

**SEASIDE GROUNDWATER BASIN
WATERMASTER**

ANNUAL REPORT – 2008

Integral to the Superior Court Decision (Decision) rendered by Judge Roger D. Randall on March 27, 2006 is the requirement to file an Annual Report. The ruling of the Court requires that the Annual Report be prepared and filed with the Court and mailed to all the parties on or before the 15th day of November every year for the preceding Water Year. This 2008 Annual Report is being filed on or before November 15, 2008, consistent with the provisions of the Decision. This Annual Report addresses the specific Watermaster functions set forth in Section III. L. 3. x. of the Decision. In addition this Annual Report includes a section pertaining to Water Quality Monitoring and Basin Management.

A. Groundwater Extractions

The schedule summarizing the 2008 Water Year (WY 2008) groundwater production from all the producers allocated a Production Allocation in the Seaside Groundwater Basin is provided in Attachment 1, “Seaside Groundwater Basin Watermaster, Reported Quarterly and Annual Water Production From the Seaside Groundwater Basin for all Producers Included in the Seaside Basin Adjudication During Water Year 2008.” For the purposes of this Annual Report the Water Year is defined as beginning October 1, 2007 and ending on September 30, 2008.

B. Groundwater Storage

Monterey Peninsula Water Management District (MPWMD), in cooperation with California American Water (CAW), operated the Seaside Basin Aquifer Storage and Recovery (ASR) testing program during Water Year (WY) 2008. During WY 2008, a total of 60 acre-feet (AF) of water was diverted by CAW from its Carmel River sources during periods of flow in excess of NOAA-Fisheries’ recommended bypass flows, transported through the existing CAW distribution system for injection and storage in the Seaside Basin at the MPWMD’s ASR Well No. 1 (formerly known as the Santa Margarita Test Injection Well) located on former Fort Ord property. This is the only reported storage of non-native groundwater into the Seaside Basin in WY 2008.

During WY 2007, the MPWMD completed construction of a second well, ASR Well No. 2, as part of the Phase 1 ASR Project. This well was drilled in Spring 2007, but delays in obtaining materials and equipment for the on-site infrastructure improvements will delay the startup of injection testing at this new facility until WY 2009. The State Water Resources Control Board (SWRCB) authorization for a jointly-held water right by MPWMD and CAW for the Phase 1 ASR Project was received in December 2007.

Based upon production reported for WY 2008, the following Standard Producers are entitled to a Carryover Credit in accordance with the Decision, Section III. H. 5. for WY 2009:

Granite Rock	81.3 acre-feet
DBO Development	147.8 acre-feet

C. Amount of Artificial Replenishment, if any, performed by Watermaster

No Artificial Replenishment of water was performed by the Watermaster for the WY 2008.

D. Leases or sales of Production Allocation

There have been no water leases or sales during the WY 2008.

E. Use of imported, reclaimed, or desalinated Water as a source of Water for Storage or as a water supply for lands overlying the Seaside Basin

Other than the water imported from the Carmel Basin for the ASR program described in **Section B** above, no imported, reclaimed or desalinated water use (either direct or for storage in the groundwater basin) has been reported to the Watermaster during the WY 2008.

F. Violations of the Decision and any corrective actions taken

Section III. D. of the Decision enjoins all Producers from any Over-Production beyond the Operating Yield in any Water Year in which the Watermaster declares that Artificial Replenishment is not available or possible. Section III. L. 3. j. iii. requires that the Watermaster declare the unavailability of Artificial Replenishment prior to the beginning of the Water Year so that the Producers are informed of the prohibition against pumping in excess of the Operating Yield.

The Watermaster made this declaration regarding the unavailability of Artificial Replenishment for WY 2008 at its Board meeting of February, 2008. A copy of this declaration is contained in Attachment 2.

Total pumping for WY 2008 did not exceed the Operating Yield for the Seaside Basin. However, CAW and the City of Seaside reported annual pumping quantities that exceeded their Standard Productions by 13.7 and 6.8 acre-feet, respectively. Also, the City of Seaside reported annual pumping quantities that exceeded its Alternative Production by 53.0 acre-feet. The Watermaster has assessed CAW and the City of Seaside a Replenishment Assessment for the Operating Yield Over Production, as further described in **Section H**, below.

G. Watermaster administrative costs

The total estimated Administrative costs for Fiscal Year 2008 amounted to \$91,975.00. This included the cost of maintaining an office and paying a part time administrator and some part time staff to take and transcribe minutes of the Watermaster Board meetings during 2008. "Fiscal Year 2008 Administrative Fund Report" is provided as Attachment 3.

H. Replenishment Assessments

A Replenishment Assessment of \$2,485 per acre-foot was established by the Watermaster Board at its October, 2007 meeting for use against Water Year 2008 pumping. At its meeting of October, 2008 the Watermaster Board established a Replenishment Assessment of \$3,040 per acre-foot for use against Water Year 2009 pumping.

Based upon the reported production for WY 2008, CAW's Replenishment Assessment for production over the natural safe yield is \$5,352,939 and its Replenishment Assessment for Operating Yield Over Production is \$34,045. The City of Seaside's Replenishment Assessment for its Municipal System for production over the natural safe yield is \$414,001 and its Replenishment Assessment for Operating Yield Over Production is \$16,898. The City of Seaside's Replenishment Assessment for its Golf Course System for production over the natural safe yield is \$131,705 and its Replenishment Assessment for Operating Yield Over Production is \$131,705. A summary of the calculations for Replenishment Assessment for Water Year 2008 is contained in Attachment 4.

CAW has applied to the Watermaster for a credit against its Replenishment Assessments, as provided for under Section III.M.1.d. It is the Watermaster's intent to grant a credit to CAW under the terms and conditions of a Memorandum of Understanding (MOU) that is currently being prepared between the Watermaster and CAW. The final language of that MOU was still being refined as of the date of filing of this 2008 Annual Report. Finalization and execution of the MOU is expected to occur in December, 2008. A copy of the executed MOU will be provided to the Court at that time.

I. All components of the Watermaster budget

The Watermaster budget has four separate funds: Administrative Fund; Monitoring & Management–Operations; Monitoring and Management–Capital Fund and; Replenishment Fund. Copies of the Fiscal Year 2009 adopted budgets are contained in Attachment 5. The Chief Executive Officer provides monthly financial status reports to the Watermaster Board on all financial activities for each month with year to date totals.

J. Water Quality Monitoring and Basin Management

Water Quality Analytical Results

Groundwater quality data were collected on a quarterly basis during WY 2008 from the enhanced network of monitoring wells. These wells include the Monterey Peninsula Water Management District (MPWMD) monitor wells in and near the coastal subareas of the Seaside Basin, and the new Watermaster coastal sentinel wells that were installed at four locations in and near the basin in WY 2007. Sampling results from these monitoring wells indicate no presence of seawater intrusion into the primary aquifer systems of the Seaside Basin. However, saline water from past seawater intrusion on the former Fort Ord was observed in the sediments above the primary aquifers at the most northerly Watermaster well site. At the other three sites to the south, saline intrusion was limited to the shallow dune and beach sand deposits.

Copies of the sampling results are contained in Attachment 6. The format differs from the 2007 Annual Report in that a single Annual Water Quality report has been prepared for 2008, rather than providing each of the four quarterly reports. The revised format avoids the duplication and redundancy associated with including all four quarterly reports, without sacrificing any of the data or the conclusions and recommendations.

Analysis of the results shows no evidence of water quality changes indicative of seawater intrusion at the locations and depths sampled in the coastal areas of the basin.

All of the recommendations contained in the report in Attachment 6 are being actively pursued by the Watermaster. Funds to pursue these recommendations have been included in the adopted FY 2009 budgets contained in Attachment 5.

Basin Management Database

Groundwater resource monitoring within the Seaside Basin is currently being conducted by numerous entities. The programs consist of: Groundwater Production Monitoring; Groundwater Level Monitoring; Groundwater Quality Monitoring; Surface Water Monitoring; and Precipitation Monitoring.

For successful implementation of the Seaside Basin Monitoring and Management Plan, pertinent historical basic groundwater resource data obtained from the above-mentioned programs has been consolidated into a database to allow more efficient organization and data retrieval. The consolidated database allows for simple identification of differences and discrepancies of datasets compiled by the numerous entities, and to identify data gaps. In addition, the consolidated database allows pertinent groundwater data to be efficiently organized, managed and housed in a single location to facilitate:

- Ongoing data collection
- Data storage and retrieval
- Distribution of basic data to Watermaster members and interested parties
- Preparation of annual and periodic reports to the Watermaster.

Characteristics of existing wells are notated in the database, including type, location, construction details and other pertinent information.

The Watermaster retained RBF Consulting to develop the Basin Management Database. An overview of the Database was contained in Attachment 8 to the Watermaster's 2007 Annual Report.

The database had been in use since early 2008. It is being used to compile the monitoring data that is acquired and to present it in a variety of ways for use in analyzing and interpreting the data for Basin management purposes. Operational experience gained from using the database has identified some modifications that are in the process of being made to improve the efficiency and user-friendliness of use of the database.

Enhanced Monitoring Well Network

The Seaside Basin Monitoring and Management Program called for the development of an Enhanced Monitoring Well Network. The objective of the enhanced network is to fill in data gaps in the previous monitoring well network used by the Monterey Peninsula Water Management District (MPWMD), and others, in order to improve the Basin management capabilities of the Watermaster.

Attachment 9 to the 2007 Annual Report contained a report prepared by Joe Oliver of MPWMD describing the recommended enhanced monitoring well network. The table on the following page contains a summary of the recommendations from that report, along with the status of actions taken by the Watermaster to carry out those recommendations.

The enhanced monitoring well network is being used to obtain additional data that is useful to the Watermaster in managing the Basin.

To establish a consistent set of elevations at each of the monitoring and production wells within the Basin, the Watermaster issued a contract to Central Coast Surveyors to survey each of the well sites, and to put them on a common datum. Having all well water level data related to a common datum is important in preparing water level contour maps, and for other Basin management purposes. This work was completed in June, 2008 and the elevation data has been entered into the Watermaster's comprehensive database.

RECOMMENDATION FROM THE ENHANCED MONITORING WELL NETWORK REPORT	WATERMASTER ACTION TAKEN IN RESPONSE TO THE RECOMMENDATION
<p>Required water level and water quality data has not been provided by some of the water producers in the basin, as required by the Court order. Action to remedy this situation should be taken as soon as possible.</p>	<p>In early 2008 the Watermaster implemented a process of notifying individual well owners of their data reporting obligations. The process is described in the materials contained in <u>Attachment 7</u>. As a result of implementing this process, all required data is now being provided on a regular basis, and is integrated into the Watermaster's database for use in managing the Basin and preparing reports.</p>
<p>At least one existing well in the Dune Sand/Aromas Sand aquifer in the Northern Coastal Subarea should be added to the monitoring well network. There are several candidate wells that would be suitable for this purpose.</p>	<p>During 2008, the Watermaster worked with the U.S. Army to convert an existing well in the area north of the Northern Coastal Subarea to long-term monitor status for the Watermaster. Conversion of the well for the Watermaster's use will require a Use Agreement with the U.S. Army, which will be pursued in 2009.</p> <p>In addition, the FY 2009 Monitoring and Management Plan Operations and Capital Budgets contained in <u>Attachment 5</u> include the funds to plan, design, and construct a new monitoring well in the inland area near the northern basin boundary. Authorization for installation and use of the new monitoring well will also be pursued in 2009.</p>
<p>Seven additional existing wells elsewhere in the basin should be added to the monitoring network for water level data only.</p>	<p>These wells have been added to the Enhanced Monitoring Well Network and data from them is being compiled in the Watermaster's database.</p>
<p>Seven additional wells in the Laguna Seca Subarea should be added to the monitoring well network to increase the database of water quality information from this area. These are the York School, Laguna Seca Driving Range, CAW East Fence, Laguna Seca County Park No. 4, CAW Ryan Ranch No. 7, Laguna Seca Golf No. 12, and Pasadera Main Gate wells.</p>	<p>These wells, with the exception of one well that is planned for destruction (CAW East Fence), have been added to the Enhanced Monitoring Well Network, and data from them is being compiled in the Watermaster's database. These six wells will provide adequate data for this region of the Basin.</p>

Basin Management Action Plan (BMAP)

HydroMetrics LLC was hired by the Watermaster to prepare the BMAP, as required under the Amended Court Decision through the Monitoring and Management Program (M&MP) which the Watermaster submitted to the Court, and which the Court approved.

Work to prepare the BMAP was authorized through the issuance by the Watermaster in February, 2008 of a contract to HydroMetrics in the original amount of \$145,530. A copy of that contract, which provides the detailed scope-of-work, is contained in Attachment 8. During the course of performing the work described in Attachment 8, there was agreement between HydroMetrics and the Watermaster's Technical Advisory Committee to make some minor modifications to the original scope of work in order to produce documents that will be more useful to the Watermaster.

Within the BMAP there will be these Sections:

- Executive Summary
- The Background and Purpose of the Plan
- The State of the Basin
- Supplemental Water Supplies (long-term water supply solutions)
- Groundwater Management Actions (to be taken as interim measures while long-term supplies are being developed)
- Recommended Management Strategies.

The technical solutions to the issues discussed in the BMAP have proven to be complex, and addressing the political and socio-economic impacts of the recommended actions is also complex. Consequently, for a period of several months beginning in mid-2008 a series of Special TAC meetings were held in order to develop solutions that will be technically, politically, and publicly acceptable. These additional meetings required an amendment to the original HydroMetrics contract in the amount of \$7,516. As discussed below, the work to complete the BMAP will extend beyond the September, 2008 target date that was set when the original contract was issued.

Preliminary drafts of all of the Sections of the BMAP have been completed by HydroMetrics. As of the date of preparation of this Annual Report, the TAC had reviewed and held detailed discussions on all of these Sections, and had scheduled meetings to be held in November and December, 2008 in order to complete work on the Final Draft of the BMAP. This will allow the Final Draft to be provided to the Board for consideration at its January, 2009 regular meeting.

In order to keep the Board abreast of the development of the BMAP, and to obtain Board input and direction on certain of the issues, HydroMetrics provided a comprehensive overview presentation of the BMAP to the Board at its October 1, 2008 meeting. This provided an opportunity for input and questions from both the Board and the public.

Seawater Intrusion Response Plans

Two documents have been, or are being, prepared for the Watermaster for the purpose of having plans in place for rapid implementation in the event seawater intrusion is detected

within the Basin. The first of these is an interim plan, and the second of these is a long-term plan.

Interim Plan. As required in the Monitoring and Management Program (M&MP), the Watermaster is to develop an Interim Seawater Intrusion Contingency Plan, to be implemented in the event seawater intrusion is detected prior to the development of a long-term Seawater Intrusion Contingency Plan. Under its contract with the Watermaster, the MPWMD prepared the Interim Seawater Intrusion Contingency Plan contained in Attachment 9. The Board approved this Interim Plan at its meeting of June 4, 2008.

The Interim Plan sets forth a series of procedures to control seawater intrusion, adapted from Section IV C. of the M&MP.

Long-Term Plan. HydroMetrics LLC was hired by the Watermaster to prepare a long-term Seawater Intrusion Response Plan (SIRP), also as required in the M&MP. Work to prepare the SIRP was authorized through the issuance by the Watermaster in February, 2008 of a contract to HydroMetrics in the original amount of \$145,530. A copy of that contract, which provides the detailed scope-of-work, is contained in Attachment 8.

Within the SIRP there will be these Sections:

- Executive Summary
- Background and Purpose
- Conformance with Other Documents
- Seawater Intrusion Indicators and Triggers (how seawater intrusion will be detected)
- Seawater Intrusion Contingency Actions (containing a recommended set of actions to be taken in the event seawater intrusion is detected at any of the monitoring or production wells within the Basin)

The technical solutions to the issues discussed in the SIRP have proven to be complex, and addressing the political and socio-economic impacts of the recommended actions is also complex. Consequently, for a period of several months beginning in mid-2008 a series of Special TAC meetings were held in order to develop solutions that will be technically, politically, and publicly acceptable. These additional meetings required an amendment to the original HydroMetrics contract in the amount of \$7,516. As discussed below, the work to complete the SIRP will extend beyond the September, 2008 target date that was set when the original contract was issued.

Preliminary drafts of all of the Sections of the SIRP have been completed by HydroMetrics. As of the date of preparation of this Annual Report, the TAC had reviewed and held detailed discussions on all of these Sections, and had scheduled meetings to be held in November and December, 2008 in order to complete work on the Final Draft of the SIRP. This will allow the Final Draft to be provided to the Board for consideration at its January, 2009 regular meeting.

In order to keep the Board abreast of the development of the SRIP, and to obtain Board input and direction on certain of the issues, HydroMetrics provided a comprehensive overview presentation of the SIRP to the Board at its October 1, 2008 meeting. This provided an opportunity for input and questions from both the Board and the public.

Seawater Intrusion Analysis

The Watermaster retained HydroMetrics LLC to prepare the WY 2008 Seawater Intrusion Analysis Report (SIAR) required under the Seaside Basin Monitoring and Management Program. A copy of the contract under which HydroMetrics performed this work is contained in Attachment 8. The 2007 SIAR was also prepared by HydroMetrics under a subcontract with RBF Consulting.

The SIAR is lengthy, so only the findings and conclusions of it are provided in this Annual Report. A complete copy of the document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

The SIAR provides an analysis of data collected during Water Year 2008. It presents the following principle findings and conclusions:

- Depressed groundwater levels, continued pumping in excess of recharge and fresh water inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin.
- In spite of these factors, multiple forms of analyses led to the conclusion that no seawater intrusion is currently being observed in existing monitoring wells within the Basin.
- The only wells displaying increasing chloride levels are the deep Ord Terrace well and the southernmost of the recently installed Watermaster Sentinel wells (SBWM-4 deep). The increasing chloride levels do not appear to be the result of seawater intrusion. [Note: The water quality of well SBWM-4 is being monitored closely.]
- No wells display decreasing sodium/chloride ratios (which could be indicative of incipient seawater intrusion) except for the 900 feet depth sample from SBWM-4. This is the southernmost of the four coastal sentinel monitoring wells installed by the Watermaster in 2007. More data will need to be acquired to determine whether a trend is being established. [Note: This data is being collected.]
- Maps of chloride concentrations do not show chlorides increasing towards the coast.
- In spite of the geochemical data, the water level and pumping data suggest that a potential for seawater intrusion exists. Coastal water levels in the deep zone remain significantly below sea level. However, groundwater levels are above sea level in parts of the Southern Coastal and Laguna Seca Subareas.
- Two potential processes may explain why no seawater intrusion has been observed in the deep coastal wells:
 1. The seawater/fresh water interface is sufficiently far offshore in the deep zone that it has not yet reached the coastal monitoring wells. A seawater interface may be moving towards the coast, but may take many years to arrive. Before the interface arrives, pumping will mine much of the fresh water stored beneath the ocean in the lower aquifer. OR

2. Overlying aquifers and aquitards limit or prevent seawater from percolating into the lower aquifer. Water level data suggest that this process is almost certainly occurring. Coastal water levels in aquifers that are in close hydraulic communication with the ocean remain near sea level because the ocean acts as a constant-pressure reservoir. Coastal water levels in the deep aquifer are more than 20 feet below sea level, suggesting that this aquifer is not in close communication with the ocean. This is further evidence that groundwater in the deep aquifer is being mined rather than replaced by seawater.

The Watermaster continues to analyze the data that is being gathered at the various monitoring sites in order to keep a close watch on the conditions within the Basin, as discussed under the “Enhanced Monitoring Well Network” heading above.

K. Recommendations

The Seaside Basin Watermaster Board has taken an aggressive approach to meet all of the Court’s established deadline dates. All of the Phase 1 Scope of Work activities, which are described in the “Implementation Plan for the Seaside Basin Monitoring and Management Program” dated March 7, 2007, have essentially been completed as of the date of preparation of this Annual Report. At the Watermaster Board meeting held on October 23, 2008 the Board adopted the budgets contained in Attachment 5, which support carrying out all elements of the “Seaside Groundwater Basin Management and Monitoring Program Anticipated 2009 Scope of Work.” That Scope of Work describes the M&MP activities that will be conducted during Fiscal Year 2009. A copy of this Scope of Work is contained in Attachment 10.

As described in **Section J** above, information from the Enhanced Monitoring Well Network will be utilized to detect any seawater intrusion. The response actions described in that Section will be implemented, if seawater intrusion is detected within the Basin.

ATTACHMENT 1

GROUNDWATER EXTRACTIONS

Seaside Groundwater Basin Watermaster
Reported Quarterly and Annual Water Production (in Acre Feet) From the Seaside Groundwater Basin
For All Producers Included in the Seaside Basin Adjudication -- Water Year 2008
All Values in Acre-Feet (AF)

Producer	Category of Producer	Quarters				Annual Reported Total	Base Operating Yield Allocation	Carryover Credit from Water Year 2007 (See Footnote 7)	Carryover Credit to Water Year 2009 (See Footnote 7)
		Oct-Dec 2007	Jan-Mar 2008	Apr-Jun 2008	Jul-Sep 2008				
<u>Coastal Subareas</u>									
CAW (Coastal Subareas)	Standard	1,049.9	224.8	721.5	1,333.6	3,329.8	3,504.2	0.0	0.0
Seaside (Municipal)	Standard	76.0	53.7	92.0	72.5	294.2	287.4	0.0	0.0
Granite Rock Company	Standard	0.0	0.0	0.0	0.0	0.0	27.1	54.2	81.3
DBO Development No. 27	Standard	0.0	0.0	0.0	0.0	0.0	49.3	98.6	147.8
City of Seaside (Golf Courses)	Alternative	87.2	36.2	200.7	268.9	593.0	540.0	N/A	N/A
Sand City	Alternative	0.0	0.0	0.0	0.0	0.0	9.0	N/A	N/A
Security National Guaranty	Alternative	2.0	2.1	0.2	0.0	4.3	149.0	N/A	N/A
M.E. Calabrese 1987 Trust	Alternative	0.0	0.0	0.0	0.0	0.0	14.0	N/A	N/A
Alderwoods Group (Mission Memorial Park)	Alternative	4.2	1.4	5.4	9.8	20.8	31.0	N/A	N/A
Coastal Subarea Totals		1,219.3	318.2	1,019.8	1,684.8	4,242.1	4,611.0	N/A	N/A
<u>Laguna Seca Subareas</u>									
CAW (Inland Subareas)	Standard	113.1	88.4	156.2	175.4	533.1	345.0	0.0	N/A
Pasadera Country Club	Alternative	11.2	0.1	64.9	65.2	141.4	251.0	N/A	N/A
Laguna Seca/Bishop	Alternative	31.7	9.3	122.8	136.4	300.2	320.0	N/A	N/A
York School	Alternative	4.0	2.9	7.0	8.1	22.0	32.0	N/A	N/A
Laguna Seca Park (County)	Alternative	7.3	3.1	9.4	13.4	33.2	41.0	N/A	N/A
Laguna Seca Subarea Totals		167.3	103.8	360.3	398.5	1,029.9	989.0	N/A	N/A
Seaside Basin Production Totals =						5,272.0	5,600.0	N/A	N/A
Total Production by Alternative Producers =						1,114.9			
Total Production by Standard Producers =						4,157.1			

Notes:

- The water year begins October 1 and ends September 30 of the following calendar year. For example, WY 2008 began on October 1, 2007, and will end on September 30, 2008.
- All values are rounded to the nearest tenth of an acre-foot. Where required, reported data were converted to acre-feet utilizing the relationship: 325,851 gallons = 1 acre-foot.
- "Operating Yield" values based on Seaside Basin Adjudication decision as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M66343).
- Any minor discrepancies in totals are attributable to rounding.
- Carryover Credits are as defined in the amended Seaside Basin Adjudication decision, and apply only to Standard Producers. Since the Storage Capacity of the Basin has not yet been established (this will be done in early 2009), it is assumed that the Carryover Credits shown above will not exceed any of the Standard Producer's Storage Allocations, and are therefore applicable toward Water Year 2009.
- The Base Operating Yield Allocations are derived directly from the Decision, and do not include any Carryover Credits from the previous Water Year. Carryover credits are included in determining whether or not a Standard Producer exceeded its Operating Yield allocation.
- The carryover credit shown for CAW is the combined total carryover credit for CAW's Coastal Subarea and Inland Subarea. CAW's total carryover credit is shown with the Coastal Subarea only, since the Seaside Basin Adjudication decision as amended does not differentiate between the Coastal and Inland Subareas in determining a producer's carryover credit amount.
- CAW = California American Water.

ATTACHMENT 2

**WATERMASTER DECLARATION OF NON-
AVAILABILITY OF ARTIFICIAL REPLENISHMENT
WATER**

NOTICE TO ALL SEASIDE GROUNDWATER PRODUCERS:

The Watermaster has declared for Water Year 2008 that **NO** Artificial Replenishment Water is available to offset Over-Production in excess of the Operating Yield for the Seaside Groundwater Basin. Pursuant to the Amended Decision entered in the Seaside Adjudication, **NO** production over the Operating Yield may occur during the 2008 Water Year. All producers are limited in production to the following quantities of water:

Coastal Subarea Alternative Producers:

Seaside (Golf)	540 acre-feet
SNG	149 acre-feet
Calabrese	14 acre-feet
Mission Memorial (Alderwood)	31 acre-feet
Sand City	9 acre-feet

Laguna Seca Subarea Alternative Producers:

Pasadera	251 acre-feet
Bishop	320 acre-feet
York School	32 acre-feet
Laguna Seca County Park	41 acre-feet

Coastal Subarea Standard Producers:

California American Water	3,504 acre-feet
Seaside (Municipal)	287 acre-feet
Granite Rock	81 acre-feet
D.B.O. Development 27	147 acre-feet

Laguna Seca Subarea Standard Producers:

California American Water	345 acre-feet
---------------------------------	---------------

¹ Includes base allocation of 3,504 acre-feet.

² Includes base allocation of 27 acre-feet plus an additional 54 acre-feet of carry-over from WYs 2006 and 2007.

³ Includes base allocation of 49 acre-feet plus an additional 98 acre-feet of carry-over from WYs 2006 and 2007.

