

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION R5-2017-0046

APPROVING THE LOCAL AGENCY MANAGEMENT PROGRAM
FOR
MERCED COUNTY DIVISION OF ENVIRONMENTAL HEALTH

WHEREAS, on 19 June 2012, the State Water Resources Control Board (hereafter State Board) adopted Resolution No. 2012-0032, which in part approves the *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems* (hereafter the OWTS Policy); and

WHEREAS, the OWTS Policy allows Local Agencies to propose Local Agency Management Programs (hereafter LAMPs) for California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) approval, as conditional waivers of Waste Discharge Requirements; and

WHEREAS, The OWTS Policy requires Central Valley Water Board staff (hereafter staff) to solicit comments from the State Water Resources Control Board Division of Drinking Water (hereafter DDW) regarding a LAMP's proposed setbacks and notifications to water purveyors; and

WHEREAS, on 13 May 2016 the Merced County Department of Public Health, Division of Environmental Health (hereafter MCDEH) submitted a formal draft LAMP, along with a preliminary completeness checklist (hereafter checklist) per staff's request; and

WHEREAS, on 7 June 2016, Central Valley Water Board staff sought DDW's comments on the formal draft LAMP; on 15 September 2016 DDW concurred with the proposed setbacks and notifications contingent upon an appropriate workshop by 13 May 2018 to define public agency responsibilities and procedures for OWTS Policy implementation; and

WHEREAS, on 14 September 2016 staff provided MCDEH with comments on the formal draft LAMP; on 1 November 2016 MCDEH submitted a revised draft LAMP that addressed staff's comments; on 21 November 2016 staff and MCDEH completed discussions on the revised draft LAMP and checklist; and

WHEREAS, on 23 January 2017, the Central Valley Water Board notified MCDEH and interested parties of its intent to approve the LAMP, and provided them with an opportunity for public hearing, and an opportunity to submit comments and recommendations, both on the LAMP and checklist; and

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WHEREAS, on 7 April 2017, the Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to this action:

Therefore, be it RESOLVED, that the Central Valley Water Board hereby approves the Local Agency Management Program submitted by Merced County Division of Environmental Health.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the Central Valley Water Board, on 7 April 2017.

Original signed by

PAMELA C. CREEDON, Executive Officer



DIVISION OF
ENVIRONMENTAL HEALTH

ONSITE WASTEWATER TREATMENT SYSTEMS

LOCAL AGENCY MANAGEMENT PROGRAM (LAMP)

DECEMBER 6, 2016

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REGION 5 - COMPLIANCE CHECKLIST TABLE

PROPOSED LOCAL CODES IN COMPLIANCE WITH OWTS POLICY GENERAL REQUIREMENTS FOR LAMPs				
OWTS Policy Section	OWTS Policy Section Summary	Region 5 Comments (These do not replace your review of OWTS Policy. Italics and websites are specific explanations, more detailed than in the Policy.)	Relevant LAMP Section	Legal Authority/ Code Section *See note at end of table
3.3	Annual Reporting	For Section 3.3 et seq, describe your program for annual reporting to Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff in a tabular spreadsheet format.	Section 4, pg. 33-34, Section 5, pg. 34-35, Section 7, 54-55, Section 10, pg. 51, Section 12, pg. 53-55	Policy, LAMP, Chp 9.54
3.3.1	Complaints	Include numbers and locations of complaints, related investigations, and means of resolution.	Section 5, pg. 35-37	"
3.3.2	OWTS Cleaning	Include applications and registrations issued as part of the local cleaning registration pursuant to California Health and Safety Code §117400 et seq.	Section 4, pg. 33-34	"
3.3.3	Permits for New and Replacement OWTS	Include numbers and locations of permits for new and replacement OWTS, and their Tiers.	Section 5, pg. 34-35, Section 6, pg. 35-39, Section 7, 39-40	"
3.4	Permanent Records	Describe your program for permanently retaining records, and means of making them available to Central Valley Water Board staff within 10 working days of a written request.	Section 3, pg. 32-34	"
3.5	Notifications to Municipal Water Suppliers	Describe your program for notifying public well and water intake owners, and the California Department of Public Health. Notification shall be as soon as practicable, but no later than 72 hours upon discovery of a failing OWTS, as described in Sections 11.1 and 11.2, within setbacks described in Sections 7.5.6 through 7.5.10.	Section 6, pg. 37-38	"
9.0	Minimum OWTS Standards	This Section is an introduction; we require no specific LAMP Section citation here.	Section 5, pg. 34 (Chapter 9.54, 9.54.040, 9.54.080)	Not applicable
9.1	Considerations for LAMPs	For Section 9.1 et seq., provide your commitment to evaluate complaints, variances, failures, and inspections in Section 9.3.2 (Water Quality Assessment); and your proposed means of assessment to achieve this Policy's purpose of protecting water quality and human health.	Section 5, pg. 34-35, Section 6, pg. 35-38, Section 12, pg. 54	Policy, LAMP, Chp 9.54
9.1.1	Degree of vulnerability due to local hydrogeology	<i>Describe your commitment, and proposed means to identify hydrogeologically vulnerable areas for Section 9.3.2, after compiling monitoring data.</i> Discuss appropriate related siting restrictions and design criteria to protect water quality and public health. Qualified professionals ("Definitions," page 9 in the Policy) should identify hydrogeologically vulnerable areas. <i>Such professionals, where appropriate during a Water Quality Assessment, should generally consider locally reasonable percolation rates of least permeable relevant soil horizons, best available evidence of seasonally shallowest groundwater (including, but not limited to, soil mottling and gleying, static water levels of nearby wells and springs, and local drainage patterns), threats to receptors (supply wells and surface water), and potential geotechnical issues (including, but not limited to, potentially adverse dips of bedding, foliations, and fractures in bedrock).</i>	Section 3, pg. 15-26, Section 4, pg. 26-34, and Section 10, pg. 49-51	Policy, LAMP, Chp 9.54
9.1.2	High quality waters and other environmental conditions requiring enhanced protection	Describe special restrictions to meet water quality and public health goals pursuant to all Federal, State, and local plans and orders. <i>Especially consider appropriate alternatives to those provided in Section 7.8, Allowable Average Density Requirements under Tier 1. See also: State Water Resources Control Board Resolution No. 68-16.</i>	Section 3, pg. 15-25, Section 10, pg. 49-51, and Section 11, pg. 52-53	Policy, LAMP, Chp 9.54

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9.1.3	Shallow soils requiring non-standard dispersal systems	<i>We interpret "shallow" soils generally to mean thin soils overlying bedrock or highest seasonal groundwater. Dependent on threats to receptors, highest seasonal groundwater can locally include perched and intermittent saturated zones, as well as the shallowest local hydraulically unconfined aquifer unit. See Section 8.1.5 for Minimum Depths to Groundwater under Tier 1. Qualified professionals should make appropriate determinations on the design and construction of non-standard dispersal systems due to shallow soils.</i>	Section 3, 4, 11 and 10	Policy, LAMP, Chp 9.54
9.1.4	High domestic well usage areas	<i>Our key potential concerns are nitrate and pathogen transport toward receptor wells, especially in areas with existing OWTS already prone to soft failures (OWTS failures not evident at grade). Appropriate qualified professionals should consider reasonable pollutant flow paths toward domestic wells, at minimum based on; publically available nitrate concentrations in local wells, published technical literature on local wastewater and non-wastewater nitrate sources, well constructions, pumping demands, and vulnerability of wells due to local hydrogeology. For pathogens, qualified professionals should ensure that field methods are sufficient to mitigate the potential for false positives.</i>	Section 8, pg. 45, 50, Section 11, pg. 53	Policy, LAMP, Chp 9.54
9.1.5	Fractured bedrock	<i>Where warranted, appropriate qualified professionals should assess permeability trends of water-bearing fractures, and related potential pathways of effluent toward receptors, including but not limited to, domestic wells and surface water. The professionals should also consider potential geotechnical issues. We suggest consideration of fractured bedrock in concert with percolation rates of overlying soils; either very high or low percolation rates might warrant siting restrictions or non-standard dispersal systems. See also State Water Resources Control Board Order WQ 2014-0153- DWQ, Attachment 1, page 1-3, Item A-3.</i>	Section 3, pg. 22-23, 27, and pg. 33	Policy, LAMP, Chp 9.54
9.1.6	Poorly drained soils	<i>Appropriate qualified professionals should give criteria for determination of representative percolation rates, including but not limited to, general site evaluation, trench logging, pre-soak and measurement methods of percolation tests, and acceptable alternatives for percolation tests.</i>	Section 2, pg. 26-31, Section 6, pg. 36-37, Section 8, pg. 42-43, Section 9, pg. 47	Policy, LAMP, Chp 9.54
9.1.7	Vulnerable surface water	<i>Our key potential concern is eutrophication of fresh surface water. While typically with relatively low mobility in groundwater and recently informally banned in dishwater detergents, phosphate is a common cause. At minimum, describe appropriate qualified professionals who will consider potential pathways of wastewater- sourced phosphate and other nutrients toward potentially threatened nearby surface bodies.</i>	Section 9, pg. 50, and Section 11, pg. 52	Policy, LAMP, Chp 9.54
9.1.8	Impaired water bodies	<i>Wolf Creek, Nevada County, and Woods Creek, Tuolumne County will require Tier 3 Advanced Protection Management Programs. This applies to Nevada, Placer, and Tuolumne Counties. See Attachment 2 of the OWTS Policy.</i>	NA – No 303d listed waters in Merced County	Not Applicable
9.1.9	High OWTS density areas	<i>Where nitrate is an identified chronic issue, at minimum, consider nitrogen loading per area; for example, see Hantzsche and Finnemore (1992), Crites and Tchobanoglous (1998), and more recent publications as appropriate.</i>	Section 4, pg. 33, Section 8, pg. 45, Section 10, pg. 49-51, Section 11, pg. 53	Policy, LAMP, Chp 9.54
9.1.10	Limits to parcel size	<i>At minimum, consider hydraulic mounding, nitrate and pathogen loading, and sufficiency of potential replacement areas.</i>	Section 5, pg. 34, Section 6, pg. 38, Section 8, pg. 45, Section 9, pg. 50, Section 11, pg. 53	Policy, LAMP, Chp 9.54

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9.1.11	areas with OWTS that predate adopted standards	This refers to areas with known, multiple existing OWTS.	OWTS prior to 1950 were not permitted by Merced County Env. Health. No known issues with multiple existing OWTS predating adopted standards	Policy, LAMP, Chp 9.54
9.1.12	areas with OWTS within prescriptive, Tier 1 setbacks, or within setbacks that a Local Agency finds appropriate	This refers to areas with known, multiple existing OWTS.	Section 6, pg. 35-39, Section 7, pg. 39-40, Section 8, pg. 41-45, Section 9, pg. 45-49	Policy, LAMP, Chp 9.54
9.2	Scope of Coverage:	For Section 9.2 et seq, provide details on scope of coverage, for example maximum authorized projected flows, allowable system types, and their related requirements for site evaluation, siting, and design and construction requirements.	Section 5, pg. 34, Section 6, pg. 35-39, Section 7, pg. 39-40, Section 8, pg. 41-45, Section 9, pg. 45-49, Section , and Section 12, pg. 54	Policy, LAMP, Chp 9.54
9.2.1	Installation and Inspection Permits	Permits generally cover procedures for inspections, maintenance and repair of OWTS, including assurances that such work on failing systems is under permit; see Tier 4.	Section 5, pg. 34-35, and Section 6, pg. 35-39	Policy, LAMP, Chp 9.54
9.2.2	Special Provision Areas and Requirements near Impaired Water Bodies	<i>Wolf Creek, Nevada County, and Woods Creek, Tuolumne County will require Tier 3 Advanced Protection Management Programs. This applies to Nevada, Placer, and Tuolumne Counties. See Attachment 2 of the OWTS Policy.</i>	NA	Not Applicable
9.2.3	LAMP Variance Procedures	Variances for new installations and repairs should be in substantial conformance to the Policy, to the greatest extent practicable. Variances cannot authorize prohibited items in Section 9.4.	Section 10, pg. 49-52	Policy, LAMP, Chp 9.54
9.2.4	Qualifications for Persons who Work on OWTS	Qualifications generally cover requirements for education, training, and licensing. <i>We suggest that Local Agencies review information available from the California Onsite Water Association (COWA), see: http://www.cowa.org/.</i>	Section 8, pg. 42	Policy, LAMP, Chp 9.54
9.2.5	Education and Outreach for OWTS Owners	Education and Outreach generally supports owners on locating, operating, and maintaining OWTS. At minimum, ensure that you will require OWTS designers and installers to provide owners with sufficient information to address critical maintenance, repairs, and parts replacements within 48 hours of failure; <i>see also Tier 4.</i> Also, provide information to appropriate volunteer groups. <i>At minimum, we suggest providing this information on your webpage.</i>	Section 7, pg. 39	Policy, LAMP, Chp 9.54
9.2.6	Septage	Assess existing and proposed disposal locations, and their	Section 5, pg. 34-35, Section 6, pg. 35-38, Section 8, pg. 41-45 and	Policy, LAMP,

