 | 12:00m | 8.2 | 0.0 | 0.54 | 4.8 | 20.0 | 3:00p | SE |
| 4 | 52.9 | 63.5 | 2:00p | 45.0 | 6:00a | 12.1 | 0.0 | 0.14 | 2.6 | 13.0 | 6:30a | S |
| 5 | 51.4 | 60.7 | 3:30p | 45.2 | 11:30p | 13.6 | 0.0 | 0.42 | 1.5 | 12.0 | 10:30a | WSW |
| 6 | 51.9 | 60.3 | 1:30p | 44.4 | 6:00a | 13.1 | 0.0 | 0.03 | 1.5 | 12.0 | 3:00p | WSW |
| 7 | 51.2 | 59.6 | 1:00p | 42.0 | 6:30a | 13.8 | 0.0 | 0.00 | 1.2 | 10.0 | 2:30p | SW |
| 8 | 52.5 | 59.7 | 10:00a | 47.3 | 12:00m | 12.5 | 0.0 | 0.00 | 2.7 | 20.0 | 11:30p | S |
| 9 | 47.7 | 54.2 | 3:00p | 39.5 | 12:00m | 17.3 | 0.0 | 0.00 | 3.9 | 18.0 | 12:30a | NNW |
| 10 | 46.0 | 57.5 | 1:30p | 36.4 | 6:00a | 19.0 | 0.0 | 0.00 | 2.3 | 16.0 | 12:00p | N |
| 11 | 46.7 | 57.8 | 3:30p | 37.0 | 6:00a | 18.3 | 0.0 | 0.00 | 1.4 | 8.0 | 5:00a | NNE |
| 12 | 49.7 | 58.8 | 1:30p | 39.5 | 4:30a | 15.3 | 0.0 | 0.00 | 0.9 | 12.0 | 3:30p | SW |
| 13 | 52.6 | 59.7 | 12:00p | 48.4 | 6:30a | 12.4 | 0.0 | 0.00 | 1.8 | 12.0 | 11:30a | WSW |
| 14 | 52.6 | 57.8 | 1:00p | 49.4 | 1:30a | 12.4 | 0.0 | 0.00 | 2.1 | 11.0 | 12:30p | SW |
| 15 | 57.9 | 67.3 | 3:30p | 53.1 | 4:00a | 7.2 | 0.1 | 0.17 | 1.7 | 14.0 | 2:00p | S |
| 16 | 61.1 | 71.1 | 2:00p | 55.4 | 12:30a | 4.5 | 0.7 | 0.12 | 1.5 | 10.0 | 1:00p | SSW |
| 17 | 56.7 | 65.2 | 12:30p | 48.1 | 12:00m | 8.3 | 0.0 | 0.02 | 1.0 | 11.0 | 3:30p | WSW |
| 18 | 54.9 | 68.2 | 12:30p | 46.5 | 3:00a | 10.1 | 0.0 | 0.00 | 1.8 | 15.0 | 9:00a | N |
| 19 | 55.0 | 61.2 | 2:30p | 48.5 | 6:00a | 10.0 | 0.0 | 0.01 | 1.5 | 13.0 | 5:00p | SW |
| 20 | 55.0 | 63.1 | 12:30p | 51.3 | 8:00a | 10.0 | 0.0 | 0.00 | 1.3 | 10.0 | 12:30p | SW |
| 21 | 57.3 | 66.9 | 1:00p | 50.7 | 12:00m | 7.8 | 0.0 | 0.13 | 2.9 | 16.0 | 2:30p | S |
| 22 | 49.8 | 54.3 | 12:30p | 45.6 | 12:00m | 15.2 | 0.0 | 0.14 | 6.0 | 24.0 | 5:00p | NNW |
| 23 | 47.3 | 55.5 | 1:00p | 36.4 | 5:00a | 17.7 | 0.0 | 0.00 | 2.9 | 19.0 | 5:00p | N |
| 24 | 49.5 | 58.8 | 3:00p | 39.5 | 6:00a | 15.5 | 0.0 | 0.00 | 1.6 | 15.0 | 2:00p | NNE |
| 25 | 52.7 | 61.5 | 3:00p | 44.7 | 6:30a | 12.3 | 0.0 | 0.00 | 2.4 | 18.0 | 7:30p | WSW |
| 26 | 53.7 | 59.9 | 2:00p | 46.4 | 6:00a | 11.3 | 0.0 | 0.00 | 1.9 | 16.0 | 3:00p | WSW |
| 27 | 53.5 | 63.9 | 3:30p | 44.7 | 6:00a | 11.5 | 0.0 | 0.00 | 0.8 | 10.0 | 11:00a | SW |
| 28 | 52.8 | 61.0 | 2:30p | 44.2 | 6:00a | 12.2 | 0.0 | 0.01 | 1.4 | 13.0 | 8:30p | SSW |
| 29 | 51.9 | 57.7 | 2:00p | 45.9 | 10:30p | 13.1 | 0.0 | 0.00 | 4.1 | 22.0 | 11:00p | NNW |
| 30 | 53.8 | 61.8 | 11:30a | 42.6 | 12:00m | 11.2 | 0.0 | 0.00 | 4.0 | 23.0 | 1:30a | N |
| 31 | 51.3 | 62.3 | 1:30p | 40.0 | 5:00a | 13.7 | 0.0 | 0.00 | 1.9 | 17.0 | 11:00p | SW |
| | 53.0 | 71.1 | 16 | 36.4 | 10 | 371.9 | 0.8 | 2.79 | 2.4 | 27.0 | 1 | SW |

Max >= 90.0: 0

Max <= 32.0: 0

Min <= 32.0: 0

Min <= 0.0: 0

Max Rain: 0.74 ON 3/02/09

Days of Rain: 11 (>.01 in) 9 (>.1 in) 0 (>1 in)

Heat Base: 65.0 Cool Base: 65.0 Method: Integration

San Francisco Public Utilities Commission

Hydrological Conditions Report

For March 2009

J. Chester, B. McGurk, A. Mazurkiewicz, M. Tsang, April 1, 2009

Current System Storage

Current Tuolumne System and Local Bay Area storage conditions are summarized in Table 1.

| Table 1 Current Storage As of April 1, 2009 | | | | | | | |
|--|------------------|------------------------|------------------|------------------------|--------------------|------------------------|----------------------------------|
| Reservoir | Current Storage | | Maximum Storage | | Available Capacity | | Percent of Maximum Storage |
| | Acre-Feet | Millions of Gallons | Acre-Feet | Millions of Gallons | Acre-Feet | Millions of Gallons | |
| Tuolumne System | | | | | | | |
| Hetch Hetchy ^{1/} | 244,865 | | 340,830 | | 95,965 | | 71.8% |
| Cherry ^{2/} | 227,728 | | 268,810 | | 41,082 | | 84.7% |
| Lake Eleanor ^{3/} | 24,565 | | 23,541 | | 0 | | 100.0% |
| Water Bank | 431,172 | | 570,000 | | 138,828 | | 77.6% |
| Tuolumne Storage | 928,330 | | 1,203,181 | | 274,851 | | 77.2% |
| Local Bay Area Storage | | | | | | | |
| Calaveras ^{4/} | 48,685 | 15,864 | 96,824 | 31,550 | 48,139 | 15,686 | 50.3% |
| San Antonio | 47,660 | 15,530 | 50,496 | 16,454 | 2,836 | 924 | 94.4% |
| Crystal Springs | 54,726 | 17,832 | 58,377 | 19,022 | 3,651 | 1,190 | 93.7% |
| San Andreas | 17,250 | 5,621 | 18,996 | 6,190 | 1,747 | 569 | 90.8% |
| Pilarcitos | 2,607 | 850 | 3,100 | 1,010 | 492 | 160 | 84.1% |
| Total Local Storage | 170,928 | 55,697 | 227,793 | 74,226 | 56,865 | 18,529 | 75.0% |
| Total System | 1,099,258 | | 1,430,974 | | 331,716 | | 76.8% |

^{1/} Maximum Hetch Hetchy Reservoir storage with drum gates deactivated.

^{2/} Maximum Cherry Reservoir storage with flash-boards out.

^{3/} Maximum Lake Eleanor storage with all stop-logs out.

^{4/} Available capacity does not take into account current DSOD storage restrictions.

Hetch Hetchy System Precipitation Index ^{5/}

Current Month: The March precipitation index is 5.61 inches, or 102.6% of the average index for the month. In March, two major storm events produced the near-normal precipitation accumulation for the month. 4.86 inches of precipitation accumulated at O'Shaughnessy Dam in March, which is 93.5% of the monthly average.

Cumulative Precipitation to Date: The accumulated precipitation index for water year 2009 is 28.98 inches, which is 81.4% of the average annual water year total, and 97.4% of the season-to-date precipitation index. The cumulative precipitation for the Hetch Hetchy gauge is shown in Figure 1 in red, indicating that accumulated precipitation at Hetch Hetchy is slightly above average to date.

^{5/}The precipitation index is computed using six Sierra precipitation stations and is an indicator of the wetness of the basin for the water year to date. The index is computed as the average of the six stations and is expressed in inches and in percent.

Precipitation at Hetch Hetchy: Water Year 2009

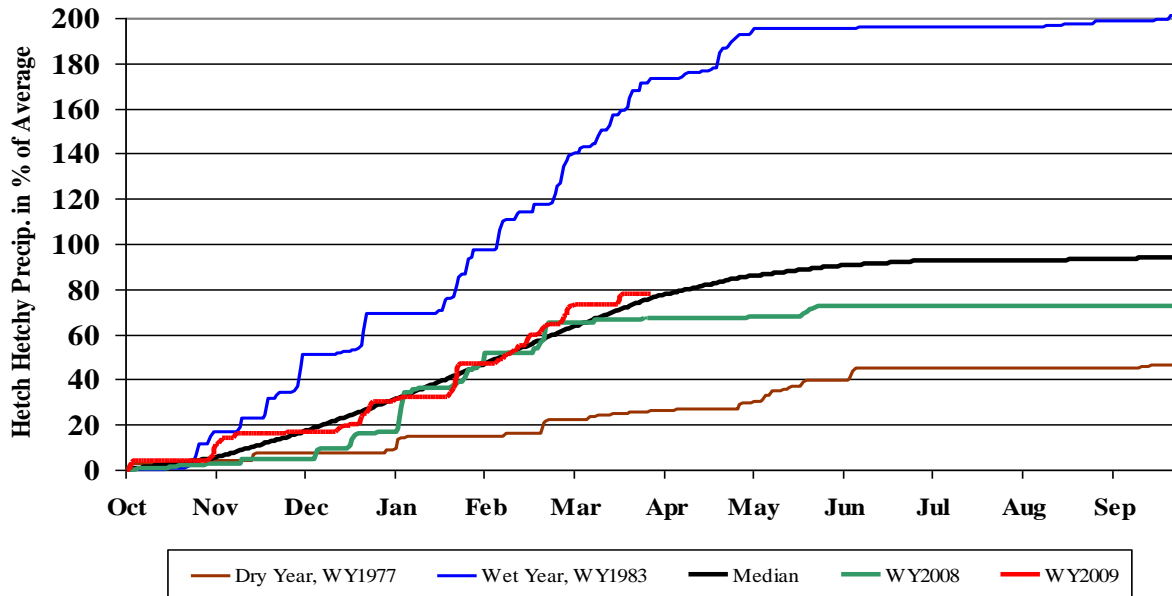


Figure 1: Water year 2009 cumulative precipitation received at Hetch Hetchy Reservoir through the end-of-month March. Precipitation curves for wet, dry, median, and WY 2008 years for the station at Hetch Hetchy are included for comparison purposes.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange as of March 31st is summarized below in Table 2. The total March inflow to Hetch Hetchy Reservoir was 55,012 acre-feet, or 133% of the long-term average. The March inflow volumes to the SFPUC watersheds were above average due to the early-month precipitation event which began with a relatively high rain-snowline, with rainfall up to 8,000 feet. The storm temperature cooled about half way through the 5-day event and snow fell down to about 4,000 feet. Clear and dry conditions then produced snowmelt from the lower elevations throughout March.

| | March 2009 | | | | October 1, 2008 through March 31, 2009 | | | |
|---|---------------|---------------------|----------------------|--------------------|--|---------------------|----------------------|--------------------|
| | Observed Flow | Median ⁶ | Average ⁶ | Percent of Average | Observed Flow | Median ⁶ | Average ⁶ | Percent of Average |
| Inflow to Hetch Hetchy Reservoir | 55,012 | 38,023 | 41,388 | 132.9% | 148,706 | 114,363 | 131,004 | 113.5% |
| Inflow to Cherry Reservoir and Lake Eleanor | 55,942 | 36,974 | 41,474 | 134.9% | 163,476 | 109,583 | 135,854 | 120.3% |
| Tuolumne River at La Grange | 226,558 | 161,637 | 191,542 | 118.3% | 541,202 | 508,939 | 611,219 | 88.5% |
| Water Available to the City | 87,306 | 30,065 | 69,031 | 126.1% | 152,806 | 143,062 | 231,718 | 65.9% |

⁶ Hydrologic Record: 1919 – 2005.

Natural flow at La Grange for March was 118% of average. 87,306 acre-feet of water became available to the City in March. The overall available water to the City to date is 66% of the long-term average.

Hetch Hetchy System Operations

Draft from Hetch Hetchy Reservoir in March totaled 42,228 acre-feet. In addition to draft made to support minimum streamflow releases and SJPL deliveries, power draft was made in order to reduce the projected spring runoff spill and to increase available storage capacity. Due to the accumulated precipitation, minimum streamflow releases at O’Shaughnessy Dam are following schedule “A”.

During March, about 55,583 acre-feet of power draft was made from Cherry Reservoir to support the City’s Municipal load, District Class 1, other loads or accounts, and sales. All water released to the stream channels from Cherry and Hetch Hetchy was transferred to the City’s Water Bank account in Don Pedro Reservoir. To facilitate capture of snowmelt runoff and maximize power generation, 17,790 acre-feet of water was pumped from Lake Eleanor to Cherry Reservoir in March. Currently Lake Eleanor is at maximum capacity and is spilling.

Local System Operations

The average rate at the Sunol Valley Water Treatment Plant for March was 18 MGD. The Harry Tracy Water Treatment Plant rate averaged 23 MGD in March.

Local System Water Demand

March water demand averaged 174 MGD, a 2% increase over the February average of 170 MGD.

Local Precipitation

Precipitation totals across the local watersheds were 99 % of normal for the month, and 82 % of normal for year-to-date. Precipitation totals are presented in Table 3.

Table 3. Precipitation Totals for March, 2009 at Three Local Reservoirs

| Reservoir | Month Total (inches) | Percentage of Normal for the Month | Year To Date ⁷ (inches) | Percentage of Normal for the Year-to-Date ⁷ |
|-----------------------|----------------------|------------------------------------|------------------------------------|--|
| Pilarcitos | 5.07 | 93 % | 26.49 | 76 % |
| Lower Crystal Springs | 3.07 | 80 % | 18.26 | 76 % |
| Calaveras | 4.08 | 125 % | 18.03 | 94 % |

⁷ Since 7-1-2008

Snowmelt and Water Supply

Manual snow survey measurements were made during the last week of March. These measurements provide vital snowpack and water supply information. The measurements within the Tuolumne River watershed indicate that the snowpack is 92% of average April 1st snowpack conditions. In general, the seasonal snow pack peaks near April 1st. These measurements indicate that the mountain snowpack conditions remained relatively consistent over the month.

Currently, a high pressure system is affecting the region and causing clear, sunny skies. The short-term forecast does indicate feasible precipitation over the next five days, however there is considerable uncertainty as to timing and amount. The long-term NWS climate forecasts indicate that the 1-month (April) and 3-month (April-June) precipitation has an equal chance of being above, below, or normal.

Unimpaired Flow at La Grange & Water Available to the City

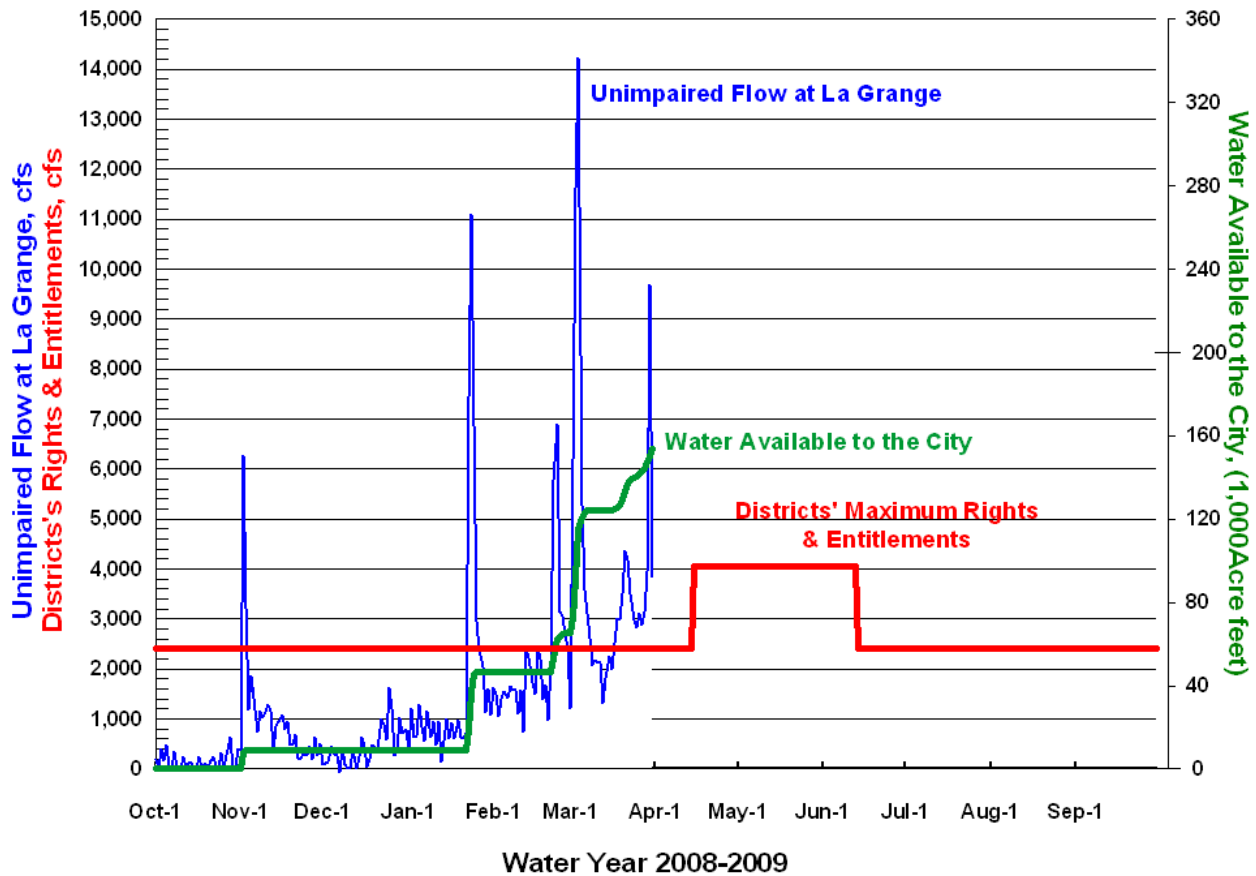


Figure 2: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City. Water available to the City for the period from October 1st, 2008 through March 31st, 2009 was 152,806 acre-feet.

