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SECTION III. CLOSING SUMMARY

The preceding sections discussed details that have been provided for the four areas (Zones) in the Central Valley. Summary observations about water quality conditions that can be made based on the monitoring data considered in this 2007 Review are identified in the Executive Summary and detailed within each Section Zone Report. The specific monitoring results that were used for this 2007 Review will be posted on the Central Valley Water Board web site at: http://www.waterboards.ca.gov/centralvalley/programs/irrigated_lands.

Data collected and analyzed in this report provides a starting point to help the Board and the Coalitions better understand the potential constituents of concern associated with irrigated lands. Characterization of the inputs is only one component of a comprehensive monitoring program. This report compiles and analyzes the monitoring data collected over the past three years. Additional activities that could influence future assessments are described below.

Monitoring and Reporting Program Issues

The Coalition Group Monitoring and Reporting Program is being revised in part through the efforts of Water Board staff in consultation with the ILP Technical Issues Committee as well as other stakeholders. The changes that are being proposed are based on lessons learned from the previous and current MRP (Order RB5S-2005-0833), as well as on considerations to balance the need for more technical information with concerns about cost effectiveness. The modifications that will be made in the Coalition monitoring plans will have an effect on information available for future data assessments.

Several Coalition groups are engaged in the process of developing Management Plans, based on the exceedances that have been identified during their monitoring and reporting.

MANAGEMENT PLANS

The Irrigated Lands Conditional Waiver, Board Revised Order No. R5-2006-0053 (Revised Order) Attachment B requires that a Management Plan be developed where it is determined that discharges of waste from irrigated lands have caused or contributed to exceedances of applicable water quality standards. A Management Plan will identify the management practices that may be implemented, evaluate the effectiveness of existing management practices in achieving applicable water quality standards, and identify additional actions, including, but not limited to, different or additional management practice implementation or education outreach to achieve applicable water quality standards. The Management Plan will also include a schedule to implement the management practices and the means of assessing and evaluating their effectiveness. Multiple Management Plans are being developed by Coalitions in Zones 1, 2 and 3. Information gathered from Management Plan implementation will be used in concert with monitoring data to evaluate the effectiveness of the Irrigated Lands Program.

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Monitoring Data Gaps

This 2007 Review has summarized the monitoring information generated for the ILP and provided baseline information regarding water quality conditions where sufficient monitoring data was available. It has identified priority areas that clearly warrant actions to improve water quality. It has also identified areas where there has been insufficient information to understand baseline conditions. A summary of the data gaps previously discussed in Section II could generally be addressed as follows:

1. Development of a cost-effective monitoring approach that will be adequate to understand trends, in particular with respect to areas where management plans are being implemented.
2. Identification of limits to be used in implementation of Basin Plan objectives.
3. Collaboration with Coalitions to develop a pesticide monitoring approach that would accurately reflect the pesticides that are actually being applied when the monitoring occurs.
4. Identification of an approach that will evaluate the effects of agriculture at locations and during seasons that have not been sufficiently characterized.

Data gaps do not always need to be addressed by direct monitoring but with appropriate justification, could be addressed by inference from data collected at representative sites, or from the use of modeling techniques.

SALINITY AND BACKGROUND CONTAMINANTS. There are exceedances at monitoring sites that will not be easily addressed, and will require a concerted effort on the part of many agencies and groups, scientific studies, and perhaps the development of new management practices with different approaches to protecting water quality. This is particularly true for some constituents, such as metals and salt, which may be present at background levels and could be increased through certain activities related to irrigated agriculture.

A Central Valley Salinity Management Policy is being developed in cooperation with many State as well as federal agencies. This policy will affect the Irrigated Lands Program.

MULTIPLE LAND USES. Selection of monitoring sites can often be challenging for Coalitions as well as the CVRWQCB, because of the often-present conflict of multiple land uses. The presence of dairies, which are not covered under the Irrigated Lands Conditional Waiver, as well as urbanized areas and other land uses can influence the water quality in areas where irrigated agriculture also exists. At this stage, the program monitoring that is taking place attempts to identify monitoring sites that are tied primarily to irrigated agriculture, yet there is a need to protect all waters of the State, even areas of mixed land use. Increased coordination within Water Board programs and a broader watershed approach to monitor, assess, and implement management practices in collaboration with all types of land-use practitioners would be an exemplary approach to protect water quality.

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PRIORITIZATION OF IMPLEMENTATION. It is important to consider that the data results from monitoring sites that exhibit exceedances may represent localized results, or they may represent broad geographic areas that will require management practice implementation. In many cases, management practices will need to be implemented. In order to address all exceedances, a prioritization sequence for implementing measures is appropriate.

Prioritizing management practice implementation to address water quality issues should be based on approaches that will have the greatest potential to improve water quality. In some cases, multiple water quality impairments could be resolved by addressing one type of exceedance. For example, high levels of suspended solids in water is an impairment which, if improved, could also result in a reduction of pesticides in the water, pesticides in the sediment, water and sediment toxicity, and general physical parameters, such as low dissolved oxygen.

The prioritization in each management should also include an time schedule that identifies appropriate intervals in which progress should be measured and reported. Progress measurements should include updates on water quality conditions as well as tracking of management practice implementation.

MANAGEMENT PRACTICE EFFECTIVENESS. Management plans developed by Coalition Groups require that the effectiveness of the management practice implementation be measured. Construction or installation of management practices may be one measure of implementation effectiveness. Other measures may include outreach to growers that will lead to changes in pesticide applications and reduction of discharges. The ultimate measure of effectiveness will be in the identified improvements to receiving water quality which will be measured in the trend monitoring. However, this may take many years to identify, therefore it is important to measure management practice effectiveness through runoff or localized monitoring where appropriate.

TREND ANALYSIS. This 2007 Review provides baseline information about the possible effects of irrigated agriculture for a significant number of areas within each Zone and for the entire Central Valley Region. Another key element in a comprehensive monitoring program would be trend analysis. This could involve establishing fixed monitoring site locations to obtain ongoing measurements of core water quality parameters to conduct a trend analysis of the resulting data. Core monitoring parameters may include but are not limited to, general physical parameters, suspended solids, pathogens, and toxicity.

Core monitoring sites would be selected to represent areas within the Central Valley in which the ILP Program is being implemented, and would be implemented for a period of time. The information from these monitoring sites, together with tracking of the implemented management practices, and land use changes would help identify the effectiveness of the Irrigated Lands Conditional Waiver Program efforts to address constituents of concern identified in the baseline monitoring.

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Closing

The information summarized in this 2007 Review is the result of a tremendous effort on the part of Central Valley Water Board staff in data compilation, quality control review, and data summary. Tens of thousands of data records were uploaded into electronic format, reviewed, analyzed, and summarized for this report. This took focused dedication and attention to detail on the part of the entire staff of the Irrigated Lands Program.

The 2007 Review is also the result of an admirable effort on the part of the Coalition Groups and Irrigation Districts that performed their monitoring duties in compliance with the Irrigated Lands Conditional Waiver Program, many of whom participated in the quality control review of the draft data summaries as well.