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	Disposal	adequacy.	Section 12, pg. 54	Policy, LAMP, Chp 9.54
9.2.7	Maintenance Districts and Zones	<i>These generally refer to Homeowners Associations, special maintenance districts, and similar responsible entities. Requirements for responsible entities should generally reflect the Local Agency's judgment on minimum sizes of subdivisions that could potentially cause environmental impacts. LAMPs should ensure that responsible entities have the financial resources, stability, legal authority, and professional qualifications to operate community OWTS.</i>	Section 8, pg. 45, Section 10, pg. 50-52	Policy, LAMP, Chp 9.54
9.2.8	Regional Salt and Nutrient Management Plans	Consider development and implementation of, or coordination with, Regional Salt and Nutrient Management Plans; <i>see also State Board Resolution 2009-0011:</i> http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/!aws_regs_policies/rw_policy_implementation_mem.pdf	Section 10, pg. 50	Policy, LAMP, Chp 9.54
9.2.9	Watershed Management Groups	Coordinate <i>with volunteer well monitoring programs</i> and similar watershed management groups.	Section 7, pg. 39	Policy, LAMP, Chp 9.54
9.2.10	Proximity of Collection Systems to New or Replacement OWTS	Evaluate proximity of sewer systems to new and replacement OWTS. <i>See also Section 9.4.9.</i>	Section 6, pg. 39 and Section 10, pg. 51	Policy, LAMP, Chp 9.54
9.2.11	Public Water System Notification prior to permitting OWTS Installation or Repairs	Give your notification procedures to inform public water services of pending OWTS installations and repairs within prescribed setback distances.	Section 6, pg. 38, Section 8, pg. 43-44	Policy, LAMP, Chp 9.54
9.2.12	Policies for Dispersal Areas within Setbacks of Public Wells and Surface Water Intakes	Discuss supplemental treatments; see Sections 10.9 and 10.10. A Local Agency can propose alternate criteria; <i>however we will need rationale in detail.</i>	Section 5, pg. 34, Section 6, pg. 38-39, Section 8, pg. 45, Section 9, pg. 50-51, Section 11, pg. 53	Policy, LAMP, Chp 9.54
9.2.13	Cesspool Discontinuance and Phase-Out	Provide plans and schedule.	Section 4, pg. 33	Policy, LAMP, Chp 9.54
9.3	Minimum Local Agency Management Responsibilities:	For Section 9.3 et seq, discuss minimum responsibilities for LAMP management. Responsibilities should generally cover data compilation, water quality assessment, follow-up on issues, and reporting to the Central Valley Water Board:	Section 5, pg. 34	Policy, LAMP, Chp 9.54
9.3.1	Permit Records, OWTS with Variances	Describe your records maintenance; numbers, locations, and descriptions of permits where you have granted variances.	Section 2, pg. 13, Section 5, pg. 34-35, Section 11, pg. 52	Policy, LAMP, Chp 9.54

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9.3.2	Water Quality Assessment Program	In the Water Quality Assessment Program, generally focus on areas with characteristics covered in Section 9.1. Include monitoring and analysis of water quality data, complaints, variances, failures, and inspections. Also include appropriate monitoring for nitrate and pathogens; you can use information from other programs. <i>We are available to provide further guidance on reporting requirements. In the interim, to assist with analyses and evaluation reports (Section 9.3.3), we suggest posting data on appropriate maps; for example consider the following links:</i> http://www.nrcs.usda.gov/wps/portal/nrcs/site/ca/home/ http://www.cdpr.ca.gov/docs/emon/grndwtr/gwpa_maps.htm http://ngmdb.usgs.gov/maps/mapview/ http://www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS58.pdf http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/SacValGWContours/100t400_Wells_Spring_2013.pdf http://www.water.ca.gov/waterdatalibrary/ http://www.waterboards.ca.gov/gama/docs/hva_map_table.pdf http://geotracker.waterboards.ca.gov/gama/ http://msc.fema.gov/portal	Section 4, pg. 33-35, Section 6, pg. 38, Section 9, pg. 47, Section 10, pg. 49-52, and Section 12, pg. 53-55	Policy, LAMP, Chp 9.54
9.3.2.1	Domestic Well Sampling	<i>Apply your best professional judgment to ensure that well sampling focuses on hydrogeologically reasonable pollutant (primarily nitrate) flow paths. A qualified professional should generally design an appropriate directed, judgmental, sample (i.e., statistically non-random). Of the links provided, the Geotracker GAMA website might be particularly useful to the professional; at minimum we suggest reviews of available nitrate data in relevant domestic wells, up-gradient, within, and down-gradient of an area of interest. For some instances, for example where a developer proposes a relatively large project, a Local Agency might require a special study to distinguish between wastewater and non-wastewater sourced nitrate. In such cases, we suggest your consideration of requiring focused sampling and analyses, for example of $\delta^{18}O$ and $\delta^{15}N$ of nitrate (Megan Young, USGS, 2014 pers comm), and the artificial sweeteners sucralose and acesulfame-K (Buerge et al 2009, Van Stempvoort et al 2011, and more recent publications as they become available).</i>	Section 12, pg. 53-55	Policy, LAMP, Chp 9.54
9.3.2.2	Domestic Well Sampling, Routine Real Estate Transfer Related	This applies only if those samples are routinely performed and reported.	Section 12, pg. 53-55	Policy, LAMP, Chp 9.54
9.3.2.3	Water Quality of Public Water Systems	Reviews can be by you or another municipality.	Section 12, pg. 54	SWRCB Drinking Water Program
9.3.2.4	Domestic Well Sampling, New Well Development	This applies if those data are reported.	Section 12, pg. 53-55	Policy, LAMP, Chp 9.54

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9.3.2.5	Beach Water Quality Sampling, H&S Code §115885	<i>Public beaches include those on freshwater.</i>	None, no beach program at MCDEH	CA H&S Code §115885
9.3.2.6	Receiving Water Sampling Related to NPDES Permits	This refers to existing data from other monitoring programs.	Section 12, pg. 54	NA
9.3.2.7	Data contained in California Water Quality Assessment Database	This refers to existing data from other monitoring programs.	Section 12, pg. 54	NA
9.3.2.8	Groundwater Sampling Related to Waste Discharge Requirements	This refers to existing data from other monitoring programs.	Section 12, pg. 54	NA
9.3.2.9	Groundwater Sampling Related to GAMA Program	This refers to existing data from other monitoring programs. Reports	Section 12, pg. 54	NA
9.3.3	Annual Status Reports Covering 9.3.1-9.3.2	are due 1 February, annually beginning one year after Regional Board approves LAMP. Every fifth year also include an evaluation report. Submit all groundwater monitoring data in Electronic Delivery Format (EDF) for Geotracker; submit all surface water data to CEDEN.		
9.4	Not Allowed or Authorized in LAMP:	For Section 9.4 et seq, ensure that your LAMP covers prohibitions.	Section 4, pg. 33, Section 8, pg. 42, Section 10, pg. 49-52, Section 11, pg. 53	Policy, LAMP, Chp 9.54
9.4.1	Cesspools	Local Agencies cannot authorize cesspools of any kind or size.	Section 4, pg. 33	Policy, LAMP, Chp 9.54
9.4.2	Projected Flow >10,000 gpd	<i>Apply professional judgment to further limit projected flows.</i>	Section 5, pg. 34, Section 9, pg. 47, and Section 11, pg. 54	Policy, LAMP, Chp 9.54
9.4.3	Effluent Discharger Above Post- Installation Ground Surface	For example, Local Agencies cannot authorize effluent disposal using sprinklers, exposed drip lines, free-surface wetlands, and ponds.	Section 10, pg. 51	Policy, LAMP, Chp 9.54
9.4.4	Installation on Slopes >30% without Registered Professional's Report	<i>See also earlier comments, Section 9.1.1, regarding potential geotechnical concerns.</i>	Section 8, pg. 44-45, and Section 10, pg. 51	Policy, LAMP, Chp 9.54
9.4.5	Decreased Leaching Area for IAPMO-Certified Dispersal System with Multiplier <0.70	IAPMO, International Association of Plumbing and Mechanical Officials. <i>Decreased leaching area refers to alternatives to conventional (stone-and-pipe) dispersal systems; these alternatives require relatively less area. The multiplier, <1, allows for a reduction in dispersal field area relative to a conventional system.</i>	Section 9, pg. 48-49	Policy, LAMP, Chp 9.54

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9.4.6	Supplemental Treatments without Monitoring and Inspection	<i>Therefore, ensure that the LAMP describes periodic inspection and monitoring for OWTS with supplemental treatments.</i>	Section 4, pg. 33, Section 8, pg. 45, Section 10, pg. 49-51, Section 11, pg. 53	Policy, LAMP, Chp 9.54
9.4.7	Significant Wastes from RV Holding Tanks	<i>We interpret significant amounts to mean amounts greater than incidental dumping, such that volume, frequency, overall strength, or chemical additives preclude definition as domestic wastewater; see Definitions in OWTS Policy. See also, State Water Resources Control Board Order WQ 2014-0153-DWQ, Attachment B-2.</i>	Section 5, pg. 34	Policy, LAMP, Chp 9.54
9.4.8	Encroachment Above Groundwater	<i>Bottom of OWTS dispersal systems cannot be less than 2 feet above groundwater, or bottom of seepage pits, less than 10 feet above groundwater. We interpret groundwater to include inter-flow and perched zones, along with the shallowest main unconfined aquifer. Degree of vulnerability to pollution due to hydrogeological conditions, Section 9.1.1, and the Water Quality Assessment, Section 9.3.2., should cover in detail means of assessing seasonally shallowest depth to groundwater.</i>	Section 3, pg. 33, Section 9, pg. 37, Section 10, pg. 49	Policy, LAMP, Chp 9.54
9.4.9	Installations Near Existing Sewers	<i>New and replacement OWTS cannot occur on any lot with available public sewers less than 200 feet from a building or exterior drainage facility (exception; connection fees plus construction costs are greater than 2 times the replacement OWTS costs, and Local Agency determines no impairment to any drinking water.)</i>	Section 6, pg. 39 and Section 10, pg. 51	Policy, LAMP, Chp 9.54
9.4.10	Minimum Setbacks	<i>These setbacks are from public water systems.</i>	Section 8, pg. 43	Policy, LAMP, Chp 9.54, and 9.28
9.4.10.1	From Public Supply Wells	<i>If the dispersal system is less than 10' in depth, then the setback must be greater than 150' from public water supply well.</i>	Section 8, pg. 43	Policy, LAMP, Chp 9.54, and 9.28
9.4.10.2		<i>If the dispersal system is greater than 10' in depth, then the setback must be greater than 200' from public water supply well.</i>	Section 8, pg. 43	Policy, LAMP, Chp 9.54, and 9.28
9.4.10.3	From Public Supply Wells, Regarding Pathogens	<i>If the dispersal system is greater than 20' in depth, and less than 600' from public water supply well, then the setback must be greater than the distance for two-year travel time of microbiological contaminants, as determined by qualified professional. In no case shall the setback be less than 200'.</i>	Section 6, pg. 38	Policy, LAMP, Chp 9.54, and 9.28

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9.4.10.4	From Public Surface Water Supplies	If the dispersal system is less than 1,200' from public water system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 400' from the high water mark of the surface water body.	Section 8, pg. 43	Policy, LAMP, Chp 9.54
9.4.10.5	From Public Surface Water Supplies	If the dispersal system is greater than 1,200', but less than 2,500', from public water system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 200' from high water mark of surface water body.	Section 8, pg. 43	Policy, LAMP, Chp 9.54
9.4.11	Supplemental Treatments, Replacement OWTS That Do Not Meet Minimum Setback Requirements	Replacement OWTS shall meet minimum horizontal setbacks to the maximum extent practicable.	Section 8, pg. 43, Section 9, pg. 47, Section 11, pg. 52-53	Policy, LAMP, Chp 9.54 and 9.28
9.4.12	Supplemental Treatments, New OWTS That Do Not Meet Minimum Setback Requirements	New OWTS shall meet minimum horizontal setbacks to the maximum extent practicable, and meet requirements for pathogens as specified in Section 10.8. and any other Local Agency's mitigation measures.	Section 8, pg. 43, Section 9, pg. 47, Section 11, pg. 52-53	Policy, LAMP, Chp 9.54
9.5	Technical Support of LAMP	Include adequate detail to ensure that the combination of all proposed criteria will protect water quality and public health sufficiently to warrant the Central Valley Water Board's waiver of Waste Discharge Requirements, pursuant to §13269, California Water Code.	Section 8, pg. 42 and Section 10, pg. 51	Policy, LAMP, Chp 9.54
9.6	Regional Water Quality Control Board Consideration of LAMP	Regional Boards shall consider past performance of local programs to protect water quality. <i>We will generally consider past performance based on our reviews of annual status and evaluation reports; see Section 9.3.3.</i>		
E. Rapport, Revised 10 Feb 2015				

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Young, Megan, USGS Menlo Park, mbyoung@usgs.gov, (650-329-4544)

Buerge, Ignaz J., Hans-Rudolf Buser, Maren Kahle, Markus D. Muller, and Thomas Poiger (2009), Ubiquitous occurrence of the artificial sweetener acesulfame in the aquatic environment: an ideal chemical marker of domestic wastewater in groundwater. "Environmental Science and Technology," 43, pages 4,381 to 4,385.

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SECTION 1 - INTRODUCTION, PURPOSE AND OVERVIEW

INTRODUCTION

The California Water Code authorizes the State Water Resources Control Board (SWRCB) to regulate all discharges that could affect the quality of the waters of the state. The policies of the SWRCB are implemented locally through nine regional water quality control boards. Historically, each regional board developed “basin plans” that outlined water quality objectives in their respective jurisdictions as well as policies and programs to achieve those objectives.

Discharges are regulated through the use of Waste Discharge Requirements that act as discharge permits. With regards to the regulation of wastewater in Merced County, the California Central Valley Regional Water Quality Control Board (CVRWQCB) issues discharge permits to the municipalities and special districts that operate wastewater treatment plants in the County. In addition, the CVRWQCB issues storm water permits to the incorporated cities and to the County as well as permits for the use of recycled water.

The CVRWQCB had adopted a general waiver of waste discharge requirements for septic tank and leach field systems, where such systems were regulated by the counties that used the criteria for onsite systems set forth in the Basin Plans. Pursuant to the Water Code section 13269 (b)(2), the CVRWQCB’s general waiver expired on June 30, 2004. Since expiration of the general waiver, discharges from onsite wastewater treatment systems (OWTS) have not been formally authorized by the CVRWQCB.

On June 19, 2012, The SWRCB approved Resolution 2012-0032, adopting the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (Policy). The Policy (hence forth the Policy) was approved by the Office of Administrative Law on November 13, 2012 and became effective six months later on May 13, 2013. The Policy established a risk-based tiered approach for the regulation and management of OWTS statewide and called for incorporation of the Policy requirements into regional water boards’ basin plans within a year of the policy’s effective date.

Under the tiered approach of the Policy, Tier 1 establishes minimum standards for low risk new or replacement OWTS. Tier 2 allows local agencies to develop customized management programs that address the conditions specific to that jurisdiction. These Local Agency Management Programs (LAMP) must be approved by the appropriate regional water quality control board. Tier 3 applies special, enhanced standards to both new and existing OWTS located near a water body that has been listed as impaired due to nitrogen or pathogens pursuant to Section 303(d) of the Clean Water Act. Once approved, the standards contained in an approved LAMP supersede the Tier 1 standards.