April-July Natural Flow at LaGrange

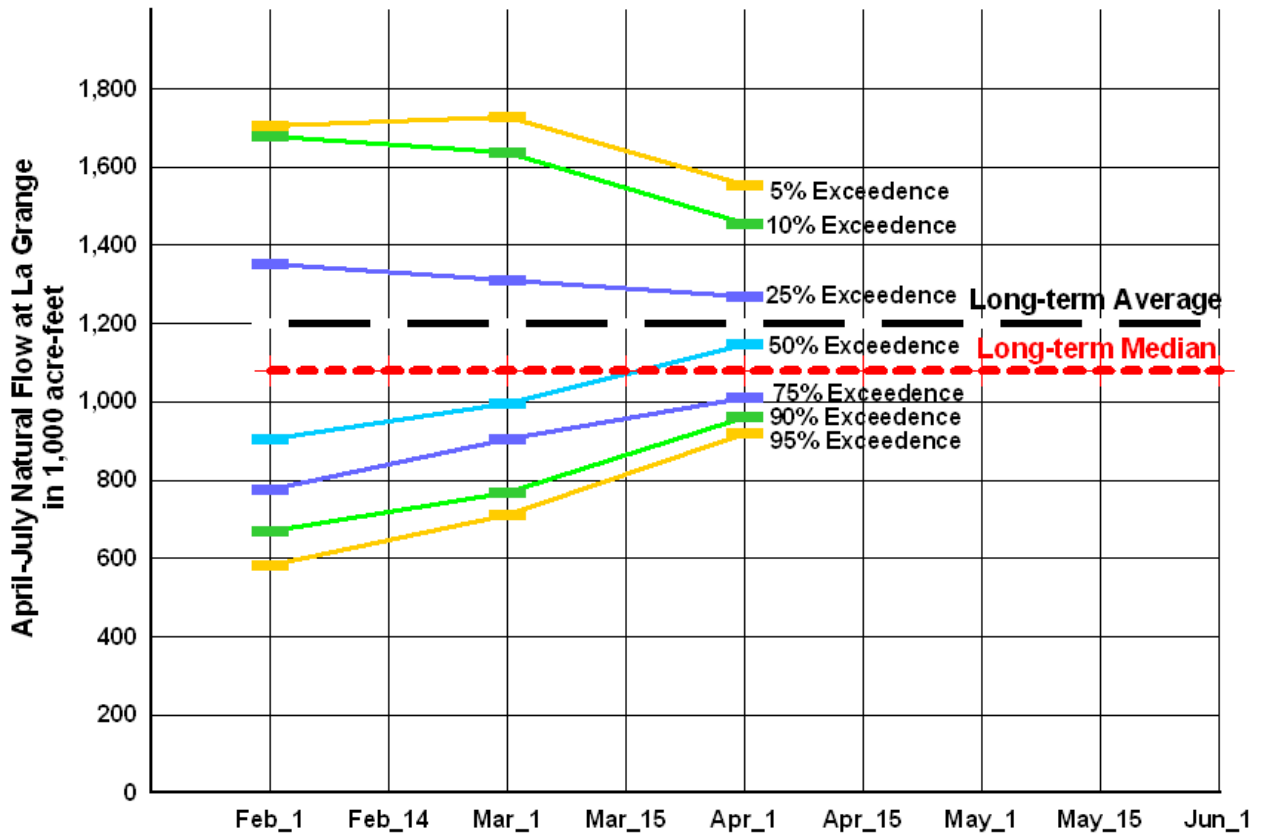


Figure 3: Funnel diagram for April-through-July forecast of natural flow at La Grange.

Using the snow survey and precipitation data, the volumetric runoff forecast procedure was completed for April 1st. Figure 3 displays the distribution of the probable inflow volumes. The forecast indicates that the median amount of runoff that may occur this year is about 106% of the long-term median. The median forecast for April-to-July runoff is about 1,149 TAF, compared to the long-term median runoff for the April-to-July period of 1,080 TAF. For natural flow at La Grange, there is an 80 percent chance that the April-to-July natural runoff will be between 962 TAF and 1,455 TAF. The forecast is between average and median conditions, which would be expected given the near-normal snowpack and precipitation conditions to date.

| | | | | |
|----|-----------------|---------------------|--------------------|-------------------|
| cc | HHWP Records | Dufour, Alexis | Levin, Ellen | Rickson, Norman |
| | Briggs, David | Gibson, Bill | Mazurkiewicz, Adam | Rydstrom, Todd |
| | Cameron, David | Hale, Barbara | McGurk, Bruce | Samii, Camron |
| | Carlin, Michael | Hannaford, Margaret | Meier, Steve | Sandkulla, Nicole |
| | Chester, John | Harrington, Ed | Nelson, Kent | Sanguinetti, Dave |
| | DeGraca, Andrew | Jensen, Art | Patterson, Mike | Tsang, Michael |
| | Dhakai, Amod | Kehoe, Paula | Ramirez, Tim | Winnicker, Tony |

STAFF REPORT

To: Coastside County Water District Board of Directors

From: Dave Dickson, General Manager

Agenda: April 14, 2009

Date: March 10, 2009

Subject: Notice of Completion - Acceptance of Nunes Underground Storage Tank Removal and Above Ground Storage Tank Installation Project

Recommendation:

That the Board of Directors take the following actions:

- (1) Accept the Nunes Underground Storage Tank Removal and Above Ground Storage Tank Installation Project as complete.
- (2) Authorize the Notice of Completion to be filed with the County of San Mateo.
- (3) Authorize the release of the retention funds when the Notice of Completion has been recorded and returned to the District.

Background

Coastside County Water District entered into a contract with PC INC on April 24, 2008 for the Nunes Underground Storage Tank Removal and Above Ground Storage Tank Installation Project.

This project consists of properly installing a new above ground storage tank and ancillary piping and removing and discarding of an existing UST (underground storage tank) located at the Nunes Water Treatment Plant, 500 Lewis Foster Drive, Half Moon Bay, California 94019, to meet the specifications.

The project was completed on March 10, 2009. The project was constructed according to the plans and specifications and is now in service.

Fiscal Impact: None

Recorded at Request of
and Return To:

Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN:

1. The undersigned is an owner of an interest or estate in the hereafter described real property, the nature of which is: fee.

2. The full name and address of the undersigned is:
COASTSIDE COUNTY WATER DISTRICT
766 MAIN STREET
HALF MOON BAY, CALIFORNIA 94019

3. On the 10th day of March, 2009 there was completed upon the hereinafter described real property a work of improvement as a whole named Nunes Underground Storage Tank Removal and Above Ground Storage Tank Installation Project, consisting of installing a new above AGST (above-ground storage tank) and ancillary piping and removing and discarding of an existing UST (underground storage tank) located at the Nunes Water Treatment Plant.

4. The name of the original contractor for the work of improvement as a whole was: PC, INC., P. O. Box 2116, Nipomo, CA 93444.

5. The real property herein referred to is situated in the County of San Mateo, State of California, and described as follows:

The work is located within parcels of land owned by the Coastside County Water District on which the Nunes Water Treatment Plant is located. The Nunes Water Treatment Plant is located at 500 Lewis Foster Road in the unincorporated community of Half Moon Bay, California in San Mateo County, Assessor Parcel Number 056-320-090.

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

COASTSIDE COUNTY WATER DISTRICT

By: _____
David R. Dickson, General Manager

STAFF REPORT

To: Coastside County Water District Board of Directors
From: David Dickson, General Manager
Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: Kennedy/Jenks report on Denniston Pretreatment Alternatives

Recommendation:

None. Information only.

Background:

In September 2008, the Board directed staff to retain Kennedy/Jenks Consultants to perform a study of pretreatment alternatives for the Denniston Water Treatment Plant. The study, which has now been completed, recommends that CCWD add pressurized contact clarifiers to the Denniston process train.

As background for our recommendation that the Board approve the next phase of work in this pretreatment project (next agenda item), Kennedy Jenks will make a presentation on their study and its conclusions.

The Kennedy/Jenks study report dated March 2, 2009 is attached (Appendices omitted due to their large size).

Fiscal Impact:

None.

Kennedy/Jenks Consultants

622 Folsom Street
San Francisco, California 94107
415-243-2150
FAX: 415-896-0999

Denniston Creek WTP Pretreatment Alternatives Feasibility Report

2 March 2009



Prepared for

Coastside County Water District

766 Main Street
Half Moon Bay, CA 94018

K/J Project No. 0868026

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Section 1: Executive Summary

1.1 Introduction and Background

The Coastside County Water District (District) owns and operates two surface water treatment plants, the Denniston Creek Water Treatment Plant (DCWTP) and the Nuñez Water Treatment Plant (NWTP), that supply potable water to the District's customers. The NWTP treats local water and surface water purchased from the San Francisco Public Utilities Commission (SFPUC). The DCWTP treats up to 1,000 gallons per minute (gpm) of local surface water and groundwater from the Denniston Creek watershed in an area northeast of Half Moon Bay, California.

During winter-time high flow events in Denniston Creek, when the local surface water supply would permit operating the DCWTP at its design capacity, the source water turbidity can be too high for treatment using the existing DCWTP direct filtration process. As a result, the District is unable to treat this local, available water and must purchase water from the SFPUC to meet its demands during these times. The District currently pays the SFPUC approximately \$1,900 per million gallons of raw water and then treats the raw water at its NWTP. Discussions with District staff indicate that the SFPUC has informed the District that its cost of raw water will increase to over \$4,600 in the next six to seven years due to the SFPUC's on-going improvements to its Hetch Hetchy water system. The District recognizes that the Denniston Creek water supply is a valuable resource that could provide more water for the District, improve water supply security and could reduce its long-term operating cost.

The District asked Kennedy/Jenks to evaluate alternative pretreatment processes that could be incorporated into the existing DCWTP facilities that would permit treating more of its available source water supply from the raw water reservoir on Denniston Creek. The District would like the new pretreatment process to permit treating source water with turbidity as high as 200 NTU.

Based on discussions with District staff, the DCWTP capacity is also constrained at times by its existing disinfection requirements. One additional benefit of adding a new pretreatment process ahead of the filters is that this could convert the existing direct filtration treatment process either to a "conventional filtration treatment process" or to an "alternative filtration treatment process. The District's filtered water disinfection requirement could drop from 1.0-log *Giardia* and 3-log virus inactivation to 0.5-log *Giardia* and 2-log virus inactivation. This would provide the District more flexibility in operations of the DCWTP and may permit increasing the DCWTP flow rate to produce more of the District's treated water supply from its own local resources.

1.2 Potential Additional Water Available from the Denniston Creek WTP

Based on available source water quality and turbidity data from 1999 through 2008, Kennedy/Jenks evaluated the additional water that could be provided by the DCWTP if a new pre-treatment system is added ahead of the existing filters. The available water from Denison Creek was categorized by turbidity level and the current volume was calculated assuming the DCWTP is operating at its current maximum capacity of 1,000 gpm (1.44 million gallons per day

(MGD). Table 1.1 presents the additional available water vs turbidity in the Denniston Creek source.

Table 1-1: Available Denniston Creek Source Water

| Parameter | Source-water turbidity, (NTU) | | |
|--|-------------------------------|---------|----------|
| | 0 - 15 | 15 – 50 | 50 - 200 |
| Estimated Average Days/Year | 339 | 26 | 3 |
| Current Available Water (MG) | 424 | 0 | 0 |
| Available Water with Pretreatment (MG) | 424 | 37 | 5 |
| Available Water with Pretreatment (MG) and Increased Production to 1,250 gpm | 461 | 45 | 6 |

Approximately 37 million gallons of additional water could be treated during periods when the creek turbidity is between 15 and 50 NTU. Approximately an additional 5 million gallons of water could be treated when the creek turbidity is between 50 and 200 NTU.

If the District’s water rights permit, an additional amount of water may be available if the DCWTP can operate (with a new pre-treatment system) at capacities higher than 1,000 gpm. Operation at 1,250 gpm may be possible and would provide more “local water” from the DCWTP to the District’s customers.

1.3 Regulatory Review and Treated Water Quality

Based on a review of the state and federal drinking water regulations and discussions with WTP staff, the treated water produced at the DCWTP meets all of the existing drinking water regulations and guidelines. However, the TTHM and HAA5 data indicate that the existing plant processes may not be adequate to meet some of the increasingly stringent drinking water regulations that will become effective in October 2013.

The proposed new pre-treatment system could provide benefits in water quantity and quality by:

- Providing up to an additional 37 MG per year of water from the local Denniston Watershed, thereby reducing the cost of raw water purchased from SFPUC.
- A new pretreatment system could permit the DCWTP to increase its capacity based on reduced disinfection CT requirements, if water rights permit.
- Reducing the solids loading on the filters and the filter’s backwash frequency.
- Improving organics removal at the DCWTP to help reduce disinfection byproducts in the District’s distribution system to meet upcoming Stage 2 D/DBP Rule requirements.

1.4 Pretreatment Alternatives Evaluation

The primary basis of evaluation for each alternative pretreatment process is its ability to reduce the source water turbidity from between 15 and potentially as high as 200 NTU to less than 2 NTU. Secondary issues including the ability of the pretreatment process to maintain or enhance the existing filters' capability to provide the same level of manganese removal efficiency, color removal and reduction of DBP precursors were also considered.

Four alternative pretreatment processes were considered:

1. Conventional gravity-based clarification in an open topped treatment unit
2. Contact Clarification in pressure vessels
3. Clean Filtration Technologies (CFT) Turboclone™ proprietary particle removal system and
4. Amiad Filtration (AF) thread filtration equipment.

The first two pretreatment processes alternatives have been used to treat many surface water supplies in California, and should be suitable for treating the District's DCWTP source water supplies. Alternatives three and four are newer technologies without operational records for this application. These newer technologies would require pilot testing to confirm that the treatment objectives can be met.

Based on information provided by both CFT and AF, the estimated cost of the two proprietary pre-treatment processes would be significantly higher (25 to 50 percent) than the cost of the contact clarification alternative. Therefore, these two alternatives were not considered suitable for this application.

1.5 Recommended Project

The recommended pretreatment process to meet the District's goals is the Pressure Contact Clarifier Alternative Filtration treatment process based on the higher benefit to cost ratio of the present worth value of the additional water and the conceptual project costs, as well as the reliability, suitability and flexibility of the system.

The recommended Pressure Contact Clarifier project should include two vertical contact clarifier pressure vessels and treating source water supplies with turbidity as high as 50 NTU. Each contact clarifier vessel should have capacity to include at least 48-inches depth of buoyant or non-buoyant media. The two new pretreatment process units would be followed by final filtration in the three existing granular media pressure filter units.

Section 2: Source Water Quality and Availability

This section describes the general source water quality for the Denniston Creek Water Treatment Plant (DCWTP) and provides an estimate of the average annual additional amount of water that could be treated at the DCWTP if a pretreatment process is added that is capable of treating source water with turbidity above 15 NTU and as high as 200 NTU.

2.1 DCWTP Source Water

The DCWTP treats local surface water from the Denniston Creek watershed and groundwater in an area northeast of Half Moon Bay, California. The source water treated at the DCWTP is collected in a small reservoir located on Denniston Creek about one-quarter-mile below the DCWTP. Coastal California watershed streams often experience rapid increases in both flow rate and turbidity during and after storm events. The turbidity levels in Denniston Creek and the reservoir can rapidly increase to several hundred and up to 1,000 NTU, but will often drop rapidly to 200 NTU or less. The turbidity will continue to decrease slowly over a period of days or weeks back to typical low levels.

There is a significant amount of accumulated solids in the DCWTP source water reservoir, which the California Department of Fish and Game will not permit the District to remove using mechanical equipment. The available space in the reservoir that permits settling solids from the source water is very limited, and the source water turbidity is not expected to improve as additional solids accumulate in the reservoir.

2.2 Source Water Quality

Kennedy/Jenks reviewed water quality data provided by the District for periods from 1999 through January 2009. Additional Denniston Creek water quality data was obtained from the UF/MF Membrane Filtration Pilot Study Report prepared for the District in December 2000 (Kennedy/Jenks 2000).

A review of source water quality data indicates that the surface water supply from Denniston Creek is normally close to neutral pH and has relatively moderate alkalinity. The surface water supply can also be characterized as having turbidity that is too high at times for treatment using a direct filtration treatment process, contains manganese requiring treatment and can be challenging to treat due to DBP precursor material that reacts with chlorine to form regulated DBPs. Discussions with DCWTP staff indicate that the source water has also had problems with color, which is currently addressed by adding chlorine and enough coagulant to the water to coagulate the color ahead of the flocculation basin and generate filterable particles in the flocculation vessel.

Specific water quality parameters are discussed in more detail below.

2.2.1 Turbidity

The average turbidity in the water delivered from Denniston Creek to the WTP was 7.4 NTU and the turbidity ranged between 0.3 NTU and 241 NTU during the 100 months that includes the 6-year period between January 2000 to December 2005, February 2006, and the 2-½ -year period between May 2006 through January 2009. Discussions with District staff indicate that the Creek water turbidity can be as high as 1000 NTU, and that typically it quickly decreases down to 200 NTU and lower. District staff also indicate that the Creek water turbidity can remain around 200 NTU for 1 to 1-1/2 days, and it may take weeks for the turbidity level to decrease to the currently treatable level of less than 15 NTU.

The existing direct filtration treatment process cannot operate when the source water turbidity exceeds 15 NTU, thereby limiting use of this locally available resource. The source water data indicate that the turbidity is below 15 NTU about 86 percent of the time between 1 October and 30 April of the following year. The source water data also indicate that the turbidity is between 15 and 50 NTU for an average of 26 days per year (11 percent of the time from October through May) and between 50 and 200 NTU for an average of 3 days per year (2 percent of the time from December through April).

2.2.2 Available Water from Denniston Creek

The available water from Denison Creek was categorized by turbidity level and the current volume was calculated assuming the DCWTP is operating at its current capacity of 1,000 gpm (1.44 MGD). Table 2.1 presents the additional available water vs turbidity in the Denniston Creek source.

Table 2-1: Available Denniston Creek Source Water

| Parameter | Source-water turbidity, (NTU) | | |
|--|-------------------------------|---------|----------|
| | 0 - 15 | 15 – 50 | 50 - 200 |
| Estimated Average Days/Year | 339 | 26 | 3 |
| Current Available Water (MG) | 424 | 0 | 0 |
| Available Water with Pretreatment (MG) | 424 | 37 | 5 |
| Available Water with Pretreatment (MG) and Increased Production to 1,250 gpm | 461 | 45 | 6 |

Approximately 37 million gallons of additional water could be treated annually during periods when the creek turbidity is between 15 and 50 NTU. Approximately 5 million gallons of additional water could be treated during periods when the creek turbidity is between 50 and 200 NTU.

If the water rights permit, additional water may be available by operating the DCWTP (with a new pre-treatment system) at capacities higher than 1,000 gpm. A new pretreatment system could permit the DCWTP to increase capacity to between 1,250 gpm (1.8 MGD) and 1,400 gpm (2 MGD) based on reduced disinfection CT requirements. Depending on water availability, this

could provide additional treated water from the DCWTP, thereby reducing the District's cost for raw water purchased from SFPUC.

2.2.3 Manganese

Data collected in February through May of 1999 for the Membrane Pilot Study show that manganese concentrations in the raw water ranged between 0.03 and 0.42 mg/L during the study. Discussions with the DCWTP staff indicated that the manganese is currently present in both the ground water and the source water from the Denniston Reservoir treated at the DCWTP. Manganese removal is currently achieved by adsorption and oxidation on the filter media.

2.2.4 Total Organic Carbon, Color and Disinfection-By-Products

The District provided water quality laboratory reports on the Denniston Reservoir water color, reported monthly from April 2003 through January 2008, and on TTHM and HAA5, reported quarterly from 2004 through 2008 at 8 locations, and indicated that 4 of these locations receive treated water produced by the DCWTP during most of the year.

The available source water total organic carbon (TOC) data for February through May 1999 indicate that the source water TOC concentration is between 2.1 and 7.6 mg/L and the average TOC concentration is 5.0 mg/L. The TOC data are limited and conclusions regarding seasonal fluctuations in the TOC concentration cannot be made from the available TOC data. The natural color of the raw water from the Denniston Reservoir ranged between 20 and 255 color units, and the average color value of the raw water was 70 color units (CU) and the median value was 56 CU.

The District's current coagulant (alum) dosage is typically between 8 and 23 mg/L. Based on the available pH and alkalinity data the alum dosage should remove a significant portion of the TOC from the source water. However, the District staff indicated that TTHMs are an issue at one existing Stage 1 D/DBP monitoring location that normally receives water primarily from the DCWTP. Although use of granular activated carbon (GAC) as the filter media could enhance removal of the more reactive TOC material from the water, use of GAC filter media is not recommended for manganese removal. Therefore, replacement of the existing filter media with GAC media is not recommended as long as manganese removal has a higher priority than TOC removal.

It should be noted that although District staff indicate a preference to continue using chlorine as its final disinfectant, the District may have to consider switching to use of chloramine as its final disinfectant if the plant treatment processes cannot remove enough of the more reactive TOC to produce treated water that meets the future locational running annual average- (LRAA) based TTHM and HAA5 MCLs.

Section 3: Regulatory Requirements and Treated Water Quality

This section provides a brief review of current and upcoming drinking water quality regulations and the DCWTP's treated water quality compliance.

