

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.