The Merced County Department of Public Health, Division of Environmental Health (MCDEH) acknowledges that the Tier 1 standards afford an essential level of public health and water quality protection, but recognizes there are elements in Tier 1 that would preclude property owners from developing on their property relative to current standards. Information presented in this LAMP will provide alternatives to these Tier 1 requirements that are just as protective to public health and water quality.

PURPOSE

The purpose of the LAMP is to set forth an alternative method for the siting, design, operation, and maintenance of OWTS than those specified in the OWTS Tier 1 Policy. The LAMP will prescribe proper mitigation measures that will provide effective sewage treatment and achieve the purpose of the Policy in protecting water quality, while allowing

current use and development of properties within all areas in Merced County. This will additionally enable MCDEH to continue to provide a consistent and feasible regulatory system for OWTS in Merced County while maintaining the highest level of ground and surface water protection.

As examples, the LAMP will address ways to implement the following development practices that deviate from the Policy:

1. The use of leaching pits and sumps in specific areas of the County, constructed to a maximum depth of 50' below surface grade where MCDEH determines it to be necessary and appropriate.
2. The use of OWTS in cases where the percolation rate is less than or equal to one (1) minute per inch or greater than or equal sixty (60) minutes per inch by requiring a system design that mitigates any impacts and provides for effective disposal.
3. For existing parcels where the current setback requirements cannot be met, the setback requirements from the CVRWQCB's 1994 Basin Plan document Guidelines for Waste Disposal from Land Developments (Guidelines) will be used.
4. The continued allowance of one acre parcels with private or public water and an OWTS, as appropriate, based on soil suitability and other loading studies and reliance on Advanced Treatment Units (ATU's).

PLAN STRUCTURE

This plan is structured to include all required information as specified in the Policy relating to Tier 2 – Local Agency Management Programs. Related topics are grouped into separate sections for easier reference, as indicated in the Table of Contents.

AUTHORITY

California Water Code, Section 13260, requires any person discharging or proposing to discharge waste to file a report of waste discharge to the appropriate CVRWQCB.

California Water Code, Section 13291, requires the State Water Board to adopt regulations or standards for the permitting and operation of all OWTS in the state. On June 19, 2012, the State Water Board adopted the Policy to satisfy this requirement. The standards provided in the Policy carry the same substance as regulations and are enforceable.

The Policy provides for local agencies to submit management programs to the CVRWQCB, and once approved, manage the installation of new and replacement OWTS under that program.

Water Code section 13282, allows Regional Water Quality Control Boards to authorize a local public agency to issue permits for and to regulate OWTS "to ensure that systems are adequately designed, located, sized, spaced, constructed and maintained." The CVRWQCB, with jurisdiction over Merced County, authorizes MCDEH to issue certain OWTS permits within unincorporated areas.

SWRCB Order WQ 2014-0153-DWQ, the General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems, dated September 23, 2014, is the general order providing directives for discharges from all types of small domestic wastewater treatment systems and is complementary to the Policy.

California Health and Safety Code, Section 5410 et seq. provides authority for local Health Officers and Directors of Environmental Health to abate discharges of “sewage or other waste, or the effluent of treated sewage or other waste in any manner which will result in contamination, pollution, or a nuisance.”

California Health and Safety Code, Section 5461 states that “Any person who discharges sewage or other waste in any manner which results in contamination is guilty of a misdemeanor.”

California Health and Safety Code, Section 106615(e) defines the scope of practice in environmental health as “the practice of environmental health by registered environmental health specialists in the public and private sector within the meaning of this article and includes, but is not limited to, organization, management, education, enforcement, consultation, and emergency response for the purpose of prevention of environmental health hazards and the promotion and protection of the public health and the environment in the following areas: food protection; housing; institutional environmental health; land use; community noise control; recreational swimming areas and waters; electromagnetic radiation control; solid, liquid, and hazardous materials management; underground storage tank control; onsite septic systems; vector control; drinking water quality; water sanitation; emergency preparedness; and milk and dairy sanitation pursuant to Section 33113 of the Food and Agricultural Code.

California Health and Safety Code, Section 106620, states “Except for the design of onsite septic systems, nothing in this article shall authorize registered environmental health specialists to design any of the fixed works defined in Section 6731 of the Business and Professions Code.”

The Policy provides a risk-based, tiered approach for the regulation of OWTS and retains implementation at the local level. The Policy also recognizes the diversity of California’s geology, hydrology, geography, and meteorology and allows local agencies to vary from the prescribed standards in the Policy under an approved LAMP that provides for alternative standards while maintaining the same level of surface and ground water protection.

SECTION 2 - HISTORY AND COUNTY CHARACTERISTICS

HISTORY OF LOCAL SEWAGE STANDARDS

Merced County records show OWTS have historically been regulated at the local level, with those systems generating significant volumes of waste or non-domestic wastes being referred to the CVRWQCB for oversight.

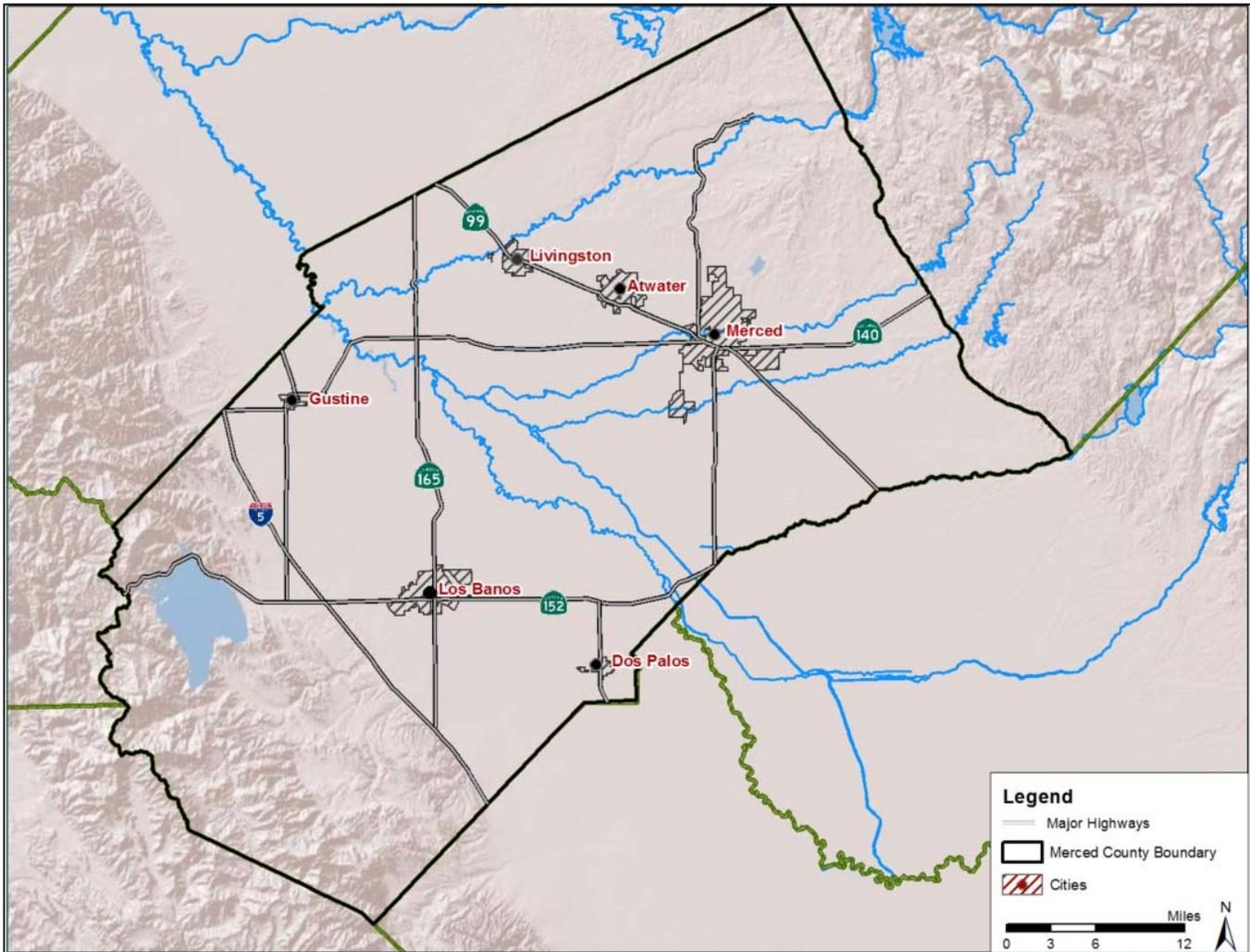
In the late 1940's the Dickey Water Pollution Act was established to create the California Water Pollution Control Board in response to degradation of water quality. In the early 1950s, the California Regional Water Pollution Control Board waived the filing of reports for discharges from individual sewage disposal systems in those counties having satisfactory ordinances or regulations. On December 15, 1972, the CVRWQCB incorporated the Guidelines for Waste Disposal from Land Developments into the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins. These guidelines provided standards designed to be protective of surface and ground water and public health. Shortly after, Merced County developed and implemented our *Minimum Design Standards – Operation and Maintenance Site Evaluation for On-Site Sewage Disposal Systems Guidelines* to be consistent with the CVRWQCB Guidelines and have implemented the requirements since that time.

Merced County has worked to maintain a consistent, comprehensive local regulatory program for OWTS while conforming to the changes outlined in the Policy and the SWRCB Order WQ 2014-0153-DWQ dated September 23, 2014 by reviewing and updating local standards and guidelines relating to OWTS and now by preparing a draft LAMP and converting the *Minimum Design Standards – Operation and Maintenance Site Evaluation for On-Site Sewage Disposal Systems Guidelines* to a new ordinance, Merced County Chapter 9.54 *Regulation of Onsite Wastewater Treatment Systems*. On December 6, 2016, the Merced County Board of Supervisors approved and adopted Merced County Code, *Chapter 9.54, Regulations for Onsite Wastewater Treatment Systems*, (Chapter 9.54) in transition to this LAMP and the Policy.

COUNTY CHARACTERISTICS AND COMPOSITION

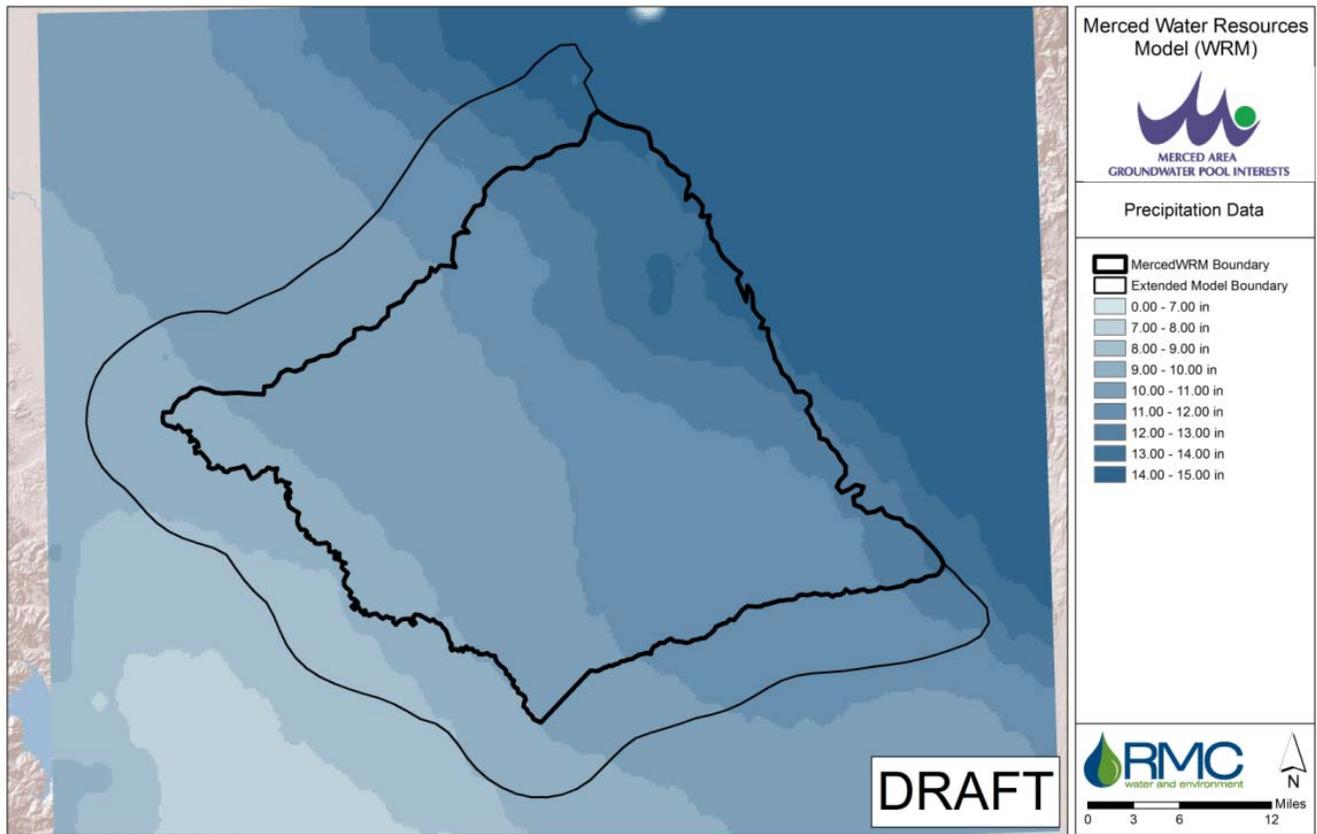
The County encompasses approximately 1,237,760 total acres, or 1,934 square miles with a total population of about 268,445 (2015 Census data). Merced County was founded in 1855 and has six incorporated cities (see Figure 1).

FIGURE 1: MERCED COUNTY



Annual precipitation within Merced County varies as displayed in Figure 2 below.