The DCWTP produces water that must comply with existing rules and guidelines established under the federal and State Safe Drinking Water Acts, including the:

- Surface Water Treatment Rule (SWTR),
- Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 D/DBPR),
- Interim Enhanced Surface Water Treatment Rule (IESWTR),
- Filter Backwash Recycling Rule (FBRR),
- California Cryptosporidium Action Plan (CAP),
- Total Coliform Rule (TCR), and
- Lead and Copper Rule (LCR).

Any waste water produced by the water treatment processes that is discharged off site must be disposed of in a manner that complies with requirements imposed by the San Francisco Bay RWQCB that has jurisdiction for the DCWTP site.

The water treatment process at the DCWTP will also have to produce water that complies with the requirements in both the new Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the new the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 D/DBPR) when they become effective for systems serving between 10,000 and 49,999 people on 1 October 2013.

It is also recommended that the treated water supplied to the public comply with the DPH-issued secondary drinking water standards and limits that include aesthetic criteria for taste and odors, color, dissolved solids and other conditions that affect palatability. The major regulatory requirements included in both existing rules and the new rules are summarized below.

3.1 Existing Regulations

3.1.1 Surface Water Treatment Rule

The SWTR, as adopted by the State of California, set a filtered water turbidity goal of 0.5 NTU. The SWTR turbidity standard was superseded by a more stringent filtered water turbidity standard of 0.3 NTU that is included in the IESWTR.

The California Department of Public Health (DPH) published a guidance document, “Surface Water Treatment Staff Guidance Manual” (SWTSGM) in May 1991 that summarizes the treatment requirements in the SWTR as adopted by the State in the California Code of Regulations (CCR). The SWTSGM, Appendix K indicates that new WTPs and WTPs modified after October 1994 should meet a turbidity standard of 0.2 NTU.

3.1.2 Stage 1 Disinfectants and Disinfection Byproducts Rule

The Stage 1 D/DBPR focuses on controlling production of carcinogenic disinfection byproducts (DBPs), while also meeting disinfection requirements. This rule set a lower maximum contaminant level (MCL) for total trihalomethanes (TTHM) at 80 µg/L, and established MCLs for newly regulated DBPs, including five haloacetic acids (HAA5) at 60 µg/L, bromate (BrO₃⁻), a byproduct of ozone oxidation, at 10 µg/L, and chlorite (ClO₂⁻), a by product of chlorine dioxide reduction, at 1.0 milligram per liter (mg/L). This rule also includes maximum residual disinfectant levels (MRDLs) for chlorine at 4.0 mg/L (as Cl₂), chloramine at 4.0 mg/L (as Cl₂), and chlorine dioxide at 0.80 mg/L (as ClO₂).

The Stage 1 Rule introduced and defines Specific Ultraviolet (UV) (light) Absorbance (SUVA), expressed in L/[m*mg] or L/[cm*mg]) as the UV light absorption at 254 nanometer (UV₂₅₄) wavelength (measured in 1/meter (m⁻¹)) divided by the dissolved organic carbon (DOC) concentration in the water. The Stage 1 D/DBPR requires that water systems with a population between 10,000 and 49,999 collect four quarterly samples for each water treatment plant or source that include at least one location that represents the maximum water age in the distribution system and three locations that represent at least the average water age in the distribution system for TTHM and HAA5 monitoring.

This Rule also includes requirements for reducing the TOC in the water as one strategy for reducing DBP production for water treatment plants with a conventional filtration treatment process. If the modifications to the DCWTP convert the existing “Direct Filtration” treatment process to a “Conventional Filtration” treatment process, the DCWTP will be required to remove between 25 and 45 percent of the TOC through the treatment processes based on the TOC concentration and the alkalinity in the source water as indicated in Table 3-1. The TOC removal goals associated with the range of TOC and alkalinity in the DCWTP source water supply are highlighted with a bold font in Table 3-1.

Table 3-1 Required Percent Removal of TOC

| Source Water TOC, (mg/L) | Source-water alkalinity, (mg/L as CaCO ₃) | | |
|--------------------------|---|------------|------|
| | 0 - 60 | 60 – 120 | >120 |
| >2.0 – 4.0 | 35% | 25% | 15% |
| >4.0 – 8.0 | 45% | 35% | 25% |
| >8.0 | 50% | 40% | 30% |

The TOC removal goals are intended to improve a water supplier’s ability to comply with the TTHM and HAA5 MCLs. It should be noted that the District must comply with the TTHM and HAA5 MCLs in the Stage 1 D/DBPR whether or not the TOC removal percentages are achieved. The Stage 1 Rule requires that the system-wide RAA concentration based on the

quarterly samples collected at the District's Stage 1 D/DBPR sample locations for TTHM be less than 80 µg/L and for HAA5 be less than 60 µg/L. The new Stage 2 D/DBP Rule is similar to the Stage 1 Rule, but requires that each of the locations monitored meet the TTHM and HAA5 concentration limits based on its LRAA, as discussed below.

3.1.3 Interim Enhanced Surface Water Treatment Rule

The IESWTR applies to WTPs that produce water delivered to a distribution system that serves more than 10,000 people. The State of California adopted the IESWTR in December 2007, with several additional monitoring requirements. The IESWTR requires that WTPs treating a surface water supply achieve at least 99 percent (2 log) removal of *Cryptosporidium*. The compliance performance standard for WTPs with either a conventional filtration or a direct filtration process includes at least 95 percent of the combined filtered effluent (CFE) samples must have turbidity that is less than 0.3 NTU in each month for CFE samples collected at 15 minute intervals.

The DPH also requires that surface water treatment plants prepare monthly reports on the CFE turbidity for the 50th percentile, 90th percentile, 95th percentile, 98th percentile, and 99th percentile values. These analyses will require that the District's SCADA System improvements include software that downloads and stores the filtered water turbidity data, analyzes these data, and includes the DPH-required information in the District's monthly reports submitted to the DPH.

The IESWTR requires that the CFE turbidity not exceed 1 NTU at any time. If the CFE exceeds 1.0 NTU in two consecutive recordings at 15 minute intervals, the District must conduct a self-assessment of the filters within 14 days. In addition, if the CFE exceeds 2.0 NTU in two consecutive recordings at 15 minute intervals during two consecutive months, the District must arrange to have a comprehensive performance evaluation (CPE) of the water treatment process conducted by the State or a qualified third party within 60 days of the second high CFE event to identify and take corrective actions to prevent future reoccurrence.

3.1.4 Filter Backwash Recycling Rule

The objective of the Filter Backwash Recycling Rule (FBRR) is to minimize the reintroduction of pathogenic microorganisms, including *Giardia* cysts and *Cryptosporidium* oocysts into the water being treated. The pathogens that are removed from the water are present in significantly higher concentrations in spent filter backwash water and other waste streams than they are in typical source water supplies. The objective of the FBRR is to reduce the risk of returning these pathogens to challenge the treatment facilities a second time. The FBRR requires that filter backwash water, which is defined in the Rule to include: spent filter backwash water, sedimentation basin sludge, and filtrate from a dewatering process; be blended with the raw water at a location ahead of the first treatment step, or that a report be submitted to the primacy agency (DPH) explaining how returning the recycled water at another location does not impair the treatment process' performance.

3.1.5 California Cryptosporidium Action Plan

The California CAP provides quantitative limits on the water treatment processes' performance, including recycled water that includes turbidity limits on the recycled water, settled water and filtered water, and limits the rate that recycled water can be returned and blended with the raw

water to 10 percent or less of the plant flow rate. The CAP requires that the pretreatment process at a WTP with a conventional filtration process reduce the turbidity to less than or equal to 2 NTU. The CAP also requires that the filtered water turbidity be less than 0.1 NTU.

3.1.6 Lead and Copper Rule

The objective of the Lead and Copper Rule (LCR) is to minimize ingestion of these toxic metals from the consumers' water delivered from the tap. The presence of these metals in the water supply is associated with leaching them from pipelines, plumbing systems, and fixtures. The LCR requires that first draw samples of water from customer's water taps be analyzed to determine the concentration of both lead and copper in the water delivered to the public. The action level (AL) concentration for lead is 15 µg/L and the AL for copper is 1,300 µg/L (1.3 mg/L) of the 90th percentile of the water samples collected at the kitchen sink after a minimum of six hours stagnation in the plumbing and fixtures. If the water supplied to the public exceeds either the lead AL or copper AL, the District must implement a corrosion control program.

3.2 New Regulations

3.2.1 Stage 2 Disinfectants and Disinfection Byproducts Rule

The new Stage 2 D/DBPR was published in the Federal Register (FR) on 4 January 2006. The Stage 2 D/DBPR adds new, more stringent compliance standards that augment the existing Stage 1 D/DBPR requirements, that includes an "Initial Distribution System Evaluation" (IDSE) that must be performed between 1 October 2008 and 30 September 2009. The new Stage 2 D/DBPR requires that water suppliers serving between 10,000 and 49,999 people, such as the District, collect water samples from eight locations in its distribution system at 60 day intervals. Three of the eight sample locations should be in areas that are likely to have high TTHMs, two of the eight sample locations should be in areas that are likely to have high HAA5, two of the eight sample locations should be representative of the average water age in the distribution system and one sample location should be near where the water enters the distribution system.

Based on the TTHM and HAA5 concentrations at the eight IDSE monitoring locations and the District's current Stage 1 D/DBPR monitoring data, four locations will be selected for the TTHM and HAA5 monitoring required by the Stage 2 D/DBPR. The District will be required to begin Stage 2 D/DBPR monitoring between 1 October and 31 December 2012, and to be in compliance by 1 October 2013. The District will have to continue monitoring its current Stage 1 D/DBPR sampling sites and report its distribution system RAA TTHM and HAA5 data through the 3rd quarter in 2013.

3.2.2 Long Term 2 Enhanced Surface Water Treatment Rule

The new LT2ESWTR was published in the FR on 5 January 2006. The new LT2ESWTR requires that all water supplies collect source water data on *Cryptosporidium*, and sets new treatment requirements that include performance standards for each water supply based on the relative risk due to presence of *Cryptosporidium* in the source water. This new rule requires that all systems serving between 10,000 and 49,999 people collect 24 samples from each of its surface water supplies to determine the average concentration of *Cryptosporidium* in the source

water supply. The *Cryptosporidium* concentration in each source water will be used to determine to which *Cryptosporidium* treatment “Bin” the source will be assigned, and if additional treatment is required to remove and/or inactivate *Cryptosporidium*.

3.3 Secondary Drinking Water Limits

The DPH requires compliance with secondary maximum contaminant levels (SMCLs) for water supplied to the public. These constituents may adversely affect taste and odor, color, scale and staining, or the appearance of the water. These constituents include an odor threshold at 3 units, color at 15 color units (CU), total dissolved solids at 500 mg/L, a “non-corrosive” water, etc. These constituents are to be sampled and analyzed annually for surface water supplies. The DPH may waive these requirements if there is consumer acceptance of the conditions and economic considerations that apply.

Information provided by the District indicate that both the surface water supplied from Denniston Creek and the groundwater delivered to the DCWTP from the District’s wells contains manganese and iron (at times) that requires treatment to meet the public’s aesthetic expectations.

3.4 Additional Applicable Regulations and Requirements

There are additional regulations that are set by the San Francisco Bay RWQCB regarding off-site disposal of waste washwater from water treatment plants (WTPs). The DCWTP produces spent filter backwash water that is clarified in the two small basins located at the DCWTP site. The clarified water from these two waste washwater basins must be disposed of in accordance with the District’s NPDES permit. The waste washwater sludge from the selected pretreatment process will also be discharged to the two existing waste washwater basins or to the existing sludge solids drying beds. The waste washwater streams must either be treated and returned to the head of the treatment process in accordance with the FBRR and CAP, or discharged in compliance with the District’s NPDES permit. The recycled waste washwater or washwater discharged off site must meet the applicable requirements for turbidity, pH, suspended solids, chlorine residual concentration and other constituents. Whichever method is selected (recycle or off site disposal) to handle the waste washwater, the applicable regulatory agency (DPH or RWQCB) will require that the washwater be monitored, and if necessary, treated to comply with the applicable recycle water criteria or off site disposal criteria.

3.5 Summary

The existing California regulations and guidelines that apply to new water treatment plants and also to existing WTPs that are modified after 1991 require that the pretreatment process at a WTP with a conventional filtration process reduce the settled water turbidity to less than or equal to 2 NTU and that the filtered water turbidity be less than 0.1 NTU. In addition, the CFE turbidity must be 0.3 NTU or lower in at least 95 percent of the samples collected at 15 minute intervals during each month, and must not exceed 1 NTU at any time.

Table 3-2 Turbidity Standards Summary

| Rule | Combined Filter Effluent | | Compliance Data |
|--------------------|--------------------------|---------|-----------------|
| | Turbidity Standard | Maximum | |
| SWTR | ≤0.5 NTU | | |
| California CAP | ≤0.1 NTU | | April 1991 |
| SWTSGM, Appendix K | ≤0.2 NTU | | October 1994 |
| IESWTR | ≤0.3 NTU ^A | 1.0 NTU | 1 January 2002 |
| LT2ESWTR | ≤0.3 NTU ^{A, B} | | 1 October 2013 |

Note: ^A 95th percentile.
^A “Bin 2”, CFE 95th percentile should be ≤0.1 NTU.

The District’s TTHM and HAA5 data indicate that the new and/or upgraded water treatment facilities should provide the ability to treat the water without having to add chlorine to the water as an oxidant ahead of the pretreatment process. The pretreatment process should be capable of removing a significant portion of the reactive TOC from the source water before chlorine is added for disinfection. The District may also need to consider reducing the operational volume stored in some of its treated water storage tanks while concurrently maintaining an adequate emergency reserve volume, to reduce the age of the water in the area that has a pattern of high TTHM and HAA5 concentrations as part of a DBP control strategy.

3.6 Treated Water Quality

Based on a review of the state and federal drinking water regulations and discussions with DCWTP staff, the treated water produced at the DCWTP currently meets all of the existing drinking water regulations and guidelines. However, the TTHM and HAA5 data indicate that the existing plant processes may not be adequate to meet some of the increasingly stringent drinking water regulations that will become effective in 2013.

Filtered water turbidity data indicate that the filtered water produced by the three existing pressure filters is well below the current IESWTR 0.3 NTU turbidity limit.

District staff indicates that the DCWTP improvement project should also address manganese, color, TOC, taste and odor problems as secondary goals.

3.6.1 Treated Water Disinfection Byproducts

The data indicate that although the District is currently meeting the Stage 1 D/DBPR’s system-wide RAA DBP MCLs, individual quarterly samples of both the TTHM and HAA5 concentrations in the treated water have exceeded the regulatory limits in the past (TTHMs in all but one quarter between 2004 and 2008, and HAA5 in seven quarters between 2005 and 2008).

The District currently collects quarterly samples from eight locations in its distribution system for TTHMs and HAA5 analysis. One monitoring location has a TTHM concentration that has exceeded the TTHM MCL in all but two of the past 19 quarters, and its HAA5 concentration has exceeded the HAA5 MCL in five of the past 19 quarters.

3.7 Water Quality Recommendations

Based on the District's goal of increasing production of treated water using the locally available water supply and meeting current and upcoming water quality requirements, the District should add a pretreatment process that permits treating its Denniston Creek source water when the turbidity is greater than 15 NTU.

The proposed new pre-treatment system could provide benefits by:

- Providing up to an additional 37 MG per year of water from the local Denniston Watershed.
- A new pretreatment system could permit the DCWTP to increase its capacity based on reduced disinfection CT requirements, if water rights permit.
- Reducing the solids loading on the filters and reducing the filter backwash frequency.
- Improving organics removal of the DCWTP to help reduce disinfection byproducts in the system.

The pretreatment process should reduce the clarified water turbidity to less than 2 NTU so that each filter can produce filtered water that meets the CFE turbidity goal of less than 0.1 NTU, in accordance with the CAP.

The pretreatment process should be capable of removing a significant portion of the color and more reactive TOC from the water. The pretreatment process, in conjunction with the filters, should reduce the TOC concentration by between at least 25 and 45 percent, in accordance with the source water TOC and alkalinity concentration as indicated by the Stage 1 D/DBPR requirements in Table 3-1.

Based on the District's anticipated project schedule, the recommended project should be capable of producing treated water that complies with both the existing rules and guidelines, and also with the new Stage 2 D/DBPR's that will become effective for the District on 1 October 2013.

3.7.1 Source Water Monitoring

The District should determine whether its currently available Denniston Creek *Cryptosporidium* concentration data suggest that it is probable that the source water will place it in Bins 1 or 2, or in Bins 3 or 4. If the source water *Cryptosporidium* concentration data indicate that the surface water in Denniston Creek is likely to be classified as a Bin 2 source, the pretreatment process should facilitate producing filtered water turbidity less than 0.1 NTU.

3.7.2 Treated Water Monitoring

The District's Stage 1 D/DBPR monitoring program, augmented by the on-going 12 months of IDSE data, should adequately define the additional treatment needed to produce treated water that complies with both the current and new TTHM and HAA5 criteria.

Section 4: Evaluation of Pretreatment Alternatives

The primary objective of this study is to identify a cost-effective pretreatment process that can be installed ahead of the existing filters to permit the District to increase its treated water production using the local water supply in Denniston Creek that is treated at the DCWTP. The pretreatment process should permit treating higher turbidity source water during the winter season when more water is available, during a period when the existing direct filtration treatment process does not permit treating source water with turbidity above 15 NTU.

4.1 Existing Water Treatment Facilities

The Denniston Creek Water Treatment Plant (DCWTP) uses a direct filtration treatment process which includes chemical coagulation, hydraulic flocculation in a pressure vessel, filtration using three pressure filters, and disinfection. A combined disinfection contact and operational storage tank is located on the hillside above the DCWTP building. Most of the major treatment process units at the DCWTP are about 35 years old. The three filters were reconditioned in 2005 and appear to be in good condition.

The existing DCWTP facilities also include two basins which contain and settle solids from the spent filter backwash water. These two basins are not capable of handling the additional waste filter backwash volume that is produced when the filters are used to treat source water turbidity greater than 15 NTU.

The three existing filters' filtered water meets the existing filtered water turbidity requirements, and should meet the new filtered water standards including a more stringent filtered water turbidity goal of 0.1 NTU. This should permit the DCWTP to meet new filtered water standards if source water testing for *Cryptosporidium* indicates that the District's Denniston Creek source water will be classified in "Bin 2".

4.2 Pretreatment Alternatives

The primary basis of evaluation for each alternative pretreatment process is its ability to reduce the source water turbidity from between 15 and as high as 200 NTU to less than 2 NTU. The cost of constructing each alternative pretreatment system, including the required ancillary equipment as well as other site improvements was also considered. Secondary issues including the ability of the pretreatment process to maintain or enhance the existing filters' capability to provide the same level of manganese removal efficiency, color removal, and reduction of DBP precursors were also considered.

Four alternative pretreatment processes were considered:

- Conventional gravity-based clarification in an open topped treatment unit,
- Contact Clarification in pressure vessels,
- Clean Filtration Technologies' Turboclone™ proprietary particle removal system, and
- Amiad Filtration's proprietary thread filtration equipment.

The capital cost of each alternative was compared with the present worth value of the additional water that could be treated at the DCWTP if pretreatment is added to the existing facilities. This additional water would not have to be purchased from the SFPUC for treatment at the NWTP to meet system demands.

District staff indicated that it prefers to continue operating with a free chlorine residual in the distribution system, and would prefer not to change to operating with a chloramine residual in its distribution system. Based on this preference, the objectives of the improvements to the DCWTP with a new pretreatment system include:

- The need to continue using the filters as the primary method of removing manganese and iron from both the surface water and the groundwater,
- Removal of organics and DBPS to reduce TOC and both TTHM and HAA5 values in the distribution system,
- Maintaining or improving the treatment process to be effective in producing CFE that is less than 0.1 NTU, and
- Maintaining good color removal

A benefit of adding a new pretreatment process that converts the existing DCWTP Direct Filtration process to a “Conventional Filtration”, or California Department of Public Health (DPH) approved “Alternative Filtration” is that the disinfection requirements would be reduced. The new treatment process would increase *Giardia* removal credit from 2-log to 2.5-log and virus removal credit from 1-log to 2-log. This would reduce the *Giardia* disinfection requirement from 1-log to 0.5-log inactivation and the virus disinfection requirement from 3-log to 2-log inactivation.

