

Section 1. Introduction

Santa Margarita Basin Groundwater Sustainability Plan

Appendix 1A Definition of SGMA and Groundwater Terms

Definition of SGMA and Groundwater Terms

Aquifer – a geologic formation(s) that is water bearing; a geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people’s needs.

Aquifer (confined) – soil or rock below the land surface that is saturated with water. There are layers of impermeable material both above and below it, and it is under pressure so that when the aquifer is penetrated by a well, the water will rise above the top of the aquifer.

Aquifer (unconfined) – an aquifer whose upper water surface (water table) is at atmospheric pressure, and thus is able to rise and fall.

Aquitard – a geologic formation or stratum that lies adjacent to an aquifer and that allows only a small amount of liquid to pass.

Artificial recharge – a process where water is put back into groundwater storage from surface-water supplies such as irrigation, or induced infiltration from streams or wells.

Best available science – the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision that is consistent with scientific and engineering professional standards of practice.

Best management practice – a practice, or combination of practices, that are designed to achieve sustainable groundwater management and have been determined to be technologically and economically effective, practicable, and based on best available science.

Conjunctive use – the combined use of groundwater and surface water sources that optimizes the beneficial characteristics of each source.

Data gap – a lack of information that significantly affects the understanding of the basin setting or evaluation of the efficacy of GSP implementation, and could limit the ability to assess whether a basin is being sustainably managed.

De minimis extractor – a person who extracts, for domestic purposes, 2 acre-feet or less per year. SGMA does not authorize GSAs to require *de minimis* users to meter their wells.

Department of Water Resources (DWR) – State agency that oversees the implementation of SGMA.

Drawdown – a lowering of the groundwater surface caused by pumping.

Evapotranspiration – the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

Groundwater – water that exists underground in saturated zones beneath the land surface. The upper surface of the saturated zone is called the water table.

Groundwater dependent ecosystem – ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface.

Groundwater flow – the volume and direction of groundwater movement into, out of, or throughout a basin.

Groundwater Sustainability Agency (GSA) – 1 or more local agencies that implement the provisions of this part. For purposes of imposing fees pursuant to Chapter 8 (commencing with Section 10730) or taking action to enforce a GSP, groundwater sustainability agency also means each local agency comprising the groundwater sustainability agency if the GSP authorizes separate agency action.

Groundwater Sustainability Plan (GSP or Plan) – in groundwater basins designated by the Department of Water Resources (DWR) as critically-overdrafted high and medium priority, local public agencies and GSAs are required to develop and implement groundwater sustainability plans (GSPs) by January 31, 2020. All other groundwater basins designated as high or medium priority basins to be managed under a GSP by January 31, 2022.

Hydraulic conductivity – property of geologic materials that controls the ease with which groundwater flows through pore spaces or fractures. Higher hydraulic conductivity allows water to travel faster through geologic media. Units with very low hydraulic conductivity slow or may prevent groundwater flow. Hydraulic conductivity has units with dimensions of length per time (e.g., feet per day).

Injection well – an injection well is used to place fluid underground into porous geologic formations. These underground formations may range from deep sandstone or limestone to a shallow soil layer. Injected fluids may include water, wastewater, brine (salt water) or water mixed with chemicals.

In-lieu use – the use of surface water by persons that could otherwise extract groundwater in order to leave groundwater in the basin.

Interconnected surface water – surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted.

Interim milestone (IM) – a target value representing measurable groundwater conditions, in increments of 5 years, set by a groundwater sustainability agency as part of a GSP.

Local agency – a local public agency that has water supply, water management, or land use responsibilities within a groundwater basin.

Management area – an area within a basin for which the GSP may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors.

Measurable objectives – specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted GSP to achieve the sustainability goal for the basin.

Minimum threshold – a numeric value for each sustainability indicator used to define undesirable results.

Monitoring well – a well designed and installed to obtain representative groundwater quality samples and hydrogeologic information. Deep and shallow monitoring wells provide controlled access for sampling groundwater near an agricultural waste storage or treatment facility to detect seepage and monitor groundwater quality.

Overdraft – overdraft occurs when, over a period of years, more water is pumped from a groundwater basin than is replaced from all sources – such as rainfall, irrigation water, streams fed by mountain runoff and intentional recharge. While many of its individual aquifers are not overdrafted, California as a whole uses more groundwater than is replaced.

Plan or GSP implementation – an Agency's exercise of the powers and authorities described in the SGMA, which commences after an Agency adopts and submits a GSP or Alternative to the Department of Water Resources and begins exercising such powers and authorities.

Plan manager – an employee or authorized representative of an Agency, or Agencies, appointed through a coordination agreement or other agreement, who has been delegated management authority for submitting the GSP and serving as the point of contact between the Agency and the Department.

Principal aquifers – aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems.