FIGURE 2: MERCED COUNTY PRECIPITATION

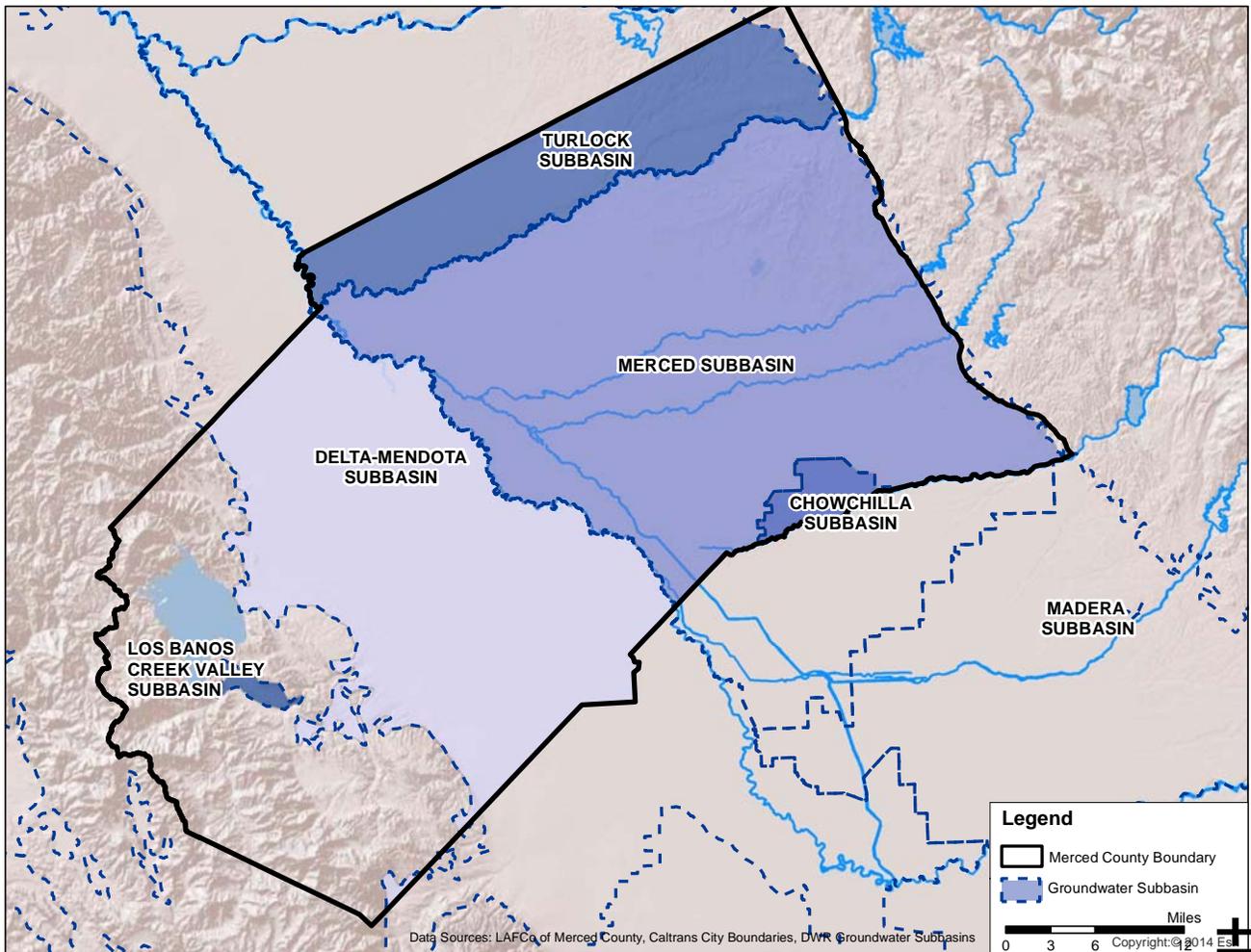


SECTION 3 - GROUNDWATER AND HYDROGEOLOGY

BASIN BOUNDARIES

As defined through the California Department of Water Resources' Bulletin 118 (2004) and updates (2016), Merced County overlies the Los Banos Creek Valley Basin and the Turlock, Merced, Chowchilla, and Delta-Mendota Subbasins of the San Joaquin Valley Groundwater Basin (referred to collectively in this document as the Merced County Groundwater Basins (see Figure 3). Bulletin 118 delineates basins and subbasins by geologic and hydrologic barriers, with some considerations made to more easily facilitate water resources management, data analysis, and basin adjudication. The Merced County Groundwater Basins underlie approximately 1,500 square miles of the County, or roughly 77% of the total area of the County. The Turlock, Merced, and Chowchilla Groundwater Subbasins are located east of the San Joaquin River while the Delta-Mendota Subbasin and the Los Banos Creek Valley Basin are to the west of the river. The Turlock, Chowchilla, and Delta-Mendota Subbasins all continue outside of Merced County boundaries and all adjacent subbasins of the San Joaquin Valley Groundwater Basin have interconnected aquifer systems. The boundaries of each Merced County basin and subbasin are described below.

FIGURE 3: MERCED COUNTY GROUNDWATER SUBBASINS



The Turlock Subbasin, part of the San Joaquin Valley Groundwater Basin, covers the area east of the San Joaquin River, north of the Merced River, and extends out of the County lines to the north (ultimately bounded to the north by the Tuolumne River). To the east, it is bounded by the crystalline basement rock of the Sierra Nevada foothills. Merced County incorporates a portion of the Turlock Subbasin between the County line and the Merced River, which includes the Dry Creek watershed.

The Merced Subbasin, part of the San Joaquin Valley Groundwater Basin, is the largest subbasin in the County and is bounded on the west by the San Joaquin River, on the north by the Merced River, on the east to the crystalline basement rock of the Sierra Nevada foothills, and on the south by either the Chowchilla River, the County line, or the northern boundaries of the Chowchilla Water District.

The Chowchilla Subbasin, part of the San Joaquin Valley Groundwater Basin, includes a small portion of Merced County, with the majority of the subbasin to the south in Madera County. The subbasin encompasses the area east of the San Joaquin River and south of the Chowchilla River, with its northern boundary in some parts defined

instead by the northern boundaries of the Chowchilla Water District and the County line. The Merced County portion of the subbasin is limited to the areas of the Chowchilla Water District within the County.

The Delta-Mendota subbasin, part of the San Joaquin Valley Groundwater Basin, is bounded on the east by the San Joaquin River and on the west by the Diablo Range, part of the California Coast Ranges. Tertiary and older marine sediments of the Coast Ranges define the western boundary of the Delta-Mendota Subbasin. To the east of the subbasin are the Turlock, Merced, and Chowchilla Subbasins. The basin is bounded by the Stanislaus/San Joaquin County line to the north and the Tranquility Irrigation District boundary to the south.

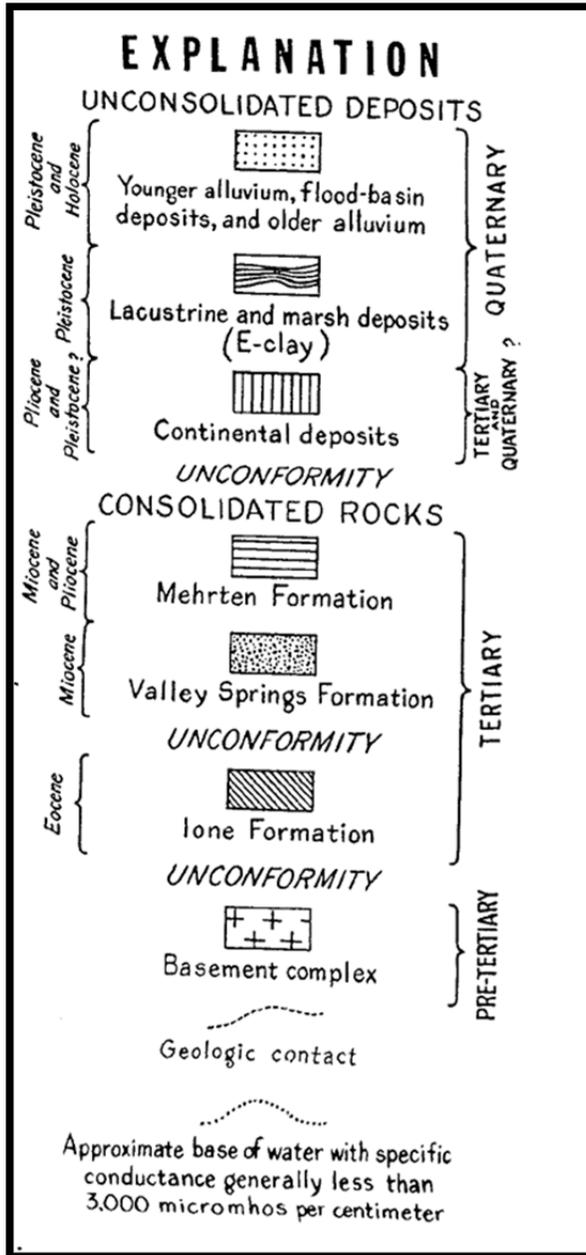
The Los Banos Creek Valley Basin is located in a valley within the Diablo Range in western Merced County. The subbasin is bounded by Upper Cretaceous marine sediments on the north and the Franciscan Formation to the south. Unlike the subbasins discussed above, the Los Banos Creek Valley Basin is not a subbasin of the San Joaquin Valley Groundwater Basin. Due to a lack of development in the Los Banos Creek Valley Basin, this basin is not described further in this document.

WATER BEARING FORMATIONS AND KEY CONFINING UNITS

Water bearing formations of significance in the Merced County subbasins of the San Joaquin Valley Groundwater Basin can generally be categorized into unconsolidated deposits and consolidated rocks with aquifers contained within unconsolidated rocks yielding the vast majority of groundwater supplies within the County. Consolidated rocks include the Mehrten Formation, Valley Springs Formation, Lone Formation, and Basement Complex. With the exception of the Mehrten Formation, the consolidated rocks in the area generally yield little water compared to the unconsolidated sediments. The Mehrten Formation is considered to be the oldest fresh water-bearing formation in the basin, although the underlying Valley Springs Formation produces minor quantities of water (DWR, 2006). The unconsolidated deposits grouping includes two of the most important water bearing formations, the older alluvium and the continental deposits, along with lacustrine and marsh deposits, younger alluvium, and flood-basin deposits. The continental deposits and older alluvium are the primary sources of groundwater in the County, along with some water from the Mehrten Formation. Although the lacustrine and marsh deposits, flood-basin deposits, and younger alluvium bear water, they yield little to wells (Page, 1977). The regionally extensive Corcoran Clay and shallow clay lenses act as aquitards in the subbasins, limiting the vertical migration of water. The generalized stratigraphy of Merced County is shown in Figure 4. Two separate geologic maps cover the County and are presented in Figure 5 and Figure 6.

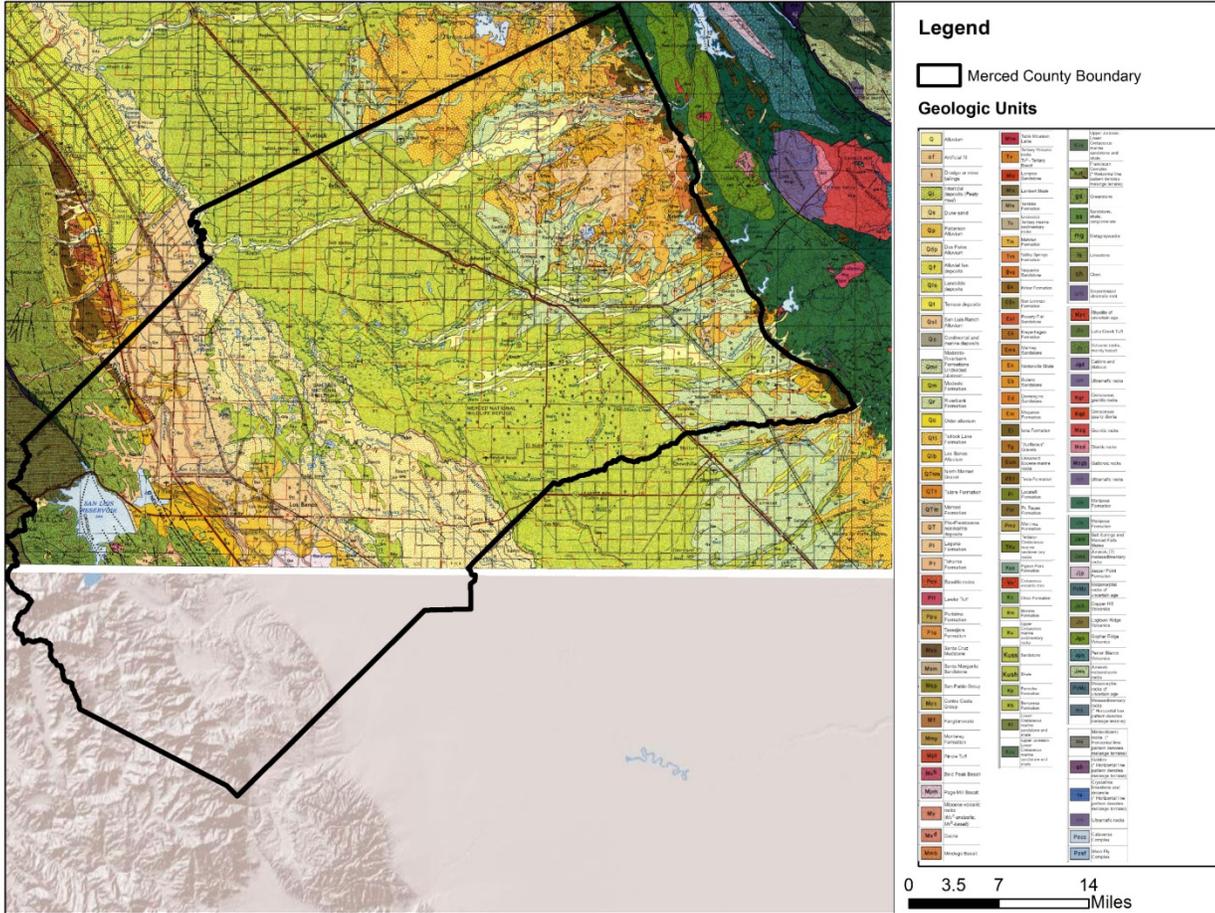
Typically, there are three groundwater bodies in the area: an unconfined water body, a confined water body, and the water body in consolidated rocks. Information on water bearing units and groundwater conditions was derived primarily from the California Department of Water Resources' Bulletin 118 (DWR, 2004) and studies of local geology.