If the District’s surface and groundwater water rights permit, the lower disinfection requirement would permit increasing the DCWTP capacity from 1,000 gpm to as much as 1,400 gpm.

4.3 Conventional (Filtration) Pretreatment Alternative

The first treatment process alternative is a conventional pretreatment process that includes: new flocculation and sedimentation clarification process steps that would be integrated into the existing coagulation, flocculation, filtration, and final disinfection processes. Adding a new pretreatment unit that combines flocculation and clarification would convert the existing “direct filtration” treatment process to a “conventional filtration” treatment process. This modification (as noted previously) offers several significant advantages, including the additional *Giardia* and virus removal credits that permit postponing where chlorine is added to the water from ahead of the flocculation tank to either just ahead of the filters or after the filters. The DCWTP improvements should permit adding chlorine to the water both ahead of and after the filters.

4.3.1 Pre-oxidation

Discussions with District staff indicate that chlorine is normally added to the source water ahead of the coagulation and flocculation system to maintain the required chlorine concentration through the filters and disinfection contact tank to provide the required disinfection CT credit. Based on the available TTHM and HAA5 data at one of the current DBP monitoring locations

that receive treated water primarily from the DCWTP, the District should use potassium permanganate as its pre-oxidant chemical if the pretreatment process and filters' performance requires oxidizing the source water ahead of the coagulant addition point.

4.3.2 Pretreatment

Based on the available source water turbidity data, the pretreatment process should be suitable for reducing the raw water turbidity from as high as 200 NTU to less than 2 NTU. The pretreatment process should also be capable of reducing the TOC concentration to a level that permits continuing to use chlorine as the final disinfectant.

Three gravity clarification-based pretreatment processes were considered: Degremont Technologies' DensaDeg reactor-clarifier, dissolved air flotation (DAF), and Kruger-Actiflo's ballasted floc sedimentation process. Each of the three gravity-based pretreatment processes is capable of treating source water with turbidity as high as 200 NTU. Based on the available source water turbidity data, it appears that about 42 MG of additional water could be treated annually if a gravity-based pretreatment process is selected. It should also be noted that the "conventional filtration" alternative would also provide two significant benefits when the source water turbidity is between 2 and 15 NTU. The first benefit is the increased *Giardia* and virus removal credits and the associated reduced inactivation requirement mentioned above. The second benefit is that the pretreatment process should reduce the clarified water turbidity to less than 2 NTU which should permit increasing the filter run duration between backwashes and would also increase the filters' net production, especially when the source water turbidity is between 2 and 15 NTU.

Each of the gravity clarification-based pretreatment processes will require installing a new set of either settled water or filtered water pumps at the DCWTP site and also modifying the existing raw water pumps at the Denniston Creek reservoir. The raw water pump station modifications are required to permit delivering water through an open gravity flow pretreatment unit and either pumping the clarified water through the existing filters to the disinfection contactor and treated water storage tank located on the hillside above the DCWTP Building, or continuing the gravity flow through the filters to a new filtered water wet well and pumping the filtered water to the disinfection contactor and treated water storage tank. The second alternative is preferred because of the potential damage to floc particles as they pass through the pump(s) and the possibility of an adverse impact on filter performance.

4.3.2.1 DensaDeg Reactor Clarifier

Degremont Technologies' DensaDeg pretreatment process provides a compact reactor-clarifier design that includes settled sludge recirculation to enhance enmeshment, recirculation of the flocculated particles to form more dense particles, and removal of relatively high solids-content sludge from the coagulated source water. The DensaDeg treatment unit is taller than the other pretreatment units and may permit installing the new set of pumps required to deliver the water to the existing tank above the DCWTP site after the filters. This would permit operating with gravity flow from the coagulation step through the filters. This configuration is preferred, since intermediate pumping can damage the floc and compromise optimizing filter performance.

4.3.2.2 Dissolved Air Flotation

Dissolved air flotation (DAF) is an efficient pretreatment process that is particularly well-suited for source water supplies containing colloidal material that has poor settling characteristics, such as algae. A DAF pretreatment process can be very effective in reducing turbidity and TOC when the particles have poor settling characteristics, and can also be very effective in removing algae, which typically have a density close to water and can be difficult to remove through a sedimentation-based clarification process. A DAF system includes air compressors, water pressurization pumps, and an air-water saturation system and storage tank(s). The additional operating and maintenance challenges associated with a DAF system would make this pretreatment alternative more challenging to operate than a conventional settling-based clarification pretreatment process. Therefore, given the likelihood that there will be a significant amount of particles in the water that settle readily and the complexity of DAF systems, the DAF alternative was eliminated from further consideration.

4.3.2.3 Ballasted Flocc Sedimentation

The ballasted flocculation pretreatment process offers a relatively robust pretreatment process that can produce good quality settled water suitable for granular media filtration and is also capable of treating source water subject to rapid changes in water quality. It should be noted that based on information provided by the equipment supplier, approximately 2.4 percent of the Actiflo pretreatment unit's capacity is recycled through the sludge handling system from the hydrocyclone solids separator each day. This would result in an additional 34,500 gallons per day of waste water discharging to the two existing spent filter backwash water basins. Due to the limited and stressed capacity of the two existing spent filter backwash water handling basins at the DCWTP site and the volume of spent sludge generated per day by an Actiflo pretreatment unit, it appears that the available capacity of the spent backwash basins at the DCWTP will not permit installing an Actiflo pretreatment unit without expanding the existing basins, adding new basins, or including a thickener unit to reduce the sludge volume. Therefore, it appears that the Actiflo process would not be a suitable pretreatment process for this location, and it was eliminated from further consideration.

4.3.3 Filtered Water Pump Station

The new pretreatment unit should be designed to provide gravity flow between the coagulant feed point and through the filters. A new Filtered Water Pump Station (FWPS) will need to be included as part of the DCWTP improvements to deliver the filtered water to the existing tank above the DCWTP site. The new FWPS should include one new 500 gpm pump and one 1,000 gpm capacity pump, with space to add a third pump at a future date. Each pump's motor should include a variable speed drive that permits matching the pumps' output to the filters' net production rate. The two new pumps at the DCWTP FWPS would have 75 horsepower (HP) and 40 HP motors.

4.3.3.1 Removal Credit and Required Inactivation Credit

Adding a flocculation and clarification pretreatment process will increase the *Giardia* removal credit from 2.0-log to 2.5-log and the virus removal credit from 1.0-log to 2.0-log. As noted above, the additional *Giardia* and virus removal credits will reduce the *Giardia* inactivation requirement from 1.0-log to 0.5-log and the virus inactivation requirement from 3.0-log

to 2.0-log. The lower *Giardia* inactivation requirement will still be the controlling disinfection condition, but should permit the District to add chlorine to the water after the pretreatment process, thereby reducing both the time that chlorine can react with DBP precursors and also at a location where the DBP precursors' concentration should be significantly lower than it currently is.

As discussed previously, manganese removal by "filters" is typically an adsorption and oxidation process. Optimal manganese removal is achieved by maintaining an oxidant concentration in the water as it flows through the filters to complete the two-stage manganese removal process. The first step includes adsorption of Mn(II) on the media (coated by MnO₂) surface and the second, concurrent, step includes oxidation of the adsorbed Mn(II) to MnO₂. Therefore, it would be prudent to add chlorine to the clarified water ahead of the filters.

4.3.3.2 Hydraulic Grade Line

Based on the existing raw water pump's capacity and the elevation difference between the pump's wet well and the DCWTP site plus the headlosses through the raw water pipelines and the water surface in the new pretreatment unit, it appears that the two existing raw water pumps will have to be modified to operate at their design flow rates (500 gpm and 1,000 gpm). A new FWPS with one new 500 gpm pump and one new 1,000 gpm pump will have to be installed at the DCWTP site. Each of the new pumps at the FWPS will include adjustable speed drives that permit delivering filtered water to the treated water storage tank at flow rates that match the net filter production rate. The HGL in the filtered water pipeline between the three new filters and the FWPS will be controlled by an operator-adjustable weir located in the FWPS wet well that maintains a positive pressure in the filter media.

4.3.3.3 Site Electrical System Capacity

Discussions with District staff and its electrical system consultant, Frisch Engineering, indicate that the existing electrical service at the DCWTP site provides 240 Volt service and has 200 Amp capacity. Frisch Engineering staff indicates that the existing electrical system has less than 100 Amps of available capacity, and the transformer and switch gear would have to be upgraded to accommodate the new pumps' additional motor loads. Based on the electrical loads associated with this alternative, the estimated cost for this alternative includes installing a new transformer and switch gear.

4.3.4 Site Issues

The area adjacent to the existing Filter Building required for the DensaDeg unit is about 700 square feet (ft²). The area required for the new filtered water wet well and FWPS is about 300 ft². A process schematic diagram showing a new reactor-clarifier treatment unit and the existing treatment process units at the DCWTP is presented on Figure 4-1. A site plan showing the proposed location of the new reactor-clarifier treatment unit at the DCWTP is shown on Figure 4-2.

4.3.5 Estimated Conceptual Cost

The estimated opinion of conceptual capital cost of the conventional filtration system improvements including one DensaDeg pretreatment unit with capacity to treat 1,000 to 1,400 gpm (1.5 to 2.0 MGD), and a new FWPS is approximately \$2.44 million. The estimated capital cost includes a 25 percent conceptual level design contingency, 8.25 percent sales tax on materials, 20 percent for Contractor bonds, mobilization, overhead and profit, and 20 percent for engineering, and environmental services during construction. The conceptual capital cost does not include the cost for improvements to the existing waste filter backwash handling systems at the DCWTP.

4.4 Contact Clarification Pretreatment

There are two manufacturers that supply “Contact or Adsorption Clarification” treatment systems with an up flow granular media bed, Siemens Water Technologies (Siemens) and Roberts Filter Group (RFG). The Siemens’ “Adsorption Clarifiers” use a buoyant (plastic) media and the RFG “ContaClarifier” uses a non-buoyant granular material manufactured from the same type of source material typically used to produce silica sand. The DPH’s “California Surface Water Treatment Alternative Filtration Technology Demonstration Report” (AFT Report) identifies water treatment process that have been approved for use in California. The AFT Report includes information regarding each manufacturer’s equipment including operational limitations and source water conditions that the manufacturer’s equipment is approved to treat, and also the pathogen removal credits given to each manufacturer’s water treatment process equipment.

Based on recent discussions with DPH staff, the District would receive “direct filtration removal credit” during at least the first 12 months of operation with this pretreatment process followed by its existing filters. Our discussion with DPH staff indicates that DPH would require the District to collect operational performance data on both the contact clarifier and filter units, which could include particle count data. These data would be used to demonstrate that this new contact clarifier process installation, in conjunction with the existing filters should receive the same *Giardia* and virus removal credits that is given to water treatment plants with a contact clarification-filtration treatment process units installed in gravity basins in California.

4.4.1 Pre-oxidation

As noted above for the Conventional Filtration alternative, District staff indicates that chlorine is normally added to the source water ahead of the existing coagulation and flocculation system to maintain the chlorine concentration through the filters and disinfection contact tank to provide the required disinfection CT credit. Although strong oxidants such as ozone and chlorine have been demonstrated elsewhere to provide a significant benefit in both contact clarifier performance and high-rate polishing filter operation, the District’s TTHM and HAA5 data suggest that the District should use potassium permanganate as its pre-oxidant chemical if the pretreatment process and filters’ performance requires oxidizing the source water ahead of the coagulant addition point. It should also be noted that the relatively low filtration rate that the DPH sets for pressure filters, including the three pressure filters at the DCWTP may provide satisfactory performance when potassium permanganate is used as the primary oxidant.

4.4.2 Pretreatment

As noted previously, based on the available source water turbidity data, the pretreatment process should be suitable for reducing the raw water turbidity from as high as 200 NTU to less than 2 NTU. The pretreatment process should also be capable of reducing the TOC concentration to a level that permits continuing to use chlorine as the final disinfectant. Contact clarification is used most often as a pretreatment process for relatively low turbidity source water supplies. However, contact clarifiers can and have been used to treat source water with turbidity between 15 and 115 NTU. Based on our experience designing and providing operational support to water treatment plants with contact clarifiers, we anticipate that contact clarification pretreatment should be able to reduce raw water turbidity from between 15 and 100 NTU to between 2 and 5 NTU.

Although the contact clarifier treatment units have been shown elsewhere to provide good service treating source water with turbidity as high as 115 NTU, the contact clarifier alternative's benefit to cost assessment is based on treating source water with turbidity as high as only 50 NTU. The available source water turbidity and Denniston Creek flow rate data indicate that about 37 MG of additional water could be treated annually if the contact clarifier pretreatment alternative is selected. It should also be noted that like the "conventional filtration" alternative, installing contact clarifiers as a pretreatment process ahead of the filters would also provide two significant benefits when the source water turbidity is between 2 and 15 NTU. As indicated above, the first potential benefit is an increase in the *Giardia* and virus removal credits and the associated reduced inactivation requirement. The second benefit is that although the spent contact clarifier wash water would be discharged to the existing filter backwash water basins, the contact clarifiers are washed with raw water, so using the contact clarifiers to remove solids ahead of the filters to extend filter run duration would increase the filters' net production.

4.4.2.1 Removal Credit and Required Inactivation Credit

The DPH includes Contact Clarification as an "Alternative Filtration Technology" and gives the same *Giardia* and virus removal credit to water treatment plants with a contact clarification - filtration treatment process that is given to WTPs with a "conventional filtration" process as long as the filtered water turbidity is less than 0.2 NTU in at least 95 percent of the monthly filtered water monitoring data. Based on experience at other water treatment plants in California, adding a contact clarification pretreatment process ahead of the existing filters would likely permit increasing the current *Giardia* removal credit from 2.0-log to 2.5-log and the virus removal credit from 1.0-log to 2.0-log after the first 12 Months of operating data are available for analysis.

As noted above for the conventional filtration process, the additional pathogen removal credits will reduce the *Giardia* inactivation requirement from 1.0-log to 0.5-log and the virus inactivation requirement from 3.0-log to 2.0-log. The lower *Giardia* inactivation requirement will still be the controlling disinfection condition, but should permit the District to add chlorine to the water after the pretreatment process. Adding chlorine to the clarified water between contact clarifiers and the filters will reduce both the time that chlorine can react with DBP precursors and also permit adding the chlorine at a location where the DBP precursor concentration should be significantly lower than it is where chlorine is currently added.

As discussed previously, manganese removal by “filters” is typically achieved by a combination of adsorption and oxidation processes. Optimal manganese removal is achieved by maintaining an oxidant concentration in the water flowing through the filters to complete the typical two-stage manganese removal process. The first step includes adsorption of soluble Mn(II) on the media’s surface (coated by MnO₂) and the second, concurrent, step includes oxidation of the adsorbed Mn(II) to MnO₂. Although some Mn(II) may adsorb and oxidize on the contact clarifier media surface, it would be prudent to add chlorine to the clarified water ahead of the filters to maintain the recommended oxidation condition in the filters.

4.4.2.2 Hydraulic Grade Line

Based on the two existing raw water pump’s capacity and information provide by District staff, the pumps should provide adequate capacity to accommodate the additional 10 feet of maximum headloss through the new Contact Clarifier units.

4.4.2.3 Ancillary Systems

Each of the two contact clarifiers will require periodic washes to remove accumulated solids and restore the media capacity to remove coagulated material from the water. Both types of contact clarifier require a supply of low pressure air (at about 10 psi) and the same raw water that is being treated for a series of air wash, combined air and water wash, and water only rinse steps. Two small low pressure air supply blowers (for lead and standby service) with 15 HP motors would need to be installed in the existing Filter Building to provide a reliable supply of air for the air wash and also the combined air and water wash clarifier wash steps. An air wash supply pipeline and manifold would connect the two blowers to the contact clarifiers.

4.4.2.4 Site Electrical System Capacity

As noted above, the District’s electrical system consultant, Frisch Engineering, indicates that the existing electrical service at the DCWTP site provides 240 Volt service and has 200 Amp capacity. Although the existing electrical system has slightly less than 100 Amps of available capacity, the new electrical loads associated with the air wash supply blower(s) for the contact clarifier pretreatment alternative is less than the available transformer capacity. Therefore, it appears that this alternative would not require including an upgrade to the existing electrical service, but would include installing a new motor control center for the clarifiers’ air wash air supply blowers.

4.4.3 Site Issues

The area adjacent to the existing Filter Building required for the two contact clarifier pressure vessels is about 500 square feet (ft²). A process schematic diagram showing the two new contact-clarifier treatment units and the existing treatment process units at the DCWTP is presented on Figure 4-3. A site plan showing the proposed location of the two new contact-clarifier treatment units at the DCWTP is shown on Figure 4-4.

4.4.4 Estimated Conceptual Cost

The estimated opinion of conceptual capital cost of two 1.0 MGD capacity contact clarifier pretreatment units and the associated ancillary air wash blower system improvements is approximately \$1.2 million. The estimated capital cost includes the same cost factors used to estimate the cost of the first alternative, including a 25 percent conceptual level design contingency, 8.25 percent sales tax on materials, 20 percent for Contractor bonds, mobilization, overhead and profit, and 20 percent for engineering, environmental and services during construction. The conceptual capital cost does not include the cost for improvements to the existing waste filter backwash handling systems at the DCWTP.

4.5 Proprietary Pretreatment Processes

At the District's request, two proprietary treatment process manufacturers, Clean Filtration Technologies, Inc. (CFT) and Amiad Filtration Systems, Ltd. (Amiad), were contacted to obtain information on their treatment processes to evaluate whether their equipment could be used to reduce the raw water turbidity ahead of the filters. Each of these two treatment processes use a straining mechanism to remove particles from the water. Discussions with District staff and with the two manufacturers indicate that these two treatment processes may be suitable for treating the source water to reduce turbidity from as high as 200 NTU to less than 15 NTU without needing to add a coagulant to the water to condition particles for removal. The gravity-based clarification process and granular media contact clarification processes discussed in Sections 4.3 and 4.4, above, require adding a coagulant and flocculating the coagulated particles to condition the particles and dissolved material in the water for removal.

Discussions with the District staff and the two manufacturers indicate that both CFT and Amiad are interested in participating in a pilot test of their treatment equipment during a period in the winter storm season in 2009 – 2010 when the Denniston Creek flow and turbidity permit simulating the type of treatment challenges that the District seeks to address. If either of these two "non-traditional" treatment processes can be demonstrated to be effective in meeting the District's pretreatment goals, and if their cost is competitive with the two other pretreatment processes, they should be considered as alternatives to the two pretreatment processes discussed above.

4.5.1 Clean Filtration Technologies, Inc.

Based on information provided by CFT staff, its treatment process may be capable of removing a significant portion of the particles from the Denniston Creek source water. The particles are removed by the CFT treatment units are part of the suspended solids that is measured as turbidity and may also include a small portion of the TOC. However, it should be noted that most of the TOC in the water (generally between 85 and 95% of the TOC) is dissolved organic carbon (DOC) and a pretreatment process such as the one manufactured by CFT that does not include coagulation and flocculation processes ahead of clarification will not remove much of the DOC from the water. The District's primary objective of adding a pretreatment process at the DCWTP is to reduce the solids load on the filters during high flow events in Denniston Creek to permit increasing treated water production when the water is available. The CFT process may meet the District's primary pretreatment objective.

Although the CFT pretreatment process may achieve the District's goals it would be prudent to evaluate whether the water treated by the CFT process unit can also improve TOC removal and thereby enhance compliance with the TTHM and HAA5 MCLs in the District's distribution system. Coagulant chemical conditioning is required to destabilize the DOC and organic colloids so that they can be removed in the pretreatment units or by the filters. Addition of a coagulant to the "clarified water" produced by CFT's Turboclone™ should create floc particles, and some of the DOC can be adsorbed by or emeshed in the floc particles and removed in the granular media filters. The amount of TOC/DOC that can be removed depends on the nature of the DOC in the source water, the type of coagulant and dose, water temperature, the flocculation time and mixing energy provided for interaction between the coagulant and the DOC, and the filter media.