Private pumpers – groundwater users operating their own wells outside of any water agency.

Recharge – water added to an aquifer. For instance, rainfall that seeps into the ground.

Reference point – a permanent, stationary and readily identifiable mark or point on a well, such as the top of casing, from which groundwater level measurements are taken, or other monitoring site.

Representative monitoring point – a monitoring site within a broader network of sites that typifies 1 or more conditions within the basin or an area of the basin.

Seasonal high – the highest annual static groundwater elevation that is typically measured in the Spring and associated with stable aquifer conditions following a period of lowest annual groundwater demand.

Seasonal low – the lowest annual static groundwater elevation that is typically measured in the Summer or Fall, and associated with a period of stable aquifer conditions following a period of highest annual groundwater demand.

Storativity (or storage coefficient) – the volume of water (e.g., cubic feet) released from aquifer storage per unit decline in hydraulic head in the aquifer (e.g., foot), per unit area of the aquifer (e.g., square feet). Storativity is a volumetric ratio and therefore unitless. A large value for storativity implies a highly productive aquifer. Storativity is applied only to aquifers under local or regional confinement; specific yield is a roughly equivalent measure of aquifer productivity in an unconfined aquifer.

Specific yield – the volume of water released from storage by an unconfined aquifer per unit surface area of aquifer per unit decline of the water table. Specific yield is a volumetric ratio and therefore unitless. Specific yield is used to characterize unconfined aquifers; high specific yield indicates a productive aquifer unit.

Surface water – water that is on the Earth’s surface, such as in a stream, river, lake or reservoir.

Sustainability goal – the existence and implementation of 1 or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield.

Sustainability indicator – any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results, as described in Water Code Section 10721(x).

Sustainable Groundwater Management Act (SMGA) – the SGMA provides a framework for sustainable management of groundwater supplies by local authorities. Recognizing that groundwater is most effectively managed at the local level, the SGMA empowers local agencies to achieve sustainability within 20 years. The SGMA establishes minimum standards for sustainable groundwater management, improves coordination between land use and groundwater planning, provides state technical assistance, protects water rights, and creates a mechanism for state intervention if a local agency is not managing its groundwater sustainability.

Sustainable Management Criteria (SMC) – refers collectively to sustainability goal, undesirable results, minimum thresholds, interim milestones, and measurable objectives.

Sustainable yield – the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin, and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.

Transmissivity – a measure of how much water can be transmitted horizontally. It is derived from the hydraulic conductivity of an aquifer unit multiplied by its total thickness. High transmissivity units are very conductive to groundwater flow, very thick, or both. Transmissivity is usually expressed in units of length² per time, or occasionally as volume per length per time.

Uncertainty – a lack of understanding of the basin setting that significantly affects an Agency's ability to develop sustainable management criteria and appropriate projects and management actions in a GSP, or to evaluate the efficacy of GSP implementation, and therefore may limit the ability to assess whether a basin is being sustainably managed.

Undesirable results – a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin. Undesirable results may be defined by minimum threshold exceedances at a single monitoring site, multiple monitoring sites, a portion of a basin, a management area, or an entire basin. Undesirable results are one or more of the following effects:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.
- Significant and unreasonable reduction of groundwater storage.
- Significant and unreasonable seawater intrusion.

- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.
- Significant and unreasonable land subsidence that substantially interferes with surface land uses.
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Water budget – an accounting of the total groundwater and surface water entering and leaving a basin including the changes in the amount of water stored.

Water table – the top of the water surface in the saturated part of an aquifer.

Water use – water that is used for a specific purpose, such as for domestic use, irrigation or industrial processing. Water use pertains to human’s interaction with and influence on the hydrologic cycle and includes elements such as water withdrawal from surface and groundwater sources, water delivery to homes and businesses, consumptive use of water, water released from wastewater treatment plants, water returned to the environment, as well as instream uses, such as using water to produce hydroelectric power.

Water year – the period from October 1 through the following September 30, inclusive.

Watershed – the land area that drains water to a particular stream, river or lake. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge. Large watersheds, like the Mississippi River Basin, contain thousands of smaller watersheds.

Well Owner Representative – director on the Santa Margarita Groundwater Agency Board who represents private pumpers.

Terminology References:

California Code of Regulations. Title 23. Waters, Division 2. Department of Water Resources, Chapter 1.5. Groundwater Management, Subchapter 2. Groundwater Sustainability Plans, Article 2., Definitions, 23 CCR § 351, § 351. Definitions.

Draft Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria. November 2016.

http://www.water.ca.gov/groundwater/sgm/pdfs/BMP_Sustainable_Management_Criteria_2017-11-06.pdf

Groundwater Sustainability Plan (GSP) Emergency Regulations Guide. July 2016.

http://www.water.ca.gov/groundwater/sgm/pdfs/GSP_Final_Regs_Guidebook.pdf