FIGURE 4: GENERALIZED STRATIGRAPHIC COLUMN OF GEOLOGIC UNITS



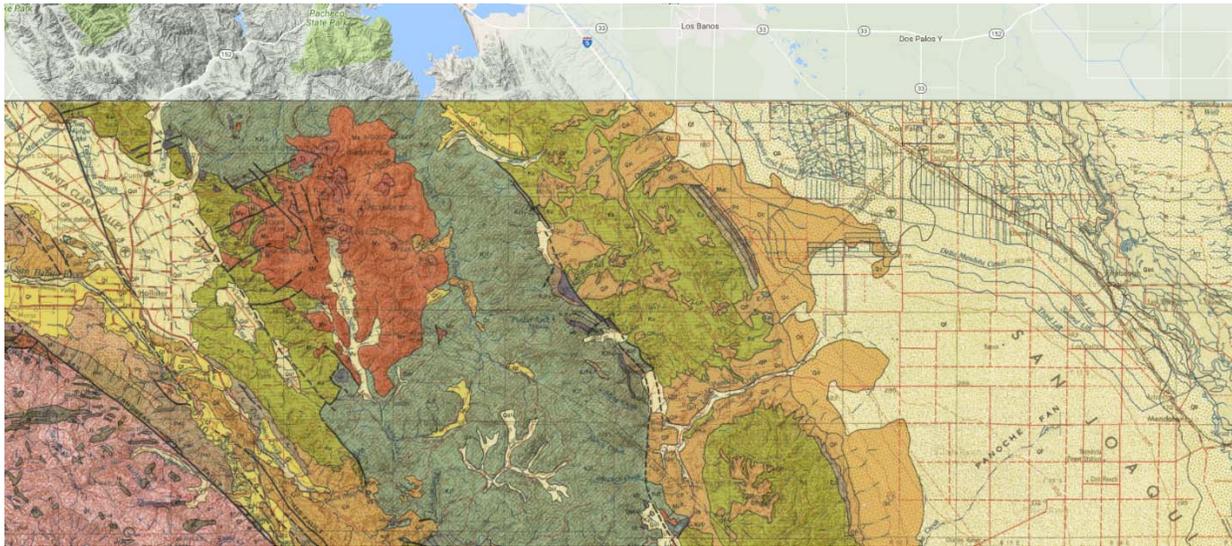
Source: Page and Balding, 1973.

FIGURE 5: GEOLOGY OF MERCED COUNTY, NORTHERN PORTION



Source: Wagner, Bortugno, and McJunkin, 1991

FIGURE 6: GEOLOGY OF MERCED COUNTY, SOUTHERN PORTION



Source: Jennings and Strand, 1958)

UNCONSOLIDATED DEPOSITS

YOUNGER ALLUVIUM

Pleistocene-Holocene aged alluvium are the youngest sediments in the region and are referred to as the “younger alluvium.” Younger alluvium is composed of fine sand, sand, and gravel and is interbedded with flood-basin deposits in the west. These deposits occur as narrow bands along river channels in the area and are 100 feet at its thickest (Page and Balding, 1973). The younger alluvium yields small to moderate quantities of water because the alluvium is not completely saturated in most areas (Page and Balding, 1973).

FLOOD-BASIN DEPOSITS

Flood basin deposits in Merced County are unconsolidated deposits which include silt, clay, organic material, and fine sand of Holocene-age (DWR, 2004). In the subsurface, the flood basin deposits are interbedded with the younger alluvium. Flood basin deposits reach a maximum thickness of 100 feet. However, due to the small hydraulic conductivity of these generally clayey deposits, the flood basin deposits yield little water to wells (Page and Balding, 1973).

LACUSTRINE AND MARSH DEPOSITS

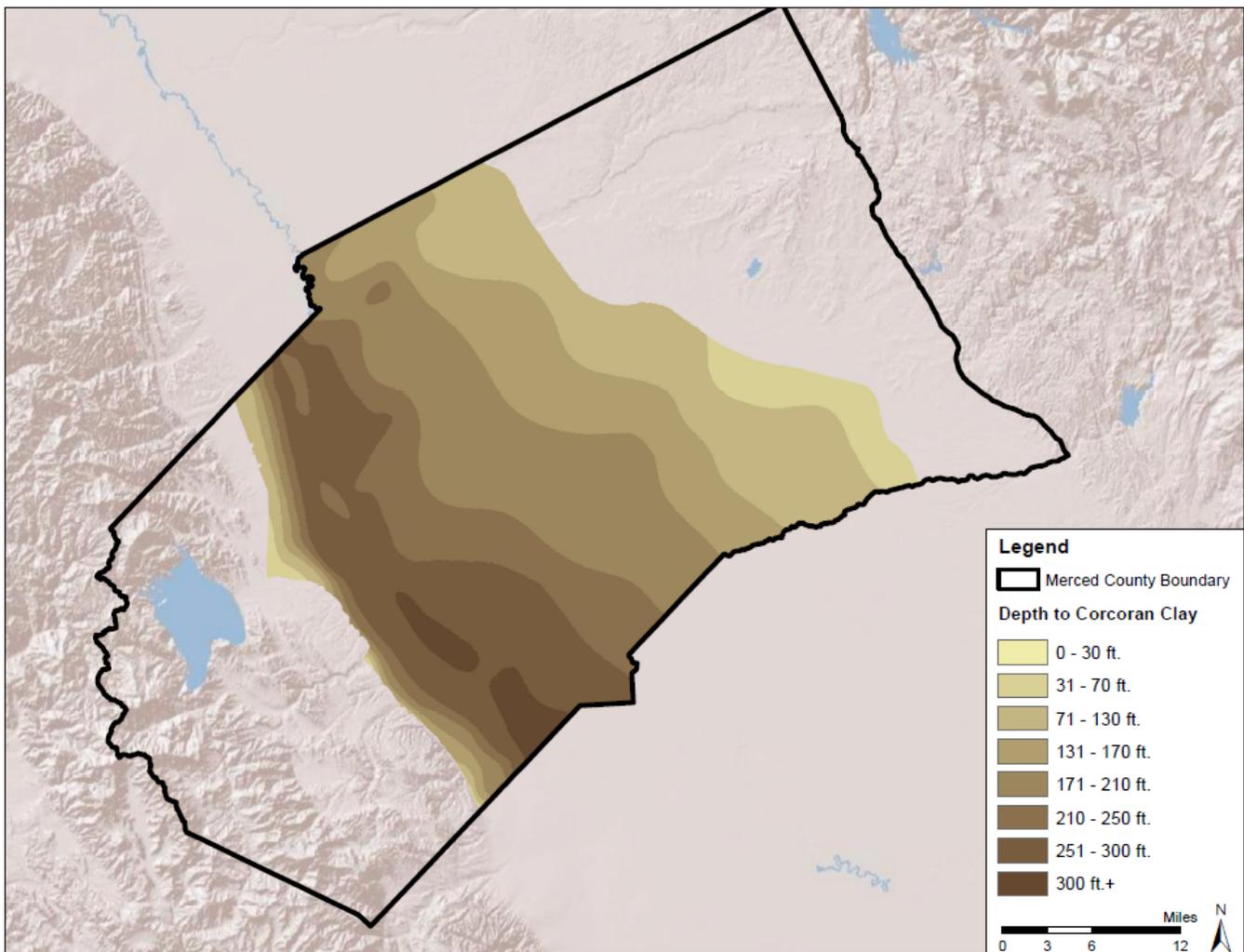
Pleistocene-aged lacustrine and marsh deposits are composed of a bed of gray and blue silt, silty clay, and clay interbedded with older alluvium (Page and Balding, 1973). Due to its clay rich composition, the lacustrine and marsh deposits restrict the vertical movement of water and function as confining beds by dividing water bearing deposits into confined and unconfined aquifers. These confining beds are further divided into the Pleistocene-aged Corcoran Clay (or “E-Clay”) and a Holocene-age shallow clay bed (Page, 1977).

The shallow clay bed is composed of oxidized sandy clay, clay, and clay with silica cemented (hardpan) intervals. This bed occurs at shallower depths than the Corcoran Clay, ranging in depth from zero to 35 ft. (Page, 1977). This bed does not yield water to wells.

The Corcoran Clay is a regionally extensive fine-grained unit that is typically present along the axis of the San Joaquin Valley (Page and Balding, 1973), including in Merced County. The diatomaceous clay unit underlies

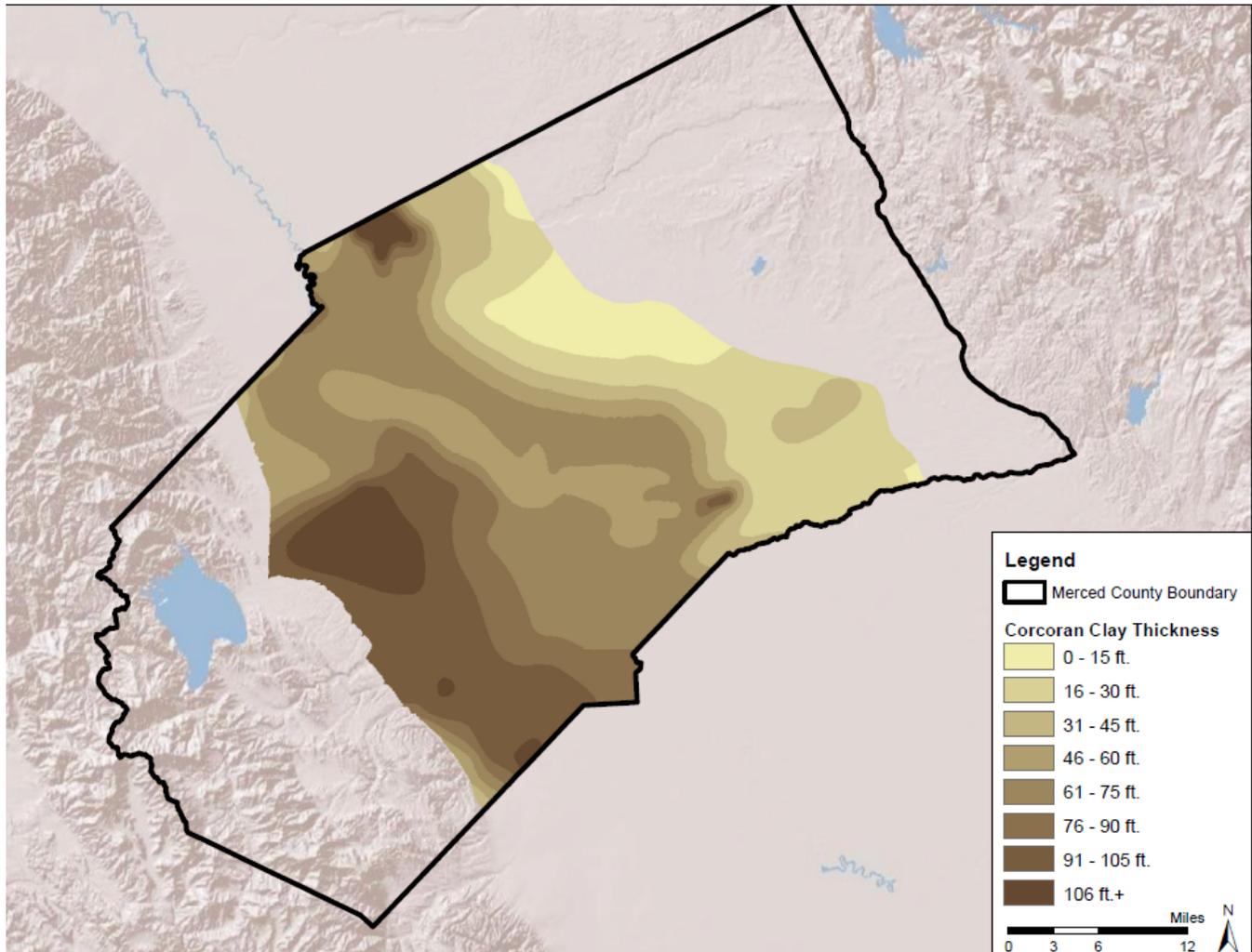
approximately 5,000 square miles of the San Joaquin Valley. In Merced County, the Corcoran Clay is generally located along the axis of the valley, between Interstate 5 and Highway 99. The top of the Corcoran in the County ranges in depth from approximately 50 to 300 feet as shown in Figure 7, with the shallowest conditions in the east, near Highway 99, and the deepest conditions in the west, near Los Banos, Gustine, and along the Union Pacific Railroad tracks that connect those cities (DWR, 1981). The thickness of the Corcoran is also variable, ranging from zero to approximately 120 feet, as shown in Figure 8 (Page, 1986). A shallow, unconfined aquifer occurs in the unconsolidated deposits above and east of the Corcoran Clay and a confined aquifer occurs in deposits underlying the Corcoran Clay (Hamlin, 1993). The extensive drilling of wells through the Corcoran Clay is thought to have reduced the confining nature of the unit, as some water can pass through the bores in the clay (RMC, 2013).

FIGURE 7: DEPTH TO CORCORAN CLAY IN MERCED COUNTY



Source: DWR, 1981

FIGURE 8: THICKNESS OF CORCORAN CLAY IN MERCED COUNTY



Source: Page, 1986

OLDER ALLUVIUM

Pleistocene-Holocene aged alluvium is referred to as the “older alluvium” and is composed of beds of gravel, sand, silt, and clay. The older alluvium is most prominent in the western part of the County and underlies eroded hills and nearly flat-lying plains. These deposits range from zero to 400 feet in thickness in the northern half of the County and up to 700 feet thick in the south. In many places, the older alluvium is coarser grained than the underlying continental deposits, and this serves to define the base of the older alluvium deposits. The older alluvium is one of the most developed aquifers in the County and yields water to domestic, irrigation, industrial, and public-supply wells. Yields to wells from this aquifer historically averaged 1,900 gallons per minute (gpm), but have been as large as 4,450 gpm. The specific capacity of the wells in the aquifer is generally smaller in the east where wells penetrate older rocks and deposits than the specific capacity in the west. Smaller specific capacity in the east indicates smaller transmissivity in the area where consolidated rocks crop out (Page and Balding, 1973).