Discussions with CFT staff indicate that the waste stream produced by the Turboclone™ units can be recycled back to the Turboclone™ units' inlet pipeline or discharged to waste. Based on the CAP requirements, the limited capacity of the two existing spent filter backwash water basins at the DCWTP, and also typical RWQCB restrictions on water discharged from WTPs to receiving waters in California, it would be prudent to consider methods of clarifying the Turboclone™ units' waste water for recycling or disposal to the creek and concurrently concentrating the wet sludge solids to minimize the amount of liquid sent to the two filter backwash water basins for further settling and to the drying beds for dewatering/drying. There will be both additional capital and operating costs for the equipment needed to handle the Turboclone™ pretreatment system's waste stream that is included in the evaluation of this alternative.

The CFT staff was asked to provide information on the space required to install a 1,000 gpm capacity Turboclone™ system and also a budgetary cost for a 1,000 gpm Turboclone™ system on 3 December 2008. Based on information provided by CFT, the space required for its treatment units would be about 800 square feet.

4.5.1.1 Advantages

Information provided by CFT staff includes a claim that its treatment process requires no power to operate and the pressure loss across its treatment unit(s) is "less than 1 psi". The CFT staff also indicated during our discussions that the "cleaning step is normally initiated when the pressure loss through the Turboclone™ unit(s) increases to about 5 psi". The CFT staff's claim regarding pressure losses across its Turboclone™ units should be verified as part of the proposed pilot study evaluation. If this claim is substantiated during the pilot study, or if the pressure loss permits installing CFT's Turboclone™ without having to modify the existing electrical service at the DCWTP site, this would provide an (additional) advantage to this treatment process alternative.

Although the Turboclone™ treatment process is designed to remove particles and is not intended to be used to remove dissolved contaminants, if the particle removal is significant, the coagulant dose required to effect turbidity removal in the existing filters should be less than without a pretreatment process. Therefore, it is possible that a higher fraction of the desired DOC removal may be achievable in the filters without an increase in either the coagulant dose or in filter backwash frequency.

4.5.1.2 Disadvantages

Unlike the Conventional (Filtration) Pretreatment process and the Contact Clarification (Alternative Filtration) pretreatment process, the two proprietary treatment processes manufactured by CFT (and Amiad) are not classified by DPH as an “Alternative Filtration Technology”. The Turboclone™ equipment is not classified as an Alternative Filtration treatment process and currently does not receive the additional *Giardia* removal credit and additional virus removal credit that some of the alternative filtration technologies receive.

As noted above the Turboclone™ treatment process, like all effective treatment process, has a concentrated waste stream that must be processed further to separate the solids from the liquid. Based on information provided by CFT staff, the solids concentration in the waste stream is too low to permit direct discharge to the WWR basins, and the solids concentration is also expected to be too high to permit recycling the waste stream back the head of the DCWTP treatment process or to Denniston Creek for “disposal” without additional treatment.

4.5.1.3 Recommended Pilot Test Parameters and Sampling

If the CFT Turboclone™ equipment is tested, the tests should be conducted during a period when the Denniston Creek flow rate is high and the creek water turbidity is between 15 and 200 NTU. Based on CFT’s claims regarding the pressure loss through its “Turboclone™” treatment equipment, the pilot plant study should be conducted on the Denniston Creek source water during a period when the source water turbidity is between 15 and 200 NTU. The pilot study test tasks should include monitoring and recording the pressure loss through CFT’s treatment unit and also collecting and recording the treatment unit’s concurrent flow rate data. These data should be used to verify CFT’s claim regarding operating pressure losses and net production capacity. The pilot study should also include monitoring the water stream flow rate and collecting raw water and treated water samples to determine waste stream quantities and characteristics.

Information provided by CFT staff indicates that the Turboclone™ unit’s waste stream containing particles removed from the water will vary as a function of the source water turbidity. The waste stream flow rate and the solids content in the Turboclone™ unit’s waste stream should be monitored to permit determining/estimating the amount of waste water (as a percent of capacity or flow rate) that will require additional treatment prior to recycling or off site disposal. The settling characteristics of the solids in the raw water and Turboclone™-treated water should also be evaluated.

The Turboclone™ pilot test should include sampling both the raw source water and the Turboclone™ product water for both TOC and DOC. Bench scale or pilot scale coagulation, flocculation, and filtration of both the raw water and the Turboclone™ product water should be conducted to evaluate whether particle removal through the Turboclone™ unit could permit operating the existing filters to enhance DOC removal.

4.5.1.4 Estimated Conceptual Cost

The estimated opinion of conceptual capital cost of a 1,000 gpm capacity CFT Turboclone™ system, including a secondary waste stream treatment system to concentrate the sludge solids and clarify the waste stream liquid to a condition suitable for either recycling the clarified water

to the head of the DCWTP or for off site disposal to Denniston Creek is about \$2.2 million. The estimated capital cost includes a 25 percent conceptual level design contingency, 8.25 percent sales tax on materials, 20 percent for Contractor bonds, mobilization, overhead and profit, and 20 percent for engineering, environmental and services during construction. Since the cost of the CFT pretreatment equipment is about 50 percent higher than the estimated cost of the contact clarifier pretreatment alternative, this proprietary treatment process was eliminated from further consideration.

We do not have information on the cost to use a pilot scale Turboclone™ unit. There would also be costs for laboratory analysis of the raw water, treated water, and waste stream samples if the recommended analysis for TOC, DOC, suspended solids and settleable solids are conducted.

4.5.2 Amiad Filtration Systems, Ltd.

Based on information provided by Amiad staff, its thread filter treatment process may also be capable of removing a significant portion of the particles from the Denniston Creek source water. Like the CFT treatment equipment, the Amiad thread filters would remove particles that are part of the suspended solids that is measured as turbidity. The thread filters may also be capable of removing a portion of the TOC. However, like the CFT equipment, Amiad does not require coagulation and flocculation ahead of its thread filters and the thread filters are not expected to remove much of the DOC from the water. The District's primary objective of adding a pretreatment process at the DCWTP is to reduce the solids load on the existing granular media filters during high flow and high turbidity events in Denniston Creek to permit increasing its treated water production when more water is available, so TOC reduction is considered to be a secondary issue for this treatment alternative evaluation as well.

Although the Amiad thread filters may meet the District's pretreatment goal it would be prudent to also evaluate whether treating the source water using Amiad's thread filters can also improve TOC removal and thereby enhance compliance with the TTHM and HAA5 MCLs in the distribution system. Coagulant chemical conditioning is typically required to destabilize the DOC and organic colloids so that they can be removed in the treatment processes. Addition of a coagulant to the "clarified water" produced by Amiad's thread filters should create floc particles, and the DOC can be adsorbed by or emeshed in the floc particles and removed in the granular media filters. The amount of TOC/DOC that can be removed depends on the nature of the DOC in the source water, the type and dose of coagulant, the water temperature, the flocculation time and mixing energy available for interaction between the coagulant and the DOC and the type of filter.

Discussions with Amiad staff indicates that the waste stream produced by its thread filters can be recycled back to the thread filters' inlet or discharged to waste. Based on the same criteria discussed above for the CFT equipment, it would be prudent to consider methods of clarifying the waste water from Amiad's thread filters for recycling or disposal to the creek and concurrently concentrating the wet waste sludge solids to minimize the amount of liquid sent to the two existing filter backwash water basins for settling and eventual drying. There will be additional capital and operating costs for the equipment needed to handle Amiad's thread filters' waste stream that should be included in the evaluation of this alternative.

4.5.2.1 Advantages

Amiad staff indicates that its thread filters require between 1 and 2 psi across the thread filters and that the thread filters should be cleaned when the pressure loss across a thread filter unit increases to about 7 psi. Amiad staff indicates that about [to be provided when manufacturer information is available] gallons of waste water is generated for each 1,000 gallons filtered whenever a thread filter unit is cleaned. The amount of waste water is likely to increase as the turbidity and the amount of solids in the raw water increases. Amiad's claim regarding pressure losses across its thread filters and the waste water percent (of thread filter through put) and solids concentration should be verified during the proposed pilot study evaluation.

Although Amiad's thread filters are designed to remove particles and not dissolved contaminants, if the particle removal is significant, the coagulant dose required to remove some of the remaining particles that contribute to turbidity should be less than without a pretreatment process. It is possible that the thread filters could permit removing a higher fraction of the desired DOC in the existing granular media filters without an increase in the coagulant dose or in filter backwash frequency for the same reasons discussed previously for the CFT alternative.

4.5.2.2 Disadvantages

As discussed above, the proprietary treatment processes manufactured by CFT and Amiad are not classified by the DPH as an "Alternative Filtration Technology". Since Amiad's thread filter system is not classified as an Alternative Filtration treatment processes, it does not receive *Giardia* removal credit and virus removal credit.

All effective treatment processes have a concentrated waste stream that must be processed further to separate the solids from the liquid. Based on information provided by Amiad staff, the solids concentration in the thread filters' waste water is too low to permit direct discharge to the WWR basins, and the solids concentration is also expected to be too high to permit recycling the waste stream back the head of the DCWTP treatment process or to Denniston Creek for "disposal" without additional treatment.

4.5.2.3 Recommended Pilot Test Parameters and Sampling

Amiad's thread filter equipment should be tested during the same period that CFT's Turboclone™ equipment is tested when the Denniston Creek flow rate is high and the creek water turbidity is between 50 and 200 NTU. The pilot study test tasks should include monitoring and recording the pressure loss through Amiad's thread filters and also collecting and recording the thread filters' concurrent flow rate data.

Information provided by Amiad staff indicates that the solids in its thread filter's waste stream will vary as a function of the source water turbidity. The waste stream flow rate and the solids content in Amiad's thread filter's waste stream should be monitored to permit estimating the amount of waste water (as a percent of capacity or flow rate) that will require additional treatment prior to recycling or off site disposal.

The Amiad thread filter pilot test should include sampling both the source water and the thread filter's product water for both TOC and DOC. Bench scale or pilot scale coagulation, flocculation, and filtration of both the raw water and the thread filter's product water should be

conducted to evaluate whether particle removal through Amiad's thread filters could permit operating the existing filters to enhance DOC removal.

4.5.2.4 Estimated Conceptual Cost

The estimated opinion of conceptual capital cost of a 1,000 gpm capacity Amiad thread filter system, including a secondary treatment system to treat the thread filters' waste stream to a condition suitable for either recycling the clarified water to the head of the DCWTP or for off site disposal to Denniston Creek is about \$1.8 million. The estimated capital cost includes a 25 percent conceptual level design contingency, 8.25 percent sales tax on materials, 20 percent for Contractor bonds, mobilization, overhead and profit, and 20 percent for engineering, environmental and services during construction. Since the cost of the Amiad thread filter pretreatment equipment is about 25 percent higher than the estimated cost of the contact clarifier pretreatment alternative, this proprietary treatment process was eliminated from further consideration.

4.6 Conceptual Cost and Benefit Comparison

The conceptual level project capital costs and benefits of the pretreatment alternatives are summarized in Table 4-1, below. The estimated capital cost of these alternatives include a 25 percent conceptual level design contingency, 8.25 percent sales tax on materials, 20 percent for Contractor bonds, mobilization, overhead and profit, and 20 percent for engineering, environmental and services during construction.

The benefits of the project have been calculated as the present worth value of the additional water that can be produced by adding a new pretreatment system to the DCWTP. The present worth value of the additional water was calculated based on 20 years at 6 percent interest.

The amount of additional available water was assumed to be the water in the winter months during high turbidity events (above 15 NTU), when there is plenty of water available. The capacity of the DCWTP was also assumed to be 1,250 gpm during these periods, due to the reduced disinfection requirements from the new-pretreatment system. If additional water can be produced during the low turbidity periods (less than 15 NTU), then significantly greater benefits can be realized.

Table 4-1: Comparison of Conceptual Project Costs and Benefits

| Pretreatment Alternative | Conceptual project Capital Cost (\$) | Additional Treated Water (MG/year) | Present Worth Value of Additional Water ⁽¹⁾ | Benefit to Cost Ratio |
|--------------------------------------|--------------------------------------|------------------------------------|--|-----------------------|
| | | | (\$ at \$2,322/MG) | (@ \$2,322/MG) |
| Conventional Filtration pretreatment | \$3.1 M | 42 | \$1,950,000 | 0.6 : 1 |
| Contact Clarification | \$1.5 M | 37 | \$1,720,000 | 1.2 : 1 |
| Turboclone™ | \$2.2 M | Not determined | Not Applicable | |
| Thread Filters | \$1.8 M | Not determined | Not Applicable | |

Notes:

⁽¹⁾ Present Worth Value of SFPUC raw water that will not have to be purchased due to additional Denniston Creek Water used to meet District water supply needs.

The estimated capital cost of the Gravity Clarifier Conventional Filtration alternative is approximately \$3.1 million. The estimated capital cost of the Pressure Contact Clarifier Alternative Filtration alternative is approximately \$1.5 million.

Based on the available Denniston Creek flow rate and concurrent turbidity data, the District's current cost to purchase raw water from SFPUC, and assuming a 20 year project life and 6 percent interest rate, the "Conventional (gravity-based) Filtration" alternative would be suitable to treat an additional 42 MG annually, and the present worth value of the additional raw water is about \$1,950,000. The present worth value of the additional treatable raw water is based on the SFPUC's planned increases in the District's cost of raw water through fiscal year (FY) 2015 – 2016. This present worth value analysis assumes that the cost of raw water only increases during the first 7 years of the 20 year planning period, and remains constant at the FY 2015 - 2016 rate during the remaining 13 years of this 20 year period. If there are additional increases in the cost of raw water purchased from SFPUC during the last 13 years of the 20 year project planning period, the benefit to cost ratio would be higher than 0.6 to 1 for this alternative.

Based on the same flow rate and turbidity data, the District's current cost to purchase raw water from SFPUC, and assuming the same 20 year project life and 6 percent interest rate, the Contact Clarifier pretreatment alternative would be suitable to treat an additional 37 MG annually and the present worth value of the additional water is about \$1,720,000. As noted above for the Conventional Pretreatment alternative, the cost of raw water may increase after FY 2015 – 2016. If there are additional increases in the cost of raw water purchased from SFPUC after FY 2015 – 2016, the benefit to cost ratio for this alternative would also increase by the same proportion from the 1.2 to 1 ratio currently estimated for this alternative.

The cost comparison does not include a operations and maintenance (O&M) cost since it is assumed that the cost for labor, electrical power, chemicals and maintenance of equipment at the DCWTP when it treats Denniston Creek water will be similar to the O&M costs at the NWTP when it treats raw water purchased from SFPUC.

4.7 Instrumentation and Control System

The existing DCWTP control and the water quality monitoring system is outdated and inadequate for efficient plant operation, control and record keeping. Discussions with District staff indicate that the District is in the process of a control system upgrade and that the pretreatment feasibility report should include information on the pretreatment system's input and output (I/O) that will be needed to operate and monitor the new pretreatment unit(s).

4.7.1.1 Plant Control and Monitoring

The control system modifications should include the capability of starting and stopping operation of individual process and/or the entire DCWTP while it is operating in an unattended condition as well as capability to collect and record operational data on raw water turbidity, the Denniston Creek flow rate, the DCWTP flow rate, clarified water turbidity, filtered water turbidity, chlorine dose and residual concentration in the treated water, calculate disinfection CT credit based on the treated water tank volume and treated water flow rate. The SCADA System should also include the ability to summarize the daily operating data and prepare the District's monthly water treatment plant reports for submission to the DPH.

The new California IESWTR requires that filtered water turbidity data be collected every 15 minutes and the plant control system must determine the CFE 50th percentile, 90th percentile, 95th percentile, 98th percentile, and 99th percentile turbidity each month. The control system must also determine if the CFE is less than 0.1 NTU in at least 95 percent of the approximately 3,000 turbidity values collected each month or if all of the CFE turbidity data during a month are below 0.1 NTU.

If either of the first two pretreatment processes is selected, the DCWTP improvements should include a plant supervisory control and data acquisition (SCADA) system that can make automated adjustments to chemical feed rates to provide optimized oxidation, coagulation, filtration, and disinfection process performance. If the contact clarifier alternative is selected, the SCADA system should also monitor and document both the flow rate and headloss through each contact clarifier. If either the third or fourth pretreatment process is selected, the DCWTP improvements will still need to include a SCADA system that can make automated adjustments to chemical feed rates to provide optimized oxidation and coagulation of the pretreated water for optimal filtration and disinfection operational performance. The control system will need to monitor the clarified water turbidity, and also the pressure loss across the pretreatment unit(s) if the second through fourth pretreatment alternatives is selected. The SCADA system should also monitor the amount of water treated by each treatment unit since the last "wash" if either the contact clarifier or the two "pre-filter" processes is selected.

The SCADA System should monitor and record filtered water turbidity at 15 minute intervals (or shorter), as well as the chlorine concentration in the water pumped to the treated water tanks, issue alarms and shut down the water treatment processes if performance is not within acceptable operating conditions. The SCADA System should also calculate compliance with regulatory requirements, and prepare and print the monthly WTP reports.

4.8 Pilot Plant Study and Plant Optimization Support

The first two types of pretreatment processes suitable for this application have been used to treat many surface water supplies in California, and should be suitable for treating the District's source water supplies. If the District and DPH believe that a plant scale study is required to demonstrate that the recommended combination of contact clarification in association with the existing pressure filtration treatment processes should receive the same removal credits that a conventional filtration process receives (2.5-log *Giardia* and 2.0-log virus removal), the additional cost to conduct a plant study and prepare a report would be about \$50,000.

We do recommend that the project bid documents include a requirement that the Contractor provide 2 weeks of on-site start-up support services that would be provided by the water treatment system equipment supplier(s) to assist the District in an evaluation of alternative coagulation chemicals and chemical dosages. We also recommend including a requirement that the Contractor provide 1 week of follow up operational optimization support at a time selected by the District that would occur between 6 and 12 months after project acceptance.

Section 5: Recommended Project

5.1 Water Treatment Process

The recommended pretreatment process to meet the District's goals is the Pressure Contact Clarifier Alternative Filtration treatment process based on the higher benefit to cost ratio of the present worth value of the additional water and the conceptual project costs, as well as the reliability, suitability and flexibility of the system.

The recommended Pressure Contact Clarifier project should include two vertical contact clarifier pressure vessels and treating source water supplies with turbidity as high as 50 NTU. Each contact clarifier vessel should have capacity to include at least 48-inches depth of buoyant or non-buoyant media. The two new pretreatment process units would be followed by final filtration in the three existing granular media pressure filter units.

5.2 Site Issues

Based on the available space at the DCWTP site and the headlosses between and through the recommended pretreatment process units, it appears that the new pretreatment units can be located in the area on the northeast side of the existing Filter Building.

5.3 Project Schedule

Since the proposed DCWTP improvements project will be completed at the District's existing DCWTP site, we anticipate that the District should be able to issue either a negative declaration or a mitigated negative declaration regarding the environment impacts of the recommended project.

The design phase for this project is expected to require between 9 and 12 months. The estimated duration between issuing the final design for bids, evaluating bids, contract negotiations, and issuing a notice to proceed to the Contractor would typically require an additional 4 to 6 months. Therefore, the construction phase could start as early as July 2010 and as late as June 2011.

Based on the site climatology and other site conditions, we estimate that the construction phase should permit scheduling construction to include two summer-time construction seasons. Therefore, project construction tasks would likely be completed by the end of October 2012, ahead of the District's deadline for compliance with the new Stage 2 D/DBPR and LT2ESWTR.