ATTACHMENT 3

WATERMASTER ADMINISTRATIVE COSTS

Seaside Groundwater Basin Watermaster Fiscal Year 2008 Administrative Fund Report

	2008 Adopted Budget	2008 Income & Actual/Estimated Expenses
Assessment Income		
Dedicated Reserve	\$ 25,000	\$ 25,000
FY Rollover	21,216	21,216
Administrative Fund	87,000	95,000
Totals	\$ 133,216	\$ 141,216
 Expense		
Contractual Services - Administrative	108,000	91,975
Total Expenses	108,000	91,975
Total Available	25,216	49,241
Less Dedicated Reserve	25,000	25,000
Net Available	\$ 216	\$ 24,241

Note: Estimated year-end expenses prepared using actual expenses through 9/30/08 and estimated expenses for 10/1/08 - 12/31/08.

ATTACHMENT 4

REPLENISHMENT ASSESSMENT CALCULATIONS

SEASIDE BASIN WATERMASTER PRODUCER ALLOCATIONS							
Initial Basin-Wide Operating Yield⁽¹⁾			5600	Coastal Operating Yield⁽¹⁾			4611
Natural Safe Yield (NSY)⁽²⁾			3000	Laguna Seca Operating Yield⁽¹⁾			989
ALTERNATIVE PRODUCER ALLOCATIONS							
Coastal Subarea⁽³⁾		Acre-Feet	Laguna Seca Subarea⁽³⁾		Acre-Feet		
Seaside (Golf)		540	Pasadera		251		
SNG		149	Bishop		320		
Calabrese		14	York School		32		
Mission Memorial (Alderwood)		31	Laguna Seca County Park		41		
Sand City		9					
Total⁽¹⁾		743	Total⁽¹⁾		644		
STANDARD PRODUCER ALLOCATIONS							
Coastal Operating Yield Available to Standard Producers (AFY)			3,868	Laguna Seca Operating Yield Available to Standard Producers (AFY)			345
Coastal Subarea	Standard Producer Allocations		AFY Available to This Producer	Laguna Seca Subarea	Standard Producer Allocations		AFY Available to This Producer
	Base Water Right %⁽⁴⁾	Weighted %⁽⁵⁾			Base Water Right %⁽⁴⁾	Weighted %⁽⁵⁾	
California American Water	77.55%	90.60%	3,504.2	California American Water	100.00%	100.00%	345.0
Seaside (Municipal)	6.36%	7.43%	287.4				
Granite Rock	0.60%	0.70%	27.1				
D.B.O. Development No. 27	1.09%	1.27%	49.3				
Total	85.60%	100.00%	3,868.0	Total	100.00%	100.00%	345.0
Allocation of Available Operating Yield Among Standard Producers	Base Water Right Available to this Producer (AF)	Carryover Credits from Prior Water Year (AF)⁽⁶⁾	Total Available to this Producer in This Water Year (AF)	% of Total Operating Yield Allocation Available to Standard Producers in This Water Year			
California American Water	3,849.2	0.0	3,849.2	88.17%			
Seaside (Municipal)	287.4	0.0	287.4	6.58%			
Granite Rock	27.1	54.2	81.3	1.86%			
D.B.O. Development No. 27	49.3	98.6	147.9	3.39%			
Total	4,213.0	152.8	4,365.8	100.00%			
Footnotes:							
(1) From page 17 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.							
(2) From page 14 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.							
(3) From page 21 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.							
(4) From Table 1 on page 19 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.							
(5) Calculated from the Base Water Right percentages in the adjacent column.							
(6) From the "Annual Report 2007" tab of this Spreadsheet. This same amount is also stated on page 2 of Watermaster's "Annual Report-2007."							

CALCULATION OF REPLENISHMENT ASSESSMENTS

Using the Basin-wide methodology approved by the Court on January 12, 2007, and as shown in detail on the spreadsheet contained in this Attachment, Watermaster calculated the Water Year 2008 Replenishment Assessments as follows:

2008 Replenishment Assessment Unit Charge = \$2,485
 NSY Available to Standard Producers for WY 2007 (AF)⁽¹⁾⁽³⁾ = 1938.1

	WY 2008 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
Standard Producers									
California American Water	3862.9	88.17%	1,708.8	2,154.1	\$5,352,939	3,849.2	13.7	\$34,045	\$5,386,983
Seaside (Municipal)	294.2	6.58%	127.6	166.6	\$414,001	287.4	6.8	\$16,898	\$430,899
Granite Rock	0.0	1.86%	36.1	0.0	\$0	81.3	0.0	\$0	\$0
D.B.O. Development No. 27	0.0	3.39%	65.6	0.0	\$0	147.9	0.0	\$0	\$0
Total Production	4,157.1	100.00%	1,938.1	2,320.7	\$5,766,940	4,365.8	20.5	\$50,943	\$5,817,882
	WY 2008 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
Alternative Producers ⁽²⁾									
City of Seaside (Golf Courses)	593.0	N/A	540.0	53.0	\$131,705	540.0	53.0	\$131,705	\$263,410
Total Production	593.0	N/A	540.0	53.0	\$131,705	540.0	53.0	\$131,705	\$263,410

Footnotes:

(1) Calculated as the difference between the NSY amount of 3,000 AF (from the "2008 Annual Report Sheet 1" in this Spreadsheet) and the Total Production from Alternative Producers of 1,114.9 AF (from the "Annual Production Report 2008" sheet in this Spreadsheet).

(2) In accordance with Section III.L.3.j.iii of the Amended Decision, Alternative Producers are not subject to the Replenishment Assessments unless their pumping exceeds their pumping allocation set forth in Table 2 of the Amended Decision. If that allocation amount is exceeded, then the Replenishment Assessments for both NSY Overproduction and Operating Yield Overproduction apply to the amount by which the allocation was exceeded.

(3) The City of Seaside (Golf Course) pumped in excess of its allocated amount by 53.0 AF, as noted in the table above. This overpumping amount does not serve to reduce the NSY available to Standard Producers, since a Replenishment Assessment charge against Seaside results from this overpumping. If the overpumping amount also reduced the NSY available to Standard Producers, it would result in double-assessing this overpumping amount, because the Standard Producers would be assessed for this amount, too.

ATTACHMENT 5
WATERMASTER BUDGETS

**Seaside Groundwater Basin Watermaster
Fiscal Year 2009 Administrative Fund Budget**

	2009 Adopted Budget
Ordinary Income/Expense	
Income	
Dedicated Reserve	\$ 25,000
FY Rollover	24,241
Administrative Fund	108,759
Totals	\$ 158,000
Expense	
Contractual Services - Administrative	108,000
Contractual Services - Legal Advisor	25,000
Total Expenses	133,000
Total Available	25,000
Less Dedicated Reserve	25,000
Net Available	\$ -

Seaside Groundwater Basin Watermaster Fiscal Year 2009 Monitoring & Management Plan Adopted Operations Budget

Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽⁹⁾				Total
				MPWMD	MCWRA	Private Consultants	Contractors	
Labor								
			Technical Project Manager	\$0	\$0	\$100,000	\$0	\$100,000
M.1 Program Administration								
	M.1.a		Project Budget and Controls	\$0	\$0	\$0	\$0	\$0
	M.1.b		Assist with Board and TAC Agendas	\$0	\$0	\$0	\$0	\$0
	M.1.c		Preparation and Attendance of Meetings	\$0	\$0	\$0	\$0	\$0
	M.1.d		Prepare Board/ TAC Status Updates and Reports	\$0	\$0	\$0	\$0	\$0
	M.1.e		Peer Review of Documents and Reports	\$0	\$0	\$0	\$0	\$0
	M.1.f		QA/QC	\$0	\$0	\$0	\$0	\$0
I.1 Initial Phase 1 Monitoring Well Construction (Task Completed in Phase 1)								
I.2 Production, Water Level and Quality Monitoring								
	I. 2. a.		Database Management					
		I. 2. a. 1.	Conduct Ongoing Data Entry/ Database Maintenance	\$9,600	\$920	\$20,000	\$0	\$30,520
		I. 2. a. 2.	Verify Accuracy of Production Well Meters	\$800	\$0	\$0	\$3,750	\$4,550
	I. 2. b.		Data Collection Program					
		I. 2. b. 1.	Site Representation and Selection	\$1,600	\$0	\$2,000	\$0	\$3,600
		I. 2. b. 2.	Collect Monthly Water Levels ⁽⁶⁾	\$3,360	\$0	\$0	\$0	\$3,360
		I. 2. b. 3.	Collect Quarterly Water Quality Samples ⁽¹⁾⁽⁵⁾⁽⁶⁾	\$43,480	\$0	\$0	\$28,000	\$71,480
		I. 2. b. 4.	Update Program Schedule and Standard Operating Procedures.	\$1,000	\$1,150	\$1,000	\$0	\$3,150
		I. 2. b. 5.	Monitor Well Construction ⁽⁷⁾	\$2,400	\$0	\$5,000	\$0	\$7,400
		I. 2. b. 6.	Reports	\$5,680	\$575	\$1,000		\$7,255
I.3 Basin Management								
	I. 3. a.		Enhanced Seaside Basin Groundwater Model	\$9,600	\$2,760	\$300,000	\$0	\$312,360
		I. 3. a. 1	Update the Existing Model	(Costs Included Under I.3.a)				
		I. 3. a. 2	Develop Protective Water Levels	(Costs Included Under I.3.a)				
		I. 3. a. 3	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	(Costs Included Under I.3.a)				
	I. 3. b.		Complete Preparation of Basin Management Action Plan ⁽⁸⁾	\$3,200	\$1,840	\$40,000	\$0	\$45,040
	I. 3. c.		Refine and/or Update the Basin Management Action Plan ⁽⁹⁾	\$0	\$0	\$0	\$0	\$0
I.4 Seawater Intrusion Contingency Plan								
	I. 4. a.		Oversight of Seawater Intrusion Detection and Tracking	\$3,600	\$3,450	\$2,000	\$0	\$9,050
	I. 4. b.		Analyze and Map Water Quality from Coastal Monitoring Wells	(Costs Included Under I.4.a)				
	I. 4. c.		Annual Report- Seawater Intrusion Analysis	(Costs Included Under I.4.a)				
	I. 4. d.		Complete Preparation of Seawater Intrusion Response Plan ⁽²⁾⁽⁸⁾	\$3,200	\$2,760	\$35,000	\$0	\$40,960
	I. 4. e.		Refine and/or Update the Seawater Intrusion Response Plan ⁽²⁾⁽⁹⁾	\$0	\$0	\$0	\$0	\$0
	I. 4. f.		If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ⁽²⁾	(No Costs are Included for This Task, as This Task Will Likely Not be Necessary During 2009. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)				
TOTALS CONSULTANTS & CONTRACTORS				\$87,520	\$13,455	\$506,000	\$31,750	
SUBTOTAL not including Technical Program Manager =								\$538,725
Contingency (not including Technical Program Manager or Task I.3.a) @ 20% ⁽⁴⁾ =								\$45,273
TPM								\$100,000
TOTAL=								\$683,998

Footnotes:

- (1) An outside contractor would be used to perform the induction logging, and potentially to also collect some water quality samples in conjunction with doing the induction logging. MPWMD is expected to perform portions of the work of this Subtask, and would likely be the party that contracts with the Contractor to perform the induction logging and sample collection work on certain of the wells.
- (2) The response plan would only be implemented in the event sea water intrusion is determined to be occurring.
- (3) Within the context of this document the term "Consultant" refers either to a Private Consultant providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD), or to the Monterey County Water Resources Agency (MCWRA). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.
- (4) Due to the uncertainties of the exact scopes of some of the Tasks listed above at the time of preparation of this Budget, e.g. Tasks I.3.b, I.3.c, I.4.d, and I.4.e, it is recommended that a 20% Contingency be included in the Budget.
- (5) Includes approximately \$10,000 in potential well site retrofitting costs that may be necessary in order to make some of these wells available for use as monitoring wells.
- (6) Does not include costs for MPWMD to collect water level data or water quality samples from wells other than those that are part of the basic monitoring well network, i.e. for private well owners who have requested that the Watermaster obtain this data for them. Costs to obtain that data are to be reimbursed to the Watermaster by those well owners, so there should be no net cost to the Watermaster for that portion of the work under these Tasks.
- (7) Costs to design, obtain right-of-way, obtain permits and approvals, to perform CEQA compliance work, and to construct the Monitoring Well will be included in the M&MP Capital Budget for 2009, and are not included in this Operations Budget.
- (8) Consultant costs include a \$25,000 allowance for costs to comply with applicable CEQA requirements.
- (9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.

**Seaside Groundwater Basin Watermaster
Fiscal Year 2009 Monitoring & Management Plan
Adopted Capital Fund Budget**

	<u>2009 Adopted Budget</u>
Assessment Income	
Monitoring & Management Fund - Capital	<u>\$ 225,000</u>
Adopted Budget - Installation of one monitoring well	
(Including consultant & well contractor costs)	<u>\$ 225,000</u>
Totals	<u><u>\$ 225,000</u></u>

**Seaside Groundwater Basin Watermaster
Fiscal Year 2009 Adopted Replenishment Fund Budget**

Replenishment Fund	2009 Proposed Budget
California American Water	
Producers	\$6,690,432
Operating Yield Overproduction Replenishment	\$ 41,648
Total California American	\$ 6,732,080
CAW Credit Against Assessment	\$ -
CAW Unpaid Balance	\$ 6,732,080
City of Seaside - Municipal	
Producers	\$ 487,920
Operating Yield Overproduction Replenishment	\$ 69,085
Total Municipal	\$ 557,005
City of Seaside - Golf Courses	
Exceeding Natural Safe Yield - Alternative Producer	\$ 161,120
Operating Yield Overproduction Replenishment	\$ 161,120
Total Golf Courses	\$ 322,240
Total City of Seaside	\$ 879,245
City of Seaside Paid Assessments	\$ -
City of Seaside Unpaid Balance	\$ 879,245
Total Assessments	\$ 7,611,325

Note: As discussed in Section H. of this Annual Report, a credit is expected to be granted to CAW against its Replenishment Assessments.

ATTACHMENT 6

WATER QUALITY ANALYTICAL RESULTS



**MONTEREY PENINSULA
WATER MANAGEMENT DISTRICT**

5 HARRIS COURT, BLDG. G
POST OFFICE BOX 85
MONTEREY, CA 93942-0085 • (831) 658-5600
FAX (831) 644-9560 • <http://www.mpwmd.dst.ca.us>

**SEASIDE BASIN WATERMASTER
MEMORANDUM 2008-04**

Date: October 31, 2008
To: Seaside Basin Watermaster
From: Joe Oliver, PG, CHg, Senior Hydrogeologist
Tom Lindberg, Associate Hydrologist
Subject: Annual Report of Water Year 2008 Groundwater Quality and Level
Data Collected for the Seaside Groundwater Basin Watermaster

SUMMARY

This memorandum transmits and summarizes groundwater quality and groundwater level data collected for the Seaside Groundwater Basin Watermaster Board (Watermaster) during Water Year (WY)¹ 2008. This report incorporates the data that were collected and reported in quarterly reports that were provided to the Watermaster earlier in WY 2008. This information is being provided to the Watermaster for information purposes and to include in the Watermaster 2008 Annual Report. This report is in compliance with the monitoring protocols described in the Watermaster's *Seaside Basin Monitoring and Management Program* (SBMMP, revision date September 5, 2006), which was prepared in response to the court decision filed March 27, 2006 (as amended by February 9, 2007 filing) in the Seaside Basin adjudication case. This document has been prepared by the Monterey Peninsula Water Management District (MPWMD) on behalf of the Watermaster.

This document is organized into the following five categories of data:

- MPWMD and other basin monitor wells water quality data
- Watermaster Sentinel wells water quality data
- Basin Producer wells water quality data
- Basin Producer wells water level data
- Basin monitor wells water level data

¹ The WY begins on October 1, and ends September 30 of the indicated year.

WATER QUALITY DATA: MPWMD AND OTHER BASIN MONITOR WELLS

MPWMD Coastal Monitor Well Network

Under the current monitoring program conducted for the Watermaster, the MPWMD collects *quarterly* samples from six monitor wells at three locations that are closest to the coastline, and *annually* from six additional wells at three locations that are farther from the coastline. The well numbers, names and sampling schedule for the MPWMD coastal monitor wells currently being sampled for the Watermaster are listed below.

MPWMD Coastal Monitor Wells

<u>Well Number</u>	<u>Well Name</u>	<u>Sample Interval</u>
15S01E15N3	MSC-Shallow	quarterly
15S01E15N2	MSC-Deep	quarterly
15S01E15F1	PCA-W-Shallow	quarterly
15S01E15F2	PCA-W-Deep	quarterly
15S01E11Pa	FO-09-Shallow	quarterly
15S01E11Pb	FO-09-Deep	quarterly
15S01E15K5	PCA-E-Shallow	annually
15S01E15K4	PCA-E-Deep	annually
15S01E23Ca	Ord Terrace-Shallow	annually
15S01E23Cb	Ord Terrace-Deep	annually
15S01E12Fa	FO-10-Shallow	annually
15S01E12Fc	FO-10-Deep	annually

These sites are also shown on **Figure 1** and completion data for these wells are shown in **Table 1**. At each site, a “shallow” and “deep” monitor well have been installed (either in separate boreholes or as multiple completions in a single borehole), generally corresponding to well completions within the two principal aquifer units that have been historically recognized in the Seaside Basin, the Paso Robles Formation (QTp) and Santa Margarita Sandstone (Tsm), respectively. The monitor wells are constructed of 2-inch PVC casing, with screens adjacent to the more permeable (i.e., based on lithologic and geophysical logging analyses) sand “packages” within each aquifer unit. The aquifer units are separated from each other in the wells by cement strata-isolation seals.

MPWMD Coastal Monitor Wells Water Sample Collection

Water sample collection from the MPWMD coastal monitor wells is accomplished by “air-lift” pumping. The method utilizes a 3/4-inch PVC dedicated airline in the well, which is coupled to a portable air compressor. The wellhead configuration is fashioned after that shown in **Figure 2**. Due to the small diameter of the monitor wells, the well casing is used as the “eductor” pipe, rather than a separate eductor pipe inside the well. Through experience, it has been determined that acceptable pumping results can be

achieved if the bottom of the airline is placed at a depth that gives approximately 50 percent pumping submergence (i.e., the ratio of the length of the airline below the pumping water level to the total length of the airline). The air-lift method can be inappropriate for certain groundwater quality constituents due to chemical changes brought about by air entrainment in the purged water; however, it is considered appropriate for the suite of general minerals and trace inorganic constituents that are currently analyzed from the collected samples.

The volume of water removed from each well prior to sampling is normally three casing volumes, as a standard sampling protocol. Sampling is supplemented by field measurement of several indicator parameters (i.e., pH, temperature, Specific Conductance) that are collected during pumping, which ensures that the groundwater quality has stabilized prior to sample collection. Upon collection of the samples, samples are handled through applicable chain-of-custody procedures and are analyzed by a State-certified water chemistry laboratory.

MPWMD Coastal Monitor Wells Water Quality Results

Water chemistry analytical results for the samples collected during WY 2008 from the MPWMD coastal monitor wells are provided in the table in **Appendix 1**. This table and other water quality and level data tables in this document were prepared utilizing the “report” feature of the groundwater resources database that was created for the Watermaster in 2007.

In general, the chemical data from the WY 2008 sampling of these monitor wells do not show significant changes relative to the previous samplings shown, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor well completions. It should be noted, however, that the ability to characterize groundwater quality conditions over the entire thicknesses of the “shallow” and “deep” aquifer systems at these locations is limited in that the monitor wells from which these samples were collected have short screened intervals, generally 40 to 50 feet in total length (**Table 1**). Therefore, the sampled intervals represent only a small portion of the total aquifer thicknesses at each well location.

As an additional guide in assessing seawater intrusion, the Watermaster’s *Interim Seawater Intrusion Contingency Plan* (ISICP) includes an interim definition for seawater intrusion in the Seaside Basin. The ISICP can be found on the Watermaster’s website, which is located at <http://www.seasidebasinwatermaster.org/sbwmARC.html>. The Watermaster’s June 4, 2008 Board agenda packet includes the ISICP (Item VIII. A. 2. a), which states that “interim notice for seawater intrusion will be defined as a 50 percent increase above ambient chloride concentrations for any specific monitoring well location”. As described in the ISICP, “the basis for determining ambient chloride concentrations will be the mean value at each well as calculated from the historical data available prior to the adoption of the adjudication decision in March 2006”. Accordingly, a statistical summary of the chloride concentration values prior to March 2006 for each of the six monitor wells above was determined, as shown in **Table 2**. This table also

includes a statistical summary of specific conductance, which is a relative measure of the total dissolved solids (salts) concentration in the groundwater samples.

The mean chloride concentration values from **Table 2** were compared to the most recent values from the Third Quarter WY 2008 samples, and the relative percent differences were determined, as shown in **Table 3**. For each well, the most recent sample results were below the ambient (mean) values, with the relative percent differences ranging from 1% to 34% less than the ambient levels. Accordingly, the Third Quarter WY 2008 results are in conformance with provisions of the ISICP and do not indicate potential seawater intrusion.

It is notable that current chloride concentrations for both the shallow and deep monitors are less than the ambient (i.e., mean historical) values. This is because earlier in the water quality records for these wells, major cation and anion chemistry was not as stable as measurements have been in more recent years. This might be explained in a combination of two ways: (a) for several water quality sample collections during the period after the initial well completions, minor observed chemical variations may be attributable to residual effects from drilling fluids used during well completion, and (b) for the shallow monitor wells, which show more variance from the ambient levels, it is possible that the more stable (and lower) chloride values in the current samples reflect the reduction in coastal pumping from specific “shallow” aquifer well sources that have reduced or eliminated pumping in recent years. With the current data control, it would be difficult to evaluate these observances with greater certainty.

Other Basin Monitor Wells Water Quality Results

Also included in the table in **Appendix 1** are the groundwater quality results from the WY 2008 for seven additional inland monitor wells that is listed below.

Other Basin Monitor wells sampled in WY 2008

<u>Well Number</u>	<u>Well Name</u>
15S01E22Cd	CAW Del Monte Test
16S02E05Gf	Laguna Seca Recreation Area –MCPD#2
16S02E06H_	Laguna Seca Golf-New #12
16S02E05Mg	Pasadera Golf-Main Gate
15S01E36Qa	York School 01-349
16S02E06C2	LS Driving Range
16S01E01E50	CAW-Ryan Ranch #7

The general locations of these wells within the Seaside Basin, as with the other monitor and production wells that are included in this report, are shown on the map in **Figure 3**. These wells were added for sample collection on an annual basis in 2008 in order to provide enhanced spatial coverage of groundwater quality data in the basin. These additional monitor wells will be sampled annually for the Watermaster in the fourth

quarter of future water years (i.e., during the month of July). Additional information regarding the description of these wells as part of basin monitor well network enhancement plan is provided in *MPWMD Seaside Basin Watermaster Technical Memorandum 2007-04*. It is notable that, based on the data collected from these additional monitor wells, chloride concentrations (and other constituents) are generally higher in the inland area of the basin (Laguna Seca Subarea) than in the coastal areas of the basin. The reasons for this are not fully understood, but are likely due to a combination of lithologic, groundwater recharge, groundwater flow and groundwater residence time differences. This occurrence merits further evaluation as additional data are collected in the future.

WATER QUALITY DATA: WATERMASTER SENTINEL WELLS

Locations of the four recently-constructed Watermaster “Sentinel Wells” are shown on **Figure 1**, and are listed below.

Watermaster Sentinel Wells Sampled in WY 2008

<u>Well Number</u>	<u>Well Name</u>
15S01E02Pb	Sentinel MW #1
15S01E11Ea	Sentinel MW #2
15S01E11Eb	Sentinel MW #3
15S01E15Gb	Sentinel MW #4

The drilling of these wells in and near the Northern Coastal Subarea of the basin indicated that the Tsm sediments do not extend as far north as previously interpreted, and transition into sediments assigned to the Purisima Formation (Tp). The Tp sediments are less permeable than the Tsm, but the Tp sediments are thicker; additional analysis and discussion of the hydrogeologic data from the sentinel wells has been conducted as part work on the Watermaster’s *Basin Management and Action Plan* and *Seawater Intrusion Analysis Report* in 2008.

In addition to quarterly induction logging conducted at the Sentinel wells, water samples were collected on two occasions during WY 2008, and the water chemistry analytical results are provided in the table in **Appendix 2**. These wells have total screen lengths ranging from 100 to 195 feet, over total lengths of intermittent screened intervals ranging from 215 to 490 feet. Samples collected in WY 2008 were “discrete” samples collected at specific depths within the screened sections of each well with the use of downhole logging equipment. The depth-specific samples were collected near the top and bottom of the screened sections in each well.

Additional information regarding the construction of the Sentinel Wells is provided in a separate report prepared for the Watermaster by Martin Feeney, titled *Seaside*

Groundwater Basin Watermaster Seawater Sentinel Wells Project, dated October 2007. These new monitor wells have now been incorporated into the Watermaster's monitoring program on an ongoing basis. The groundwater quality monitoring data collected from the Sentinel Wells has been analyzed and summarized in the Watermaster's annual *Seawater Intrusion Analysis Report* for 2008, prepared by HydroMetrics, LLC and dated October 2008.

WATER QUALITY DATA: BASIN PRODUCER WELLS

Under the SBMMP, water quality samples are to be collected annually for general mineral analysis from all active production wells in the coastal subareas of the basin owned and/or operated by a Watermaster producer. In January 2008, the Watermaster provided a reminder notice to all Watermaster producers regarding this requirement, and included that two samples would be collected in 2008 to satisfy Fall 2007 and Fall 2008 requirements. The groundwater quality results that are included in **Appendix 3** represent water samples collected in WY 2008 to satisfy these requirements. It should be noted that one well (Name: CAW-Military) had only one sample collected in Spring 2008; the Fall 2008 sample could not be collected as this well was not operational. These data have been, and will be in the future, used to support work on the annual *Seawater Intrusion Analysis Reports*, as described above.

WATER LEVEL DATA: BASIN PRODUCER WELLS

Basin producer active and inactive wells with water level data collected during the WY 2008 period are provided in **Appendix 4**. The general locations of these wells are shown on **Figure 3**. These water level data were collected primarily with manual water level sounding devices by producers or by the Watermaster on behalf of the producers. These water level data have been entered into the Watermaster database, and this table was generated with the report feature of the database. The Watermaster is continuing to work with the database development consultant on tasks to further refine the reporting feature of the database, so future reports may vary from the format provided here.