CONTINENTAL DEPOSITS

The continental deposits are of Pliocene and Pleistocene age and consist of poorly sorted gravel, sand, silt, and clay. These deposits are generally finer grained than the overlying older alluvium. The thickness of this deposit ranges throughout the County and generally thins to the north. In southern Merced County, continental deposits range from zero to 700 feet in thickness, while to the north the deposits range from zero to 450 feet. Continental deposits are one of the most productive aquifers as they yield up to 2,100 gpm (Page and Balding, 1973).

CONSOLIDATED ROCKS

MEHRTEN FORMATION

The Mehrten Formation is late Miocene to Pliocene in age and consists of fluvial deposits of sandstone, breccia, conglomerate, tuff, siltstone, and claystone (Page and Balding, 1973). The formation ranges in thickness between approximately 200 feet thick in east Merced County to over 600 feet thick in the southwest and underlies the identifiable, nearly flat-topped hills in the east (Hamlin, 1993). The Mehrten aquifer has variable hydraulic conductivities, ranging from 0.01 to 67 feet per day (ft/day), and therefore yields from the Mehrten differ greatly. In general, according to the DWR, the Mehrten averages a yield of approximately 1,000 gpm and a horizontal transmissivity of approximately 9,100 square feet per day (ft²/day) (Page and Balding, 1973).

VALLEY SPRINGS FORMATION

The Valley Springs Formation is an Eocene-aged fluvial sequence of rhyolitic ash, sandy clay, and siliceous gravel within a clay matrix (Page and Balding, 1973). The Valley Springs Formation easily erodes to form the valleys between the Lone Formation and the overlying Mehrten Formation. The low-permeability of the formation defines the eastern edge of Merced County Groundwater Basins. The Valley Springs Formation reaches a maximum thickness of 270 feet (Arkley, 2009). This formation is a small-yield aquifer, attributed to the fine ash and clay matrix, with a moderate hydraulic conductivity and a specific capacity of approximately 30 gpm per foot of drawdown (Page and Balding, 1973).

IONE FORMATION

The Lone Formation is composed of Eocene-aged sandy clay, conglomerate beds, kaolinitic clay, and sandstone (Page and Balding, 1973; Arkley, 2009). The Lone consists predominately of fluvial deposits, but also includes lagoonal and shoreline marine deposits, as indicated by fossil pelecypods (clams) found in its uppermost layers near Merced Falls (Arkley, 2009). The formation ranges in thickness from 200 ft. up to 800 ft. in the west, in areas where the Lone is underlain by unnamed gray micaceous shale, sandstone, and conglomerate (Arkley, 2009; Page and Balding, 1973). The Lone Formation does not yield large quantities of water due to the compact nature of its sandstone and conglomerates and the clay-rich matrix. The consolidated rocks and clay of the Lone restricts the movement of water in places, and it is presumed water is perched and confined in the Lone (Page and Balding, 1973).

BASEMENT COMPLEX

The basement complex represents the oldest rocks in the area, pre-Tertiary in age (Page and Balding, 1973). This complex is composed of igneous and metamorphic rocks, specifically, strongly folded meta-andesite and slate (Arkley, 2009). The crystalline basement rock defines the eastern boundary of the groundwater/alluvial basin of the Merced Region from the fluvial and fractured rock systems of the surrounding watersheds further east. Basement complex rocks are the source rocks for the eroded sediments found west of the Sierra Nevada foothills. In areas

where the basement complex rocks outcrop near the surface, fractures within the bedrock contain sufficient groundwater for domestic or stock supplies (AMEC Geomatrix, 2009). Although faulting has occurred in the basement complex, it has not influenced the general movement of groundwater in the area (Page and Balding, 1973). While the fractures and joints in the complex yield small quantities of water, this formation is otherwise considered impermeable.

GROUNDWATER LEVEL TRENDS

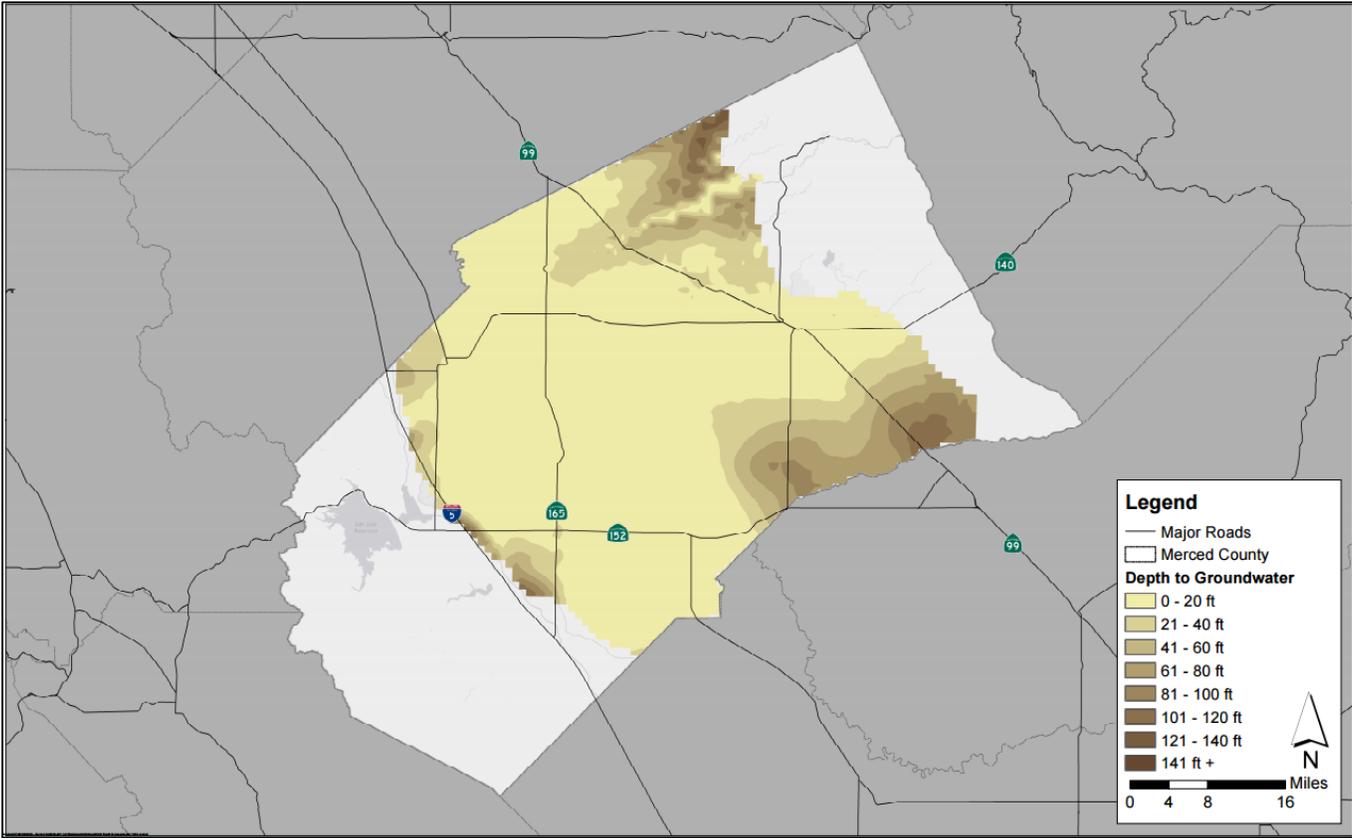
Current and historical groundwater pumping rates are generally considered to exceed the sustainable yield of the underlying groundwater subbasins on an average annual basis. Groundwater overdraft is a problem specifically for southeast portions of the County near El Nido and Le Grand, as well as the Eastside Water District in the northern portion of the County. Historically and recently, subsidence has been greatest in the El Nido area and pumping depressions have also developed near Turlock and Atwater (RMC, 2013). The Merced subbasin alone saw a decrease in storage of approximately 720,000 acre-feet between 1980 and 2007, while groundwater levels in the Chowchilla subbasin declined 40 feet from 1970 to 2000 (Nolte, 2009). In response to declining groundwater levels, Merced Irrigation District implemented a series of program improvements in the 1990s to recharge the aquifer system through in-lieu and direct recharge (Nolte, 2009).

The Sustainable Groundwater Management Act of 2014 (SGMA) requires actions to be taken to achieve basin sustainability over time and was enacted to address this type of overdraft issue.

County-wide depth to groundwater level data is presented in Figure 9 and Figure 10 for the years 1963 and 1999, derived from groundwater elevation data from DWR (2015). 1999 is provided as a relatively recent period of higher groundwater elevations, while 1963 presents the period of highest groundwater elevations over DWR's period of record, which extends to 1962. Generally, depth to groundwater increases near the Sierra Nevada and Diablo Ranges as ground surface elevation increases towards the foothills and are also influenced by groundwater extraction. Depths to groundwater reach a depth of 100 – 150 feet below ground surface (bgs) in the southeast portion of Merced County (Nolte, 2009).

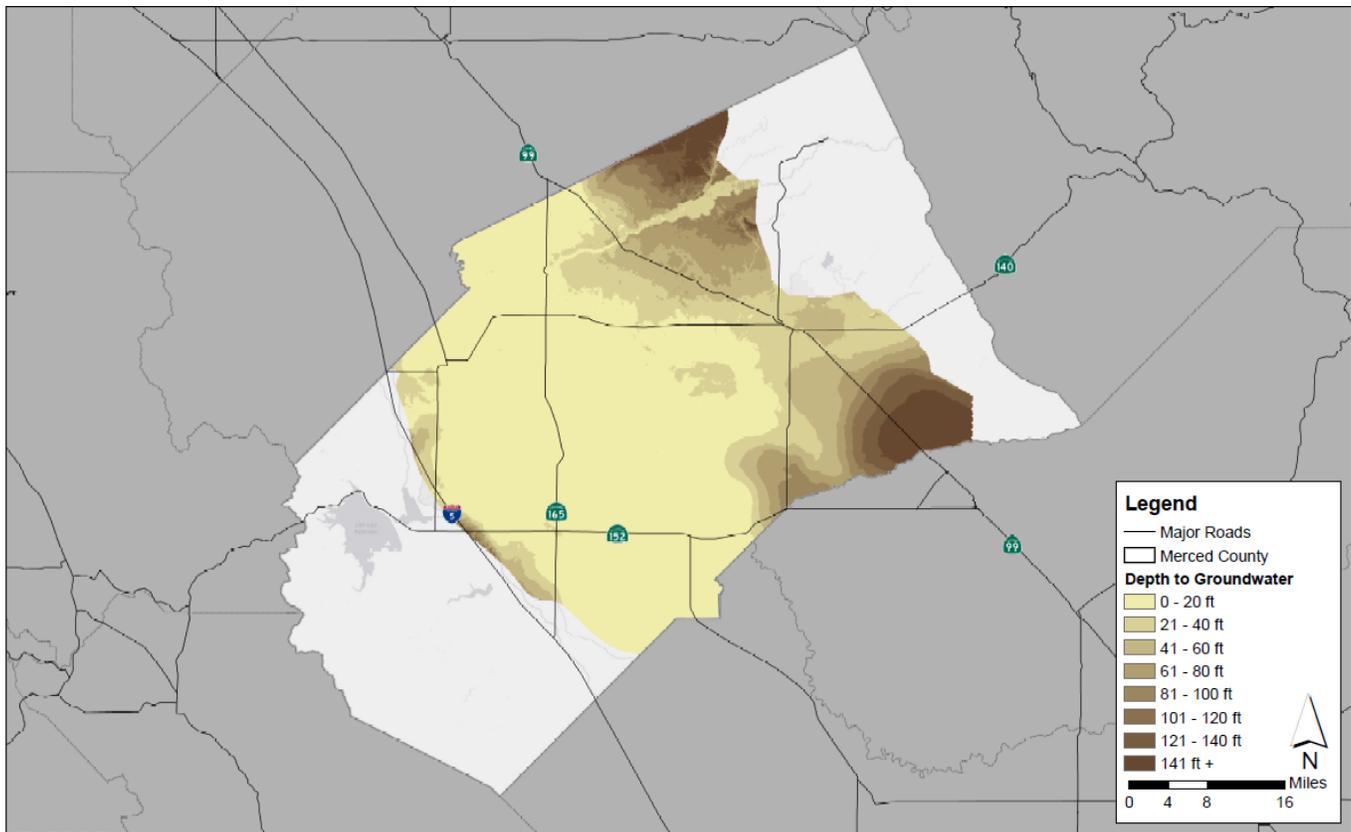
Shallow groundwater in the County has caused waterlogging issues in many areas. This includes portions of the west side of the County, where tile drains are utilized to provide adequate drainage for agriculture. Additionally, there are existing and historical waterlogging conditions in the eastern portions of the County, generally between the cities of Atwater and Livingston, west of Highway 99 and north of Highway 140, which in some cases has required surface draining. These high groundwater level conditions can coexist with declining deep-aquifer conditions described earlier due to confining layers and hardpans that can slow the downward migration of groundwater, pooling water on top of these layers in what is termed a perched aquifer. Often this perched aquifer system is not utilized for supplies due to limited volumes or poor quality, resulting in preferential extraction in deeper aquifers resulting in overdraft at depth and little to no utilization of the shallowest aquifers resulting in waterlogging issues.

FIGURE 9: DEPTH TO GROUNDWATER - 1963



Source: RMC, 2016

FIGURE 10: DEPTH TO GROUNDWATER - 1999



Source: RMC, 2016

SECTION 4 - SOILS

SOILS OVERVIEW

Merced County issues OWTS permits and provides design recommendations or restrictions for waste water treatment based on the local soil. Merced County soils can be generally divided by the San Joaquin River into two distinct units for soils and geology, east of the San Joaquin River and west of the San Joaquin River. The distinction is largely drawn from different source materials for the sediments: the Sierra Nevada on the east and the Diablo Range on the west. This, along with climatic and other differences, impacts surface soils and the geology.