References

- 40 CFR Parts 141 and 142; *Drinking Water; National Primary Drinking Water Regulations: Filtration, Disinfection Turbidity, Giardia lamblia, Viruses, Legionella and Heterotrophic Bacteria* (“Surface Water Treatment Rule”), Vol. 54, FR 27486, June 29, 1989, Final Rule.
- 40 CFR Parts 141 and 142; *Drinking Water; National Primary Drinking Water Regulations: Total Coliforms*, Vol. 54, FR 27544, June 29, 1989, Final Rule.
- 40 CFR Parts 141 and 142; *Drinking Water Regulations Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper*, Vol. 56 FR 26460, June 7, 1991, Final Rule.
- 40 CFR Part 141; *National Primary Drinking Water Regulations: Monitoring Requirements for Public Drinking Water Supplies*; Vol. 61, FR 24354, May 14, 1996, Final Rule.
- 40 CFR Parts 9, 141, and 142; *National Primary Drinking Water Regulations: (Stage 1) Disinfectants and Disinfection Byproducts Rule*; Vol. 63, No. 241, FR 69389, Final Rule, December 16, 1998.
- 40 CFR Parts 9, 141, and 142; *National Primary Drinking Water Regulations: Interim Enhanced Surface Water Treatment Rule*; Vol. 63, No. 241, FR 69477, Final Rule, December 16, 1998.
- 40 CFR Parts 9, 141, and 142; *National Primary Drinking Water Regulations: Filter Backwash Recycling Rule*; Vol. 66, No. 111, FR 31086, Final Rule, June 8, 2001.
- 40 CFR Parts 9, 141, and 142; *National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection Byproducts Rule*; , Final Rule, Vol. 71, No. 2, FR 387, January 4, 2006.
- 40 CFR Parts 9, 141, and 142; *National Primary Drinking Water Regulations: Long Term 2 Enhanced Surface Water Treatment Rule*; Vol. 71, No. 3, FR 654, Final Rule, January 5, 2006.
- 22 CCR 64400 - 64501. *Domestic Water Quality and Monitoring*
- 22 CCR 64650 - 64700. *Surface Water Filtration and Disinfection Treatment*.
- California Health and Safety Code (§ 4010 - 4039.6), Division 5, Part 1, Chapter 7, California Safe Drinking Water Act*
- “*Surface Water Treatment Staff Guidance Manual*”, Office of Drinking Water, Department of Health Services, 15 May 1991

California Surface Water Treatment Alternative Filtration Technology Demonstration Report, June 2001, edited by R.H. Sakaji and published by the California Department of Public Health.

"Cryptosporidium Action Plan", April 1995. California Department of Health Services.

Denniston Water Treatment Plant UF/MF Membrane Filtration Pilot Study Report, prepared by Kennedy/Jenks Consultants for Coastside County Water District, December 2000.

Denniston Creek Water Treatment Plant Upgrade Technical Memorandum, prepared by Kennedy/Jenks Consultants for Coastside County Water District, January 2001.

Denniston Reservoir Restoration Project Draft Initial Findings Report, prepared by TRC Essex, December 2006.

Removal of Soluble Manganese From Water by Oxide-Coated Filter Media, 1990. Knocke, William R., Occiano, Suzanne, and Hungate, Robert, published by AwwaRF, March.

The Practice of Effective Iron and Manganese Control in Water Treatment Plants, Knocke, W.R., technical presentation slides. (no date)

Personal communications with Jerry Breen, Director of Technology, and Lynda DePetris, Strategic Partnerships, Clean Filtration Technologies, Inc., 3 December 2008.

Personal communications with Brent Cromer, representing Amiad Filtration Ltd. on 4 and 8 December 2008.

Personal communications with Tom Frisch at Frisch Engineering on 5 December 2008.

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: Kennedy/Jenks Proposal for Preliminary Design of Denniston Pretreatment and Washwater System Improvements

Recommendation:

Authorize execution of an agreement with Kennedy/Jenks Consultants for Preliminary Design of Denniston Pretreatment and Washwater System Improvements, for an estimated cost of \$96,500.

Background:

In September 2008, the Coastside County Water District (CCWD) Board of Directors directed staff to hire Kennedy Jenks Engineering to provide a feasibility report on various alternative pre treatments to the Denniston WTP. The report was finalized in March and recommends a pressurized upflow clarification process.

Based on Kennedy/Jenks' recommendation, the proven nature of the selected clarification technology eliminates the need to do a pilot study before proceeding to design. The proposed scope therefore focuses on the initial design and cost estimates for the pretreatment additions to Denniston.

Additional solids removal in the pretreatment process will further overload the already-inadequate solids handling system at Denniston. Kennedy/Jenks recommends a study to select the best solids handling modifications and has included in their proposal a study to explore alternative designs to the current sludge drying ponds. Design of the solids handling improvements is included in the proposed scope.

The Kennedy/Jenks proposal is attached.

Fiscal Impact:

Estimated study and design costs of \$96,500. The approved FY 08-09 CIP budget includes \$200,000 for Denniston pretreatment work.



Kennedy/Jenks Consultants

Engineers & Scientists

303 Second Street, Suite 200 South
San Francisco, California 94107
415-243-2150
FAX 415-896-0999

31 March 2009

Mr. David R. Dickson
General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, California 94018

Subject: Proposal for Professional Engineering Services
Preliminary Design of Pretreatment and Washwater System Improvements
Denniston Creek Water Treatment Plant
K/J B10680052 / B09045

Dear Mr. Dickson:

Thank you for your request for design assistance for improvements to the Denniston Creek Water Treatment Plant (DCWTP). In accordance with your request, Kennedy/Jenks Consultants (Kennedy/Jenks) is pleased to submit this proposal to Coastside County Water District (District) to provide professional engineering design services for a new pretreatment system and waste filter backwash water and solids handling system improvements to the existing facilities at the DCWTP.

Project Background and Understanding

The District's DCWTP is a 1,000 gallon per minute [1.44 million gallon per day (MGD)] capacity water treatment plant treating surface water from Denniston Creek. The DCWTP was designed about 38 years ago with a direct filtration treatment process that includes coagulation, flocculation, and filtration. Based on information provided by District staff, and described in the Denniston Creek Water Treatment Plant - Pretreatment Alternatives Feasibility Report (K/J 08680026), the existing filters cannot be operated when the source water turbidity exceeds about 15 Nephelometric turbidity units (NTU).

Kennedy/Jenks understands that the District would like to add pretreatment units to permit reducing the turbidity in the source water ahead of the filters and modify its existing spent filter backwash water and solids handling system to improve plant operations. The existing DCWTP facilities include two earthen basins located on the north side of the Filter Building that are

Mr. David R. Dickson
Coastside County Water District
31 March 2009
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shown on the original DCWTP design drawings, Sheet G-3, as Wash Water Recovery (WWR) Pond Numbers 1 and 2.

Based on information provided by District staff, each of the two WWR Ponds provides adequate storage capacity to backwash all three of the existing pressure filters at the DCWTP 8 to 10 times before the WWR Pond is full and must be removed from service. Normally each of the three filters is backwashed once per day and the two WWR Ponds receives spent backwash water for 8 to 10 days before being removed from service to permit clarifying the spent backwash water prior to returning the "recycle water" to the head of the DCWTP treatment process. District staff indicates that the spent backwash water is normally allowed to settle for about 1 day before the clarified water is returned to the head of the treatment process. District staff also indicates that the recycle water pump speed is normally set to maintain the recycle water flow rate at less than 10 percent of the raw water flow rate in accordance with the California Cryptosporidium Action Plan (CAP) guidelines.

District staff indicates that the recycle water typically is between about 4 and 6 NTU, and generally remains between 4 and 6 NTU during the 7 to 9 days time required to recycle the WWR Pond water. District staff recently completed modifications to the recycle water system that include a new submersible pump and a 1,000 gallon capacity plastic storage tank to eliminate problems with entrained air and dissolved gasses that imparted an erroneous high turbidity measurement/indication in the recycle water.

Kennedy/Jenks understands that the objectives of the District's DCWTP Pretreatment and Filter Backwash Water and Solids Handling Improvement Project include:

- Design new pretreatment units that can reduce the raw water turbidity from between 15 and 50 NTU to less than 2 to 5 NTU to permit treating more of the District's local source water supply, especially during the winter when more water is available and the Denniston Creek water turbidity, unfortunately, tends to be highest.
- Conduct a feasibility level evaluation of the existing waste filter backwash water and solids handling system to identify a cost-effective strategy to improve operations and flexibility. The recommended WWR System improvements identified in the WWR System Feasibility Report developed in Task 1 will be included in the DCWTP Preliminary Design Report.

Kennedy/Jenks evaluated and prepared conceptual design criteria for two new contact clarifiers in pressure vessels at the DCWTP as part of a pretreatment alternatives feasibility study evaluation, dated March 2009. The scope of services for the preliminary and final design of the pretreatment units based on that previous work and improvements to the existing filter backwash water and solids handling system will be based on the feasibility study of washwater and solids handling system improvements described in Task 1 below.

Discussions with District staff indicate that a topographic survey of the DCWTP site was completed recently. A copy of the available survey material will need to be reviewed to identify additional survey services needed for the proposed DCWTP improvements design.

Mr. David R. Dickson
Coastside County Water District
31 March 2009
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Scope of Services

Kennedy/Jenks proposes the following Scope of Services for the requested engineering services for the DCWTP Pretreatment Process and Spent Filter Backwash Water and Solids Handling System Improvement Project.

Task 1 – Conduct a Feasibility Study of Washwater and Solids Handling System Improvements

This task will include a review of the District's filter operations data and spent filter backwash water quality data. These data will be used to evaluate two alternative designs to modify the existing WWR Ponds to improve the ability to clarify the spent filter backwash water (plus the additional washwater generated during pressure contact clarifier washes) and to separate and remove sludge solids from the spent backwash water for drying in new sludge drying beds.

Based on discussions with District staff, the two likely WWR system improvements will include either Alternative 1 or Alternative 2 described below.

1. Alternative 1: Install two new WWR Basins that include mechanical sludge collection equipment that permits concentrating and removing the sludge solids present in the spent clarifier wash water and filter backwash water and conveying the thickened sludge to new sludge drying beds. Based on discussions with District staff, the two new WWR Basins could be constructed on the southwest side of the existing Filter Building, between the Building and the road that runs up to the treated water storage tank, or in the area currently used to park a front loader and to store granular material near the toe of the hillside in the south corner of the level area south of the Filter Building. This alternative would also include modifying the two existing WWR Ponds to serve as sludge drying beds.
2. Alternative 2: Modify the two existing WWR Ponds to permit removing settled solids from each WWR Pond without having to remove the WWR Pond from service. The modifications to the two existing WWR Ponds should permit transferring the settled sludge solids to new sludge drying beds that would be located in one of the two areas described in Alternative 1 above for the two WWR Basins described in Alternative 1.

The project kickoff workshop agenda will include discussions to confirm or modify these two alternative concepts for making the desired improvements to the existing WWR system. Based on information provided by District staff, the new sludge drying beds at the DCWTP will be designed similar to the existing sludge drying beds at the District's Nuñez WTP.

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31 March 2009
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Kennedy/Jenks will review the available information included in the recent horizontal survey of the DCWTP site that was performed by Coastside Lands Surveying. Based on the recent survey information, Kennedy/Jenks will identify additional survey and/or utilities mapping required. The cost of the additional site surveying is included in this proposal. This information will be developed in AutoCAD format and at a ground scale of 1:1 and conforming to the National Map Accuracy Standards with a maximum contour interval of 1 foot.

Kennedy/Jenks assumes that information on the existing utilities at the DCWTP can be obtained from the DCWTP record drawings for the area where the new pretreatment units and spent filter backwash water and solids handling system will be located. Kennedy/Jenks also assumes that District staff will provide any potholing that may be required for utilities confirmation. Utilities include, but are not limited to, natural gas, electric, telephone, cable television, fiber optic, water, sanitary sewer, and storm sewer utilities.

Task 2.2 – Geotechnical Review

The new pretreatment units and spent filter backwash water and solids handling system will be located adjacent to the existing DCWTP Filter Building. Based on the expected slab-on-grade type support system and the pressure vessel configuration and height, Kennedy/Jenks anticipates that a new geotechnical investigation of the site soils and geotechnical information will be needed to design the new pressure vessels' foundation and the WWR System improvements. The cost of the geotechnical investigation is included in this proposal.

Task 2.3 – Project Kickoff Workshop and Site Visit

Kennedy/Jenks will conduct a site visit following receipt of the existing survey drawings and utilities data. Kennedy/Jenks will confirm and photograph conditions of the area(s) where the pretreatment units and spent filter backwash water and solids handling system improvements will be installed and locations of existing pipes, valves, and infrastructure. We will also meet with District staff to discuss the recommended design criteria and operations of the new pretreatment units and spent filter backwash water and solids handling system improvements.

Task 3 – Preliminary Design

Task 3.1 – Prepare Preliminary Design Criteria and Site Layout

Kennedy/Jenks will develop preliminary design criteria, operations description, a preliminary site plan, hydraulic profile through the new and existing water treatment units, and process flow schematic for the new pretreatment units, existing treatment units, and spent filter backwash water and solids handling system improvements. We will also develop process and instrumentation diagrams of the new pretreatment units and the spent backwash water handling and solids dewatering system processes.

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Task 3.2 – Prepare Opinion of Probable Project Cost

Kennedy/Jenks will develop a preliminary design level, opinion of probable project construction cost for the pretreatment units and the spent filter backwash water and solids handling system improvements.

Task 3.3 – Preliminary Design Report

Kennedy/Jenks will prepare a brief Preliminary Design Report (PDR) that summarizes the work performed under the previous tasks, presents design concepts and criteria for preparation of construction documents, and provides a preliminary construction schedule and construction cost for the project. The PDR will include the following drawings:

1. Sheet G-1: Cover Sheet with Drawing List & Location Maps
2. Sheet G-3: Basis of Design & Hydraulic Profile
3. Sheet G-4: Schematic Diagram of Treatment Facilities
4. Sheet C-1: Site Plan
5. Sheet M-2: Pretreatment Units - Plan and Section
6. Sheet I-1: Instrumentation Legend
7. Sheet I-2: Pretreatment Process System P&ID
8. Sheet I-3: Washwater Recovery System P&ID

The PDR will also provide information for the California Environmental Quality Act (CEQA) and Permitting work described below.

Kennedy/Jenks will submit five hard copies of the draft PDR to the District for review. Following the District's review of the draft PDR, we will confer with District staff to review the PDR (see Task 3.4); incorporate review comments and submit five hard copies of the final PDR.

Task 3.4 – PDR Review Workshop

Kennedy/Jenks will participate in a PDR Review Workshop with District staff to review the design and operations concepts as well as the approach to construction of the pretreatment units and spent filter backwash water and solids handling system improvements.

Task 4 – CEQA Environmental Compliance Engineering Support (optional)

Kennedy/Jenks understands that District will evaluate and prepare appropriate environmental documentation for the project pursuant to the CEQA and other regulatory permitting requirements. This proposal does not include budget to provide CEQA environmental services.

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Kennedy/Jenks assumes 8 hours of effort for answering questions on the proposed project and coordinating with District staff as they prepare CEQA documents.

Task 5 – Project Management and Quality Control

Task 5.1 – Project Management

Kennedy/Jenks will provide project management focused on control of project costs, maintaining the project schedule requirements, identifying and addressing key issues, and delivering quality design documents. Project management will include directing the work of the Kennedy/Jenks team so that the work is accomplished on-time and within budget. This process will include internal review of work progress, assessing against hours and dollars spent compared to the work accomplished. Communications with District will include periodic telephone calls to discuss current activities and any needs for additional input or information. A project file will be maintained including copies of correspondence, reports, minutes of meetings, and memoranda.

Task 5.2 – Quality Assurance/Quality Control (QA/QC)

Quality assurance and quality control (QA/QC) are integrated into our project management system from project inception, through execution to final document submission. We use experienced senior staff, familiar with, but not directly involved in the project work, to provide QA/QC review of work products and project deliverables. Kennedy/Jenks uses a multiple-step process to maintain effective QA/QC on all our projects. The following is a brief outline of our QA/QC Plan:

- **Policy and Procedures** - The policy of our firm is that quality control is a continuous process and is everyone's responsibility. The Project Manager has final responsibility for QC. We have established quality control procedures used by project managers and teams for specific types of projects. The project specific quality control review procedures are described in the internal Project Memorandum for the project.
- **Concept and Criteria Review (C&CR)** - At an early stage of the planning process, we will conduct an internal C&CR. The C&CR is an important quality control tool that gives the team an early opportunity to review the project concepts with experienced design and construction staff.
- **Technical Advisor Reviews** - The QA/QC reviewer and technical advisors will be involved on an ongoing basis and provide detailed reviews of work products. Each of the project submittals will be reviewed for engineering decisions, correctness of calculations, and constructability, as well as for content, clarity, and presentation.

The Project Manager will sign each submittal confirming that a QC review was conducted.

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Task 5.3 – Project Meetings and Workshops

Kennedy/Jenks' Project Manager and Project Engineer will participate in three project workshops with District staff during the course of the pretreatment units and spent filter backwash water and solids handling system improvement project. These three workshops are envisioned to include:

- Project kick-off and site visit workshop (Task 2.3)
- Draft Feasibility Report Review Workshop (Task 1.4)
- PDR Review Workshop (Task 3.4)

Kennedy/Jenks will prepare workshop agenda and submit workshop minutes to District for review within four business days following each workshop.

Project Team

Kennedy/Jenks proposes the following key project team members for the DCWTP Pretreatment and spent filter backwash water and solids handling system Improvement Project. These key team members bring relevant experience and expertise in water treatment design and operational support.

Principal-In-Charge – Joel Faller, P.E. – As Principal-In-Charge, Joel will be responsible for contractual matters, mobilization of our resources for the project and for maintaining our high quality design standards. Joel has 27 years of experience in project management and engineering, with expertise in surface water and seawater desalination membrane treatment. Joel's experience includes planning, process evaluation, pilot testing, plant design, construction support, and an overall understanding of and experience in water treatment plant design.

Project Manager – Craig Thompson, P.E. – Craig will serve as the Project Manager for the project design and be the primary point of contact with the District. Craig is a senior water treatment process engineer with over 22 years of civil engineering experience with major involvement in 24 water treatment facilities with capacities that range between 2 and 320 MGD. He is experienced in regulatory compliance evaluation and training, water treatment plant facilities planning, award-winning process designs, construction inspection, start-up training and assistance, process optimization studies, and design, construction and operation of pilot plants.

Project Engineer – Aileen Kondo, P.E. – Aileen will serve as the Project Engineer and be the secondary point of contact with the District. Aileen has three years of experience in engineering and project management of municipal projects.

QA/QC – Joe Drago, PhD, P.E. Joe will serve as our primary quality assurance/quality control (QA/QC) reviewer. Joe is a senior principal process/water quality engineer with over 35 years of environmental engineering experience in municipal water treatment, water quality, and compliance with regulatory requirements.

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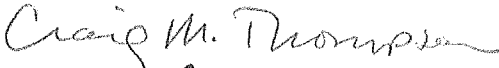
Terms and Conditions


This proposal is based on current projections of staff availability and costs and, therefore, is valid for 90 days following the date of this letter. This proposal also assumes that we will contract with the District under similar terms that were recently negotiated for the DCWTP Pretreatment Alternatives Feasibility Study Project.

If this proposal meets with your approval, please sign where noted below and return a copy to our office to serve as our authorization.

Thank you for considering us for this work. We look forward to working with you on this next project phase.

Very truly yours,
KENNEDY/JENKS CONSULTANTS, INC.


Craig M. Thompson, P.E.
Project Manager


Joel A. Faller, P.E.
Principal-In-Charge
Vice President

AUTHORIZATION:

COASTSIDE COUNTY WATER DISTRICT

By: _____
(Signature)

(Print Name)

Title: _____

Date: _____

Enclosure

Client/Address: Coastside County Water District
766 Main Street
Half Moon Bay, CA 94018

Contract/Proposal Date: 31 March 2009

Schedule of Charges

January 1, 2009

Personnel Compensation

| Classification | Hourly Rate |
|---------------------------------------|-------------|
| CAD-Technician | \$95 |
| Designer-Senior Technician | \$125 |
| Engineer-Scientist-Specialist 2 | \$120 |
| Engineer-Scientist-Specialist 3 | \$135 |
| Engineer-Scientist-Specialist 4 | \$150 |
| Engineer-Scientist-Specialist 5 | \$165 |
| Engineer-Scientist-Specialist 6 | \$185 |
| Engineer-Scientist-Specialist 7 | \$210 |
| Engineer-Scientist-Specialist 8 | \$220 |
| Engineer-Scientist-Specialist 9 | \$225 |
| Project Administrator | \$85 |
| Administrative Assistant | \$70 |
| Aide | \$55 |

In addition to the above Hourly Rates, a three percent Communications Surcharge will be added to Personnel Compensation for normal and incidental copies, communications and postage.

Direct Expenses

Reimbursement for direct expenses, as listed below, incurred in connection with the work, will be at cost plus ten percent for items such as:

- a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b. Consultants, soils engineers, surveyors, contractors, and other outside services.
- c. Rented vehicles, local public transportation and taxis, travel and subsistence.
- d. Specific telecommunications and delivery charges.
- e. Special fees, insurance, permits, and licenses applicable to the work.
- f. Outside computer processing, computation, and proprietary programs purchased for the work.