It should be noted that the table in **Appendix 4** includes the "reference point elevations" that were recently surveyed for each well, as part of work conducted for the Watermaster. The reference point elevations were established at the water level data collection point at each wellhead. The reference point elevations are tied to the North American Vertical Datum of 1988 (NAVD88). The measurements in NAVD88 datum have been adjusted for the Watermaster's use by subtracting 2.97 feet to conform to local Mean Sea Level (MSL) reference, based on data provided by the surveyor. The "depth to water" measurement at each well is subtracted from the reference point elevation to obtain the "water elevation" shown in the right-hand column of the table.

The Watermaster has requested that producers collect and report “static”, i.e., non-pumping, water level measurements. The purpose for this is so these measurements will more closely approximate ambient groundwater level conditions, and facilitate the plotting of well water level hydrographs. Occasionally, water level measurements have been collected and reported while the well was in operation. In some cases this may be due to the fact that the well can not be taken offline to collect a static water level measurement because of pumping demand requirements. To avoid confusing pumping and non-pumping water level measurements in the database, a standard “999” entry is made in the “depth to water” column, and the corresponding “water level elevation” is not provided. This allows these non-static water level measurements to be easily identified when preparing well water level hydrographs. The actual reported pumping water level measurement is retained elsewhere in the database, however. Similarly, if no water level measurement was reported on an indicated date on a producer reporting form, a standard “999.9” entry is made in the “depth to water” column.

WATER LEVEL DATA: BASIN MONITOR WELLS

Basin monitor well water level data collected during the WY 2008 period are provided in the table in **Appendix 4**. The general locations of these wells are shown on **Figure 3**. These water level data have also been entered into the Watermaster database, and this table was generated with the report feature of the database.

Water level data for the Watermaster’s four Sentinel Wells are collected continuously with water level transducers and dataloggers that were installed after well completion. A summary of the water level data collected at these wells from November 2007 through August 2008 is provided in **Appendix 5**.

CONCLUSIONS

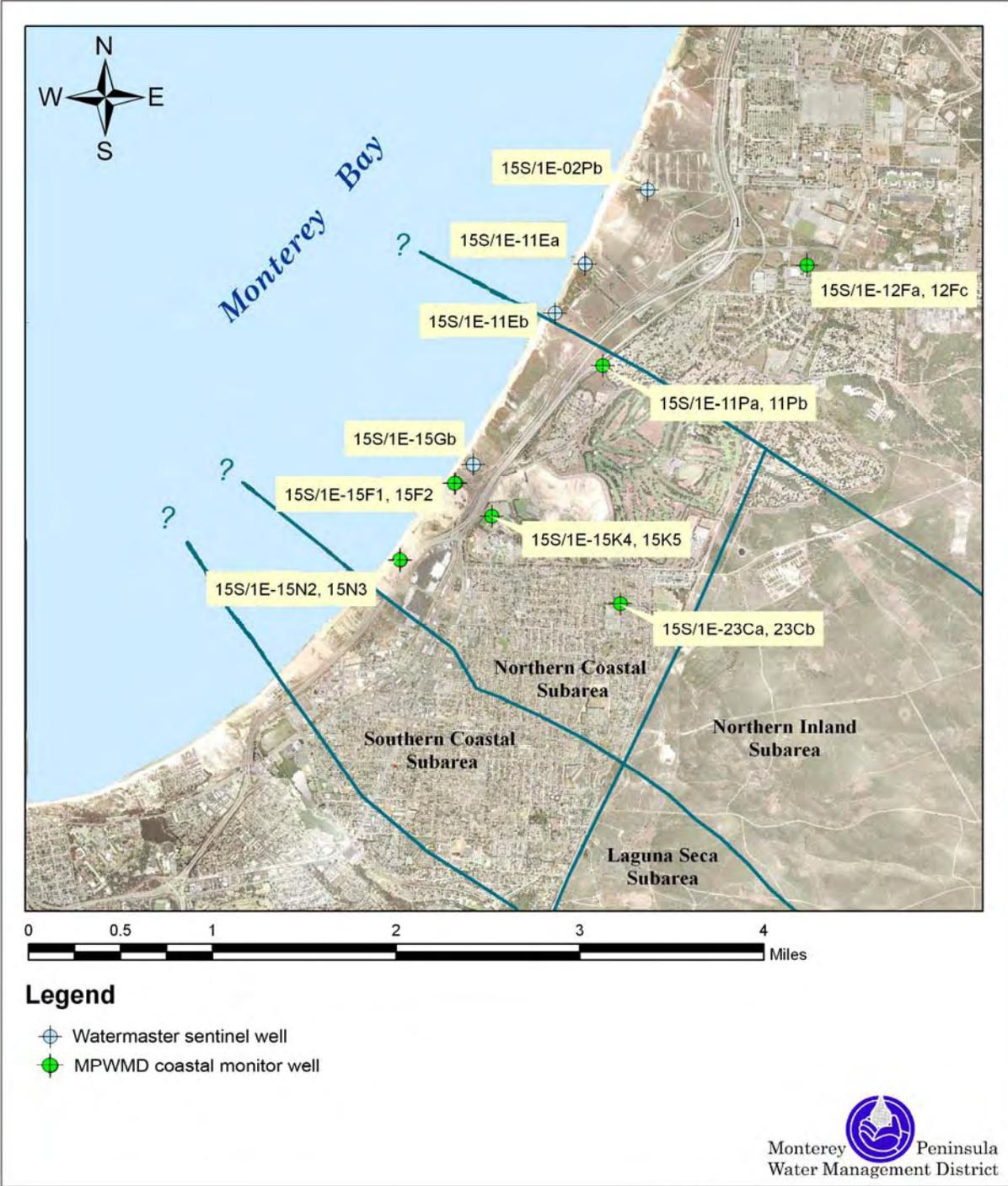
- Due to actions by the Watermaster in WY 2008 to notify and remind basin producers of their obligations to collect required groundwater level and groundwater quality data from their wells, the availability of these data to assist in analysis of the basin’s groundwater resources has greatly improved compared to prior years.
- The chemical data from the WY 2008 sampling of the MPWMD dedicated coastal monitor wells do not show significant changes relative to previous samplings, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor well completions.
- Based on the data collected from both coastal and inland monitoring and production wells during 2008, chloride concentrations (and other constituents) are generally higher in the inland area of the basin (Laguna Seca Subarea) than in the coastal areas of the basin. The reasons for this are not fully understood, but are likely due to some combination of lithologic, groundwater recharge, groundwater

flow and groundwater residence time differences. This occurrence merits further evaluation as additional data are collected in the future.

RECOMMENDATIONS

- The potential utility of using dedicated water quality datalogger probes in selected monitor wells that are currently being sampled for water quality on a quarterly basis should be examined as planned in 2009. If suitable and reliable datalogger installations prove successful, then the water quality sample collection frequency at these sites could be reduced.
- Coordination with the US Army and other involved local agencies should continue regarding the siting and installation of a new dedicated groundwater monitoring well site in the inland area of the basin near the northern basin boundary. This work is included in the Watermaster's plans and budget for 2009.
- Quarterly groundwater sample collection at the MPWMD coastal monitor wells and quarterly induction logging at the Watermaster Sentinel wells should be collected near the beginning of each quarter of future water years (i.e., during the months of October, January, April and July). In addition, annual groundwater quality samples for Watermaster producer wells in the coastal area should be collected at the beginning of the fourth quarter of future water years (i.e., during the month of July). Future monitoring on this schedule will improve the ability to have these data available in time to incorporate into the annual *Seawater Intrusion Analysis Reports* (to be prepared each October) and for incorporation into the *Watermaster Annual Reports* (to be prepared each November).

**SEASIDE GROUNDWATER BASIN WATERMASTER
SEASIDE COASTAL WATER QUALITY MONITOR WELL LOCATIONS**



u:\tom\pdf2008\watermaster\seasideWQ_20080606

Figure 1. MPWMD Seaside Basin Coastal Monitor Well Locations.

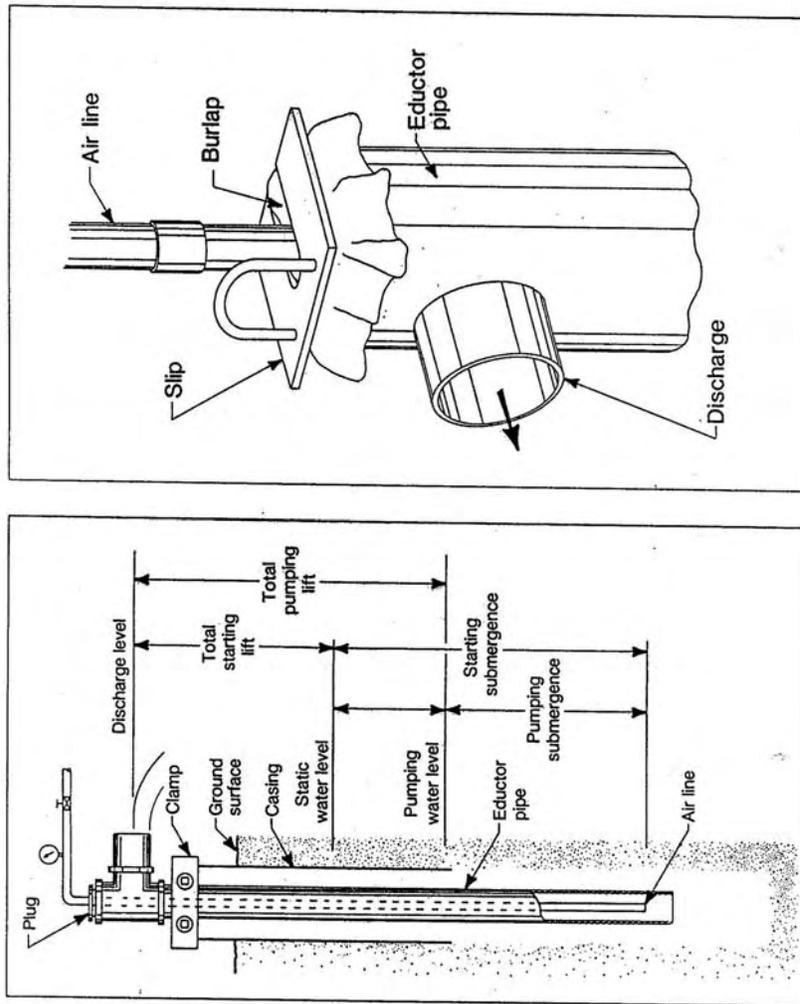


Figure 2. Diagrams illustrating the airlift-pumping method for water sample collection (from Driscoll, 1986, Figure 15.10)

Table 1. Summary of Well Completions, MPWMD Coastal Seaside Basin Water Quality Monitor Wells.

SUMMARY OF MPWMD COASTAL SEASIDE BASIN GROUND WATER QUALITY MONITOR WELLS													
Site	Well Name	Location Description	Well Number	Date Drilled	DWR Drillers Log	Hole Depth (feet)	Well Depth (feet)	Screened Interval (feet)	Strata Seal (feet)	Casing Type	Geologic Unit	E-Log	Elevation (feet AMSL)
MSC		former MSC mine north of Playa Ave. and west of Hwy. 1											
	MSC-Shallow	approx. 10' S of north property line	15S/1E-15N3	5/25/1990	338413	720	695	490 - 680	95 - 275	2" pvc	QTp	---	80.58 (s1)
	MSC-Deep	approx. 7' E of MSC-Shallow	15S/1E-15N2	5/25/1990	338425	920	865	810 - 850	725 - 775	2" pvc	Tsm	yes	80.78 (s1)
PCA WEST		former PCA mine W of Hwy. 1											
	PCA-W Shallow	approx. 200' SE of ocean bluff	15S/1E-15F1	3/28/1990	338400	600	585	525 - 575	120 - 150	2" pvc	QTp	---	64.64 (s1)
	PCA-W Deep	approx. 50' E of PCA-W Shallow	15S/1E-15F2	3/90	338401	900	885	825 - 875	760 - 790	2" pvc	Tsm	yes	65.60 (s1)
PCA EAST		vacant lot NE of Seaside High baseball field											
	PCA-E Shallow	approx. 300' E Monterey Rd, 50" N fence	15S/1E-15K5	4/16/1990	338402	863	410	350 - 400	110 - 150	2" pvc	QTp	---	69.31 (s1)
	PCA-E Deep	(same borehole as shallow well)	15S/1E-15K4	4/16/1990	338402	863	710	650 - 700	580 - 620	2" pvc	Tsm	yes	69.31 (s1)
ORD TERRACE		Ord Terrace School property south of Ord Grove Ave.											
	OT-Shallow	1700 block Ord Grove Ave.	15S/1E-23Ca	8/5/1999	---	530	340	280 - 330	0 - 260	2" pvc	upper Tsm	---	230 (e)
	OT-Deep	(same borehole as shallow well)	15S/1E-23Cb	8/5/1999	---	530	450	390 - 440	350 - 377	2" pvc	lower Tsm	yes	230 (e)
MPWMD #FO-09		E of Hwy.1, SE of Okinawa Rd.											
	#9-Shallow	50' east of utility service rd.	15S/1E-11Pa	8/16/1994	---	1,110	660	610 - 650	500 - 540	2" pvc	QTp	---	119.11 (s2)
	#9-Deep	(same borehole as shallow well)	15S/1E-11Pb	8/16/1994	---	1,110	840	790 - 830	700 - 765	2" pvc	Tsm	yes	119.15 (s2)
MPWMD #FO-10		south of Light Fighter Drive, behind Barker Theater Building											
	#10-Shallow	20' north of access road curb	15S/1E-12Fa	9/3/1996	---	1,500	650	620 - 640	480 - 500	2" pvc	QTp	---	201.19 (s2)
	#10-Deep	(same borehole as shallow well)	15S/1E-12Fc	9/3/1996	---	1,500	1,420	1380 - 1410	1280 - 1300	2" pvc	Tsm (?)	yes	201.10 (s2)
<p>NOTES:</p> <ol style="list-style-type: none"> 1. Official State well numbers end with a numeral; unofficial MPWMD well numbers end with a small case letter. 2. Geologic Unit refers to the unit adjacent to the screened interval: QTp = Paso Robles Formation; Tsm = Santa Margarita Sandstone. 3. Elevation refers to the reference point elevation: (s1) = surveyed by Land Data Services (1990 and 1992); (s2) = surveyed by Sandis Humber Jones (1995); (e) = altimeter estimate. 4. Well completion data at site MSC are documented in "Installation of Monitoring Well Cluster, Monterey Sand Company", Staal, Gardner & Dunne, Inc. (SGD), July 1990. 5. Well completion data at sites PCA West and PCA East are documented in "Hydrogeologic Investigation, PCA Well Aquifer Test", SGD, July 1990. 6. Well completion data at site MPWMD FO-09 are documented in "Summary of 1994 Fort Ord Monitor Well Installations", MPWMD Tech. Mem. 94-07. 7. Well completion data at site MPWMD FO-10 are documented in "Summary of 1996 Seaside Basin Monitor Well Installations", MPWMD Tech. Mem. 97-04. 8. Two dashes (i.e., "- -") indicate multiple screened intervals. 9. Three dashes (i.e., "- - -") indicate not applicable or not available. 													

Table 2. Statistical Summary of Parameters from MPWMD Coastal Water Quality Monitor Wells.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

SEASIDE GROUNDWATER BASIN: STATISTICAL SUMMARY OF SPECIFIC CONDUCTANCE AND CHLORIDE CONCENTRATION FOR SELECTED MPWMD COASTAL WATER QUALITY MONITOR WELLS

MPWMD Well Number	Well Name	Specific Conductance (micromhos/cm)				Chloride (milligrams per liter)						
		Sample Period		No. of Analyses	Range		Range		Mean	Median	Minimum	Maximum
		from	to		Mean	Median	Minimum	Maximum				
T15S/R1E-15N3	MSC-Shallow	4/26/1991	11/2/2005	23	408	340	301	642	58	48	40	96
T15S/R1E-15N2	MSC-Deep	4/26/1991	11/2/2005	24	953	960	800	1050	149	147	122	166
T15S/R1E-15F1	PCA West-Shallow	6/14/1990	11/3/2005	24	316	315	280	340	47	47	42	61
T15S/R1E-15F2	PCA West-Deep	6/14/1990	11/3/2005	22	980	974	900	1065	152	150	135	168
T15S/R1E-11Pa	FO-09 - Shallow	5/3/1995	11/2/2005	14	335	334	322	350	55	55	51	60
T15S/R1E-11Pb	FO-09 - Deep	5/3/1995	11/2/2005	14	434	432	425	450	69	70	64	76

Notes:

1. Statistical summary based on water quality data from the period of record available at each monitor well, prior to Seaside Basin adjudication decision in March 2006.
2. First analysis at each well was not included due to residual effects from drilling. See additional discussion of this in MPWMD TM 97-02 (page 2).
3. The 4/29/1994 chloride analysis for the MSC-Shallow well was not included due to the anomalous value (230 mg/L) believed to be incorrect.
4. Specific Conductance is a relative measure of the the total dissolved solids (salts) concentration. Chloride is the dominant anion in sea water. Chloride is the most-used tracer in simple sea-water intrusion scenarios, and is the most conservative natural constituent in water once it is in solution (for additional background, see: *Geochemical Techniques for Identifying Sources of Ground-Water Salinization*, by Bernd C. Richter and Charles W. Kreitler, 1993, pg 88).
5. Mean Chloride concentrations shown in **bold** type are referred to as the "Ambient" concentrations for the purpose of comparison with the values from the most recent sample date (see separate comparison table).

Table 3. Comparison of WY 2008 Third Quarter Chloride Concentrations with Ambient Levels

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

**SEASIDE GROUNDWATER BASIN: COMPARISON OF THIRD QUARTER WATER
YEAR 2008 CHLORIDE CONCENTRATIONS WITH AMBIENT (HISTORICAL)
LEVELS FOR MPWMD COASTAL MONITOR WELLS**

MPWMD Well Number	Well Name	Chloride (milligrams per liter)			<u>Relative Percent Difference</u>	
			<u>Sample Date</u>	<u>Value</u>	<u>Mean</u>	
T15S/R1E-15N3	MSC-Shallow	7/3/2008	41	58	34%	less
T15S/R1E-15N2	MSC-Deep	7/3/2008	148	149	1%	less
T15S/R1E-15F1	PCA West-Shallow	7/3/2008	41	47	14%	less
T15S/R1E-15F2	PCA West-Deep	7/3/2008	149	152	2%	less
T15S/R1E-11Pa	FO-09 - Shallow	7/3/2008	49	55	12%	less
T15S/R1E-11Pb	FO-09 - Deep	7/3/2008	62	69	11%	less

Notes:

1. Mean Chloride concentrations are calculated from the period of record available at each well, prior to Seaside Basin adjudication decision in March 2006. These mean concentrations are referred to as the "Ambient" concentrations for the purpose of comparison with the values from the most recent sample date.

2. Relative Percent Difference (RPD) is calculated as:

$$RPD = \frac{| \text{Value} - \text{Ambient} |}{(\text{Value} + \text{Ambient}) / 2} \times 100 \quad (\text{expressed as a percentage less or greater than Ambient})$$

APPENDIX 1

SEASIDE BASIN GROUNDWATER QUALITY MONITORING RESULTS

Water Year 2008

MPWMD AND OTHER MONITOR WELLS

GROUND WATER QUALITY MONITORING RESULTS

Date 10/23/2008

WY 2008 - 10/01/2007 through 9/30/2008

MPWMD and Other Monitor Wells

Units are milligrams unless otherwise noted.

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
MPWMD Coastal Monitors																				
Well Number: 15S01E15N3 Name: MSC-Shallow																				
8/19/2008	326	72	8.2	41	17	0.05	<1	<0.3	19	34	5	3.6	<0.1	<0.02	<0.2	216	68	0.2	<0.2	0.2
7/3/2008	330	73	8.1	41	17	0.06	<1	<0.2	18	34	6	3.7	<0.1	<0.02	<0.2	237	70	0.5	<0.2	0.18
3/27/2008	330	70	8.1	44	18	0.06	<1	0.44	19	39	5	3.4	<0.1	<0.02	<0.2	249	68		<0.2	0.19
12/27/2007	332	69	8	52	16	0.05	<1	<0.2	19	38	5	3.6	<0.1	0.025	<0.05	242	68	0.2	<0.1	0.12
10/30/2007	325	72	8.1	46	17	0.1	<1	<0.2	18	38	4	3.5	<0.1	<0.02	<0.05	226	61	0.09	0.18	0.13
Well Number: 15S01E15N2 Name: MSC-Deep																				
8/19/2008	1002	244	8.1	148	43	0.08	<1	0.73	79	106	14	4.7	<0.1	0.053	<0.2	597	255	0.4	0.5	0.22
7/3/2008	905	210	8.2	148	43	0.1	<1	0.27	53	103	17	4.9	<0.1	0.041	<0.2	593	202	0.72	0.5	0.27
3/27/2008	973	221	8.2	147	44	0.09	<1	0.43	72	102	15	4.6	<0.1	0.051	<0.2	606	242	0.08	0.4	0.26
12/27/2007	966	231	8.2	150	44	0.08	<1	<0.2	80	103	15	4.7	<0.1	0.074	<0.05	594	262	0.3	0.44	0.2
10/30/2007	977	210	8.3	147	44	0.1	<1	<0.2	78	103	15	4.7	<0.1	0.066	<0.05	555	252	0.14	0.52	0.22
Well Number: 15S01E15F1 Name: PCA-W Shallow																				
8/19/2008	312	68	8.2	42	11	<0.05	4	0.4	21	32	5	2.3	<0.1	<0.02	<0.2	196	73	0.16	<0.2	<0.1
7/3/2008	316	69	8.1	41	11	<0.05	4	<0.2	20	30	6	2.4	<0.1	0.008	<0.2	204	75	0.34	<0.2	<0.1
3/27/2008	310	64	7.8	44	11	64	4	0.23	20	32	5	2.2	<0.1	<0.02	<0.2	229	71		<0.2	0.14
10/30/2007	305	66	8.3	47	11	<0.05	4	<0.2	20	34	5	2.2	<0.1	<0.02	<0.05	203	71	0.06	0.15	0.12
Well Number: 15S01E15F2 Name: PCA-W Deep																				
8/19/2008	1007	246	7.9	151	41	0.1	<1	3.2	77	105	16	5.2	<0.1	0.088	7.9	591	258	0.34	0.5	0.25
7/3/2008	954	222	7.6	149	41	0.09	<1	0.39	58	107	17	5.4	0.386	0.126	<0.2	572	215	0.5	0.5	0.24
3/27/2008	966	204	7.8	151	43	0.07	<1	0.47	65	103	17	5.1	0.241	0.098	<0.2	594	232		0.4	0.3
10/30/2007	959	222	7.9	151	43	0.12	<1	0.21	71	100	16	5.1	0.331	0.113	<0.05	565	243	0.15	0.53	0.29
Well Number: 15S01E15K5 Name: PCA-E (Multiple) Shallow																				
8/19/2008	410	106	8.3	50	16	<0.05	<1	<0.3	29	44	7	3.4	1.21	0.069	<0.2	269	101	0.26	0.2	0.15
12/27/2007	361	86	8.2	48	16	<0.05	1	<0.2	23	43	6	2.6	<0.1	<0.02	<0.05	243	82	0.1	0.14	<0.1
10/30/2007	394	101	8.3	53	16	<0.05	<1	<0.2	27	41	6	3	0.554	0.024	<0.05	243	92	0.11	<0.1	0.17
Well Number: 15S01E15K4 Name: PCA-E (Multiple) Deep																				
8/19/2008	792	205	8.2	104	34	<0.05	<1	0.42	59	91	11	4.4	0.133	0.116	<0.2	464	193	0.3	0.4	0.25
12/27/2007	760	192	8.1	105	36	<0.05	<1	<0.2	59	90	10	4	<0.1	0.136	<0.05	473	189	0.28	0.36	0.22
10/30/2007	768	187	8.4	104	35	0.08	<1	<0.2	56	81	10	4	0.291	0.122	<0.05	456	181	0.13	0.32	0.27
Well Number: 15S01E23Ca Name: Ord Terrace-Shallow																				
8/19/2008	828	209	8.5	110	41	<0.05	9	0.65	68	80	15	4.2	1.73	0.538	<0.2	568	232	0.2	0.4	0.14
10/31/2007	962	233	8	134	55	<0.05	2	0.52	83	90	19	4.8	2.45	1.96	<0.05	577	285	0.1	0.42	0.27
Well Number: 15S01E23Cb Name: Ord Terrace-Deep																				
8/19/2008	1291	306	8.2	186	90	0.55	<1	1.3	104	128	23	7.1	<0.1	0.08	<0.2	816	354	0.44	0.7	0.38
10/31/2007	1255	263	8.2	172	95	0.6	<1	0.86	108	121	24	7	<0.1	0.073	<0.05	749	364	0.28	0.57	0.36
Well Number: 15S01E11Pa Name: MPWMD #FO-09-Shallow																				
8/19/2008	333	65	8.2	50	13	<0.05	<1	<0.3	22	35	4	3.9	<0.1	<0.02	<0.2	234	71	0.14	0.2	<0.1
7/3/2008	334	68	8.1	49	12	<0.05	<1	<0.2	23	31	6	3.9	<0.1	0.026	<0.2	233	92	0.46	<0.2	<0.1
3/27/2008	325	62	8.1	49	13	<0.05	1	0.24	23	32	4	3.6	<0.1	<0.02	<0.2	251	74		<0.2	<0.1
12/27/2007	334	66	8.1	50	16	<0.05	1	<0.2	24	34	5	3.8	<0.1	0.021	<0.05	235	81	0.16	0.16	0.1
10/31/2007	326	63	8.2	53	12	<0.05	1	<0.2	23	34	4	3.6	<0.1	<0.02	<0.05	221	74	0.08	0.14	<0.1

GROUND WATER QUALITY MONITORING RESULTS

Date 10/23/2008

WY 2008 - 10/01/2007 through 9/30/2008

MPWMD and Other Monitor Wells

Units are milligrams unless otherwise noted.