Information on soils are contained within the United States Department of Agriculture – Natural Resources Conservation District’s (USDA-NRCS’s) soil surveys, with two surveys covering Merced County:

Eastern Merced: Soil Survey, Merced Area (USDA, 1991)

Western Merced: Soil Survey of Merced County, California Western Part (USDA, 1990)

Hydrologic soil groups are a classification defined by the USDA-NRCS and based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. The soils are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). “A” is classified as having a high infiltration rate, declining to “D” with the lowest, the latter having the highest potential for runoff. Figure 11 shows the distribution of these four soil types throughout Merced County. Hydrologic soil groups can help identify soils best suited for OWTS by identifying areas that may drain too slowly (e.g., D soils) or too quickly (e.g., A soils).

In addition to the hydrologic soil groups, soils are rated by USDA-NRCS based on the properties that affect absorption of the effluent, construction, maintenance of the OWTS, and public health. Factors include saturated hydraulic conductivity, depth to water table, slope, underlying absorption field, and depth to bedrock. Soils must be properly suited, or special design may be needed, as ill-fitting soils for disposal can lead to groundwater contamination or surfacing of effluent in downslope areas. Figure 12 identifies soils suitability for septic tank effluent absorption. Soils are ranked by how limited their use may be. The highest rating “not limited” indicates that the soil has features that are very favorable for the specified use. A rating of “very limited” indicates the soil has one or more features that are unfavorable for the specified use and are expected to perform poorly and require excessive maintenance. Very limited soils often cannot be overcome with soil reclamation, special design, or expensive installation procedures.

FIGURE 11: HYDROLOGIC SOIL GROUPS

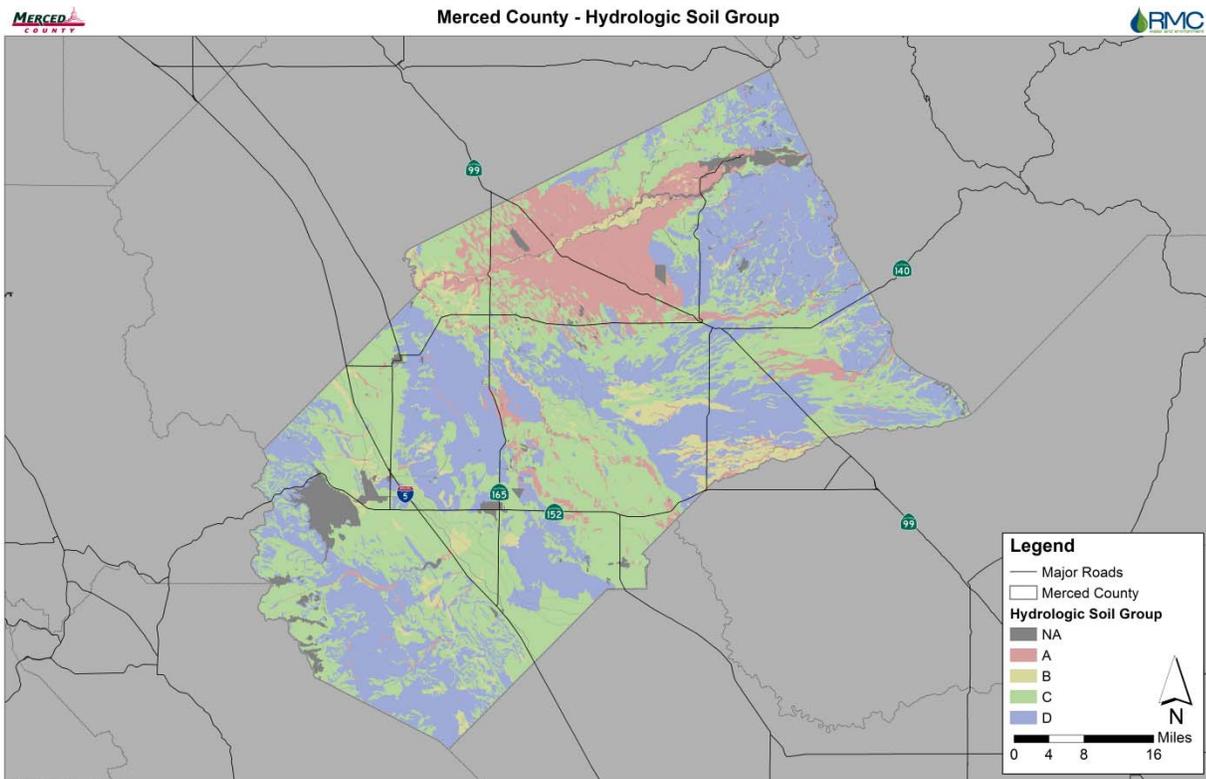
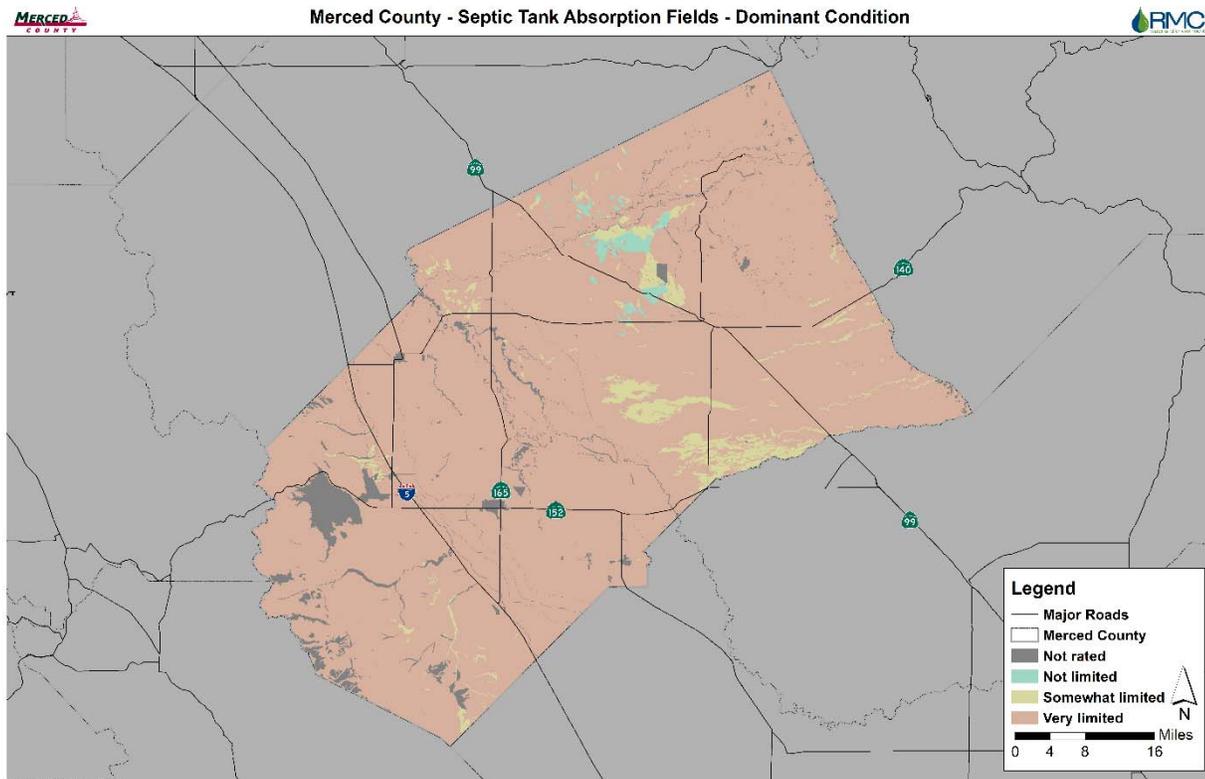


FIGURE 12: SUITABILITY FOR SEPTIC TANK ABSORPTION FIELDS



RMC 2016

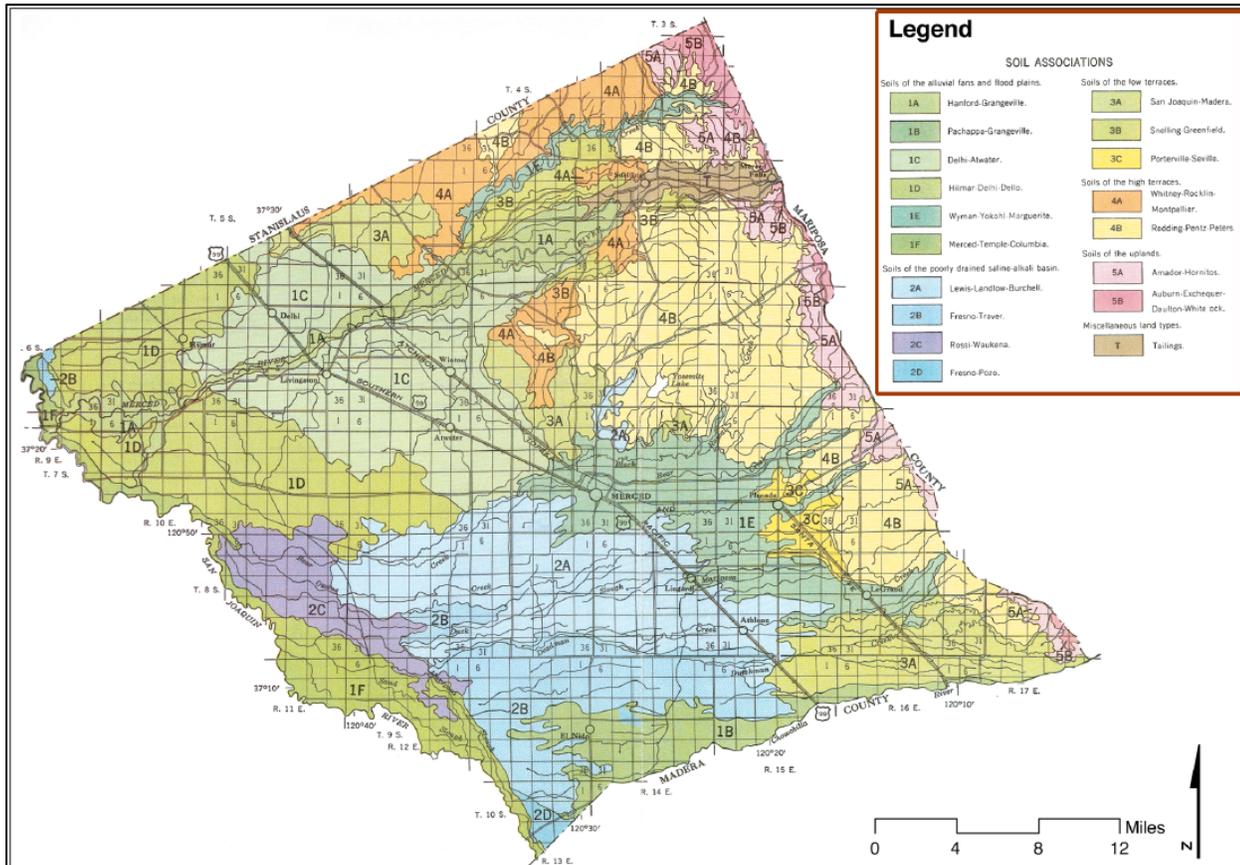
EASTERN MERCED (EAST OF THE SAN JOAQUIN RIVER)

In eastern Merced County, the soils consist of coarse sediments from volcanic and granitic material eroded and transported from the Sierra Nevada to the east via the Merced, Chowchilla, and San Joaquin Rivers (Merced County, 2012). As shown in the soil association map in Figure 13, soils in southern portion of eastern Merced County are dominated by poorly drained alkali basin soils. Inadequate drainage in these soils contributes to the shallow groundwater levels in this area, with some areas exhibiting groundwater within five feet of the ground surface (AECOM, 2009). Soils with the highest infiltration rates are confined to the northwest quadrant of eastern Merced. Hardpan layers, those found in the lacustrine and marsh deposits, act as barriers to the downward movement of water and reduce the overall permeability of the soil. The hardpan underlies most of the County and is found at shallow depths ranging from zero to 35 ft. below ground surface (Page, 1977). Hardpan layers are a major cause of the low infiltration and high runoff rates characteristic of the soils found in Merced County.

The mineral composition and manner of deposition are highly variable amongst the alluvium: some fresh and unweathered and some weathered for thousands of years. The texture ranges from clay and silt in the lower basin area to gravel and cobblestones in the terraces in the north. Soils of the alluvial fans and flood plains cover approximately 341 square miles in eastern Merced. Small alluvial fans occur along the Merced River flood plain, the San Joaquin River, and along minor streams in Merced. Most of the soils in these fans are sandy and are made up of older alluvium (USDA, 1991). Many of these floodplains were subject to flooding, like those along the Merced River flood plain, but flood control systems protect these areas from flooding and, as a result, these areas receive

very little new alluvium. The soils of alluvial fans and flood plains are typically classified in hydrologic soil groups A and B and are well drained. Group D soils are typically soils of the high and low terraces.