Reimbursement for vehicles used in connection with the work will be at the federally approved mileage rates or at a negotiated monthly rate.

Reimbursement for use of computerized drafting systems (CAD), geographical information systems (GIS), and other specialized software and hardware will be at the rate of \$12 per hour.

Rates for professional staff for legal proceedings or as expert witnesses will be at rates one and one-half times the Hourly Rates specified above.

Other in-house charges for prints and reproductions, equipment usage, laboratory analyses, etc. will be at standard company rates.

Excise and gross receipts taxes, if any, will be added as a direct expense.

The foregoing Schedule of Charges is incorporated into the agreement for the services provided, effective January 1, 2009 through December 31, 2009. After December 31, 2009, invoices will reflect the Schedule of Charges currently in effect.

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: Quarterly Financial Review

Recommendation:

None. Information only.

Background:

Quarter 3 year-to-date financials, shown on the attached summary, indicate that our overall budget is on plan, despite a substantial (9.8%) shortfall in water revenue. Significant variances include:

- Miscellaneous income higher than budget by \$68,465 due to an unbudgeted \$52,000 liability insurance refund.
- ERAF refund was \$136,700 over budget.
- SFPUC water purchases 6.1% lower expense than budget due to lower consumption.
- Crystal Springs PS costs significantly higher than budget \$103,000 due to Denniston shutdown.
- Denniston operating expenses well below budget (\$71,000) due to shutdown.

Some other variances shown in the Q3 YTD results may be due to timing of expenses which will still be incurred. We believe that the District will finish the year with negative "net income" of \$50,000 - \$100,000.

COASTSIDE COUNTY WATER DISTRICT - PERIOD BUDGET ANALYSIS

31-Mar-09

| ACCOUNT | DESCRIPTION | YTD ACTUAL | YTD BUDGET | B/(W) VARIANCE | B/(W) % VAR |
|-----------------------|--------------------------------|-----------------------|-----------------------|---------------------------|------------------------|
| REVENUE | | | | | |
| 1-0-4120-00 | Water Revenue -All Areas | 4,034,653 | 4,472,374 | (437,721) | (9.8%) |
| 1-0-4170-00 | Water Taken From Hydrants | 28,425 | 18,750 | 9,675 | 51.6% |
| 1-0-4180-00 | Late Notice -10% Penalty | 38,368 | 37,500 | 868 | 2.3% |
| 1-0-4230-00 | Service Connections | 6,523 | 6,000 | 523 | 8.7% |
| 1-0-4235-00 | CSP Connection T & S Fees | 13,940 | 0 | 13,940 | 0.0% |
| 1-0-4920-00 | Interest Earned | 71,124 | 75,093 | (3,969) | (5.3%) |
| 1-0-4925-00 | Interest Revenue T&S Fees | 0 | 0 | 0 | 0.0% |
| 1-0-4927-00 | Inerest Revenue Bond Funds | 0 | 0 | 0 | 0.0% |
| 1-0-4930-00 | Tax Apportionments/Cnty Checks | 395,078 | 385,000 | 10,078 | 2.6% |
| 1-0-4950-00 | Miscellaneous Income | 125,465 | 57,000 | 68,465 | 120.1% |
| 1-0-4960-00 | CSP Assm. Dist. Processing Fee | 0 | 0 | 0 | 0.0% |
| 1-0-4965-00 | ERAF REFUND -County Taxes | 236,700 | 100,000 | 136,700 | 136.7% |
| 1-0-4970-00 | Wavecrest Reserve Conn. Fees | 0 | 0 | 0 | 0.0% |
| REVENUE TOTALS | | 4,950,275 | 5,151,717 | (201,442) | (3.9%) |
| EXPENSES | | | | | |
| 1-1-5130-00 | Water Purchased | 991,564 | 1,055,698 | 64,134 | 6.1% |
| 1-1-5230-00 | Pump Exp, Nunes T P | 13,234 | 15,000 | 1,766 | 11.8% |
| 1-1-5231-00 | Pump Exp, CSP Pump Station | 283,675 | 180,404 | (103,271) | (57.2%) |
| 1-1-5232-00 | Pump Exp, Trans. & Dist. | 16,726 | 18,603 | 1,877 | 10.1% |
| 1-1-5233-00 | Pump Exp, Pilarcitos Can. | 3,975 | 7,500 | 3,525 | 47.0% |
| 1-1-5234-00 | Pump Exp. Denniston Proj. | 12,830 | 55,872 | 43,042 | 77.0% |
| 1-1-5235-00 | Denniston T.P. Operations | 39,454 | 67,167 | 27,713 | 41.3% |
| 1-1-5236-00 | Denniston T.P. Maintenance | 35,632 | 27,000 | (8,632) | (32.0%) |
| 1-1-5240-00 | Nunes T P Operations | 90,417 | 94,797 | 4,380 | 4.6% |
| 1-1-5241-00 | Nunes T P Maintenance | 25,324 | 38,772 | 13,448 | 34.7% |
| 1-1-5242-00 | CSP Pump Station Operations | 5,763 | 6,372 | 609 | 9.6% |
| 1-1-5243-00 | CSP Pump Station Maintenance | 12,346 | 44,000 | 31,654 | 71.9% |
| 1-1-5318-00 | Studies/Surveys/Consulting | 33,999 | 37,503 | 3,504 | 9.3% |
| 1-1-5321-00 | Water Conservation | 26,219 | 29,997 | 3,778 | 12.6% |
| 1-1-5322-00 | Community Outreach | 10,884 | 23,769 | 12,885 | 54.2% |
| 1-1-5411-00 | Salaries & Wages -Field | 624,592 | 601,713 | (22,878) | (3.8%) |
| 1-1-5412-00 | Maintenance -General | 135,993 | 135,594 | (399) | (0.3%) |
| 1-1-5414-00 | Motor Vehicle Expense | 30,196 | 43,497 | 13,301 | 30.6% |
| 1-1-5415-00 | Maintenance -Well Fields | 9,507 | 19,053 | 9,546 | 50.1% |
| 1-1-5610-00 | Salaries/Wages-Administration | 433,880 | 451,410 | 17,530 | 3.9% |
| 1-1-5620-00 | Office Supplies & Expense | 72,803 | 104,513 | 31,709 | 30.3% |
| 1-1-5621-00 | Computer Services | 39,108 | 40,425 | 1,317 | 3.3% |
| 1-1-5625-00 | Meetings / Training / Seminars | 16,275 | 24,375 | 8,100 | 33.2% |
| 1-1-5630-00 | Insurance | 374,285 | 370,012 | (4,273) | (1.2%) |
| 1-1-5640-00 | Employees Retirement Plan | 293,652 | 288,859 | (4,793) | (1.7%) |
| 1-1-5681-00 | Legal | 20,094 | 42,750 | 22,656 | 53.0% |
| 1-1-5682-00 | Engineering | 9,870 | 18,750 | 8,880 | 47.4% |
| 1-1-5683-00 | Financial Services | 18,356 | 35,531 | 17,175 | 48.3% |
| 1-1-5684-00 | Payroll Tax Expense | 74,399 | 77,126 | 2,727 | 3.5% |
| 1-1-5687-00 | Membership, Dues, Subscript. | 35,500 | 38,974 | 3,474 | 8.9% |
| 1-1-5688-00 | Election Expenses | 0 | 0 | 0 | 0.0% |
| 1-1-5689-00 | Labor Relations | 9,000 | 11,250 | 2,250 | 20.0% |
| 1-1-5700-00 | San Mateo County Fees | 8,798 | 9,200 | 402 | 4.4% |
| 1-1-5705-00 | State Fees | 10,711 | 23,000 | 12,289 | 53.4% |
| 1-1-5710-00 | Deprec, Trucks, Tools, Equipt. | 0 | 0 | 0 | 0.0% |
| 1-1-5711-00 | Debt Srvc/Existing Bonds 1998A | 265,981 | 266,220 | 239 | 0.1% |
| 1-1-5712-00 | Debt Srvc/Existing Bonds 2006B | 483,305 | 482,460 | (845) | (0.2%) |
| 1-1-5713-00 | Contribution to CIP & Reserves | 325,500 | 325,500 | (0) | (0.0%) |
| 1-1-5745-00 | CSP Connect. Reserve Contribu. | 13,940 | 0 | (13,940) | 0.0% |
| 1-1-5746-00 | Wavecrest CSP Connt. Reserve | 0 | 0 | 0 | 0.0% |
| EXPENSE TOTALS | | 4,907,787 | 5,112,665 | 204,879 | 4.0% |
| NET INCOME | | 42,488 | 39,052 | 3,436 | |

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: Agreement for Emergency Water Supply Between Coastside County Water District and Montara Water and Sanitary District

Recommendation:

Approve the attached Agreement for Emergency Water Supply between CCWD and Montara Water and Sanitary District (MWSD)

Background:

In a series of meetings beginning in June 2008, the CCWD-MWSD Mutual Interest Committee (Directors Ascher and Coverdell of CCWD and Ptacek and Slater-Carter of MWSD) developed the attached mutual emergency water supply agreement. The agreement is based on principles which the CCWD Board discussed and approved at its August 12, 2008 meeting.

In considering the agreement, it is important to note the following:

- The agreement only covers temporary, interruptible, emergency water supply.
- It creates no obligation for either party to provide water; each party does so only in its sole discretion.
- The agreement can be terminated by either party on 90 days notice.
- Implementing emergency supply provisions will require both parties to examine and seek changes to existing contracts and permits which may place restrictions on the ability to supply water to the other party.

The Montara Water and Sanitary District Board of Directors approved the agreement at its April 2, 2009 meeting.

Fiscal Impact:

None.

AGREEMENT FOR EMERGENCY WATER SUPPLY

THIS AGREEMENT is made and entered into as of _____, 2009 by and between the **MONTARA WATER AND SANITARY DISTRICT** ("MWSD") and the **COASTSIDE COUNTY WATER DISTRICT** ("CCWD"), public agencies located in the County of San Mateo, California;

RECITALS

WHEREAS, CCWD is a county water district established and operating under the County Water District Law (California Water Code §30000 et seq.); and

WHEREAS, MWSD is a sanitary district established and operating under the Sanitary District Act of 1923 (California Health and Safety Code §6400 et seq.), empowered to operate its water system under the County Water District Law pursuant to Health and Safety Code Section 6512.7; and

WHEREAS, CCWD and MWSD provide water service to communities located in the mid-coastside region of San Mateo County, California; and

WHEREAS, CCWD and MWSD desire to provide for a mutual temporary, interruptible water supply in the event they, respectively, incur a water shortage emergency;

NOW THEREFORE, the parties hereto agree as follows:

1. Purpose. This agreement is entered into for the mutual benefit of the parties to provide a temporary, interruptible supply of water for use during a water shortage emergency as hereinafter described. The parties hereby covenant and agree to cooperate and assist each other in providing such water supply in furtherance of the public health, welfare and necessity.

2. Emergency Water Supply. CCWD hereby agrees to provide an Emergency Water Supply to MWSD and MWSD hereby agrees to provide an Emergency Water Supply to CCWD subject to the terms and conditions of this agreement. For purposes hereof, "Emergency Water Supply" means a temporary, interruptible supply of water to alleviate a water shortage emergency caused by drought or unanticipated depletion of water storage capacity, access to water reserves or the capability to extract, pump or convey water due to

causes including, without limitation, fire suppression, machinery or equipment casualty or failure, power loss, vandalism, Force Majeure (hereinafter defined in Paragraph 15) or such other condition or circumstance of an unanticipated nature as to which the parties may agree. This agreement is contingent upon approval of such regulatory agency or agencies that has/have jurisdiction over its subject matter.

3. Procedure. In the event one of the parties (“Requester”) determines that it has incurred a water shortage emergency that requires an Emergency Water Supply, it shall notify the other party (“Supplier”) thereof in writing (except as hereinafter provided) not less than ten (10) calendar days in advance of the date upon which the Requester desires commencement of the Emergency Water Supply. The notification shall include a concise but complete description of the circumstances upon which the request is based. The Supplier shall respond in writing within five (5) calendar days of the date of the Requester’s notice stating whether it will, will not, or will conditionally, provide the Emergency Water Supply. The Supplier shall have sole discretion to determine whether it shall provide the Emergency Water Supply and, if so, under what conditions; provided, that no such condition shall be contrary to, or conflict with, the provisions of this Agreement. If the Supplier agrees to provide the Emergency Water Supply and the Requester agrees to such conditions, if any, required by the Supplier, the parties shall confer regarding, and cooperate in implementing, such matters as location of system connection(s), commencement of service, estimated duration of service, anticipated interruptions of service, obtaining requisite regulatory permits or other entitlements, if any, and other logistical aspects in order to effectuate delivery of the Emergency Water Supply as expeditiously and economically as reasonably feasible.

Notwithstanding the above notification procedure, in the event of a serious unanticipated water shortage emergency that imminently threatens the public health, welfare and safety of the Requester’s water system users and the Supplier determines that it is able and willing to respond to such emergency, the parties may waive the ten-day notification requirement hereof and proceed, at the

Supplier's discretion aforesaid, to effectuate the emergency water supply in the most expeditious manner feasible.

4. Compensation. The Requester shall compensate the Supplier for the Emergency Water Supply based on the volume of water consumed charged at the Supplier's rate or rates for its commercial and industrial users, current at the time the Emergency Water Supply is provided. Payment shall be made on a monthly basis within thirty (30) days of the date of billing.

5. Costs. All costs incurred by the Supplier in providing the Emergency Water Supply shall be borne by the Requester. Undisputed costs shall be due and payable within 30 days of the date of the Supplier's invoice therefor, which shall briefly describe each of the itemized costs. Any disputes regarding costs shall be resolved through the dispute resolution procedure described in paragraph 16.

6. Term. The Term of this agreement is one year from the date first hereinabove written ("Term"); provided, that the Term shall be renewed automatically for successive one-year Terms, subject to termination set forth in Paragraph 7.

7. Termination. Either party may terminate this Agreement at any time during the Term or any renewed Term by giving the other party written notice thereof not less than ninety (90) days prior to the effective date of termination, which date shall be included in the notice; provided, that if the date of termination is not included in the notice, it shall be deemed to be ninety (90) days from the date of the notice.

8. Hold Harmless; Indemnification. CCWD shall defend, hold harmless and indemnify MWSD, its governing board, officers, employees, agents and consultants from any and all claims, lawsuits, causes of action and liability of any nature or kind for injuries to persons or damage to property arising from the negligent, intentional or wrongful acts or omissions of CCWD, its governing board officers, employees, agents or consultants in the performance or failure to perform any of its or their obligations, express or implied, under this Agreement.

MWSD shall defend, hold harmless and indemnify CCWD, its governing board, officers, employees, agents and consultants from any and all claims,

lawsuits, causes of action and liability of any nature or kind for injuries to persons or damage to property arising from the negligent, intentional or wrongful acts or omissions of MWSD, its governing board, officers, employees, agents or consultants in the performance or failure to perform any of its or their obligations, express or implied, under this Agreement.

The duty to indemnify shall include the duty to defend as set forth in Civil Code Section 2778. In the event of the concurrent negligence of the parties, their respective governing boards, officers, employees, agents or consultants in the performance or failure to perform any of its or their respective obligations under this Agreement, then the liability for any and all claims, lawsuits, causes of action and liability of any nature or kind for injuries to persons or damage to property arising out of such concurrent negligence shall be apportioned under California's theory of comparative negligence as presently established, or as may be hereafter modified.

9. Insurance. Each party covenants and warrants to the other that, upon the commencement of the Term and so long as this Agreement is in effect, it is and shall be insured or self-insured in an amount of not less than \$3, 000,000 for each occurrence giving rise to personal injury or property damage liability for which they respectively may be held responsible. Each party shall furnish to the other a Certificate of Insurance and a copy of the declaration page of its insurance policy or documentation of self-insurance satisfactory to the receiving party that evidences the coverage required hereunder and an endorsement or other acknowledgment satisfactory to the receiving party that provides that said party shall be given not less than ten (10) days' prior written notice of any intended cancellation, reduction or change in coverage of such insurance or self-insurance.

10. Limited Responsibility; Release. The Emergency Water Supply delivered by the Supplier to the point of connection of its water system with that of the Requester shall comply with the water quality standards established for potable water. The Requester shall be solely responsible for the quality of the Emergency Water Supply from said point of connection and for such other

potable water, irrespective of its source, that is provided to the Requester's customers.

Upon taking delivery of the Emergency Water Supply the Requester shall be deemed to release, and hereby does release, the Supplier from any and all liability of any nature or kind arising out of, or pertaining to, the quality of water provided to the Requester's customers, except to the extent that the Emergency Water Supply does not comply with the requirements of the first sentence of the immediately preceding paragraph.

The foregoing release is a general release and the Requester shall be deemed to, and does hereby, waive the provisions of Civil Code Section 1542 which provides as follows:

“§1542. A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor.”

11. Status. The parties hereto are independent contractors and the officers, employees, agents and consultants of one shall not be deemed to be officers, employees or agents of the other in the performance of their respective duties and obligations hereunder.

12. Successors. This Agreement and the duties and obligations hereunder shall be binding upon, and the benefits hereof shall accrue to, the successors and assigns of CCWD and MWSD, respectively.

13. Non-assignability. This Agreement and the obligations, duties and rights hereunder shall not be assigned by one party without the prior written consent of the other party, which consent shall not unreasonably be withheld.

14. Notices. Notices required or convenient for performance hereunder shall be in writing, unless otherwise specified in writing, and shall be delivered personally, deposited with the United States Postal Service, first-class postage prepaid in an envelope addressed as follows, or by facsimile as follows:

To CCWD: General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

By facsimile: (650) 726-5245

To MWSD: General Manager
Montara Water and Sanitary District
8888 Cabrillo Highway
P.O. Box 370131
Montara, CA 94037

By facsimile: (650) 728-8556

15. Force Majeure. The performance of the parties' obligations and duties hereunder shall be excused by reason, and for the duration, of Force Majeure. "Force Majeure" as used herein means fire, flood, earthquake, or other natural calamity, or acts of God, governmental action or inaction not caused by the party claiming excuse of performance, labor strike, except for strikes by employees of a party hereto, civil unrest, acts of terrorism or other cause beyond the control of the party claiming excuse of performance. Upon the cessation of the Force Majeure, the party whose performance was excused thereby shall commence and diligently pursue to completion the obligation or duty excused.

16. Dispute Resolution. In the event a dispute arises between the Parties regarding the interpretation of this Agreement or their performance or failure to perform their respective duties and obligations hereunder, the party claiming a dispute shall give written notice thereof to the other party expressly describing the matter disputed. The parties shall meet and confer within thirty (30) days of the date of the notice and attempt to resolve the dispute informally. If they are unable to resolve the dispute by the informal meeting, the dispute shall be submitted to mediation with a mediator selected by agreement of the parties or by striking names from a list of mediators provided by the San Francisco, California, Office of the American Arbitration Association. Costs of mediation shall be divided equally. If the dispute is not resolved by mediation or by another form of Alternative Dispute Resolution upon which the parties may agree, the parties may pursue such legal or equitable remedies as they may choose.

17. Paragraph Headings. Paragraph headings herein are for convenience of reference and shall not be deemed to modify or amend the provisions of the paragraphs headed thereby.

18. Prior Agreement; Integration. That certain agreement entitled, "Agreement for Temporary, Interruptible, Supplemental Water Supply," dated as of the 15th day of August 2001 by and between Citizens Utility Company of California, predecessor in interest of MWSD, and Coastside County Water District is hereby superseded and shall have no further force and effect from and after the date hereof. This agreement comprises the entire agreement between the parties and supersedes and replaces all prior oral and written agreements, notes, memoranda, or other communications between the parties pertaining to the subject matter hereof

IN WITNESS WHEREOF the parties have signed this Agreement as of the date first hereinabove written.

**Coastside County Water District
("CCWD"),**

By: _____
General Manager

Countersigned:

By: _____
District Secretary

**Montara Water and Sanitary District
("MWSD"),**

By: _____
General Manager

Countersigned:

By: _____
District Secretary

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: Water Reclamation Update

Recommendation:

None. Information only.

Background:

Recent activities and developments on water reclamation:

Water Reclamation Committee Joint Meeting

The Water Reclamation Committee met jointly with the SAM Recycled Water Committee on March 23. CCWD committee members emphasized that they felt the next step in the process should be for staff of the involved agencies to meet and to develop a project implementation plan for consideration by the agency boards.