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
Well Number: 15S01E11Pb Name: MPWMD #FO-09-Deep																				
8/18/2008	427	91	8.2	66	14	<0.05	<1	<0.3	29	0.59	4	3.7	0.1	<0.02	<0.2	251	89	0.16	<0.2	<0.1
7/3/2008	425	90	8.1	62	14	<0.05	<1	<0.2	26	48	4	3.8	<0.1	<0.02	<0.2	254	81	0.34	0.2	<0.1
3/27/2008	426	86	8.2	66	14	<0.05	1	<0.2	28	50	4	3.5	<0.1	<0.02	<0.2	269	86		0.2	0.14
12/27/2007	430	90	8.2	64	20	<0.05	1	<0.2	29	54	4	3.7	<0.1	0.02	<0.05	268	89	0.18	0.12	0.1
10/31/2007	421	89	8.2	66	14	<0.05	1	<0.2	28	48	3	3.6	<0.1	<0.02	<0.05	256	82	0.1	0.21	<0.1
Well Number: 15S01E12Fa Name: MPWMD #FO-10-Shallow																				
8/18/2008	354	73	8.2	48	17	<0.05	1	0.33	24	38	5	2	<0.1	<0.02	<0.2	211	81	0.14	0.2	<0.1
10/31/2007	355	74	8.3	50	20	<0.05	1	<0.2	23	36	6	2.1	<0.1	<0.02	<0.05	119	82	0.07	<0.1	<0.1
Well Number: 15S01E12Fc Name: MPWMD #FO-10-Deep																				
8/18/2008	383	79	8.1	50	15	<0.05	1	0.37	25	38	6	2.9	2.04	0.862	0.2	230	87	0.2	0.2	<0.1
10/31/2007	375	84	8.3	54	17	0.05	<1	<0.2	24	38	6	2.7	0.108	0.035	<0.05	242	85	0.09	0.2	<0.1
Other Coastal Monitors																				
Well Number: 15S01E22Cd Name: Del Monte Test																				
8/19/2008		91		57	14		1.8	0.25						0.059			80		0.19	0.2
2/18/2008	1295	84	7.29	57.1	14.6	0.13	1.8	<0.25	91	135	26		0.33	0.165	1.21	806	334		0.19	0.2
Other Inland Monitors																				
Well Number: 16S02E05Of Name: Laguna Seca Recreation Area - MCPD #2																				
8/14/2008	553	104	6.6	96	16	<0.05	1	2.9	0.4	80	9	2.4	2	0.065	0.7	324	75	0.34	0.4	0.25
2/15/2008	590	110	6.7	107	17	<0.05	1	0.84	15	87	9	2.2	7.2	0.142	0.44	360	75	0.24	0.34	0.21
Well Number: 16S02E06H Name: Laguna Seca Golf - New #12																				
8/15/2008	1543	252	6.9	245	207	0.13	<0.1	7.4	150	129	31	6	0.553	0.064	<0.2	1000	502	0.32	0.8	0.57
3/3/2008	1400	76	6.5	350	107	0.05	2	1.9	74	168	30	5	13	0.391	<0.2	911	308	0.34	1	0.29
Well Number: 16S02E05Mg Name: Pasadera Golf - Main Gate																				
8/15/2008	1674	232	7.1	298	215	0.08	2	4.2	158	145	31	6.1	0.205	0.054	<0.2	1140	522	0.36	1	0.53
3/3/2008	1660	246	7	249	260	0.17	2	2.7	151	151	38	4.6	3.97	0.215	<0.2	1130	534	0.32	0.9	0.59
Well Number: 15S01E36Qa Name: York School 01-349																				
8/14/2008	1192	68	6.6	313	34	<0.05	0.5	0.86	38	148	28	4.4	0.1	<0.02	<0.2	728	210	0.18	1	0.28
2/27/2008	1170	76	6.8	327	30	<0.05	5	0.39	36	153	28	4.2	0.843	0.024	<0.2	783	205	0.26	1	0.19
Well Number: 16S02E06C2 Name: LS Driving Range (SCS Deep)																				
8/15/2008	1126	132	6.6	247	53	<0.05	1	4.5	43	136	25	5.6	0.254	0.021	0.3	679	210	0.26	0.8	0.11
5/1/2008	1016	106	6.6	244	52	<0.05	1	60	39	135	24	5.4	0.644	<0.02	0.2	669	196	0.3	0.8	0.53
Well Number: 16S01E01E50 Name: CAW - Ryan Ranch #7																				
8/19/2008		212		172	147				1.92					0.16			327		0.7	0.6
2/19/2008		82		192.1	152.6		<0.44	1.81	91	134	28		0.36	0.16			335		0.7	0.6

APPENDIX 2

SEASIDE BASIN GROUNDWATER QUALITY MONITORING RESULTS

Water Year 2008

WATERMASTER SENTINEL WELLS

GROUND WATER QUALITY MONITORING RESULTS

WY 2006 - 10/01/2007 through 9/30/2008

Watermaster Sentinel Wells

Units are milligrams unless otherwise noted.

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
Well Number: 15S01E02Pb Name: Sentinel MW #1 (Depth - 1140')																				
8/28/2006	414	83	8.9	58	22	---	<1	---	10	73	1	3	0.189	<0.02	<0.2	264	29		0.2	0.16
3/26/2006	412	92	9	58	25	---	<1	---	12	68	2	3.3	1.43	<0.02	<0.2	309	38		<0.2	0.25
Well Number: 15S01E02Pb Name: Sentinel MW #1 (Depth - 1390')																				
8/28/2006	405	94	8.8	58	21	---	<1	---	11	72	1	3	0.475	<0.02	<0.2	226	32		<0.2	0.18
3/26/2006	406	80	8.9	58	23	---	<1	---	11	67	2	2.9	0.497	<0.02	<0.2	303	36		<0.2	0.24
Well Number: 15S01E11Ea Name: Sentinel MW #2 (Depth - 1000')																				
8/28/2006	427	86	8.4	65	18	---	<1	---	16	70	2	2.8	<0.1	<0.02	<0.2	240	48		<0.2	0.12
3/26/2006	424	82	8.4	62	20	---	<1	---	16	65	2	3	<0.1	<0.02	<0.2	263	48		<0.2	0.22
Well Number: 15S01E11Ea Name: Sentinel MW #2 (Depth - 1470')																				
8/28/2006	427	95	8.5	63	18	---	<1	---	16	70	1	2.8	<0.1	<0.02	<0.2	226	44		0.2	0.12
3/26/2006	425	83	8.5	63	19	---	<1	---	16	65	2	3.1	0.203	<0.2	<0.2	266	48		0.2	0.2
Well Number: 15S01E11Eb Name: Sentinel MW #3 (Depth - 870')																				
8/28/2006	407	83	8.1	62	16	---	<1	---	18	69	2	3.2	<0.1	<0.02	<0.2	227	53		0.2	<0.1
3/26/2006	390	79	8.1	60	16	---	<1	---	17	67	2	3.4	<0.1	<0.02	<0.2	257	51		<0.2	0.15
Well Number: 15S01E11Eb Name: Sentinel MW #3 (Depth - 1275')																				
8/28/2006	410	86	8.2	62	15	---	<1	---	18	63	2	3.3	0.139	---	<0.2	207	53		<0.2	0.59
3/26/2006	405	84	8.2	60	17	---	<1	---	17	59	2	3.5	<0.1	0.023	<0.2	277	51		<0.2	0.16
Well Number: 15S01E15Gb Name: Sentinel MW #4 (Depth - 715')																				
8/28/2006	798	200	8.1	122	38	---	<1	---	47	94	23	7.2	<0.1	<0.02	<0.2	415	212		0.3	0.14
3/26/2006	840	186	8.2	123	40	---	<1	---	52	94	10	7	<0.1	0.035	<0.2	509	171		0.4	0.23
Well Number: 15S01E15Gb Name: Sentinel MW #4 (depth 900')																				
8/28/2006	1453	290	7.4	270	46	---	<1	---	79	180	36	8.5	0.101	0.154	<0.2	814	346		0.7	0.2
3/26/2006	1423	255	7.5	265	43	---	<1	---	76	168	19	8.3	<0.1	0.131	<0.2	817	268		0.9	0.28

APPENDIX 3

SEASIDE BASIN GROUNDWATER QUALITY MONITORING RESULTS

Water Year 2008

COASTAL PRODUCTION WELLS

GROUND WATER QUALITY MONITORING RESULTS

Date 10/23/2008

WY 2008 - 10/01/2007 through 9/30/2008
Coastal Production Wells with Water Quality Data

Units are milligrams unless otherwise noted.

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
Well Number: 15S01E23De Name: CAW - New Luzern																				
8/19/2008		159		124	72	---	22.1	0.76						0.16	---		217		0.42	0.3
2/12/2008	952	166	7.07	152.6	77.3	0.14	17.7	0.82	68	100	18	1	<0.1	0.026	<0.2	577	244	0.131	0.48	0.2
Well Number: 15S01E23B02 Name: CAW - Ord Grove #2																				
8/19/2008		185		134	66	---	5.3	0.7						0.018	---		235		0.47	0.2
1/29/2008	919	178	7.04	132	66.7	0.13	5.3	---	68	94	18	1	<0.1	0.017	<0.2	593	245	0.15	0.51	0.2
Well Number: 15S01E14R50 Name: CAW - Paralta																				
8/19/2008		233		118	75	---	0.4	0.74						0.033	---		259		0.43	0.3
1/31/2008	497	81	7.33	81.8	27.4	<0.05	6.6	0.46	28	54	9	1	0.55	0.01	<0.2	303	107	0.05	0.26	<0.1
Well Number: 15S01E22B50 Name: CAW-Playa #3																				
8/19/2008		123		128	95	---	26.1	0.94						---	---		207		0.47	0.1
1/31/2008	885	151	7.42	131	66.5	<0.05	23	0.7	64	83	21	1	0.46	0.28	<0.2	531	246	0.104	0.49	<0.1
Well Number: 15S01E14N50 Name: CAW - Military																				
2/8/2008	814	59	8.45	98.7	99.6	<0.05	<0.44	0.66	35	74	13	1	3.72	0.047	<0.2	534	141	0.05	0.33	<0.1
Well Number: 15S01E22H01 Name: CAW - Darwin																				
8/19/2008		52		68	34	---	33.2	---						0.018	---		90		0.2	---
1/31/2008	473	48	7.01	70.5	36.5	<0.05	32.8	0.49	21	53	9	1	1.7	0.051	<0.2	297	92	0.074	0.23	<0.1
Well Number: 15S01E27Jg Name: CAW - Plumas #4																				
8/19/2008		83		159	61	---	---	0.82						---	---		157		0.48	0.2
1/31/2008	789	61	6.8	142	60.6	<0.05	30.1	0.71	32	96	17	1	0.1	<0.01	<0.2	486	147	0.064	0.44	0.2
Well Number: 15S01E23T55 Name: Seaside Muni - City #3																				
9/25/2008	320	46	7.1	69	7	---	4	---	12	49	5	2.1	0.285	<0.0005	---	196	50.6		---	0.05
2/12/2008	328	46	6.7	82	10	0.07	9	0.23	11	51	5.7	2.2	<0.1	<0.02	0.08	130	50.9	0.287	0.17	0.13
Well Number: 15S01E23Gc Name: Seaside Muni - City #4																				
9/25/2008	365	60	7.3	69	15	---	16	---	15	54	7	2.3	5.54	0.131	---	228	66.3		---	0.05
2/12/2008	360	55	7	82	14	<0.05	14	0.25	14	51	7.4	2.3	<0.1	<0.02	0.09	205	65.4	0.26	0.15	0.13
Well Number: 15S01E13Na Name: Seaside Golf - Reservoir Well																				
9/25/2008	391	50	7.5	87	9	---	5	---	17	53	6.6	2.5	<0.1	<0.0005	---	244	69.9		---	0.03
2/13/2008	413	50	7.8	88	10	<0.05	2	---	17	58	6.6	2.9	2.36	0.031	0.03	228	69.6	0.263	0.28	0.11
Well Number: 15S01E14M50 Name: Seaside Golf - Coe Avenue																				
9/25/2008	562	104	7.5	92	37	---	15	---	35	69	10	2.7	<0.1	<0.0005	---	352	129		---	0.04
2/13/2008	528	93	7.6	83	31	<0.05	14	---	34	59	10	2.7	<0.1	<0.02	0.05	300	126	0.285	0.23	0.12
Well Number: 15S01E23Ac Name: Mission Memorial - PRTIW																				
8/15/2008	641	140	7.6	71	57	<0.05	7	2.9	49	59	13	3.7	0.145	<0.02	<0.2	405	176	0.26	0.2	0.18
2/27/2008	537	89	7.5	83	36	<0.05	12	0.66	36	58	11	3	0.237	<0.02	<0.2	371	135	0.16	0.2	0.17
Well Number: 15S01E22T59 Name: Sand City - Public Works Corp. Yard																				
8/15/2008	1187	104	7.6	202	116	0.24	60	1.9	46	172	9	5.6	<0.1	0.025	0.4	710	152	0.76	0.7	1.57
2/26/2008	1390	130	7.7	237	134	0.22	39	1.1	44	215	10	6	<0.1	<0.02	<0.2	823	151	0.88	0.7	2.23

APPENDIX 4

SEASIDE BASIN GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008, Second Quarter

BASIN PRODUCER AND MONITOR WELLS

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
----------------------	------	------	----------------	---------------------------------	----------	-----------------------

Producer Wells: Nothern Coastal Subarea

Well Number: 15S01E22H01 Name: CAW - Darwin

10/25/2007			115	134.05		19.05
11/29/2007			115	134.05		19.05
12/27/2007			115.5	134.05		18.55
1/31/2008			123	134.05		11.05
2/21/2008			123	134.05		11.05
3/27/2008			118	134.05		16.05
4/24/2008			118	134.05		16.05
5/29/2008			124	134.05		10.05
6/26/2008			126	134.05		8.05
7/31/2008			124.5	134.05		9.55
8/28/2008			127	134.05		7.05

Well Number: 15S01E23D0 Name: CAW - New Luzern

10/25/2007			999	156.99	well on	*
11/29/2007			186	156.99		-29.01
12/27/2007			193	156.99		-36.01
1/31/2008			190	156.99		-33.01
2/21/2008			183	156.99		-26.01
3/27/2008			180	156.99		-23.01
4/24/2008			178.6	156.99		-21.61
5/29/2008			999	156.99	well on	*
6/26/2008			999	156.99	well on	*
7/31/2008			999	156.99	well on	*
8/28/2008			220	156.99		-63.01

Well Number: 15S01E14N50 Name: CAW - Military

10/25/2007			165	135.8		-29.2
11/29/2007			165	135.8		-29.2
12/27/2007			165	135.8		-29.2
2/21/2008			177	135.8		-41.2
3/27/2008			166.6	135.8		-30.8
4/24/2008			156.5	135.8		-20.7
5/29/2008			172	135.8		-36.2
6/26/2008			177	135.8		-41.2
7/31/2008			177	135.8		-41.2
8/28/2008			177.6	135.8		-41.8

Well Number: 15S01E23B02 Name: CAW - Ord Grove #2

10/25/2007			999	292.39	well on	*
11/29/2007			999	292.39	well on	*
12/27/2007			999	292.39	well on	*
1/31/2008			999	292.39	well on	*
2/21/2008			327	292.39		-34.61
3/27/2008			319	292.39		-26.61
4/24/2008			319	292.39		-26.61

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	5/29/2008		999	292.39	well on	*
	6/26/2008		999	292.39	well on	*
	7/31/2008		999	292.39	well on	*
	8/28/2008		999	292.39	well on	*

Well Number: 15S01E14R50 Name: CAW - Paralta

	10/25/2007		999	324.49	well on	*
	11/29/2007		999	324.49	well on	*
	12/27/2007		999	324.49	well on	*
	1/31/2008		346	324.49		-21.51
	2/21/2008		999	324.49	well on	*
	3/27/2008		343	324.49		-18.51
	4/24/2008		343	324.49		-18.51
	5/29/2008		999	324.49	well on	*
	6/26/2008		999	324.49	well on	*
	7/31/2008		999	324.49	well on	*
	8/28/2008		999	324.49	well on	*

Well Number: 15S01E22B50 Name: CAW - Playa #3

	10/25/2007		53	53.02		0.02
	11/29/2007		999	53.02	well on	*
	12/27/2007		56	53.02		-2.98
	1/31/2008		57.8	53.02		-4.78
	3/27/2008		51	53.02		2.02
	2/21/2008		999	53.02	well on	*
	4/24/2008		51	53.02		2.02
	5/29/2008		999	53.02	well on	*
	6/26/2008		999	53.02	well on	*
	7/31/2008		999	53.02	well on	*
	8/28/2008		999	53.02	well on	*

Well Number: 15S01E22C50 Name: DBO - Target Well

	2/12/2008	1530	57.4	44.42		-12.98
	2/26/2008	1120	58.44	44.42		-14.02
	4/3/2008	0910	55.93	44.42		-11.51
	4/29/2008	1044	55.9	44.42		-11.48
	6/2/2008	1117	57.21	44.42		-12.79
	6/20/2008	1050	58.85	44.42		-14.43
	7/31/2008	1010	59.57	44.42		-15.15
	8/25/2008	1300	61.06	44.42		-16.64
	9/29/2008	1025	61.72	44.42		-17.3

Well Number: 15S01E13Na Name: Seaside Golf - Reservoir Well

	2/13/2008	0830	401	417.44		16.44
	2/29/2008	0830	403	417.44		14.44
	4/1/2008	0830	404	417.44		13.44
	5/1/2008	0846	406	417.44		11.44
	7/1/2008	0800	406	417.44		11.44

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/4/2008	1330	410	417.44		7.44
	9/2/2008	0930	412	417.44		5.44

Well Number: 15S01E14M50 Name: Seaside Golf - Coe Avenue

	2/13/2008	0800	105	110.15		5.15
	2/29/2008	0800	107	110.15		3.15
	4/1/2008	0800	106	110.15		4.15
	5/2/2008	0800	107	110.15		3.15
	7/2/2008	0756	111	110.15		-0.85
	8/1/2008	1330	113	110.15		-2.85

Well Number: 15S01E23Gc Name: Seaside - City #4

	2/13/2008	0900	301	312.12		11.12
	2/29/2008	0900	298	312.12		14.12
	4/1/2008	0922	290	312.12		22.12
	5/1/2008	0900	286	312.12		26.12
	7/1/2008	1408	282	312.12		30.12
	8/1/2008	0850	285	312.12		27.12
	9/2/2008	1100	283	312.12		29.12

Well Number: 15S01E23T55 Name: Seaside - City #3

	2/13/2008	1030	280	307.19		27.19
	2/29/2008	0810	279	307.19		28.19
	4/1/2008	0810	265	307.19		42.19
	5/1/2008	0922	279	307.19		28.19
	7/1/2008	1408	277	307.19		30.19
	8/1/2008	0902	279	307.19		28.19
	9/2/2008	1030	279	307.19		28.19

Well Number: 15S01E15T51 Name: SNG - PCA Production

	2/19/2008		68	80		12
	3/25/2008		68.2	80		11.8
	4/25/2008		68.8	80		11.2
	5/29/2008		68.66	80		11.34
	6/30/2008		68.71	80		11.29
	7/30/2008		68.33	80		11.67
	8/28/2008	1715	68.5	80		11.5

Producer Wells: Southern Coastal Subarea

Well Number: 15S01E27Jg Name: CAW - Plumas #4

	10/25/2007		110	161.48		51.48
	11/29/2007		999	161.48	well on	*
	12/27/2007		110	161.48		51.48
	1/31/2008		113	161.48		48.48
	2/21/2008		999	161.48	well on	*
	3/27/2008		110	161.48		51.48
	4/24/2008		109	161.48		52.48

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	5/29/2008		999	161.48	well on	*
	6/26/2008		999	161.48	well on	*
	7/31/2008		999	161.48	well on	*
	8/28/2008		999	161.48	well on	*

Well Number: 15S01E22T59 Name: Sand City - Public Works Corp. Yard

	2/26/2008	1015	41.76	47.25		5.49
	4/3/2008	1010	42.17	47.25		5.08
	4/29/2008	1000	42.43	47.25		4.82
	6/3/2008	1115	42.32	47.25		4.93
	6/20/2008	0958	48.59	47.25		-1.34
	6/20/2008	0958	48.59	47.25		-1.34
	7/31/2008	1020	42.09	47.25		5.16
	8/15/2008	1315	44.6	47.25		2.65
	9/29/2008	1540	42.1	47.25		5.15

Well Number: 15S01E22Mc Name: Sand City - Robinette -Design Ctr.

	2/26/2008	1040	13.46	21.31		7.85
	4/3/2008	1017	13.78	21.31		7.53
	4/29/2008	1008	13.93	21.31		7.38
	6/3/2008	1122	13.68	21.31		7.63
	6/20/2008	0945	13.51	21.31		7.8
	7/31/2008	1025	13.32	21.31		7.99
	8/15/2008	1525	13.37	21.31		7.94

Well Number: 15S01E22Dd Name: Calabrese - Cypress Pacific

	2/26/2008	1055	46.02	50.23		4.21
	4/3/2008	1028	46.52	50.23		3.71
	4/29/2008	1029	46.98	50.23		3.25
	6/2/2008	1100	47	50.23		3.23
	6/20/2008	1035	46.95	50.23		3.28
	7/31/2008	0945	46.89	50.23		3.34
	8/25/2008	1243	47.02	50.23		3.21
	9/29/2008	1012	47.04	50.23		3.19

Producer Wells: Laguna Seca Subarea

Well Number: 16S02E09Cd Name: CAW - Bay Ridge

	10/25/2007		375	545.92		170.92
	11/29/2007		363	545.92		182.92
	12/27/2007		363	545.92		182.92
	1/31/2008		365	545.92		180.92
	2/21/2008		359	545.92		186.92
	3/27/2008		999	545.92	well on	*
	4/24/2008		999.9	545.92	no measurement taken	**
	5/29/2008		999.9	545.92	no measurement taken	**
	6/26/2008		999	545.92	well on	*
	7/31/2008		384	545.92		161.92

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/28/2008		999	545.92	well on	*
<i>Well Number: 16S02E05Ea Name: CAW - Bishop #1 (west)</i>						
	10/25/2007		225	398.81		173.81
	11/29/2007		999	398.81	well on	*
	12/27/2007		999	398.81	well on	*
	1/31/2008		244.4	398.81		154.41
	2/21/2008		293.6	398.81		105.21
	3/27/2008		999	398.81	well on	*
	4/24/2008		999	398.81	well on	*
	5/29/2008		999	398.81	well on	*
	6/26/2008		999	398.81	well on	*
	7/31/2008		999	398.81	well on	*
	8/28/2008		999	398.81	well on	*
<i>Well Number: 16S02E05Fb Name: CAW - Bishop #2 (east)</i>						
	10/25/2007		225.6	418.34		192.74
	11/29/2007		254.6	418.34		163.74
	12/27/2007		253.6	418.34		164.74
	1/31/2008		245.6	418.34		172.74
	2/21/2008		248.8	418.34		169.54
	3/27/2008		251	418.34		167.34
	4/24/2008		999.9	418.34	no measurement taken	**
<i>Well Number: 16S01E01E50 Name: CAW - Ryan Ranch #7</i>						
	10/25/2007		999	294	well on	-705
	11/29/2007		999.9	294	no measurement taken	**
	12/27/2007		178.8	294		115.2
	1/31/2008		265.8	294		28.2
	2/21/2008		999	294	well on	*
	3/27/2008		999	294	well on	*
	4/24/2008		999	294	well on	*
	5/29/2008		999	294	well on	*
	6/26/2008		260.2	294		33.8
	7/31/2008		999	294	well on	*
	8/28/2008		999	294	well on	*
<i>Well Number: 16S01E01T54 Name: CAW - Ryan Ranch #8</i>						
	10/25/2007		190.4	306.86		116.46
	11/29/2007		999	306.86	well on	*
	12/27/2007		185	306.86		121.86
	1/31/2008		184.6	306.86		122.26
	2/21/2008		191	306.86		115.86
	3/27/2008		191.8	306.86		115.06
	4/24/2008		191.6	306.86		115.26
	5/29/2008		210.8	306.86		96.06
	6/26/2008		225.5	306.86		81.36
	7/31/2008		245	306.86		61.86

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/28/2008		249	306.86		57.86
<i>Well Number: 16S01E01Cd Name: CAW - Ryan Ranch #11</i>						
	10/25/2007		186	307.59		121.59
	11/29/2007		202.4	307.59		105.19
	12/27/2007		187.4	307.59		120.19
	1/31/2008		186	307.59		121.59
	3/27/2008		189	307.59		118.59
	2/21/2008		999.9	307.59	no measurement taken	**
	4/24/2008		191.6	307.59		115.99
	5/29/2008		191.6	307.59		115.99
	6/26/2008		198.7	307.59		108.89
	7/31/2008		999	307.59	well on	*
	8/28/2008		999	307.59	well on	*
<i>Well Number: 16S02E05Mg Name: Pasadera - Main Gate</i>						
	10/1/2007		239	345.42		106.42
	11/19/2007		219.1	345.42		126.32
	1/2/2008		209.05	345.42		136.37
	2/14/2008		206.8	345.42		138.62
	3/5/2008		206.8	345.42		138.62
	5/1/2008		204.9	345.42		140.52
	6/1/2008		204.91	345.42		140.51
	7/1/2008 0900		221.17	345.42		124.25
	7/31/2008 1030		222.43	345.42		122.99
	8/6/2008 1045		222.52	345.42		122.9
<i>Well Number: 16S02E05Mf Name: Pasadera - New Paddock</i>						
	2/14/2008		199.6	352.69		153.09
	3/5/2008		199.1	352.69		153.59
	5/1/2008		198.51	352.69		154.18
	6/1/2008		198.21	352.69		154.48
	7/1/2008 1000		207.51	352.69		145.18
	7/31/2008 1030		207.09	352.69		145.6
	8/6/2008 1045		207.11	352.69		145.58
<i>Well Number: 16S02E05Ge Name: MCPD #1</i>						
	1/8/2008		183	392.86		209.86
	2/5/2008		187	392.86		205.86
	3/5/2008		192	392.86		200.86
	4/7/2008		185	392.86		207.86
	5/6/2008		185	392.86		207.86
	6/2/2008		188	392.86		204.86
	7/2/2008		191	392.86		201.86
	8/2/2008		202	392.86		190.86
<i>Well Number: 16S02E05Gf Name: MCPD #2</i>						
	1/8/2008		174	391.04		217.04

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	2/5/2008		184	391.04		207.04
	3/5/2008		179	391.04		212.04
	6/2/2008	1300	276	312.12		36.12
	6/2/2008	1330	278	307.19		29.19
	6/3/2008	1300	405	417.44		12.44
	7/2/2008		186	391.04		205.04
	8/2/2008		195	391.04		196.04

Well Number: 16S02E06Hb Name: Laguna Seca_Old No. 12

	10/31/2007		208	368.02		160.02
	11/30/2007		206	368.02		162.02
	1/31/2008		202	368.02		166.02
	2/29/2008		202.6	368.02		165.42
	3/31/2008		204.75	368.02		163.27
	5/31/2008		222.6	368.02		145.42
	6/13/2008	1150	237.96	368.02		130.06
	6/30/2008		222.3	368.02		145.72
	7/31/2008		226.6	368.02		141.42

Well Number: 15S01E36Qa Name: York School 01-349

	6/4/2008	0830	222.79	384.3		161.51
	6/13/2008	1112	281.5	384.3		102.8
	7/1/2008	1000	224.6	384.3		159.7
	8/1/2008	0840	287.67	384.3		96.63
	8/19/2008	1105	286.88	384.3		97.42
	9/29/2008	1420	225.6	384.3		158.7

Monitor Wells: Northern Coastal Subarea

Well Number: 15S01E15N3 Name: MSC-Shallow

	10/30/2007	1310	75.75	80.1		4.35
	11/27/2007	1545	75.65	80.1		4.45
	12/27/2007	1520	76.58	80.1		3.52
	1/29/2008	1225	75	80.1		5.1
	2/28/2008	1519	75.51	80.1		4.59
	3/27/2008	1245	75.76	80.1		4.34
	6/3/2008	1135	76.11	80.1		3.99
	6/20/2008	1120	76.72	80.1		3.38
	7/3/2008	1445	76.6	80.1		3.5
	7/31/2008	1000	76.93	80.1		3.17
	8/19/2008	1351	76.58	80.1		3.52
	9/29/2008	1515	78.12	80.1		1.98

Well Number: 15S01E15N2 Name: MSC-Deep

	10/30/2007	1310	97.82	80.29		-17.53
	11/27/2007	1545	97.79	80.29		-17.5
	12/27/2007	1520	99.41	80.29		-19.12
	1/29/2008	1225	95.69	80.29		-15.4

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	2/28/2008	1519	95.71	80.29		-15.42
	3/27/2008	1245	93.87	80.29		-13.58
	4/29/2008	1100	93.61	80.29		-13.32
	6/3/2008	1135	94.16	80.29		-13.87
	6/20/2008	1120	96.25	80.29		-15.96
	7/3/2008	1445	96.71	80.29		-16.42
	7/31/2008	1000	97.88	80.29		-17.59
	8/19/2008	1350	97.86	80.29		-17.57
	9/29/2008	1515	99.92	80.29		-19.63
<hr/>						
<i>Well Number: 15S01E15F1 Name: PCA-W Shallow</i>						
	10/30/2007	1015	60.72	64.22		3.5
	3/27/2008	0945	59.97	64.22		4.25
	6/20/2008	1220	60.92	64.22		3.3
	7/3/2008	1001	61.26	64.22		2.96
	8/18/2008	1016	61.55	64.22		2.67
<hr/>						
<i>Well Number: 15S01E15F2 Name: PCA-W Deep</i>						
	10/30/2007	1015	86.91	65.18		-21.73
	3/27/2008	0945	81.35	65.18		-16.17
	6/20/2008	1220	84.1	65.18		-18.92
	7/3/2008	1001	84.61	65.18		-19.43
	8/18/2008	1015	86.76	65.18		-21.58
<hr/>						
<i>Well Number: 15S01E15K5 Name: PCA-E (Multiple) Shallow</i>						
	10/30/2007	1501	66	68.51		2.51
	11/27/2007	1350	66.09	68.51		2.42
	12/27/2007	1305	65.16	68.51		3.35
	1/29/2008	1350	64.31	68.51		4.2
	2/28/2008	1403	63.75	68.51		4.76
	3/28/2008	1040	64.25	68.51		4.26
	4/29/2008	1414	65.04	68.51		3.47
	6/2/2008	1455	65.41	68.51		3.1
	6/18/2008	1425	66.61	68.51		1.9
	7/31/2008	1440	67.53	68.51		0.98
	8/19/2008	1026	67.83	68.51		0.68
<hr/>						
<i>Well Number: 15S01E15K4 Name: PCA-E (Multiple) Deep</i>						
	10/30/2007	1500	91.71	68.54		-23.17
	11/27/2007	1350	91.92	68.54		-23.38
	12/27/2007	1305	92.36	68.54		-23.82
	1/29/2008	1350	87.66	68.54		-19.12
	2/28/2008	1403	86.17	68.54		-17.63
	3/28/2008	1040	84.38	68.54		-15.84
	4/29/2008	1414	83.62	68.54		-15.08
	6/2/2008	1455	87.12	68.54		-18.58
	6/18/2008	1425	88.8	68.54		-20.26
	7/31/2008	1440	91.28	68.54		-22.74

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/19/2008	1025	91.5	68.54		-22.96
<i>Well Number: 15S01E23B1 Name: Ord Grove Test</i>						
	10/25/2007		342	294.14	prod well on	-47.86
	10/25/2007		351	330.72	prod well on	-20.28
	11/1/2007	1145	328.11	294.14	prod well off	-33.97
	11/27/2007	1327	344.17	294.14	prod well on	-50.03
	12/27/2007		342	294.14	prod well on	-47.86
	11/29/2007		349	330.72	prod well on	-18.28
	12/25/2007		348	330.72	prod well on	-17.28
	1/3/2008	1300	328.7	294.14	prod well off	-34.56
	1/29/2008	1420	343.16	294.14	prod well on	-49.02
	1/31/2008		344	294.14	prod well on	-49.86
	2/21/2008		327	294.14	prod well off	-32.86
	2/28/2008	1323	322.39	294.14	prod well off	-28.25
	3/27/2008		319	294.14	prod well off	-24.86
	3/28/2008	1119	318.97	294.14	prod well on	-24.83
	4/24/2008		318	294.14	prod well off	-23.86
	4/29/2008	1345	317.09	294.14	prod well off	-22.95
	5/29/2008		339	294.14	prod well on	-44.86
	6/2/2008	1520	332.76	294.14	prod well on	-38.62
	6/18/2008	1455	342.02	294.14	prod well on	-47.88
	6/26/2008		336	294.14	prod well on	-41.86
	7/31/2008	1505	345.88	294.14	prod well on	-51.74
	8/25/2008	1425	347.14	294.14	prod well on	-53
<i>Well Number: 15S01E14Ra Name: Paralta Test</i>						
	10/29/2007	1536	349.2	330.72	prod. well on	-18.48
	11/27/2007	1347	348.6	330.72	prod. well on	-17.88
	1/3/2008	1040	347.4	330.72	prod. well on	-16.68
	1/29/2008	1255	336.4	330.72		-5.68
	2/28/2008	1050	335.02	330.72		-4.3
	3/28/2008	1350	333.58	330.72		-2.86
	1/31/2008		336	330.72		-5.28
	2/21/2008		345	330.72	prod. well on	-14.28
	3/1/2008		334	330.72		-3.28
	3/27/2008		334	330.72		-3.28
	4/24/2008		334	330.72		-3.28
	4/29/2008	1440	339.69	330.72		-8.97
	5/29/2008		345	330.72	prod. well on	-14.28
	6/2/2008	1550	341.56	330.72	prod. well on	-10.84
	6/18/2008	1405	345.76	330.72	prod. well on	-15.04
	6/26/2008		345	330.72	prod. well on	-14.28
	7/31/2008	1418	347.12	330.72	prod. well on	-16.4
	7/31/2008		346	330.72	prod. well on	-15.28
	8/25/2008	1445	348.41	330.72	prod. well on	-17.69
	8/28/2008		346	330.72	prod. well on	-15.28

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
<i>Well Number: 15S01E23Ca Name: Ord Terrace-Shallow</i>						
	8/19/2008	1516	265.23	228.65		-36.58
<i>Well Number: 15S01E23Cb Name: Ord Terrace-Deep</i>						
	10/31/2007	1405	262.3	228.63		-33.67
	11/27/2007	1315	264.99	228.63		-36.36
	1/3/2008	1314	261.91	228.63		-33.28
	1/29/2008	1409	262.49	228.63		-33.86
	2/28/2008	1313	256.26	228.63		-27.63
	3/28/2008	1110	253	228.63		-24.37
	4/29/2008	1335	251.31	228.63		-22.68
	6/2/2008	1505	257.63	228.63		-29
	6/18/2008	1438	260.63	228.63		-32
	7/31/2008	1455	265.03	228.63		-36.4
	8/19/2008	1515	265.66	228.63		-37.03
<i>Well Number: 15S01E11Pa Name: MPWMD #FO-09-Shallow</i>						
	10/31/2007	1135	115.2	118.89		3.69
	11/27/2007	1225	114.96	118.89		3.93
	12/27/2007	1015	114.43	118.89		4.46
	1/29/2008	1230	113.78	118.89		5.11
	2/28/2008	1243	113.19	118.89		5.7
	3/27/2008	1425	113.66	118.89		5.23
	4/29/2008	1256	114.05	118.89		4.84
	6/2/2008	1440	114.59	118.89		4.3
	6/18/2008	1230	115.5	118.89		3.39
	7/3/2008	1250	115.46	118.89		3.43
	7/31/2008	1348	116.31	118.89		2.58
	8/18/2008	1401	116.47	118.89		2.42
	9/26/2008	1422	117.08	118.89		1.81
<i>Well Number: 15S01E11Pb Name: MPWMD #FO-09-Deep</i>						
	10/31/2007	1135	141.58	118.85		-22.73
	11/27/2007	1225	141.55	118.85		-22.7
	12/27/2007	1015	141.95	118.85		-23.1
	1/29/2008	1230	137.2	118.85		-18.35
	2/28/2008	1243	136.36	118.85		-17.51
	3/27/2008	1425	135.25	118.85		-16.4
	4/29/2008	1256	133.6	118.85		-14.75
	6/2/2008	1440	137	118.85		-18.15
	6/18/2008	1230	138.66	118.85		-19.81
	7/3/2008	1250	139.53	118.85		-20.68
	7/31/2008	1348	140.9	118.85		-22.05
	8/18/2008	1400	141.32	118.85		-22.47
	9/26/2008	1422	142.33	118.85		-23.48
<i>Well Number: 15S01E12Fa Name: MPWMD #FO-10-Shallow</i>						
	10/31/2007	0915	201.03	200.85		-0.18

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	11/27/2007	1450	200.06	200.85		0.79
	1/3/2008	1400	200.4	200.85		0.45
	1/29/2008	1159	200.96	200.85		-0.11
	2/28/2008	1220	200.27	200.85		0.58
	3/28/2008	1200	200.78	200.85		0.07
	4/29/2008	1528	200.76	200.85		0.09
	6/2/2008	1415	202.42	200.85		-1.57
	6/18/2008	1212	202.42	200.85		-1.57
	7/31/2008	1330	202.58	200.85		-1.73
	8/18/2008	1301	203.4	200.85		-2.55
	9/29/2008	1320	203.7	200.85		-2.85

Well Number: 15S01E12Fc Name: MPWMD #FO-10-Deep

	10/31/2007	0915	204.98	201.03		-3.95
	11/27/2007	1450	204.66	201.03		-3.63
	1/3/2008	1400	204.37	201.03		-3.34
	1/29/2008	1159	204.75	201.03		-3.72
	2/28/2008	1220	204.15	201.03		-3.12
	3/28/2008	1200	203.51	201.03		-2.48
	4/29/2008	1528	202.86	201.03		-1.83
	6/2/2008	1415	204.02	201.03		-2.99
	6/18/2008	1212	204.52	201.03		-3.49
	7/31/2008	1330	204.81	201.03		-3.78
	8/18/2008	1300	206.16	201.03		-5.13
	9/29/2008	1320	206.48	201.03		-5.45

Well Number: 15S01E23Aa Name: Mission Memorial Monitor

	11/1/2007	1135	347.43	315.42		-32.01
	11/27/2007	1340	348.3	315.42		-32.88
	1/3/2008	1305	347.3	315.42		-31.88
	1/29/2008	1430	340	315.42		-24.58
	2/27/2008	1130	338.18	315.42		-22.76
	3/28/2008	1130	334.48	315.42		-19.06
	4/29/2008	1400	335.6	315.42	prod well on	-20.18
	6/2/2008	1535	340.18	315.42		-24.76
	6/18/2008	1510	342.98	315.42		-27.56
	7/31/2008	1505	345.91	315.42		-30.49
	8/15/2008	1146	346.08	315.42		-30.66

Well Number: 15S01E22Cd Name: CAW - Del Monte Test

	10/25/2007		30	32.62		2.62
	11/29/2007		30	32.62		2.62
	12/27/2007		30	32.62		2.62
	1/31/2008		30	32.62		2.62
	2/21/2008		30	32.62		2.62
	3/27/2008		29	32.62		3.62
	1/31/2008		30	32.62		2.62
	4/24/2008		29	32.62		3.62

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	5/29/2008		29	32.62		3.62
	6/26/2008		29	32.62		3.62
	7/31/2008		29	32.62		3.62
	8/28/2008		29	32.62		3.62
<i>Well Number: 15S01E22Ha Name: CAW - Luxton</i>						
	10/25/2007		90	89.12		-0.88
	11/29/2007		96	89.12		-6.88
	12/27/2007		97	89.12		-7.88
	1/31/2008		96	89.12		-6.88
	2/21/2008		95	89.12		-5.88
	3/27/2008		95	89.12		-5.88
	4/24/2008		94	89.12		-4.88
	5/29/2008		94	89.12		-4.88
	7/31/2008		92.8	89.12		-3.68
	8/28/2008		90.6	89.12		-1.48
<i>Well Number: 15S01E22B51 Name: CAW - Playa #4</i>						
	10/25/2007		65	52.53		-12.47
	11/29/2007		65	52.53		-12.47
	12/27/2007		66	52.53		-13.47
	1/31/2008		64	52.53		-11.47
	2/21/2008		61	52.53		-8.47
	3/27/2008		61	52.53		-8.47
	4/24/2008		61	52.53		-8.47
	5/29/2008		62.5	52.53		-9.97
	6/26/2008		62	52.53		-9.47
	7/31/2008		64	52.53		-11.47
	8/28/2008		65	52.53		-12.47
<i>Well Number: 15S01E02Pa Name: CDM MW-1</i>						
	5/12/2008		90.5	93.53		3.03
	7/2/2008 1245		90.02	93.53		3.51
<i>Well Number: 15S01E15Ga Name: CDM MW-2</i>						
	5/12/2008		60.45	63.83		3.38
	7/2/2008 1340		60.46	63.83		3.37
<i>Well Number: 15S01E12Da Name: MW-B-22-180</i>						
	6/20/2008 1315		157.09	168.1		11.01
	8/26/2008 1245		157.03	168.1		11.07
<i>Well Number: 15S01E02Pb Name: Sentinel MW #1</i>						
	7/2/2008 1240		111.67	93.03		-18.64
	8/27/2008 0700		114.6	93.03		-21.57
<i>Well Number: 15S01E11Ea Name: Sentinel MW #2</i>						
	7/2/2008 1300		90.06	70.73		-19.33

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/27/2008	0830	92.4	70.73		-21.67
<i>Well Number: 15S01E11Eb Name: Sentinel MW #3</i>						
	7/2/2008	1320	75.52	56.53		-18.99
	8/27/2008	0900	77.75	56.53		-21.22
<i>Well Number: 15S01E15Gb Name: Sentinel MW #4</i>						
	7/2/2008	1350	79.9	59.43		-20.47
	8/27/2008	1300	82.8	59.43		-23.37

Monitor Wells: Northern Inland Subarea*Well Number: 15S01E26Ba Name: MPWMD #FO-01-Shallow*

	10/29/2007	1024	201.67	362.61		160.94
	1/11/2008	1110	201.87	362.61		160.74
	4/4/2008	1209	201.72	362.61		160.89
	6/13/2008	1410	201.68	362.61		160.93

Well Number: 15S01E26Bb Name: MPWMD #FO-01-Deep

	10/29/2007	1028	337.59	362.57		24.98
	1/11/2008	1107	337.58	362.57		24.99
	4/4/2008	1206	337.72	362.57		24.85
	6/13/2008	1405	337.76	362.57		24.81

Well Number: 15S01E13La Name: MPWMD #FO-07-Shallow

	10/29/2007	1340	458.53	473.44		14.91
	11/27/2007	1146	458.02	473.44		15.42
	1/3/2008	1155	457.88	473.44		15.56
	1/29/2008	0946	457.58	473.44		15.86
	2/28/2008	1023	457.45	473.44		15.99
	3/28/2008	1015	457.54	473.44		15.9
	4/29/2008	1215	458.11	473.44		15.33
	7/31/2008	1240	458.22	473.44		15.22
	8/26/2008	1215	458.39	473.44		15.05
	9/29/2008	1224	458.81	473.44		14.63

Well Number: 15S01E13Lb Name: MPWMD #FO-07-Deep

	10/29/2007	1300	495.89	473.44		-22.45
	11/27/2007	1146	496.26	473.44		-22.82
	1/3/2008	1155	495.77	473.44		-22.33
	1/29/2008	0946	491.9	473.44		-18.46
	2/28/2008	1023	490.99	473.44		-17.55
	3/28/2008	1015	489.54	473.44		-16.1
	4/29/2008	1214	487.69	473.44		-14.25
	6/2/2008	1216	492.22	473.44		-18.78
	6/13/2008	1418	492.58	473.44		-19.14
	7/31/2008	1231	495.28	473.44		-21.84

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	8/26/2008	1210	495.8	473.44		-22.36
	9/29/2008	1257	496.78	473.44		-23.34
<i>Well Number: 15S01E12Qa Name: MPWMD #FO-08-Shallow</i>						
	10/29/2007	1447	375.92	378.04		2.12
	11/27/2007	1411	375.58	378.04		2.46
	1/3/2008	1226	375.34	378.04		2.7
	1/29/2008	1017	374.82	378.04		3.22
	2/28/2008	1112	374.65	378.04		3.39
	3/28/2008	1300	374.39	378.04		3.65
	4/29/2008	1457	374.38	378.04		3.66
	6/2/2008	1320	376.79	378.04		1.25
	6/18/2008	1125	374.98	378.04		3.06
	7/31/2008	1310	375.5	378.04		2.54
	8/25/2008	1331	375.6	378.04		2.44
	9/29/2008	1046	376.01	378.04		2.03
<i>Well Number: 15S01E12Qb Name: MPWMD #FO-08-Deep</i>						
	10/29/2007	1446	399.48	378.1		-21.38
	11/27/2007	1420	399.93	378.1		-21.83
	1/3/2008	1225	399.46	378.1		-21.36
	1/29/2008	1016	395.96	378.1		-17.86
	2/28/2008	1112	395.07	378.1		-16.97
	3/28/2008	1300	393.49	378.1		-15.39
	4/29/2008	1457	392.55	378.1		-14.45
	6/2/2008	1320	395.66	378.1		-17.56
	6/18/2008	1125	396.92	378.1		-18.82
	7/31/2008	1310	398.68	378.1		-20.58
	8/25/2008	1330	399.28	378.1		-21.18
	9/29/2008	1046	400.04	378.1		-21.94
<i>Well Number: 15S02E7Ba Name: MPWMD #FO-11-Shallow</i>						
	10/29/2007	1211	339.89	332.93		-6.96
	11/27/2007	1433	339.4	332.93		-6.47
	1/3/2008	1410	339.21	332.93		-6.28
	1/29/2008	1050	339.26	332.93		-6.33
	2/28/2008	1139	338.8	332.93		-5.87
	3/28/2008	1320	339.13	332.93		-6.2
	4/29/2008	1511	339.2	332.93		-6.27
	6/2/2008	1350	340.03	332.93		-7.1
	6/13/2008	1510	340.08	332.93		-7.15
	7/31/2008	1320	340.3	332.93		-7.37
	8/25/2008	1358	340.38	332.93		-7.45
	9/29/2008	1310	340.6	332.93		-7.67
<i>Well Number: 15S02E7Bb Name: MPWMD #FO-11-Deep</i>						
	10/29/2007	1211	330.06	332.96		2.9
	11/27/2007	1433	330.3	332.96		2.66

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	1/3/2008	1410	330.26	332.96		2.7
	1/29/2008	1050	329.08	332.96		3.88
	2/28/2008	1139	328.74	332.96		4.22
	3/28/2008	1320	328.79	332.96		4.17
	4/29/2008	1511	328.14	332.96		4.82
	6/2/2008	1350	329.61	332.96		3.35
	6/13/2008	1510	329.62	332.96		3.34
	7/31/2008	1320	330.15	332.96		2.81
	8/25/2008	1357	330.37	332.96		2.59
	9/29/2008	1310	330.68	332.96		2.28

Well Number: 15S01E23Ad Name: ASR - 1

	6/18/2008	1046	366.48	337.23		-29.25
	7/8/2008	1015	367.85	337.23		-30.62
	7/29/2008	1000	369.43	337.23		-32.2
	9/2/2008	1111	370.71	337.23		-33.48

Well Number: 15S01E23Af Name: ASR - 2

	6/18/2008	1055	383.86	356		-27.86
	7/8/2008	1010	385.44	356		-29.44
	7/29/2008	1005	386.76	356		-30.76
	8/26/2008	1500	389.54	356		-33.54
	9/2/2008	1131	388	356		-32

Well Number: 15S01E23Ae Name: ASR MW-1

	9/12/2008	0930	371.34	338.28		-33.06
--	-----------	------	--------	--------	--	--------

Monitor Wells: Southern Coastal Subarea

Well Number: 15S01E27J6 Name: MPWMD - Plumas '90 Test

	11/1/2007	1105	104.06	157.83		53.77
	11/27/2007	1515	103.77	157.83		54.06
	1/3/2008	1330	104.88	157.83		52.95
	1/29/2008	1450	104.43	157.83		53.4
	2/28/2008	1422	104.49	157.83		53.34
	3/28/2008	0940	103.85	157.83		53.98
	4/29/2008	1549	103.56	157.83	prod. well on	54.27
	6/4/2008	1035	104.68	157.83	prod. well on	53.15
	6/18/2008	1530	105.03	157.83	prod. well on	52.8
	7/31/2008	1531	105.91	157.83	prod. well on	51.92
	8/25/2008	1515	105.22	157.83	prod. well on	52.61
	9/29/2008	1603	105.08	157.83		52.75

Well Number: 15S01E21Re Name: K-Mart

	11/1/2007	1120	23.46	30.65		7.19
	11/27/2007	1530	22.89	30.65		7.76
	1/3/2008	1340	23.13	30.65		7.52
	1/29/2008	1500	22.79	30.65		7.86

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	2/28/2008	1437	22.74	30.65		7.91
	3/28/2008	0925	22.54	30.65		8.11
	4/29/2008	1559	23.22	30.65		7.43
	6/4/2008	1025	23.12	30.65		7.53
	6/20/2008	0932	23.22	30.65		7.43
	7/31/2008	1035	23.27	30.65		7.38
	8/25/2008	1540	23.3	30.65		7.35
	9/29/2008	1530	23.34	30.65		7.31

Well Number: 15S01E22De Name: CDM MW-3

	2/8/2008	1010	31.68	33.81		2.13
	2/28/2008	0930	31.58	33.81		2.23
	3/27/2008	1229	32.82	33.81		0.99
	4/29/2008	0945	32.33	33.81		1.48
	6/2/2008	1052	32.83	33.81		0.98
	6/20/2008	1025	32.78	33.81		1.03
	8/22/2008	1411	31.3	33.81		2.51

Well Number: 15S01E21Ka Name: CDM MW-4

	2/8/2008	0910	14.51	18.69		4.18
	2/28/2008	0910	14.82	18.69		3.87
	3/28/2008	0958	15.33	18.69		3.36
	4/29/2008	0930	15.55	18.69		3.14
	6/2/2008	1040	15.23	18.69		3.46
	6/20/2008	0921	15.51	18.69		3.18
	7/31/2008	0920	15.19	18.69		3.5
	8/25/2008	1221	15.28	18.69		3.41
	9/29/2008	1002	15.16	18.69		3.53

Well Number: 15S01E26Da Name: Hilby MGT

	10/25/2007		242	248.04		6.04
	11/29/2007		242.6	248.04		5.44
	12/27/2007		242	248.04		6.04
	1/31/2008		242	248.04		6.04
	2/21/2008		241	248.04		7.04
	3/27/2008		241	248.04		7.04
	4/24/2008		241.8	248.04		6.24
	5/29/2008		243	248.04		5.04
	6/26/2008		243	248.04		5.04
	7/31/2008		243	248.04		5.04
	8/28/2008		243	248.04		5.04

Monitor Wells: Laguna Seca Subarea

Well Number: 15S01E26Fb Name: MW-BW-08-A

	1/30/2008	1100	58.68	205.18		146.5
	2/28/2008	1010	58.39	205.18		146.79
	3/28/2008	0950	58.41	205.18		146.77

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
	4/29/2008	1202	58.51	205.18		146.67
	6/2/2008	1203	58.58	205.18		146.6
	6/13/2008	1350	58.59	205.18		146.59
	7/31/2008	1210	58.01	205.18		147.17
	8/26/2008	1154	58.62	205.18		146.56
	9/29/2008	1204	58.72	205.18		146.46

Well Number: 15S01E26Fa Name: MW-BW-09-180

	1/30/2008	1055	203.66	206.22		2.56
	2/28/2008	1012	203.42	206.22		2.8
	3/28/2008	0945	203.61	206.22		2.61
	4/29/2008	1157	203.63	206.22		2.59
	6/2/2008	1201	203.9	206.22		2.32
	6/13/2008	1346	203.82	206.22		2.4
	7/31/2008	1205	204.02	206.22		2.2
	8/26/2008	1150	204.03	206.22		2.19
	9/29/2008	1202	204.3	206.22		1.92

Well Number: 15S02E33Ca Name: MPWMD #FO-03-Deep

	11/1/2007	1300	634.57	774.74		140.17
	1/11/2008	1250	634.78	774.74		139.96
	4/4/2008	1405	634.98	774.74		139.76
	7/1/2008	1145	635.41	774.74		139.33

Well Number: 15S01E26Na Name: MPWMD #FO-04-Shallow (E)

	10/29/2007	1050	109.68	168.23		58.55
	1/11/2008	1157	110.48	168.23		57.75
	4/4/2008	1240	110.1	168.23		58.13
	6/13/2008	1320	111.2	168.23		57.03