Request from Ocean Colony Partners to Supply Recycled Water

At the joint committee meeting on March 23, Bruce Russell of Ocean Colony Partners (OCP) presented a letter (Attachment A) addressed to CCWD and SAM requesting that CCWD provide recycled water to OCP for golf course irrigation and that CCWD delegate to SAM the authority to supply reclaimed water directly to OCP. Staff reviewed the letter with District Counsel and prepared a response which we sent to OCP in a letter dated April 9, 2009 (Attachment B). Because recycled water is not currently available and there is no assurance that it can be made available, the request does not place any obligation on CCWD under the Water Code.

Staff-Level Meeting on Recycled Water

Following direction from the City Council, City of Half Moon Bay staff organized an April 1 meeting for agency managers and attorneys to discuss water reclamation. Due to concerns expressed by SAM board members regarding participation of agency attorneys, only CCWD and the City attended the April 1 session. We agreed that the next step should be for agency managers to meet without attorneys to discuss reclamation project implementation plans. City staff is working to organize this meeting.

Letter to SAM Emphasizing CCWD's Desire to Cooperate

After seeing claims in a SAM staff report that CCWD had threatened litigation against SAM in connection with water reclamation, staff worked with District Counsel to prepare a letter to SAM dated April 9, 2009 (Attachment C). The letter emphasizes the District's desire to build a cooperative arrangement with SAM and corrects the record by stating that we have not threatened and are not threatening litigation against SAM.



KENMARK
Real Estate Group, Inc.

March 23, 2009

David R. Dickson, General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94109

John F. Foley III, Manager
Sewer Authority Mid-Coastside
1000 N. Cabrillo Hwy
Half Moon Bay, CA 94109

Re: Request for Agreement to Provide Recycled Water to Ocean Colony

Dear Messrs. Dickson and Foley,

Over the past several months Ocean Colony Partners LLC ("OCP") has discussed with Coastside County Water District ("CCWD") and the Sewer Authority Mid-Coastside ("SAM") OCP's desire to enter into a long term agreement to acquire recycled water for golf course and landscape irrigation purposes. In connection with these discussions, CCWD and SAM have undertaken significant efforts to achieve the goal of recycled water use by conducting committee meetings to discuss recycled water, preparing studies on potential recycled water uses, and preparing an initial design and exploring permitting requirements for a proposed expansion and upgrade of SAM's existing treatment facility to meet tertiary recycled water standards. The initial phase of SAM's proposed project would allow SAM to provide approximately 600,000 gallons per day of recycled water to OCP for OCP's exclusive use during its irrigation season. We appreciate the efforts you have made to date to facilitate OCP's goal of reducing its use of potable and well water for golf course and landscape irrigation.

By this letter and pursuant to Water Code section 13580(c), OCP respectfully requests that CCWD provide recycled water to OCP. Pursuant to Water Code section 13580.5(a)(2), OCP further requests that CCWD delegate to SAM the authority and responsibility to provide recycled water, so that SAM may deliver recycled water directly to OCP.

We believe this request presents an ideal opportunity for OCP, CCWD and SAM to work together to reduce OCP's use of potable water and thereby assist CCWD in its water conservation efforts during our present drought crisis. Implementation of OCP's request will result in other environmental benefits, including promoting recharge of area aquifers through reduction of OCP's ground water pumping and well use, and also reduce the amount of treated effluent which SAM discharges into the Pacific Ocean.

2450 South Cabrillo Highway, Suite 200
Half Moon Bay, California 94019

phone 650.560.0055
fax 650.560.9198



San Francisco • Los Angeles

KENMARK

We also feel that OCP is in a unique position, given that SAM, with minimal additional capital improvements, can deliver recycled water directly to OCP through OCP's existing privately owned pipeline. Although some repair or upgrading of OCP's existing pipeline would likely be necessary, and SAM would have to install a new approximately 500 foot under creek pipeline to connect SAM's recycled water facility to OCP's pipeline, we believe the repair and upgrade work is feasible from a financial, engineering and environmental perspective. The Water Recycling Law (Water Code section 13500 *et seq.*) encourages this type of design and construction of water delivery systems on private property.

Based on our recent discussions, we understand that CCWD and SAM will likely want to address certain issues, including the non-precedential nature of the delegation and commitments with regard to potable water offsets. To facilitate discussions between CCWD and SAM regarding the terms of the requested delegation, we have prepared the enclosed draft summary of key terms which OCP is prepared to support. We welcome your feedback on the key terms summary and are available at your convenience to discuss further the terms of the requested delegation agreement as well as the terms of a long term recycled water delivery agreement between OCP and SAM.

We look forward to receiving an offer for recycled water service pursuant to Water Code section 13580.7, and continuing discussions regarding the requested delegation agreement between CCWD and SAM.

Very truly yours,

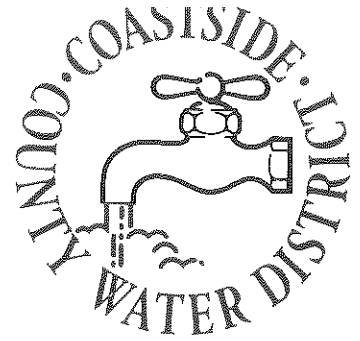


Bruce J. Russell, CEO
Kenmark Real Estate Group, Inc.,
Authorized Agent for OCP

BJR:jg
Enclosure
Cc: Mark Kendall

**SUMMARY OF PROPOSED KEY TERMS FOR
DELEGATION AGREEMENT BETWEEN SAM AND CCWD**

1. CCWD would delegate authority to SAM to allow OCP to obtain the recycled water directly from SAM via OCP's private pipeline and to use such recycled water for golf course and landscape irrigation purposes.
2. SAM and CCWD would agree that the delegation would only cover the provision of recycled water to OCP and would not establish any precedent with respect to any other delegations of authority that SAM or any third party may request in the future.
3. SAM and CCWD would agree to impose a potable water offset on OCP in exchange for delivery of recycled water, subject to certain conditions, consistent with Water Code section 13551, to ensure that OCP does not lose its existing priority potable water rights. Such a requirement would be necessary to comply with the law and to guard against any negative impact to OCP and/or SAM that might result from interruptions in delivery of recycled water to OCP.
4. Following completion of the initial phase of SAM's treatment plant upgrade project, SAM and CCWD would commit to use diligent good faith efforts to explore further opportunities to expand SAM's recycled water facilities with the goal of further reducing customer demands for potable water within CCWD and SAM's service area.
5. To the extent SAM's provision of recycled water to OCP frees up surplus potable water, SAM and CCWD would support use restrictions clarifying that such surplus potable water not be used to justify the issuance of new water permits or otherwise facilitate growth inducing impacts.
6. _____ [other terms to be inserted]



April 9, 2009

Mr. Bruce Russell
Kenmark Real Estate Group, Inc.
2450 South Cabrillo Highway, Suite 200
Half Moon Bay, California 94019

Re: Request for Agreement to Provide Recycled Water to Ocean Colony

Dear Mr. Russell:

I write to acknowledge Coastside County Water District's receipt of your letter dated March 23, 2009 requesting that the District provide recycled water to Ocean Colony Partners (OCP). As the agency responsible for meeting the water needs of Half Moon Bay, El Granada, and Princeton, the District looks forward to a time in the near future when recycled water can be made available for use by the golf course and other key customers. We believe that reclaimed water can play a key role in making our water supply portfolio more drought resistant.

Realizing the significant benefits water reclamation offers will require a concerted effort of agencies and customers as well as a planning process which addresses the concerns of the public and numerous stakeholders. CCWD has expressed its desire to cooperate with Sewer Authority Mid-Coastside (SAM), the recycled water producer, to develop a project that will enable the District to provide recycled water service within the District's service boundary. We are continuing to work toward a cooperative arrangement with SAM.

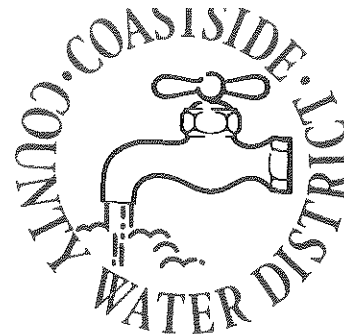
The next step in developing a reclamation project to bring water to the golf course is for CCWD staff to collaborate with our counterparts at SAM and its member agencies to identify implementation issues, tasks, timelines, and responsibilities. We can then bring this information back to our governing boards for decisionmaking and commitment of resources. Your continuing input and participation in this process will be essential.

Thank you for your interest and for your contributions to advancing the cause of water reclamation.

Sincerely yours,

A handwritten signature in black ink, appearing to read "D. Dickson", written over a light blue horizontal line.

David R. Dickson
General Manager
Coastside County Water District



April 9, 2009

Mr. John F. Foley III
Manager
Sewer Authority Mid-Coastside
1000 N. Cabrillo Highway
Half Moon Bay, CA 94019

Re: Interagency Cooperation for Water Reclamation

Dear Mr. Foley:

In the context of our agencies' ongoing discussion of how we can cooperate to bring the benefits of water reclamation to the coastside, I am writing in reaction to statements included in your agenda package for the March 23 SAM Board meeting. In a March 12 email included with your staff report on Item 5C (*Discuss and Possibly Take Action on Proposed Recycled Water Meeting of Managers and Attorneys*), Director Boyd references a SAM closed session "based on three CCWD representatives (two board members and the manager) threatening litigation".

I want to assure you that CCWD seeks a cooperative relationship with SAM for water reclamation. The District's Board has not discussed litigation against SAM in any closed session or public meeting. I do not recall making any statement which could be construed as threatening litigation, nor do I recall any such statement made by any District director. On the contrary, CCWD has consistently reached out to SAM, beginning in August 2008, to develop a dialog on water recycling goals and issues. We are continuing to focus on this cooperative effort and look forward to collaborating at the staff level with you and the SAM member agencies to develop specific implementation plans for consideration by our governing boards. In short, the District desires to correct the record – it has not and is not threatening litigation in connection with the recycled water project.

It is clear that we all share the drive to improve our community's use of water resources through reclamation. I hope we can work together to make water recycling happen here.

Sincerely yours,

A handwritten signature in black ink, appearing to read "DR Dickson".

David R. Dickson
General Manager
Coastside County Water District

STAFF REPORT

To: Coastside County Water District Board of Directors

From: David Dickson, General Manager

Agenda: April 14, 2009

Report

Date: April 10, 2009

Subject: General Manager's Report

I'd like to highlight the following:

1. **Drought Planning:** While they have given us no ironclad assurances, SFPUC has indicated strongly that there will be no mandatory cutbacks in the coming water year. Because the current year has been the third dry year in a row, this may be only a temporary reprieve. Staff is therefore continuing to work on the District's drought ordinance and other elements of our drought contingency plan.
2. **New SFPUC Water Sales Agreement:** Bay Area Water Supply and Conservation Agency (BAWSCA), the authorized contract negotiator for CCWD and other wholesale SFPUC water customers, is nearing completion of contract negotiations on the new master Water Sales Agreement, which takes effect July 1, 2009. Art Jensen of BAWSCA will provide a briefing on the new agreement for representatives of CCWD on April 15. The final version of the new agreement will be presented to the BAWSCA agencies for their approval in May. Each agency will also need to negotiate an individual contract with SFPUC before June 30. Staff will provide further details of this process to the Board at the May 12 meeting.
3. **Credit Card On-Line Payment:** After several months of work by the District's office staff, a credit card on-line payment option is now available for the District's customers. We anticipate that many customers will find this payment method convenient and that it may reduce the number of late payments.
4. **District Team Places Second in AWWA Top Ops Competition:** A team including District employees Steve Twitchell and Sean Donovan took second place in the annual Top Ops competition at the AWWA California-Nevada Section's conference in Santa Clara on April 7.

Monthly Report

To: David Dickson, General Manager
From: Cathleen Brennan, Water Resources Analyst
Agenda: April 14, 2009
Subject: Water Resources Report

This report is provided as an update on water conservation, outreach, and water resources activities.

□ **New Landscape Education Literature Available**



Central Coast Wilds Nursery has provided us with three native plant landscaping guides to make available to our customers.

- The Native Grassland Garden
- The Coastal Scrub Garden
- The Oak Woodland Garden

Central Coast Wilds is located in Santa Cruz and offers a wide selection of native plants and ecological landscape services.

□ **California Water Plan Update 2009**

The Department of Water Resources is hosting regional workshops to share the Draft California Water Plan (CWP) Update 2009. The CWP is California's strategic plan for water and covers the following topics:

- Water Uses
- Water Supply
- Water Quality
- Regional Conditions

- Regional Water Planning
- Flood Management
- Options for Improving Water Management

The California Water Plan is available on line at www.waterplan.water.ca.gov

The San Francisco Bay regional workshop is scheduled for April 20th in Fairfield at the Solano County Administration Building. More information is available on the workshops at

<http://www.waterplan.water.ca.gov/materials/index.cfm?subject=apr2009>

<http://www.waterplan.water.ca.gov/regional/workshops/index.cfm>

□ **Summary of Meetings**

- Employee Meeting - 3/17/2009
- California Department of Water Resources - Urban Drought Workshop - 3/18/2009
- California Department of Water Resources - AB1420 Workshop - 3/20/2009
- Pacific Gas and Electric - Energy/Water Conservation Showcase - 3/24/2009
- Water Resources Committee Meeting 3/25/2009
- Bay Area Water Conservation and Supply Agency (BAWSCA) - Technical Advisory Committee (TAC) 4/2/2009
- CA-NV AWWA Water Conservation Certification Committee Meeting - 4/6/2009

Monthly Report

To: David Dickson, General Manager
From: Cathleen Brennan, Water Resources Analyst
Agenda: April 14, 2009
Subject: Water Shortage and Drought Contingency Plan

This report is provided as an update on the implementation of the Water Shortage and Drought Contingency Plan – Stage 1 (Advisory Stage). The Advisory Stage was implemented in June of 2007. In June of 2008, Governor Schwarzenegger declared a state - wide drought. On February 27, 2009, Governor Schwarzenegger proclaimed a state of emergency due to drought conditions and the resulting water shortage.

√ **Local Precipitation**

- Water year 2007 was critically dry at 67% of annual historic average.
- Water year 2008 was slightly better at 72% of the annual historic average.
- **Water Year 2009 is about 71% of annual historic average and about 79% of historic average to date.**

| Precipitation for Half Moon Bay | | | | | | | | | | | | | |
|---------------------------------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|--------|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Totals |
| Historic Average | 1.3 | 3.4 | 3.7 | 5.5 | 4.8 | 3.9 | 1.6 | 0.6 | 0.2 | 0.0 | 0.1 | 0.3 | 25.4 |
| | 2008 | | | | | | 2009 | | | | | | |
| Water Year 2009 | 0.48 | 2.39 | 2.63 | 0.93 | 8.70 | 2.79 | | | | | | | 17.92 |
| | 2007 | | | | | | 2008 | | | | | | |
| Water Year 2008 | 1.83 | 0.93 | 3.16 | 8.75 | 2.73 | .31 | .16 | .07 | .04 | 0.1 | .12 | .05 | 18.25 |
| | 2006 | | | | | | 2007 | | | | | | |
| Water Year 2007 | .19 | 3.18 | 4.24 | .72 | 5.31 | 0.81 | 1.62 | .41 | .07 | .25 | .03 | .19 | 17.02 |

According to the San Francisco Public Utilities Commission's Hydrological Conditions Report for March 2009, Pilarcitos Reservoir watershed precipitation is 26.49" to date, which is 76% of normal for year to date. Hetch Hetchy System precipitation is 28.98", which is 81.4% of the average annual water year total.

√ **SFPUC – San Francisco Public Utilities Commission**

San Francisco Public Utilities Commission will continue to request its wholesale customers curtail their water use and purchases by 10% this next fiscal year. This will

be the third year that the SFPUC has requested voluntary rationing. These voluntary efforts, along with careful water management, have helped keep water storage at adequate levels to serve customers of the SFPUC water system.

Coastside County Water District continues to request voluntary water rationing (curtailment) by at least 10% and encourages customers to meet Governor Schwarzenegger's request for all Californians to curtail their water usage by 20%.

√ **Continued Mandatory Rationing Planning....**

Because there is the possibility of mandatory rationing next year, if we get less than normal precipitation next winter, staff will continue to work on the following items:

- Drought Ordinance
- Springbrook Software Modifications for Billing
- Rates, Excess Use Charges, and Surcharges

MONTHLY REPORT

To: David Dickson, General Manager
From: Joe Guistino, Superintendent of Operations
Agenda: April 14, 2009

Report
Date: April 3, 2009

Monthly Highlights

Denniston Rehabilitation

The Planning Commission to approve the issuance of a Coastal Development Permit (CDP) and a certificate of a Mitigated Negative Declaration to allow Coastside County Water District (CCWD) to undertake a 5 year dredging operation at Denniston Reservoir.

Denniston Storage Tank Modification Project

All coating and mechanical work is complete.

Source of Supply

Pilarcitos Reservoir and Pilarcitos Wells 4A and 5 were the main source of supply in March.

Systems Improvement

Beautification

- Crews removed much of the overgrown brush from the hill on the north side of the entrance road just west of the Nunes treatment plant. This was done in response to a comment by the Fire District.
- Crews continued to paint the new piping and conduit associated with the Denniston Filter Valve Project.
- Crew refinished cabinets at Nunes Water Treatment Plant (WTP) laboratory.

Other Improvements

- Crews installed a solar power station at Hazen's Tank to provide electricity when boosting the chlorine and circulating the tank. This eliminates the need to carry a car battery up the hill when the weather is too wet to drive up.

Update on Other Activities:

Carnoustie Subdivision

Work on the Carnoustie Subdivision has started. Crews have been inspecting the pipeline installation in the month of March.

Safety/Training/Inspections/Meetings

Meetings Attended

I was on my annual vacation from 9 – 23 March.

10 March – Treatment Supervisor Steve Twitchell met with Kennedy Jenks representatives to discuss the concept for sludge drying at Denniston WTP

27 March – Attended Mel Mello Day luncheon. Treatment/Distribution Operator Jon Bruce was acknowledged for his community efforts throughout the years.

31 March – Contract negotiations with Teamsters Local 856

Safety Committee

Cintas conducted a safety inspection of District sites on 18 March. They were quite pleased with the condition of our facilities and gave us the following commendations:

- Non skid tread on Denniston stairs to creek access
- Safety lighting
- Safety signage and plant process identification
- Nunes top deck and filter gallery lighting
- National Fire Prevention Association (NFPA) /Material Safety Data Sheet (MSDS) board at Nunes entry gate

Improvements needed include life rings on the sedimentation basin, ladder at end of sedimentation basin, new NFPA signage on outer doors and better lighting in the wash water return pump room.

Department of Public Health (DPH)

Short Term Improvement Review

We have been corresponding with DPH via e-mail on specific questions related to the Short Term Improvement Project (STI Project). Their review and formal review letter should be complete in April.

Projects

Tank Recoating Projects

Bid documents for coating and safety improvements to Miramar Tank will be modified per legal counsel request and will be sent out for bidding in April.

Short Term Improvement Project

Working with DPH on specific questions concerning this project.

Denniston Storage Tank Modification Project

All coating and mechanical work is complete. The inlet line was filled on 31 March for pressure testing. Tank cleaning and disinfection will follow. Pending favorable results, the tank and Denniston Water Treatment Plant (WTP) should be on line in April.

Nunes Filter Media Replacement

Waiting for acceptable media samples from contractor.

Nunes Underground Storage Tank (UST) Removal and Above Ground Storage Tank (AGST) Installation Project

Project complete. Notice of Completion ready to be sent.

Denniston Rehabilitation

The County of San Mateo Planning and Building Department petitioned the Planning Commission to approve a Coastal Development Permit (CDP) and a certificate of a Mitigated Negative Declaration to allow Coastside County Water District (CCWD) to undertake a 5 year dredging operation to include 800 cubic yards the first year and 400 cubic yards in the subsequent years. The Planning Commission approved both. The public has until 8 April to appeal before it goes before the Coastal Commission with these recommendations.

El Granada Phase III Pipeline (EGIII)

Two small sinkholes developed on the EG III pipeline in the vicinity of the Stoloski residence and the Sea Horse Ranch. The contractors filled them in promptly.