Well Number: 15S01E26Nb Name: MPWMD #FO-04-Deep (W)

	10/29/2007	1053	110.68	167.44		56.76
	1/11/2008	1201	111.05	167.44		56.39
	4/4/2008	1236	109.24	167.44		58.2
	6/13/2008	1324	111.28	167.44		56.16

Well Number: 16S02E04Ha Name: MPWMD #FO-05-Shallow

	1/11/2008	1425	240.08	478.97		238.89
	4/7/2008	1336	241.03	478.97		237.94
	6/13/2008	0940	243.71	478.97		235.26

Well Number: 16S02E04Hb Name: MPWMD #FO-05-Deep

	10/26/2007	1430	304.63	479.29		174.66
	1/11/2008	1425	301.45	479.29		177.84
	10/26/2007	1430	241.82	478.97		237.15
	4/7/2008	1336	303.37	479.29		175.92
	6/13/2008	0940	307.71	479.29		171.58

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
<i>Well Number: 16S02E04Fa Name: MPWMD #FO-06-Shallow</i>						
	10/26/2007	1520	230.61	470.13		239.52
	1/11/2008	1515	229.59	470.13		240.54
	4/7/2008	1415	230.13	470.13		240
	6/13/2008	1002	231.68	470.13		238.45
<i>Well Number: 16S02E04Fb Name: MPWMD #FO-06-Deep</i>						
	10/26/2007	1520	225.82	470.63		244.81
	1/11/2008	1515	222.85	470.63		247.78
	4/7/2008	1415	223.4	470.63		247.23
	6/13/2008	1002	227.97	470.63		242.66
<i>Well Number: 15S01E35Jb Name: Justin Court (RR M2S)</i>						
	10/29/2007	0926	142.37	240.28		97.91
	1/11/2008	1617	142.33	240.28		97.95
	4/4/2008	1605	142.3	240.28		97.98
	6/13/2008	1220	142.29	240.28		97.99
<i>Well Number: 15S02E32Ra Name: LS Pistol Range (Mo Co TH-1)</i>						
	10/26/2007	1450	284.18	514.39		230.21
	1/11/2008	1445	284.38	514.39		230.01
	4/4/2008	1428	284.23	514.39		230.16
	6/13/2008	1036	284.37	514.39		230.02
<i>Well Number: 15S01E36Rb Name: York Rd-West (Mo Co MW-1 D)</i>						
	10/29/2007	0944	307.56	490.28		182.72
	1/11/2008	1610	306.72	490.28		183.56
	4/4/2008	1522	306.7	490.28		183.58
	6/13/2008	1210	308.02	490.28		182.26
<i>Well Number: 16S02E04Lc Name: Seca Place (Mo Co MW-2)</i>						
	10/26/2007	1415	250.98	427.58		176.6
	1/11/2008	1410	245.89	427.58		181.69
	4/4/2008	1503	247.41	427.58		180.17
	6/13/2008	0925	255.53	427.58		172.05
<i>Well Number: 16S02E09Bb Name: Robley Shallow (North) (Mo Co MW-3S)</i>						
	10/26/2007	1400	320.82	566.54		245.72
	1/11/2008	1355	321.09	566.54		245.45
	4/4/2008	1445	321.02	566.54		245.52
	6/13/2008	0915	321.97	566.54		244.57
<i>Well Number: 16S02E09Bc Name: Robley Deep (South) (Mo Co MW-3D)</i>						
	10/26/2007	1400	377.83	566.44		188.61
	1/11/2008	1355	372.05	566.44		194.39
	4/4/2008	1445	374.13	566.44		192.31
	6/13/2008	0915	380.41	566.44		186.03

SEASIDE BASIN WATERMASTER

GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008 - All Quarters
 Period: 10/1/2007 to 9/30/2008
 (data in feet)

Well Number and Name	Date	Time	Depth to Water	Reference Point Elevation (MSL)	Comments	Water Elevation (MSL)
<i>Well Number: 16S02E06C2 Name: LS Driving Range (SCS Deep)</i>						
	10/29/2007	0937	324.02	491		166.98
	1/11/2008	1601	324.22	491		166.78
	9/4/2008	1515	322.83	491		168.17
	6/13/2008	1125	325.42	491		165.58
	8/15/2008	0930	325.35	491		165.65
<i>Well Number: 16S02E06M1 Name: LS No. 1 Subdivision</i>						
	10/29/2007	1000	115.38	277.13		161.75
	1/11/2008	1550	116.27	277.13		160.86
	4/4/2008	1545	116.23	277.13		160.9
	6/13/2008	1055	117.05	277.13		160.08
<i>Well Number: 16S01E01Hx Name: Blue Larkspur-East End</i>						
	10/29/2007	0953	92.63	253.29		160.66
	1/11/2008	1544	93.29	253.29		160
	4/4/2008	1535	93.2	253.29		160.09
	12/7/2007	1441	89.01	253.29		164.28
	6/13/2008	1045	94.08	253.29		159.21
<i>Well Number: 15S01E35Jc Name: CAW-Granite Construction</i>						
	2/8/2008	1405	134.15	226.43		92.28
	4/3/2008	1057	134.02	226.43		92.41
	6/13/2008	1230	133.97	226.43		92.46

APPENDIX 5

SEASIDE BASIN GROUNDWATER LEVEL MONITORING RESULTS

Water Year 2008

WATERMASTER SENTINEL WELLS

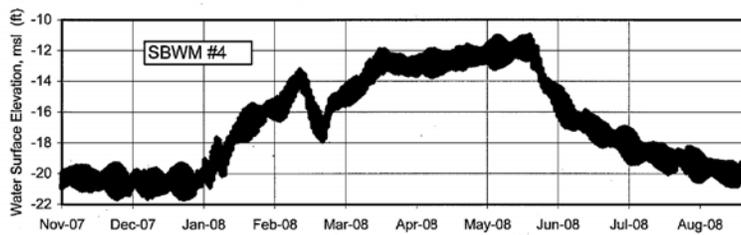
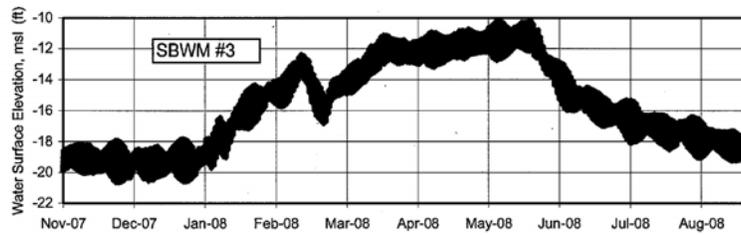
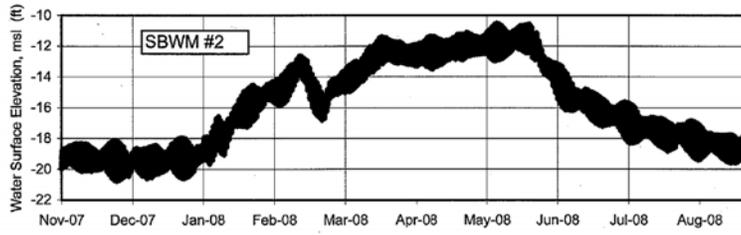
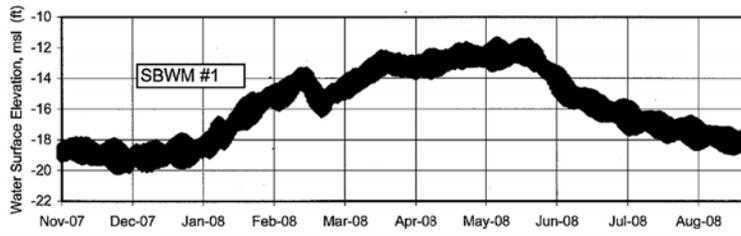


FIGURE 1
SBWM Sentinel Wells -
Continuous Water Level Record

ATTACHMENT 7

**MATERIALS PERTAINING TO IMPLEMENTATION OF
RECOMMENDATIONS CONTAINED IN THE ENHANCED
MONITORING WELL NETWORK REPORT CONTAINED
IN THE 2007 ANNUAL REPORT**

The Seaside Basin Watermaster submitted the following report in response to the Order of the Court dated November 26, 2007. That Order pertained to deficiencies in the collection of data from certain wells located within the Basin.

The Court's Minute Order read as follows:

The Court has received and read the 2007 Watermaster Report for the Seaside Groundwater Basin. It notes that Attachment 9, Page 10 of the report summarizes: "Existing provisions in the court-approved Seaside Basin Monitoring and Management Program (SBMMP) require certain groundwater-level and groundwater-quality data collection and reporting from Watermaster member production wells for incorporation into the Watermaster's consolidated groundwater-resources database. It appears that at least some of the required data collections have not been conducted by Watermaster members as prescribed in the SBMMP. If these required data had been available they would have significantly benefited the groundwater-level quality analyses recently undertaken as part of the Phase I implementation of the SBMP."

The Annual Report references the Joe Oliver report (Attachment 9) at page 6, and states: "The Watermaster Board approved Fiscal Year 2008 Budgets that will fund implementation of all of these recommendations, so the enhanced monitoring well network will be put into place during Water Year 2008."

To ensure full implementation of the judgment the Court now orders that Watermaster provide supplemental information regarding the deficiencies noted above, and present a specific plan of action to cure those deficiencies, no later than February 28, 2008.

At its January 16, 2008 meeting the Watermaster Board of Directors took the following actions regarding the Court's Order:

1. Adopted the Specific Action Plan contained in Exhibit A.
2. Authorized the issuance of the "Notice of Request for Well Water Data" (Notice) requesting that the groundwater-level and groundwater-quality data be provided to the Watermaster as required by the SBMMP. This Notice is contained in Exhibit B.
3. Authorized staff to prepare and execute a contract for a not-to-exceed amount of \$17,460 with the Monterey Peninsula Water Management District (MPWMD) to collect well data for well owners/operators who wish to have the Watermaster provide this service.

The progress and current status of each of the actions listed above are as follows:

1. All elements of the Specific Action Plan have been performed.
2. The "Notice of Request for Well Water Data" was issued to all well owners within the Basin.

3. The Board approved a contract for a not-to-exceed amount of \$17,460 with the Monterey Peninsula Water Management District (MPWMD) to collect well data for well owners/operators who wish to have the Watermaster provide this service.

All required well data is now being regularly provided to the Watermaster, as required by the Amended Decision.

Exhibit A

Specific Action Plan In Response to Court Order Dated November 26, 2007

In accordance with the Schedule shown below, the Watermaster will carry out the following actions in order to cure the deficiencies cited in the Court's Minute Order dated November 26, 2007:

1. Identify all of the wells that are required by the Court's March 27, 2006 Order to obtain and submit water level and water quality data.
2. Not later than January 31, 2008, notify each of these well owners/operators of their obligations to provide this data to the Watermaster, and require that they promptly begin providing this data. Require that a response to this notification be provided to the Watermaster within 10 days of the date it is received by a well owner/operator.
3. Issue a contract to MPWMD to obtain water level and/or water quality data from those well owners/operators who wish to pay the Watermaster to obtain this data for their wells.
4. Include the water level and water quality data from all of these wells in the comprehensive database which the Watermaster uses to help it to manage the Seaside Basin.
5. Initiate appropriate action to obtain the required data from any well owner/operator that does not provide this data after being notified by the Watermaster under Action 2 above.
6. Submit this Specific Action Plan, along with a report on the results of Actions 1 through 4 above, to the Court not later than February 25, 2008.
7. On an ongoing basis, continue to monitor the receipt of the required water level and water quality data to ensure that such data is received on time and in the proper

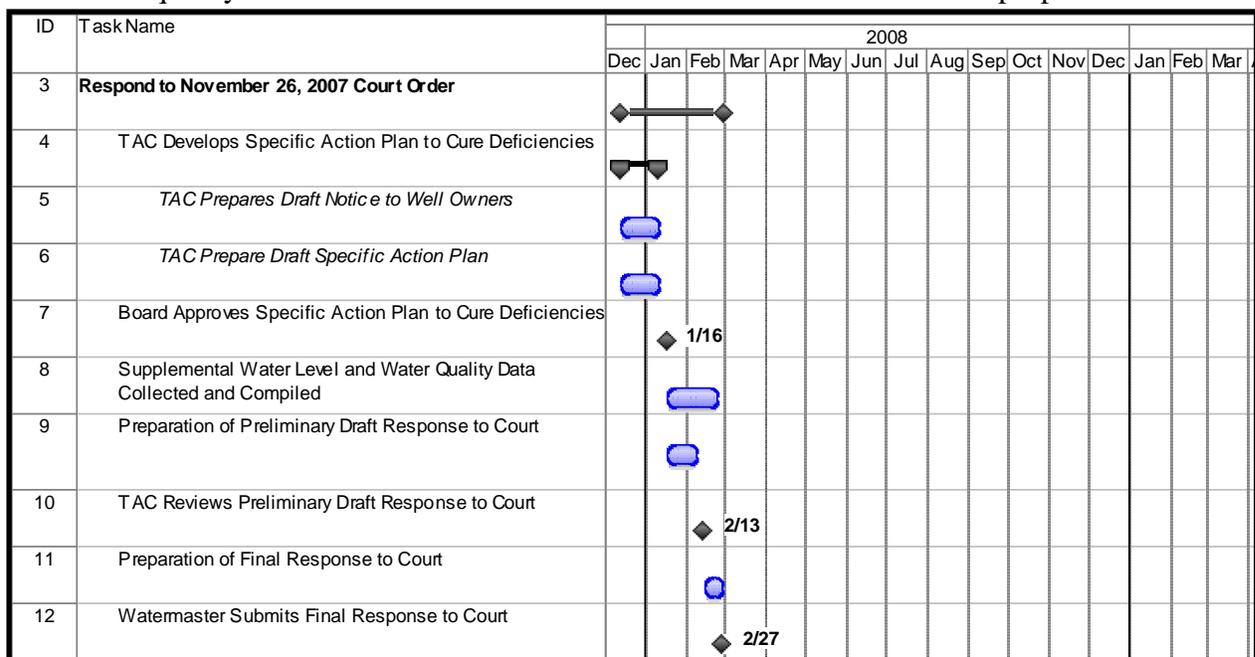


Exhibit B

[SENT OUT ON WATERMASTER LETTERHEAD]

NOTICE OF REQUEST FOR WATER WELL DATA January 17, 2008

You are receiving this Notice because the Seaside Groundwater Basin Watermaster's records indicate you are the owner or operator of a water well located within the Seaside Groundwater Basin.

The Seaside Groundwater Basin Watermaster (Watermaster) is responsible for enforcing and administering the provisions of the adjudication Decision for the Seaside Groundwater Basin (Basin) located in northern Monterey County, California. This Decision was issued by the Superior Court in Monterey County on March 27, 2006 and amended on February 9, 2007.

Concerns about overpumping of groundwater from the Basin, and the potential for this to lead to seawater intrusion, led to the Court's issuing of the Decision. The Decision requires that certain actions be taken by the Watermaster to preserve and protect the groundwater resources within the Basin. Two of these requirements are:

1. All active and inactive production wells in the basin must have static (i.e., non-pumping) water levels collected and recorded a minimum of once per month.
2. All active production wells in the coastal subareas of the basin must have a water quality sample from each well collected and analyzed by a state-approved (certified) laboratory for the full general inorganic mineral suite a minimum of once per year.

An active production well is defined as any well that has extracted water within the last year for a beneficial use, such as landscape irrigation, commercial uses, or drinking water. An inactive production well is defined as any well that could extract water for a beneficial use, but which has not extracted water within the last year and currently either has an inoperable pump, or no pump at all, and is therefore not currently capable of extracting water for a beneficial use.

The Decision states that it shall be the responsibility of each owner/operator of the well(s) to report water level and quality analytical results to the Watermaster for inclusion of these data in the consolidated groundwater resource database. This database is being developed by the Watermaster pursuant to the Decision.

The check box on the following page shows what our records indicate with regard to receipt of the required data from you for the indicated water well(s) located within the Seaside Groundwater Basin. If the data has not been submitted, you are hereby requested to provide the indicated 2006 and 2007 data to the Watermaster, as well as any prior well data of this type.

Water System Name:

Well Name:

Well Status: Active Inactive

Required Data to be Submitted: Monthly Static Water Levels Annual Water Quality

Has Data Has Been Submitted to the Watermaster as Required? Yes No

Are There Any Extenuating Circumstances Pertaining to this Well for Which You Believe the Well Should Not be Required to Submit this Data?: Yes No

If the answer to this question is “Yes” please provide a detailed explanation of these circumstances, and why the data cannot, or should not, be submitted:

For ongoing compliance, there are two ways for you to obtain and submit the required data to the Watermaster:

1. Obtain the data yourself, and submit it to the Watermaster. This will likely involve (1) either making the water level measurements yourself, or having another qualified party do this for you, and (2) taking a water quality sample and sending it to a state-approved laboratory for analysis.
2. Have the Watermaster obtain the data for you, and pay the Watermaster for its costs to provide this service.

If you choose to obtain the data yourself, you will need to have the skills and equipment to make the water level measurements, and to collect a representative sample for water quality testing. A brief description of the procedures for performing each of these tasks is contained in Attachment A to this Notice. A listing of the water quality parameters for

which the annual water sample must be analyzed are contained in Attachment B. These parameters are standard tests performed by many water quality laboratories. Water level data are to be collected once each month, and are to be submitted to the Watermaster within 15 days after the data are collected. Water quality sampling is to be performed in September or October, and the water quality results are to be submitted to the Watermaster not later than October 15 of each year. **If you choose to obtain the data yourself, please send written notification of this to the Watermaster not later than January 31, 2008.**

If you choose to have the Watermaster obtain the data on your behalf, you will need to provide written authorization to the Watermaster for this purpose. This can be done by filling out and returning the form contained in Attachment C to this letter, and returning it to the Watermaster along with your check made out in the appropriate amount per well, as described in Attachment C. **If you choose to have the Watermaster obtain the data on your behalf, please complete and return the form in Attachment C, along with your check, to the Watermaster not later than January 31, 2008.** Note: Well owners/operators who are currently collecting this data themselves may also ask to have the Watermaster collect the data for them, under the same terms and conditions set forth in Attachment C.

The Watermaster has been ordered by the Court to provide a report by February 28, 2008 on progress being made to collect the required data. The responses received from each affected well owner/operator will be used in the preparation of that report. Any well owners from whom no definitive response has been received will be noted in that report. Since the Court has the power to impose sanctions on any well owner/operator that does not carry out the requirements contained in the Decision, it is imperative that all affected well owners respond to this Notice.

If you have any questions regarding this Notice, please contact the Seaside Groundwater Basin Watermaster at (831) 641-0113, or by mail at the address shown on the letterhead.

Thank you for your attention to this Notice.

Dewey D. Evans
Chief Executive Officer

Attachments (3)

ATTACHMENT A

**OUTLINE OF PROCEDURES TO MEASURE STATIC
WATER LEVELS AND TO COLLECT A SAMPLE FOR
WATER QUALITY ANALYSIS**

Water Level Measurement

An acceptable method for collecting static (i.e., non-pumping) water level measurements is with the use of a coaxial electric water level sounding device, such as shown in Figure 1. All water level measurements must be referenced to a described point at the wellhead. For active production wells, the well must be shut down 24 hours prior to water level measurement to ensure an accurate static water level reading. All measurements should be recorded to the nearest one hundredth of a foot (e.g., depth to water from wellhead reference point = 85.94 feet).

Water Sample Collection

Samples are to be collected for water quality analysis only from active production wells. Active wells have operable pumps and motors, and are therefore able to pump the water that will be used for the water quality analysis. Therefore, no portable or temporary pumping equipment or piping should be necessary.

The volume of water removed from each well prior to sampling is should be at least three casing volumes, consistent with standard sampling protocol. This is accomplished by calculating the casing volume and then running the pump long enough to pump the required pre-sampling volume. This purges the well of water that may have been residing in it for some period of time, so that the sample collected for analysis will represent the current quality of the water being pumped from the underlying aquifer. A representative wellhead configuration for collection of water quality samples is shown in Figure 2.

Sampling is supplemented by field measurement of several indicator parameters that are collected during pumping, which ensures that water quality has stabilized prior to sample collection. An example of the recordation of field data is provided on the field ground water sampling form in Figure 3.

Once the samples are collected, they are to be sent or taken to a state-certified laboratory for analysis. The laboratory should be contacted to determine the volume of sample they will need to be provided in order to perform the required analyses. The laboratory should also be consulted with regard to proper “chain-of-custody” sample submittal forms, proper sample collection techniques, and suitable sample containers, to ensure that the sample is not contaminated during the sampling process.

Figure 1. Representative Method for Collecting Static Water Level Measurements

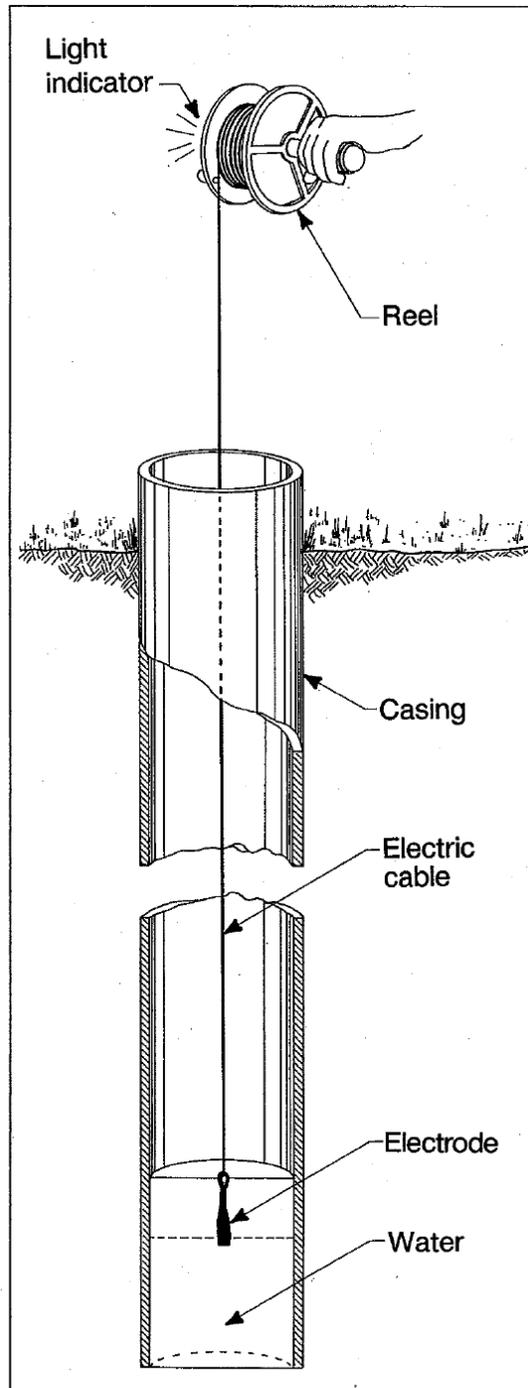


Figure 16.12. Electric sounder for measuring depth to water consists of electrode, two-wire cable, and a light which indicates a closed circuit when electrode touches water.

From: Groundwater and Wells 2nd Ed., 1986,
pg. 549.

Figure 2. Representative Wellhead Configuration for Water Quality Sample Collection

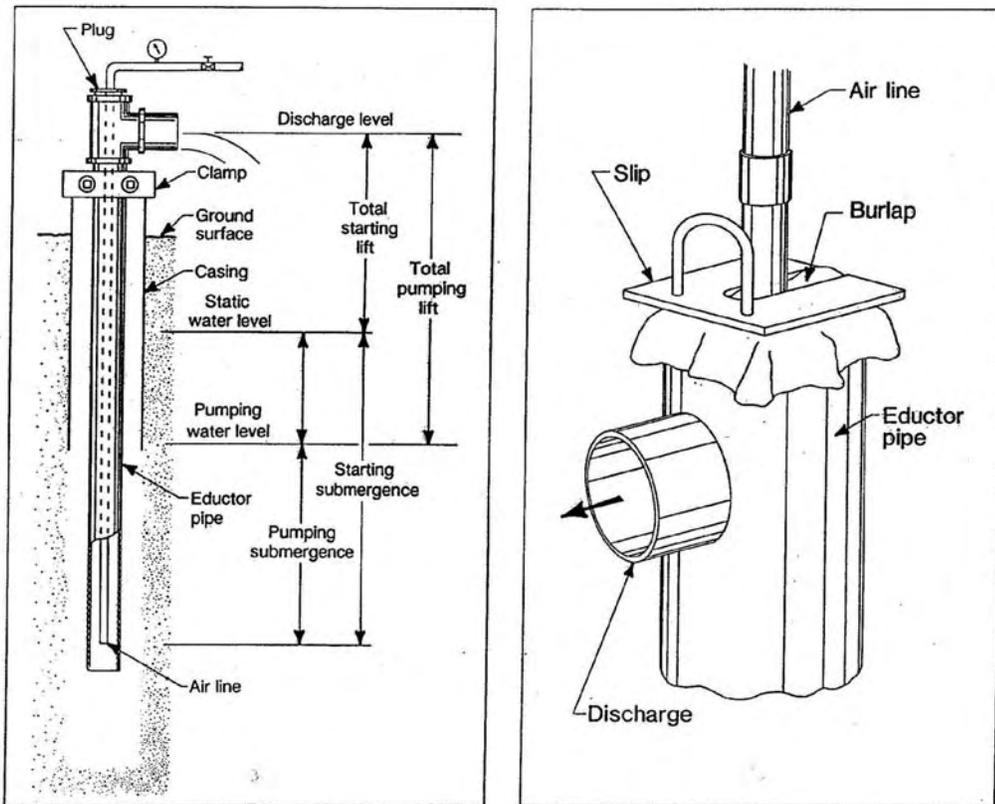


Figure 3. Example Ground Water Data Collection Form



MONTEREY PENINSULA
WATER MANAGEMENT DISTRICT

Joe [Signature]
(Signature)

GROUND-WATER SAMPLING FORM

Well No. PCA East - Deep 155/1E-15K4
 Well Type: Monitor Extraction Other _____
 Well Material: PVC St. Steel Other _____
 Date 10/24/2006 Time 1310 hr
 Sampled by Jwo, TLL, TTC
 (Initials)

Recorded by _____

WELL PURGING

PURGE VOLUME
 Casing Diameter (D in inches):
 2-inch 4-inch 6-inch Other _____
 Total Depth of Casing (TD in feet BTOC): 710
 Water Level Depth (WL in feet BTOC): 89.95
 Number of Well Volumes to be purged (# Vols)
 3 4 5 10 Other _____

PURGE METHOD
 Bailor - Type: _____
 Submersible Centrifugal Bladder; Pump No.: _____
 Other - Type: airlift - 105 H Sullair compressor

PUMP INTAKE SETTING
 Near Bottom Near Top Other bottom of airline
 Depth in feet (BTOC): _____ Screen Interval in feet (BTOC):
 from 650 to 700

PURGE VOLUME CALCULATION

$$\left(\frac{710 - 90}{710} \right) \times \frac{2^2}{D \text{ (inches)}} \times \frac{3}{\# \text{ Vols}} \times 0.0408 = \frac{304}{\text{Calculated Purge Volume}}$$
 gallons

PURGE TIME
1320 Start 1411 Stop 51 Elapsed Initial 6+ gpm Final 6+ gpm

PURGE RATE
 Initial 6+ gpm Final 6+ gpm

ACTUAL PURGE VOLUME
306 + gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input type="checkbox"/> °C <input checked="" type="checkbox"/> °F	Other	# gal
1320	1	651	66	clr	6
1335	15	614	72	"	90
1345	25	577	74	"	150
1400	40	710	76	"	240
1411	51	714	76	"	306

Minutes Since Pumping Began pH Cond. (µmhos/cm) T °C °F Other _____

Observations During Purging (Well Condition, Turbidity, Color, Odor): slight H₂S odor after 70gal pumped.
 Discharge Water Disposal: Sanitary Sewer Storm Sewer Other directed to swale away from wellhead.

WELL SAMPLING

SAMPLING METHOD
 Bailor - Type: _____ Same As Above
 Submersible Centrifugal Bladder; Pump No.: _____ Grab - Type: _____
 Other - Type: _____

SAMPLE DISTRIBUTION Sample Series: _____

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>- see chain-of-custody record sheet -</u>					

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.	Type	Sample No.

ATTACHMENT B

Listing of the Water Quality Parameters for Which Annual Water Samples Must be Analyzed

The water quality constituents that must be measured and reported for the annual water quality analyses are:

Specific Conductance (micromhos/cm)

Total Alkalinity (as CaCO₃)

pH

Chloride

Sulfate

Ammonia Nitrogen (as NH₃)

Nitrate Nitrogen (as NO₃)

Total Organic Carbon

Calcium

Sodium

Magnesium

Potassium

Iron

Manganese

Orthophosphate

Total Dissolved Solids

Hardness (as CaCO₃)

Boron

Bromide

Fluoride

ATTACHMENT C

Authorization to Have the Watermaster Obtain Well Data

The following is an estimate of the costs the Watermaster anticipates incurring, if it is authorized to collect water level and water quality data from a water well located within the Seaside Groundwater Basin.

Monthly Water Levels - It is estimated that it will take approximately 0.5 hour/well to perform a water level measurement. This time estimate is based on the assumption that the water level measurements will be performed at the time that a field person is already out and about collecting data from other wells, and the fact that the distance between wells located within the Basin is not that great. This labor would be billed at the field rate of \$70/hr, so the estimated cost per water level measurement would be \$35.

The total estimated cost would be \$420 per year per well for 12 monthly measurements.

Annual Water Quality Sampling - Assuming that annual water sample collection would coincide with water level collection at a well, it is estimated that it will take approximately 0.5 hr to collect the water quality sample, including sampling time, bottle labeling, custody forms, delivery to laboratory, etc. There will also be an estimated 0.5 hr for receipt, review and computer entry of laboratory data, and an estimated \$200 per sample for the laboratory analysis. The sampling work would be billed at the field rate of \$70/hr, so the estimated cost per annual water quality sample would be \$70 for labor, and \$200 for laboratory services, for a total cost per sample of \$270. One sample is needed to represent water quality from the fall of 2007, and one for the fall of 2008, so two water quality samples will need to be collected and analyzed in 2008. The sample to represent 2007 water quality will be collected as soon as possible in 2008, most likely at the time the first water level measurement is made. The 2008 sample will be collected in the fall of 2008. Thereafter, only one sample per year will be required.

The total estimated cost for collecting and analyzing the two samples per well in 2008 is \$540.

Combined Water Level Measurements and Water Quality Sampling: For combined water level and water quality monitoring, the total estimated cost, per well, for the initial 12-month period is \$960.

I am the Party responsible for the well(s) described below, and I am empowered to provide this Authorization to the Seaside Groundwater Basin Watermaster. (List all wells to which this authorization applies).

Water System Name (if applicable): _____

Well Name: _____

Well Name: _____

Well Name: _____

I hereby authorize the Seaside Groundwater Basin Watermaster (Watermaster) and/or its agents to perform the services indicated below on my behalf. I agree to pay the Watermaster all of its reasonable costs incurred in the performance of this work. I agree to provide the Watermaster with reasonable access to the well(s) for the purpose of performing these services, and to provide such information and/or assistance as is requested by the Watermaster in order for the Watermaster to perform these services.

I have attached a check made out to the Seaside Groundwater Basin Watermaster in the appropriate amount (based on the estimated costs described on the preceding page) per well, as an advance payment toward the cost of annual collection of data on my well(s). Should the Watermaster's actual costs to perform these services differ from the amount of this advance payment, the Watermaster will either bill me for the additional amount owed, or will refund me the amount of overpayment, whichever is appropriate, at the end of the 12-month period for which these services will be provided.

Services to be Performed by the Seaside Groundwater Basin Watermaster

(Note: The well owner/operator should put a check mark in the box for each service it wishes the Watermaster to provide)

Visit each well site listed above once each month during calendar year 2008 and make a static water level measurement.

Visit each well site listed above twice during calendar year 2008 and collect and analyze one sample at each visit for water quality analysis.

Record and report the data obtained under items 1 and 2 in the Quarterly and/or Annual Reports the Watermaster prepares. Provide a copy of the information collected from the well owner's/operator's well to the well owner/operator.

Signed: _____ Date: _____
(Signature of Responsible Party)

Printed Name of Signatory: _____

ATTACHMENT 8

**HYDROMETRICS LLC CONTRACT
TO PREPARE THE BASIN MANAGEMENT ACTION PLAN (BMAP),
THE SEAWATER INTRUSION RESPONSE PLAN (SIRP),
AND
THE SEAWATER INTRUSION ANALYSIS REPORT (SIAP)**

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: 2/7/08

RFS NO. 2008-01
(To be filled in by WATERMASTER)

TO: Derrick Williams

FROM: Robert Jaques

Services Needed and Purpose: See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2007, and shall be performed in accordance with the Schedule contained in Attachment 2.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: \$ 145,530.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 3 for Detailed Breakdown of Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____
WATERMASTER Technical Program Manager

Authorized by: _____ Date: _____
WATERMASTER Chief Executive Officer

Agreed to by: _____ Date: _____
PROFESSIONAL

Note: Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page A-1 of this RFS is binding and limiting as defined in Section V of the Agreement.

ATTACHMENT 1

SCOPE OF WORK

The Scope of Work will yield three distinct documents with discreet and limited purposes:

- ***Basin Management Action Plan (BMAP):*** Develops a generalized outline for both short-term and long-term basin management which can be implemented over the coming years. The purpose of the BMAP will be to optimize the Natural Safe Yield of the Basin and to balance the recharge and extractions from the Basin.
- ***Seawater Intrusion Response Plan (SIRP):*** Protects the Seaside Groundwater Basin in the event of incipient seawater intrusion. The purpose of the SIRP will be to have a plan in place, ready to be implemented in the event seawater intrusion is detected within the Basin.
- ***Seawater Intrusion Analysis Report (SIAR):*** Reports on current water quality conditions in the Seaside Basin

The specific tasks to develop the BMAP, the SIRP, and the SIAR are presented below.

Task 1: Develop Basin Management Action Plan

The Basin Management Action Plan (BMAP) constitutes the basic plan for managing the Seaside Groundwater Basin. The BMAP identifies both short-term actions and long-term plans intended to protect the groundwater resource while maximizing the beneficial use of groundwater in the basin. It provides the WATERMASTER a logical set of actions that can be undertaken to manage the basin for its maximum yield. Subtasks that HydroMetrics LLC will undertake to develop and produce the BMAP are detailed below.

Subtask 1.1: Update Basin Geology and Water Budget. The Basin geology and water budget provide the conceptual basis for our understanding of the state of the basin. Components of the water budget include estimates of Natural Safe Yield, the recent Operating Yield, estimates of Primary and Secondary Recharge, and the Total Usable Storage Space. All of these concepts will be updated based on recent data. In particular, the following will be analyzed:

- ***Geologic Framework.*** The geologic framework of the Basin will be updated based on the information collected in the recent sentinel well drilling program. This update fulfills one of the recommendations in the report on the sentinel wells project (Feeney, 2007). The sentinel well data will be integrated into a comprehensive subsurface geologic framework.
- ***Storage Capacity and Recharge.*** Estimates of the estimated usable storage space (sometimes referred to in the *Adjudication Decision* as “Total Usable

Storage Space”) and natural recharge will be updated. A conceptual model of groundwater storage capacity, describing the physical mechanisms by which water is stored in the Basin and addressing important spatial and temporal aspects of storing and withdrawing water will be provided. Quantitative estimates of total and usable storage capacity in the Seaside Basin, and updated estimates of primary and secondary recharge based on the most recent data, will be documented. A discussion of techniques for estimating “efficiencies of Storage” in the Basin, as described in the *Adjudication Decision*, will be provided.

- **Groundwater Extractions.** The natural safe yield and the operating yield of the Basin will be updated. The hydrogeologic information obtained from construction of the new sentinel wells, as well as from other existing wells and previously prepared reports, will be taken into account in performing this work, as will the monitoring data from all of these wells. The WATERMASTER will provide the PROFESSIONAL access to the WATERMASTER’s comprehensive database of well construction, monitoring, and production data for the PROFESSIONAL’s use in performing this work.
- **Material Injury.** Based on the water level and water quality data, PROFESSIONAL will make a determination of whether or not any “Material Injury” is occurring, or is likely to occur, to the Basin, as defined on page 12 of the *Adjudication Decision*. If Material Injury is occurring, or is likely to occur, then a modified Operating Yield shall be determined to mitigate such injury.

The results of this subtask will be incorporated as Chapter 2 of the BMAP.

Subtask 1.2: Update Analysis of Long-Term Water Supply Solutions.

Using information available from project proponents, including but not limited to projects proposed by California American Water, Monterey Regional Water Pollution Control Agency, Monterey Peninsula Water Management District, the City of Sand City, and the California Public Utilities Commission, the status of proposed non-potable replenishment or out-of-basin import supplies will be reviewed. The updated analysis of long-term water supply solutions will include:

- Summarizing these projects’ costs and environmental documentation as available
- Providing an overview of distribution and delivery system improvements required for implementation
- Reviewing mandatory conservation efforts being implemented by the MPWMD and California American Water
- Assessing non-potable water resources
- Assessing out-of-Basin imports
- Assessing the timing and feasibility of these projects as potential replenishment sources, taking into account issues pertaining to

environmental constraints, costs, regulatory acceptance, and public acceptance

The results of this subtask will be incorporated as Chapter 3 of the BMAP

Subtask 1.3: Develop Local Groundwater Management Actions. Both before and after the supplemental water supplies become available, a number of management actions can extend the life of the Seaside Groundwater Basin and maximize the use of groundwater stored in the basin. Local groundwater management actions are those that the WATERMASTER could undertake to optimize the storage capacity of the Seaside Basin. Each groundwater management action will be analyzed in terms of how it meets various basin management objectives including:

- Minimizing local drawdown
- Reducing the threat of seawater intrusion
- Optimizing the usable storage of the Seaside Basin

A preliminary list of groundwater management actions that will be considered include:

- Reallocating pumping among existing wells
- Installing new municipal wells
- Transferring groundwater between users or sub-basins
- Initiating voluntary or mandatory cutbacks
- Inter-basin transfers

These actions will be developed by the PROFESSIONAL in coordination with staff from the WATERMASTER and the WATERMASTER's TAC. The actions will cover groundwater management throughout the Seaside Basin, including the Ryan Ranch area. Each action will be accompanied by a plan for how the action might be implemented.

The results of this subtask will be incorporated as Chapter 4 of the BMAP

Subtask 1.4: Rank Actions and Develop the Basin Management Action Plan. After developing the local groundwater management actions, the PROFESSIONAL will meet with staff from the WATERMASTER to rank the various actions. This meeting will allow the WATERMASTER to understand the proposed actions and modify the implementation plans before they are drafted into the BMAP. Additionally, the PROFESSIONAL will identify which of the supplemental supply projects should be pursued, and the likely schedule for implementation of each of these projects. It is anticipated that the WATERMASTER may initially need to pursue multiple supplemental supply options to ensure that an adequate water supply is available.

The various components of a BMAP will be developed under this task, in coordination with the WATERMASTER's staff. The detailed BMAP will summarize the work described above, and will present conclusions and recommendations for management of the Basin. The BMAP will include development of concrete steps for implementation of these recommendations over specific time-periods, including near-term and long-term actions. Components that will be developed include:

- Ranking the management actions.
- Identifying the superior supplemental supply solutions.
- Developing techniques for estimating efficiencies of storage.
- Recommending tools and techniques for Basin management. This will include discussions on the status of the database and utility and need for using the Groundwater Model developed by Tim Durbin as a basin management tool. This section updates the *Groundwater Model Report* prepared by Hydrometrics in 2007
- Recommendations and suggestions for continued monitoring. This section will support, and build on (as necessary) the recommendations contained in Attachment 9 of the WATERMASTER's 2007 *Annual Report*.

A schedule will be developed that outlines steps the WATERMASTER can take to manage the Seaside Groundwater Basin. The schedule will include both short-term actions, as well as actions that lead to securing a supplemental supply.

The results of this subtask will be incorporated as Chapters 5 and 6 of the BMAP.

Subtask 1.5: Draft and Finalize the Basin Management Action Plan. The following is an outline of the BMAP. The Draft BMAP will be provided to the WATERMASTER for review. The WATERMASTER will provide its review comments and those of its TAC members, consolidated into a single document, and the PROFESSIONAL will address all of these comments in a Final BMAP. The PROFESSIONAL will provide the WATERMASTER two CDs containing an electronic version of the entire Draft and Final BMAPs, along with 15 printed and bound copies of both the Draft and Final BMAPs.

Outline of BMAP

Section 1 – Background and Purpose. This is a short section that sets out the necessary background for the BMAP. This section will serve to show how the WATERMASTER is taking the necessary and logical steps in managing the Seaside Basin by developing the BMAP. The relevant parts of the *Adjudication Decision* will be cited to provide justification for the report. Other documents, such as the Monitoring and Management

Program will be further cited to demonstrate that the BMAP is part of a logical basin management strategy.

Section 2 – Conceptual Model of the Seaside Basin.

Section 2.1 – Geologic Structure. This section will update the geologic framework of the Seaside Basin, incorporating results from the 2007 sentinel well drilling program.

Section 2.2 – Groundwater Recharge. This section will update the Basin's estimated Natural Yield. Updated estimates of primary and secondary recharge will be detailed in this section

Section 2.3 – Groundwater Extractions. This section will update the Basin's current operating yield. Groundwater Production data included in the WATERMASTER's 2007 *Annual Report* will be compared with data from previous years to demonstrate the evolution of the operating yield. Carryover credits will be discussed in this Section.

Section 2.4 – Subsurface Inflows and Outflows. Subsurface inflows and outflows will be identified, and quantified to the extent possible. These quantifications may have substantial margins of error, which will be noted.

Section 2.5 – Groundwater in Storage. The amount of total groundwater in storage, usable groundwater in storage, and changes from the previous year will be detailed. These estimates will provide the WATERMASTER with the Total Usable Storage Space of the Basin.

Section 2.6 – State of the Basin. This final section is a concluding narrative that summarizes the status of the groundwater resources in the Seaside Basin, and identifies whether material injury has occurred as defined by the *Adjudication Decision*.

Section 3 – Long-Term Water Supply Solutions. The long-term water supply solutions comprise the supplemental water supply options available to the WATERMASTER. A sub-section will be included for each potential supplemental supply project.

Section 4 – Local Groundwater Management Actions. The actions identified in this section will be groundwater management activities that are independent of a new source of water. These actions may have a number of objectives including:

- Extending the life of the Seaside basin prior to developing the supplemental supplies.
- Optimizing the existing natural recharge and basin storage capacity
- Managing and reducing the near-term threat of seawater intrusion

As with the long-term water supply solutions, a sub-section will be included for each potential groundwater management action. Each action will be analyzed by its potential to meet one or more of the objectives listed above, and each action will be accompanied by a plan for how the action might be implemented. The actions will include at a minimum:

- Installing new wells
- Mandatory pumping reductions due to overdraft
- Ryan Ranch system production capacity issues and a range of options to resolve this problem.

Section 5 – Recommended Management Strategy. Based on the information presented in Sections 2, 3, and 4, as well as meetings with the WATERMASTER, a generalized management strategy will be developed. The management strategy will include the following elements:

- Recommending management actions.
- Recommending supplemental supply strategies.
- Recommending techniques for estimating efficiencies of storage.
- Recommending tools and techniques for Basin management.
- Recommendations and suggestions for continued monitoring.
- Reiterating the requirement for annual reporting.

Section 6 – Implementation Plan and Schedule. A time line will show when the WATERMASTER should implement the recommended management actions, and when the supplemental water supply projects are anticipated to become operational. The schedule will serve to demonstrate how the WATERMASTER will bring the Seaside Basin into hydrologic balance. The schedule will acknowledge the technical and financial uncertainties inherent in the Basin's management.

Task 2: Develop Seawater Intrusion Response Plan

The Seawater Intrusion Response Plan (SIRP) details actions that will be set in motion in the event of incipient seawater intrusion. The purpose of the plan is to reduce and prevent further degradation of the Seaside Basin by curtailing and redistributing groundwater pumping. The purpose of the SIRP is not to identify supplemental water supplies that can be used in event of seawater intrusion, since those are discussed in the BMAP. The SIRP will be designed to be used in conjunction with the BMAP. While the SIRP will require reductions in pumping, the BMAP will identify supplemental water supplies and basin management actions that may curtail seawater intrusion. The SIRP

will likely include implementing the measures detailed in Exhibit A of the *Adjudicated Decision*.

The SIRP will build on the *Contingency Plan for Seawater Intrusion, Seaside Basin*, developed by Dr. Steve Bachman (2005a), and the subsequent *Seaside Basin – Principles of Settlement* (Bachman, 2005b). Additionally, the SIRP will explicitly acknowledge and be consistent with the Monterey Peninsula Water Management District's (MPWMD) *Expanded Water Conservation and Standby Rationing Plan*.

The SIRP will be designed to protect the Seaside Groundwater Basin in a way that is practical and realistic. Subtasks that the PROFESSIONAL will undertake to develop and produce the SIRP are detailed below.

Subtask 2.1: Review and Compare Relevant Documents. The SIRP must be consistent with a number of existing documents. The following five documents in particular will be reviewed and compared to ensure that the plan is consistent with all of them::

- *Adjudication Decision*
- *Expanded Water Conservation and Standby Rationing Plan*
- *Contingency Plan for Seawater Intrusion, Seaside Basin*
- *Seaside Basin – Principles of Settlement*
- *Seawater Intrusion Analysis Report, Seaside Basin*

If it is found that the existing documents are not consistent with each other, the PROFESSIONAL will first ensure consistency with the *Adjudication Decision*. The PROFESSIONAL will then ensure consistency with existing policies, and finally ensure consistency with principles and unpublished plans. The results of this review will be incorporated into Section 1 of the SIRP.

Subtask 2.2: Develop Contingency Plan. The contingency plan constitutes the bulk of the SIRP. Under this subtask, the PROFESSIONAL will develop both the triggers that indicate seawater intrusion, and the actions that will ensue if seawater intrusion is detected. The contingency plan will include the following:

- A detailed discussion of seawater intrusion indicators.
- General seawater intrusion triggers that can be applied to all wells. These may be water level triggers or water quality triggers.
- Specific numerical seawater intrusion triggers at specific wells, where applicable.
- Necessary pumping reductions should seawater intrusion be identified. As with the *Contingency Plan for Seawater Intrusion*, the pumping reductions will be focused in the area of the seawater intrusion. This section will address the issue of salinity detection and mandatory pumping reductions highlighted in the Adjudication Decision.

- Discussions of additional pumping redistribution strategies to avoid adverse impacts within the Basin. These strategies will include at a minimum:
 - Reduced groundwater delivery, along with a discussion of impacts and solutions
 - Substitution of alternative supplies for Basin groundwater, including in lieu recharge and voluntary pumping reductions
 - Water banking
 - Development of a salinity barrier system
 - Pumping variability
 - Direct aquifer replenishment of pumping in excess of Basin Natural Safe Yield

The results of this subtask will be incorporated into Sections 1 and 2 of the SIRP.

Subtask 2.3: Draft and Finalize SIRP. The following is an outline of the SIRP. The Draft SIRP will be provided to the WATERMASTER for review. The WATERMASTER will provide its review comments and those of its TAC members, consolidated into a single document, and the PROFESSIONAL will address all of these comments in a Final SIRP. The PROFESSIONAL will provide the WATERMASTER two CDs containing an electronic version of the entire Draft and Final SIRPs, along with 15 printed and bound copies of both the Draft and Final SIRPs.

Outline of the SIRP

Section 1 – Background and Purpose. This is a short section that sets out the necessary background for the plan. This section will serve to show how the WATERMASTER is taking the necessary and logical steps in managing the Seaside Basin by developing the SIRP. This section will identify and review the relevant documents that form the basis of the SIRP.

Section 2 – Indicators of Seawater Intrusion. Seawater intrusion must be identified before the response plan can be implemented. This section presents general indicators of seawater intrusion, and discusses how to identify incipient seawater intrusion. Indicators that are relevant to the Seaside Basin will be highlighted. If possible, specific numerical targets suggesting seawater intrusion will be presented.

Section 3 – Contingency Plan. This section outlines the specific actions that should be implemented, should seawater intrusion be detected. The actions will generally follow those outlined in the *Contingency Plan for Seawater Intrusion* (Bachman, 2005a). As with the *Contingency Plan for Seawater Intrusion*, the actions will be grouped by severity of intrusion and location of intrusion.

Task 3: Update the 2007 Seawater Intrusion Analysis Report

As an initial step the PROFESSIONAL will first elicit feedback on the 2007 Seawater Intrusion Analysis Report (SIAR) from the WATERMASTER. Feedback on the SIAR format, scope, and clarity will all be requested. The intention of obtaining feedback is to ensure that the SIAR acquires a simple and acceptable format that can easily be updated each year.

To promote efficiency, much of the text and graphics from the 2007 SIAR will be incorporated directly into the updated report. Notable changes that will be incorporated into the updated report will include:

- Updating charts, graphs, and maps to reflect the most recent sampling and water level data.
- Analyzing the quarterly electric induction logs from the newly installed sentinel wells to look for evidence of seawater intrusion.
- Incorporating data from new well locations which may be added to the WATERMASTER's enhanced monitoring well network.

Updating the 2007 SIAR will involve reanalyzing all water quality data at the end of Water Year 2007-2008 (October 1, 2007 to September 30, 2008) and producing semi-annual chloride concentration maps for each aquifer in the Basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. Potential seawater intrusion will be highlighted in the updated report, and recommendations will be included as warranted. Annual chloride concentration contour maps will be produced, including data from the new sentinel wells and analyses of the water quality data from these wells, to determine whether or not seawater intrusion is occurring at the locations of these wells.

The Draft 2008 Updated SIAR will be provided to the WATERMASTER for review. The WATERMASTER will provide its review comments and those of its TAC members, consolidated into a single document, and the PROFESSIONAL will address all of these comments in a Final 2008 Updated SIAR. The PROFESSIONAL will provide the WATERMASTER two CDs containing an electronic version of the entire Draft and Final 2008 Updated SIARs, along with 15 printed and bound copies of both the Draft and Final 2008 Updated SIARs.

Task 4: Meetings and Presentations

As the work described in Tasks 1, 2, and 3 is being performed there will be periodic meetings and presentations with the WATERMASTER. These meetings will help keep the project on schedule and on budget by obtaining buy-in from the WATERMASTER and its TAC and Board at key junctures. These meetings may include:

- Meeting with the WATERMASTER's TAC to review the local groundwater management actions for technical feasibility
- Meeting with the WATERMASTER's Board to present and develop consensus on the local groundwater management actions developed under subtask 1.3.
- Meetings with the WATERMASTER's TAC to review the various Draft reports.
- Meetings with the WATERMASTER Board to present the various reports

The key meetings are included in the Schedule contained in Attachment 2 of this RFS.

Task 5: Ongoing Hydrogeologic Support

The BMAP, SIRP, and Updated SIAR are three key documents that the WATERMASTER must produce in 2008. However, there may be additional hydrogeologic work that the WATERMASTER will wish to have the PROFESSIONAL perform during 2008. Examples may include work such as:

- Database upkeep and data entry
- Overseeing quarterly electric induction logging of the new sentinel wells
- Preparing information for WATERMASTER TAC and Board meetings
- Installing additional monitoring wells
- Assisting with public information dissemination
- Implementing suggestions included in the BMAP

An allowance for the possible performance of such additional work has been included in the Detailed Breakdown of Estimated Costs contained in Attachment 3 to this RFS. However, no charges to the cost allowance for this Task 5 are to be made by the PROFESSIONAL unless and until a specific written authorization to do so has first been issued to the PROFESSIONAL by the WATERMASTER.

ATTACHMENT 2

SCHEDULE

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008															
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK																
2	2008 Administration, Operations and Replenishment Budgets Due						◆	Completed									
3	Respond to November 26, 2007 Court Order					◆	◆	◆									
4	TAC Develops Specific Action Plan to Cure Deficiencies					◆	◆	◆									
5	TAC Prepares Draft Notice to Well Owners					◆	◆	◆									
6	TAC Prepare Draft Specific Action Plan					◆	◆	◆									
7	Board Approves Specific Action Plan to Cure Deficiencies					◆	◆	◆									
8	Supplemental Water Level and Water Quality Data Collected and Compiled					◆	◆	◆									
9	Preparation of Draft Response to Court Including Supplemental Water Level and Water Quality Information and Final Specific Action Plan					◆	◆	◆									
10	Board Approves Draft Response to Court					◆	◆	◆									
11	Watermaster Submits Final Response to Court					◆	◆	◆									
12	Watermaster Submits Quarterly Water Production, Water Level, and Water Quality Reports to Judge			◆			◆			◆			◆				
17	Replenishment Assessments for Water Year 2009												◆	◆	◆		

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008															
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
18	TAC Develops Replenishment Assessment Unit Cost for 2009 Water Year																
19	TAC Approves 2009 Water Year Replenishment Assessment Unit Cost																
20	Board Declares 2009 Water Year Replenishment Assessment Unit Cost																
21	Replenishment Assessments for Water Year 2008																
22	Watermaster Prepares Replenishment Assessments for Water Year 2008																
23	Watermaster Board Approves Replenishment Assessments for Water Year 2009																
24	Watermaster Levies Standard Replenishment Assessment for 2008																
25	2008 Annual Report																
26	Watermaster Prepares Draft 2008 Annual Report																
27	TAC Provides Input on Draft 2008 Annual Report																
28	Watermaster Prepares Revised Draft 2008 Annual Report (Incorporating TAC Input)																
29	Board Provides Input on Revised Draft 2008 Annual Report																
30	Watermaster Prepares Final 2008 Annual Report (Incorporating Board Input)																
31	Watermaster Submits Final 2008 Annual Report to Judge																

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008															
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
32	MANAGEMENT																
33	M.1 PROGRAM ADMINISTRATION (All Work Performed by Watermaster Staff)																
34	IMPLEMENTATION																
35	I.1 CONSTRUCT MONITORING WELLS (CAW ASR MONITORING WELLS)																
36	Resolve ASR Monitoring Well Permitting/Approval Issues																
37	ASR MW Construction (by CWP)																
38	I.2 COMPREHENSIVE BASIN PRODUCTION, WATER LEVEL, AND WATER QUALITY MONITORING PROGRAM																
39	I.2.a Conduct Ongoing Data Entry/Database Maintenance (Data Entry by MPWMD & Watermaster; Database Maint. By RBF; QA/QC by MPWMD with Assistance from MCWRA)																
40	I.2.b Data Collection Program Enhancements																
41	I.2.b.1 Site Representation & Selection (MPWMD)																
42	I.2.b.2 Collect Monthly Water Levels for 2008 (MPWMD)																
43	I.2.b.3 Collect and Analyze Quarterly Water Quality Samples for 2008 (MPWMD)																
48	I.2.b.4 Update Program Schedule and Standard Operating Procedures (MPWMD & MCWRA)																

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008															
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
51	TAC Provides Input on Updating Schedule and SOPs																
54	I.2.c Reports																
55	Water Quality & Water Level Quarterly Reports for 2008 (MPWMD Prepares Reports; MCWRA Provides Review Comments)																
60	Annual Water Quality & Water Level Summary Report (MPWMD Prepares Report; MCWRA Provides Review Comments)																
61	I.3 BASIN MANAGEMENT																
62	I.3.a Enhanced Seaside Groundwater Basin Model (No Action Required in 2008)																
63	I.3.b Prepare Basin Management and Action Plan																
64	Watermaster Staff Prepares Draft Request for Proposals (RFP), and List of Potential Consultants from Whom Proposals will be Solicited, for Consultant Services for Preparation of Basin Management Action Plan and Sea Water Intrusion Contingency Plan																
65	TAC Reviews Draft RFP and List of Potential Consultants from Whom Proposals will be Solicited for Consultant Services for Preparation of Basin Management Action Plan and Sea Water Intrusion Contingency Plan																
66	TAC Approves RFP and Consultant List																
67	Watermaster Staff Sends Out RFPs (Revised with TAC Input)																

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008																
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
68	Pre-Proposal Telephone Conference				Completed													
69	Proposals Due & Distributed to TAC Review Subcommittee Members (Subcommittee appointed at 1/9/08 TAC meeting)				Completed													
70	TAC Subcommittee Reviews Proposals				Completed													
71	TAC Review Subcommittee Decides if Interviews are Necessary				Completed													
72	Consultants Notified to Attend Interviews (if Necessary)				Interviews Not Necessary													
73	Subcommittee Holds Consultant Interviews (if Necessary)				Interviews Not Necessary													
74	TAC Approves Subcommittee's Consultant Selection Recommendation (by email)					1/18												
75	Initial Contract Negotiations with Selected Consultant(s)																	
76	Board Authorizes Award of Contract(s) to Selected Consultant(s) for Not-to-Exceed Amounts						2/6											
77	Final Contract Negotiations with Selected Consultant(s) and Execution of Contract(s)																	
78	<i>1.3.b.1 Supplemental Water Supplies</i>																	
79	Consultant Updates Phase 1 Supplemental Water Supplies Analysis																	
80	TAC Approves Updated Water Supplies Analysis																	
81	<i>1.3.b.2 Pumping Redistribution Strategies</i>																	

Seaside Basin WaterMaster Monitoring and Management Program 2008 Work Schedule

ID	Task Name	2008															
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
82	Consultant Prepares Pumping Redistribution Strategies Report																
83	TAC Approves Pumping Redistribution Strategies Report																
84	<i>I.3.b.3 Basin Storage Capacity & Natural Safe Yield</i>																
85	Consultant Performs Analyses to Determine Basin Storage Capacity and Natural Safe Yield																
86	TAC Approves Basin Storage Capacity and Natural Safe Yield																
87	I.3.c Preparation of Basin Management Action Plan																
88	Consultant Prepares Basin Management Action Plan																
89	TAC Approves Basin Management Action Plan																
90	Board Approves Basin Management Action Plan																
91	I.4 SEAWATER INTRUSION CONTINGENCY PLAN																
92	I.4.a Consultant Provides Oversight of Seawater Intrusion Detection and Tracking																
93	I.4.b Consultant Analyzes and Maps Water Quality from Coastal Monitoring Wells																
94	I.4.c Consultant Prepares Annual Seawater Intrusion Analysis Report																
95	TAC Approves Annual Seawater Intrusion Analysis Report																

ATTACHMENT 3

DETAILED BREAKDOWN OF ESTIMATED COSTS

Table 1. Labor by Task (hours)

	HydroMetrics LLC		Gus Yates	Martin Feeney	Lew Rosenberg	RMC Consulting	
	Derrick Williams	Cameron Tana				Stephanie Hughes	Ryan Alameda
Task 1: Develop Basin Management Action Plan							
Subtask 1.1: Update Basin Conceptual Model	12		40	40	20		
Subtask 1.2: Update Analysis of Long-Term Water Supply Solutions	16		4			12	50
Subtask 1.3: Develop Local Groundwater Management Actions	40	16	8	16			8
Subtask 1.4: Draft the Basin Management Action Plan	70	20	16	16		8	24
Subtask 1.5: Finalize the Basin Management Action Plan	20	8	4	4		4	8
Task 1 Total	158	44	72	76	20	24	90
Task 2: Develop SIRP							
Subtask 2.1: Review and Compare Relevant Documents	16	4	4				
Subtask 2.2: Develop Contingency Plan	60	20	20	8		4	12
Subtask 2.3: Draft and Finalize SIRP	40	20	12	8			4
Task 2 Total	116	44	36	16	0	4	16
Task 3: Update the 2007 Seawater Intrusion Analysis Report	40	32	16				16
Task 4: Meetings and Presentations	64	18		8		8	8
Task 5: Ongoing Hydrogeologic Support	12		4	4			
Totals	390	138	128	104	20	36	130

Table 2. Cost by Task

	HydroMetrics LLC		Gus Yates	Martin Feeny	Lew Rosenberg	RMC Consulting		Direct Costs	Total Costs
	Derrick Williams	Cameron Tama				Stephanie Hughes	Ryan Alameda		
Task 1: Develop Basin Management Action Plan									
Subtask 1.1: Update Basin Conceptual Model	\$1,740	\$0	\$5,600	\$6,000	\$3,200	\$0	\$0	\$0	\$16,540
Subtask 1.2: Update Analysis of Long-Term Water Supply Solutions	\$2,320	\$0	\$560	\$0	\$0	\$2,520	\$8,250	\$0	\$13,650
Subtask 1.3: Develop Local Groundwater Management Actions	\$5,800	\$2,000	\$1,120	\$2,400	\$0	\$0	\$1,320	\$0	\$12,640
Subtask 1.4: Develop the Basin Management Action Plan	\$10,150	\$2,500	\$2,240	\$2,400	\$0	\$1,680	\$3,960	\$0	\$22,930
Subtask 1.5: Finalize the Basin Management Action Plan	\$2,900	\$1,000	\$560	\$600	\$0	\$840	\$1,320	\$2,000	\$9,220
Task 1 Total	\$22,910	\$5,500	\$10,080	\$11,400	\$3,200	\$5,040	\$14,850	\$2,000	\$74,980
Task 2: Reporting									
Subtask 2.1: Review and Compare Relevant Documents	\$2,320	\$500	\$560	\$0	\$0	\$0	\$0	\$0	\$3,380
Subtask 2.2: Develop Contingency Plan	\$8,700	\$2,500	\$2,800	\$1,200	\$0	\$840	\$1,980	\$0	\$18,020
Subtask 2.3: Draft and Finalize SIRP	\$5,800	\$2,500	\$1,680	\$1,200	\$0	\$0	\$660	\$2,000	\$13,840
Task 2 Total	\$16,820	\$5,500	\$5,040	\$2,400	\$0	\$840	\$2,640	\$2,000	\$35,240
Task 3: Update the 2007 Seawater Intrusion Analysis Report	\$5,800	\$4,000	\$2,240	\$0	\$0	\$0	\$2,640	\$2,000	\$16,680
Task 4: Meetings and Presentations	\$9,280	\$2,250	\$0	\$1,200	\$0	\$1,680	\$1,320	\$0	\$15,730
Task 5: Ongoing Hydrogeologic Support	\$1,740	\$0	\$560	\$600	\$0	\$0	\$0	\$0	\$2,900
Totals	\$56,550	\$17,250	\$17,920	\$15,600	\$3,200	\$7,560	\$21,450	\$6,000	\$145,530

ATTACHMENT 9

**INTERIM SEAWATER INTRUSION
CONTINGENCY PLAN**

SEASIDE BASIN WATERMASTER

INTERIM SEAWATER INTRUSION CONTINGENCY PLAN

MARCH 2008

Purpose

This *Interim Seawater Intrusion Contingency Plan* document formalizes the Seaside Groundwater Basin Watermaster's (Watermaster) proposed interim contingency plan for addressing potential seawater intrusion of the Seaside Basin, in accordance with the court adjudication decision and adopted *Seaside Basin Monitoring and Management Program* (SBMMP). This document will serve as the Watermaster's interim contingency plan until a more specific and detailed long-term contingency plan is developed in the fall of 2008. This long-term *Seawater Intrusion Response Plan* (SIRP) is currently under development as part of the Watermaster's Phase 2 implementation of the SBMMP.

Background

A Court Decision¹ in the Seaside Basin adjudication case was filed in Monterey County Superior Court on March 27, 2006, and was amended on February 9, 2007. The Court Decision included, in part, the requirement "to develop a plan of action to be implemented to avoid various effects in the Basin, including seawater intrusion" and to "develop a plan of action to contain seawater intrusion, should it occur". In addition, the Decision set forth an "Interim Contingency Procedure to Contain Seawater Intrusion," if it is detected before such long-term procedures are in place². This procedure was subsequently refined by modifications that were incorporated into the SBMMP³.

Interim Definition of Seawater Intrusion

¹ Monterey County Superior Court Case M66343. *California American Water vs. City of Seaside, et al.*

² See page 2 of the "Principles and Procedures of the Seaside Basin Monitoring and Management Plan", which is Exhibit A to the Court Decision.

³ See Section IV C, page 24, of the *Seaside Basin Monitoring and Management Program*, approved by the Watermaster Board on May 17, 2006, revised September 5, 2006, and approved by the Court on February 9, 2007.

The following interim definition of seawater intrusion is adopted from Section IV B. of the SBMMP:

For the purposes of defining when actions described in [Section IV C] will be taken, the seaside groundwater basin aquifers will be defined as seawater intruded when the chloride concentrations in a coastal monitor well reach approximately 100 mg/l and 250 mg/l for the Paso Robles and Santa Margarita formations respectively. For a coastal production well, the standard will be when chloride concentrations reach 250 mg/l, given that some production wells have multiple aquifer completions with water quality that reflects a blend from these sources. These standards will be used until more comprehensive standards based on historical water quality data at individual monitor and production wells can be developed. Each monitoring well and production well in the groundwater network will be evaluated on site-specific criteria. In addition, the Watermaster will institute interim standards for notice of potential seawater intrusion so that appropriate preventative actions may be taken. Interim notice for seawater intrusion will be defined as a 50 percent increase above ambient chloride concentrations for any specific monitoring well location. Generally accepted laboratory protocols and hydrogeologic methods will be employed for the determinations of seawater intrusion.

The above interim definition recognizes that limited data were available to more definitively describe historical groundwater quality variations, both spatially and vertically throughout the coastal area of the basin. In addition, the above interim definition did not include reference to the Purisima Formation in the Seaside Basin, as the occurrence and distribution of this aquifer unit have only recently been established and partially characterized with the installation of the four new coastal sentinel wells by the Watermaster in 2007. Accordingly, the above interim definition will be refined as part of the planned work to develop the SIRP, based on data that have been compiled from existing and new wells since this interim definition was developed in 2006. The basis for determining ambient chloride concentrations will be the mean value at each well as calculated from the historical data available prior to the adoption of the adjudication decision in March 2006. These mean values for the coastal monitor wells will be provided with the quarterly groundwater quality reports prepared for the Watermaster.

Interim Procedures to Control Seawater Intrusion

The following interim procedures to control seawater intrusion are adopted from Section IV C. of the SBMMP:

- 1. If seawater intrusion is detected in a coastal production or monitoring well ("Contaminated Well"), the Contaminated Well will discontinue pumping and all other wells that produce groundwater from the intruded aquifer that are within one-half mile of the affected*

monitoring well (“Threatened Wells”) will immediately reduce their monthly production to the equivalent of one-half of their average monthly production within the previous five years upon notification from Watermaster of the detection of seawater intrusion within the Contaminated Well.

- 2. Watermaster shall increase monitoring of groundwater levels within the one-half mile radius of the Contaminated Well to determine if the requisite pumping reductions sufficiently affect groundwater gradients to prevent the further spread of seawater intrusion toward the Threatened Wells. This increased monitoring effort will include installing at least one new monitoring well as a sentinel well between the Contaminated Well and the nearest down-gradient active Threatened Well.*
- 3. After six months of reduced pumping of the Threatened Wells, the threat of further seawater intrusion will be re-evaluated. If the requisite pumping reductions have failed to sufficiently affect groundwater gradients to prevent the further spread of seawater intrusion toward the Threatened Wells, those wells will further reduce their monthly production to the equivalent of one-third of their average monthly production within the previous five years upon notification by Watermaster that such further reductions are required.*
- 4. After another six months of monitoring, the direction of groundwater gradients will again be evaluated. If there continues to be a groundwater gradient that would pull the detected seawater towards the Threatened Wells, then the Threatened Wells shall discontinue pumping, unless in Watermaster’s determination, doing so would create a public health and/or safety risk.*
- 5. If, after the initial discovery of the initial seawater intrusion, seawater is encountered in an additional monitoring or production well, pumping reductions will be required for nearby threatened production wells (i.e., production wells within one half mile of the recently contaminated well) in the same manner as set forth above for first Contaminated Well.*

Similar to the interim seawater intrusion definition, the above interim procedures to control seawater intrusion will be further refined and modified as part of the SIRP, based on additional review and interpretation of hydrogeologic and groundwater quality data being compiled for the SBMMP Phase 2 implementation effort currently underway.

ATTACHMENT 10

**SEASIDE GROUNDWATER BASIN
MANAGEMENT AND MONITORING PROGRAM
ANTICIPATED 2009 SCOPE OF WORK**

**Seaside Groundwater Basin Management and Monitoring Program
Anticipated 2009 Scope of Work**

(Updated October 9, 2008)

The tasks outlined below are those that are anticipated to be performed during 2009. Some Tasks listed below were included in the Initial Phase 1 Scope of Work that was contained in the Implementation Plan prepared in March, 2007, and the Updated Phase 2 Scope of Work contained in the November, 2007 Annual Report. This is because some Tasks recur throughout the program. For instance, data collection and database entry are continuous activities that will occur throughout the program. Program Administration Tasks will also occur on a day-to-day, as needed basis throughout the program.

Within the context of this document the term "Consultant" refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD), or to the Monterey County Water Resources Agency (MCWRA). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

**M. 1. a.
Project Budget and Controls**

Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.

**M. 1. b.
Assist with Board and TAC
Agendas**

Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.

**M. 1. c.
Preparation and Attendance
of Meetings**

The Consultants' work will require internal meetings and possibly with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Task M.1.c will be:

Those associated with attendance at TAC meetings, and

From time-to-time when Watermaster staff asks Consultants to make presentations to the Watermaster Board and/or TAC.

For TAC meetings appropriate Consultant representatives will attend the TAC meetings, but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.

**M. 1. d.
Prepare Board/ TAC Status
Updates and Reports**

Consultants will provide written monthly progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings. These progress reports will typically include project progress that has been made, and problem identification and resolution.

M. 1. e.

When requested by the Watermaster staff, Consultants may be asked to assist the

Peer Review of Documents and Reports	TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.
M. 1. f. QA/QC	A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program.
I. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program	
I. 2. a. Database Management	
I. 2. a. 1 Conduct Ongoing Data Entry/ Database Maintenance	The database will be maintained by a Consultant performing this work for the Watermaster. Either one of the other Consultants or the Watermaster staff will enter new data into the consolidated database. Such data will include water production volumes, water quality and water level data, and such other data as may be appropriate.
I. 2. a. 2 Verify Accuracy of Production Well Meters	To ensure that water production data is accurate, all production well meters will be verified for accuracy during 2009. This work will either be performed by the well owner, and submitted to the Watermaster for review and acceptance, or performed by the Watermaster through a Contractor hired by the Watermaster. Performing this work "...as often as may be reasonable..." is required under the Amended Decision, on page 35, Section L.3.j.vii.
I. 2. b. Data Collection Program	
I. 2. b. 1. Site Representation and Selection.	The monitoring well network review that was started in 2008 will be completed to select the specific site where an additional monitoring well will be installed to fill a data gap that was identified through the work performed in 2008. This new well will be used to develop additional data that will be beneficial to the management of the basin. The new well will be constructed under subtask I.2.b.5.
I. 2. b. 2. Collect Monthly Manual Water Levels.	Each of the monitoring wells will be visited on a monthly basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers, if it is determined that dataloggers are appropriate. It is expected that dataloggers, if used, will only be installed on the Coastal Sentinel monitoring wells, and that the other wells will be manually measured.
I. 2. b. 3. Collect Quarterly Water Quality Samples.	Water quality data will be collected quarterly from certain of the monitoring wells. This data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant selected to perform this work will make this judgment based on consideration of costs and other factors.
I. 2. b. 4. Update Program Schedule and Standard Operating Procedures.	The TAC, with assistance from Consultants, will conduct periodic reviews of the data collection program and will recommend to the Watermaster improvements as warranted.
I. 2. b. 5. Monitor Well Construction	Similar to the approach taken in Phase 1 under Task I.1, the Watermaster will hire a Contractor to design and construct an additional monitoring well to fill a data gap in the existing monitoring well network. The work to select the site for this well will be

	performed under subtask I. 2. b. 1. Budgeting for this Task will be included in the M&MP 2009 Capital Budget.
I. 2. b.6 Reports	<p>The groundwater level and quality monitoring will be conducted on a monthly, quarterly, and annual basis, as described in the Contractor's Scope of Work. Reports summarizing data collected and analyzed will be submitted to the Watermaster on a schedule to be established during the year. Reports will include:</p> <ul style="list-style-type: none"> • Water Quality and Water Level Quarterly Reports • An Annual Water Quality and Water Level Report
I. 3 Basin Management	
I. 3. a. Enhanced Seaside Basin Groundwater Model	<p>As a result of the data obtained during Phase 1, including constructing new coastal sentinel monitoring wells and developing a consolidated database of groundwater production, water levels, and water quality, it is was concluded that at that time it was not necessary to develop a new Model. The basis for this decision was included in the Phase 1 documents submitted with the November 15, 2007 Annual Report. Preliminary conclusions from work performed on preparing the Basin Management Action Plan in 2008, along with comments and questions from Technical Advisory Committee and Board members, indicate that it will be desirable to update the existing Model during 2009, so that it can be used as more data becomes available.</p>
I.3.a.1 Update the Existing Model	<p>The existing Model is described in the report titled "Groundwater Flow and Transport Model" dated October 1, 2007. The existing Model will be updated to address those issues discussed in the Memorandum from HydroMetrics titled "Ongoing Status of the Seaside Basin Groundwater Model" dated October 4, 2007, which are necessary to use the Model for the purposes described under tasks I.3.a.2 and I.3.a.3. This work will be done by a Consultant hired by the Watermaster. <u>[Note: Both of the referenced documents were either discussed or contained in Attachment 11 of the Watermaster's "Annual Report – 2007."]</u></p>
I. 3. a. 2 Develop Protective Water Levels	<p>Use the updated Model to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work will be done by a Consultant hired by the Watermaster. The general scope of work for this Task is outlined in HydroMetrics letter dated June 4, 2008 titled "Approach and Effort for Estimating Protective Groundwater Levels in the Seaside Basin."</p>
I. 3. a. 3 Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	<p>Use the updated Model to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. As desired and appropriate, use the updated Model to develop preliminary answers to other questions associated with Basin management. This work will be done by a Consultant hired by the Watermaster. The general scope of work for this Task is included in the scope described in HydroMetrics letter dated June 4, 2008 titled "Approach and Effort for Estimating Protective Groundwater Levels in the Seaside Basin."</p>

**I. 3. b.
Complete Preparation of
Basin Management Action
Plan**

The Watermaster's Consultant hired in 2008 to prepare the Basin Management Action Plan (BMAP) has nearly completed preparing this document, and full completion is expected by spring of 2009. The completed BMAP will serve as the Watermaster's long-term seawater intrusion prevention plan. The BMAP addresses the topics described under subtasks I. 3. b. 1 and I. 3. b. 2, as well as other important Basin management topics. The Sections that will be included in the final BMAP are:

- Executive Summary
- Section 1 – Background and Purpose
- Section 2 – State of the Basin
- Section 3 – Supplemental Water Supplies
- Section 4 – Groundwater Management Actions
- Section 5 – Conclusions, Recommendations, and Implementation Plan

Drafts of each of these Sections were prepared in 2008, and will be finalized for inclusion in the Final BMAP in 2009.

The updated Supplemental Water Supplies analysis contained in Section 3 of the BMAP addresses the following:

- Updated status and review Of Monterey Peninsula Water Supply Projects
- Updated costs, schedules, permitting issues, and volumes of water that the Projects can supply
- Distribution and Delivery System/ End Use Consumer Improvements and Mandatory Conservation Efforts
- Non-Potable Water Resources
- Out-of-Basin Imports

Pumping redistribution strategies are discussed in Section 4 of the BMAP, and also in Section 4 of the Seawater Intrusion Response Plan (Section 4 listed under subtask I.4.d). This work addresses the following:

- Basin overdraft, mandatory GW reduction
- Salinity detection, mandatory GW reduction
- Reduced GW delivery impacts and solutions
- In Lieu, Voluntary pumping reductions
- Water Banking
- Salinity barrier system
- Pumping variability
- Storage capacity of the basin

Compliance with any CEQA issues which pertain to adoption and/or implementation of the BMAP will be carried out by a Consultant in conjunction with the adoption of the BMAP by the Watermaster Board of Directors. At this point it is assumed that only an Initial Study leading to a Negative Declaration will meet the CEQA requirements. If additional CEQA compliance work will be required, this will be determined once the Initial Study has been completed.

I. 3. c. Refine and/or Update the Basin Management Action Plan	<p>During 2009 it may be found beneficial or necessary to perform further, as yet undefined, work to refine the BMAP and/or to update it based on new data or knowledge that is gained during the year. Such work might involve issues pertaining to Basin storage capacity, water storage rights, or pumping redistribution strategies. This task is included primarily for budgeting purposes in the event such work is deemed necessary.</p>
I. 4 Seawater Intrusion Response Plan (formerly referred to as the Seawater Intrusion Contingency Plan)	
I. 4. a. Oversight of Seawater Intrusion Detection and Tracking	<p>A Consultant will provide general oversight over the Seawater Intrusion detection program.</p>
I. 4. b. Analyze and Map Water Quality from Coastal Monitoring Wells	<p>Annual chloride concentration maps will be produced incorporating the data from the coastal wells. Data from the Phase 1 coastal sentinel wells will be used to develop time series graphs.</p>
I. 4. c. Annual Report- Seawater Intrusion Analysis	<p>At the end of each water year, a Consultant will reanalyze all water quality data. Semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff.</p>
I. 4. d Complete Preparation of Seawater Intrusion Response Plan	<p>A detailed draft long-term Seawater Intrusion Response Plan (SIRP) has nearly been completed. The SIRP will be completed and approved by the Watermaster by the spring of 2009. The Sections that will be included in the final SIRP are:</p> <ul style="list-style-type: none"> • Executive Summary • Section 1 – Background and Purpose • Section 2 – Conformance with Other Documents • Section 3 – Seawater Intrusion Indicators and Triggers • Section 4 –Seawater Intrusion Contingency Actions
	<p>Compliance with any CEQA issues which pertain to adoption and/or implementation of the SIRP will be carried out in conjunction with the adoption of the SIRP by the Watermaster Board of Directors. At this point it is assumed that only an Initial Study leading to a Negative Declaration will meet the CEQA requirements. If additional CEQA compliance work will be required, this will be determined once the Initial Study has been completed.</p>

**I. 4. e.
Refine and/or Update the
Seawater Intrusion Response
Plan**

During 2009 it may be found beneficial or necessary to perform further, as yet undefined, work to refine the SIRP and/or to update it based on new data or knowledge that is gained during the year. Such work might involve issues pertaining to seawater intrusion indicators/triggers or pumping redistribution strategies. This task is included primarily for budgeting purposes in the event such work is deemed necessary.

**I. 4. f.
If Seawater Intrusion is
Determined to be Occurring,
Implement Contingency
Response Plan**

The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.