FIGURE 13: USDA GENERAL SOILS OF EASTERN MERCED COUNTY



Source: USDA, 1991

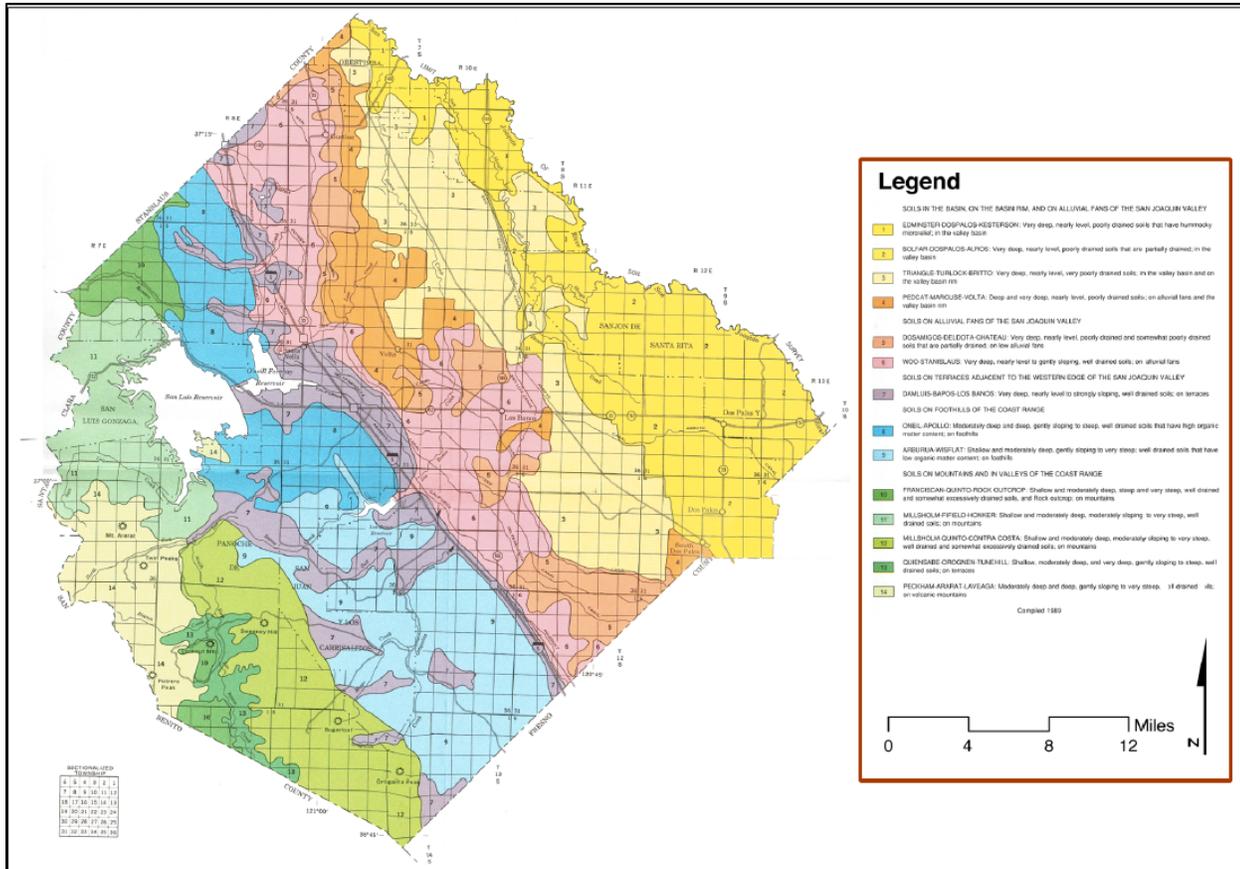
WESTERN MERCED (WEST OF THE SAN JOAQUIN RIVER)

The soils of western Merced County are typically composed of alluvium developed from the marine sedimentary and granitic rocks of the Diablo Range. Resulting soils are predominantly finer textured than those east of the San Joaquin River, and range from loam to clay soils (Merced County, 2012). The majority of soils are very deep and poorly drained (USDA, 1990) commonly formed during seasonal flooding. Soils are categorized by geography and include the classifications of soils of the foothills of the Diablo Range, soils on the mountains and valleys of the Diablo Range, soils on terraces, and soils on alluvial plains. Only soils located at the foothills of the Diablo Range tend to be well drained (USDA, 1990). Specific soil associations identified in western Merced County are exhibited in Figure 14. Some western County soils contain high salt concentrations, and some areas exhibit toxic concentrations of selenium (Merced County, 2012).

Agricultural drainage is a major issue in western Merced County. As described by DWR (2015), the drainage problem is an outgrowth of imported water, naturally saline soils, and the valley’s distinctive geological makeup which prevents effective natural drainage in certain areas. Soils on the western side of the valley come from the marine sediments that make up the Coast Range. These soils, high in salts and trace elements, are similar to those

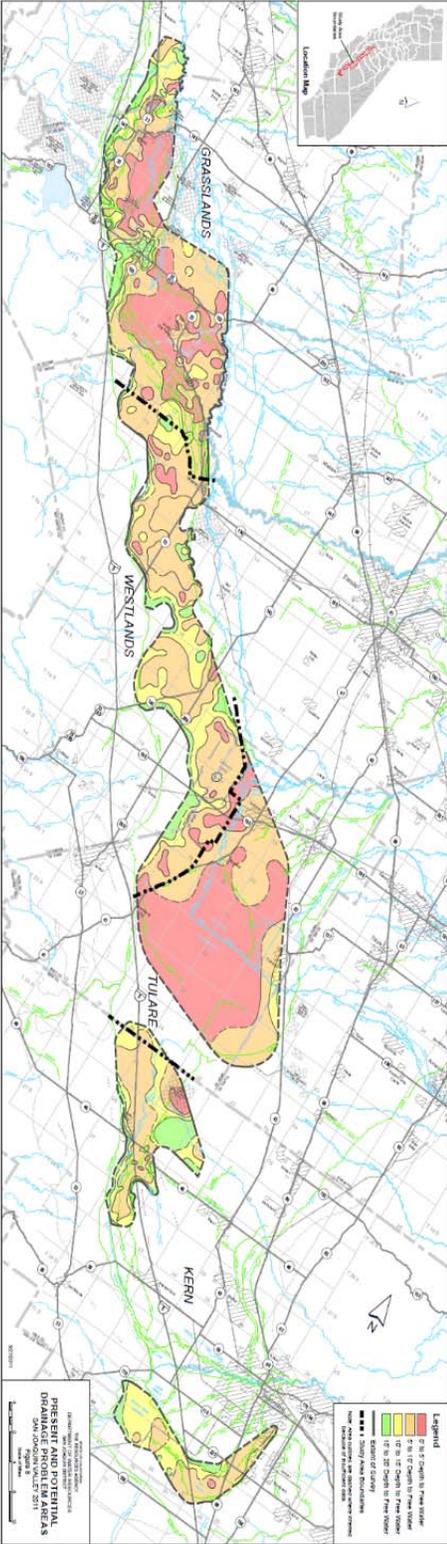
that occur in the ocean. Also, just below the surface of much of the valley's soil, is a shallow clay layer that obstructs vertical movement of irrigation water. As salts and minerals from surface soils are leached into the shallow groundwater, the water table rises to within a few feet of the surface and into the root zone. Unless this water is removed, crops growing in these soils eventually die. Figure 15 shows areas identified by DWR as having existing and potential drainage problems. Note that this analysis focuses on the unique drainage needs and unique federal and state involvement in those drainage needs, and, as such, does not necessarily consider drainage issues in other parts of the County.

FIGURE 14: USDA GENERAL SOILS OF WESTERN MERCED COUNTY



Source: USDA, 1990

FIGURE 15: DRAINAGE PROBLEM AREAS



Source: DWR, 2015

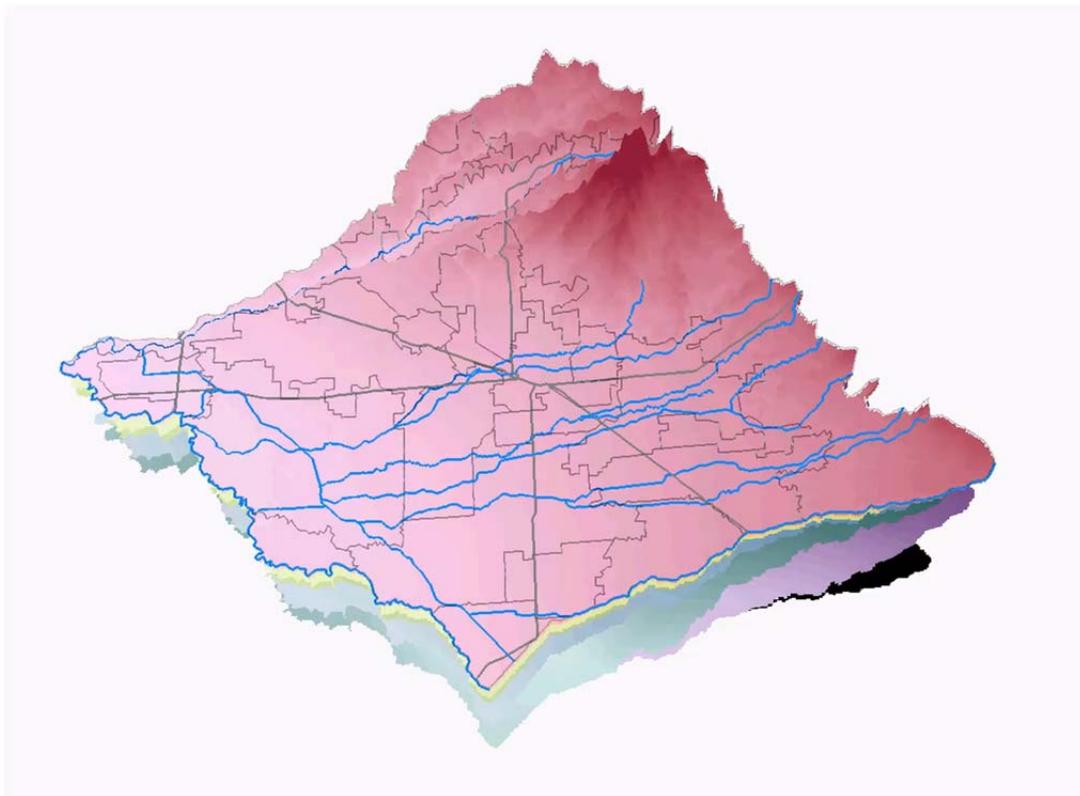
GROUNDWATER PROTECTION EFFORTS

Local land use ordinances, policies and activities support efforts to protect groundwater quality throughout the Basin. Merced County Well standards (Chapter 9.28 - Wells) were adopted in 1975 to ensure the adequate construction of wells to prevent contamination, pollution, and degradation of groundwater and to eliminate potential cross-connections with surface and subsurface contaminants. Merced County Well standards meet or exceed the requirements found in the California Well Standards Bulletin 74-81 and 74-90.

For areas in the County where groundwater is known to be impacted by contaminants, deeper well grout seals may be required. In addition, wells that are in a state of disrepair or are no longer used are required to be destroyed in a manner that prevents future migration of contaminants and protects groundwater.

The nature and extent of groundwater contamination issues in Merced County is monitored and tracked through the land use, site mitigation, state small public water, and emergency response programs. Groundwater quality records and data obtained through these programs are tracked using the MCDEH database and is available for evaluation and reporting purposes. Merced County has developed and adopted an Integrated Regional Water Management Plan (IRWMP) effective November 2013, a novel Groundwater Mining and Export Ordinance effective April 2015, and has recently completed a Surface Water and Groundwater Interactive Model on the Department of Water Resources IWFWM platform supporting SGMA efforts (see Figure 16).

FIGURE 16: MODELING IMAGE OF THE MERCED SUBBASIN



Source: RMC, 2016

OTHER CONSIDERATIONS RELATING TO OWTS GROUNDWATER QUALITY PROTECTION

In Merced County, most OWTS are installed in the alluvium of the basin with adequate soil thickness and separation from leach field to groundwater. Fractured rock may be found in areas of higher elevations but these areas are sparsely populated and OWTS installed at these locations are based on a site specific soil suitability study that mitigates potential impacts. OWTS located in poorly drained soils may utilize deeper leach lines with leaching pits or vertical leaching pit designs. The depth of leaching pits or sumps are at times 35 to 50 feet below surface with separation to groundwater of at least 10 feet. However, most of these areas have a separation to groundwater of at least 50 feet. OWTS installed in areas in the County with shallow depth to water are also mitigated by appropriate OWTS design (special systems). All systems installed meet a minimum separation of five feet from bottom of horizontal leach trench to seasonal high groundwater. The minimum soil cover for standard systems is at least 6" below surface for pressure systems and 12" below surface for standard gravity systems. In addition, Merced County remains predominately agricultural based and rural housing is mostly low density. Higher density subdivisions are limited in number, are located in areas with adequate soil thickness and separation to ground water, and usually utilize a centralized public water system. Where centralized public waste water is not proposed in a subdivision and certain commercial properties, MCDEH's Nitrogen Reducing System/Advanced Treatment Systems requirements apply [implemented in 2005 and described in Merced County Code, Chapter 9.54 Regulations for Onsite Wastewater Treatment Systems (Chapter 9.54)].

Merced County follows the guidance provided by the Basin Plans and State Water Resources Control Board (SWRCB) policies in regulating OWTS with the protection and preservation of the high quality of groundwater as a goal. These policies include SWRCB *Resolution 68-16 – Statement of Policy with Respect to Maintaining High Quality of Waters in California* and *Resolution 88-63 – Sources of Drinking Water*. The groundwater in Merced County has been designated as suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply and industrial process supply. Merced County has historically adopted OWTS standards as found in the Basin Plan intended to provide protection to groundwater quality, including minimum setbacks. Development projects that show potential impact to groundwater and cannot use typical OWTS are required to install alternative engineered designed systems or advance treatment units to mitigate potential impacts. Minimum setbacks from OWTS to surface waters are enforced and currently there are no 303(d) listed waterways in Merced County shown to be impacted from OWTS activities.

The suitability of a parcel for OWTS usage is determined through site specific studies that address hydraulic loading, nitrogen loading, and minimum usable disposal areas for the current and future OWTS. Chapter 9.54 requires septic tanks for all OWTS; all septic tanks must be water tight; cesspools and redwood tanks are prohibited. Any cesspool or other non-conforming septic tank is required to be destroyed under permit (Chapter 9.54). Chapter 9.54, Section 9.54.130, Conflicting regulations, indicates where there is a conflict between the regulations of this chapter and any other chapter of local, state or federal regulation, the greater or more stringent regulation or restriction shall apply and shall be enforced by persons authorized in this chapter.

Merced County's OWTS program meets or exceeds most elements found in Tier 1 of the Policy. The few instances of deviation from Tier 1 will be itemized in detail in Section 10 of this document, along with technical support for each item.

SEPTAGE DISPOSAL

The MCDEH currently permits approximately 40 active pumper trucks and requires the septage to be disposed of at wastewater treatment plants permitted by the CVRWQCB, in accordance with California Health and Safety Code Sections 117415-117420. Required pumping reports are to be submitted to the MCDEH each month

following the pumping activity. These pumping reports are reviewed and maintained for future reference and will be utilized to satisfy reporting requirements established in the Policy.

SECTION 5 - PLAN SCOPE, AND LOCAL RESPONSIBILITY

SCOPE OF REGULATED OWTS

The MCDEH has jurisdiction over OWTS that receive only domestic wastewater from residential or commercial buildings with an average daily flow of less than 10,000 gallons per day. The RWQCB regulates larger wastewater treatment systems that treat average daily flows of 10,000 gallons or more per day and systems receiving significant amounts of waste from RV holding tanks. Most OWTS are installed using standardized designs based on percolation rates, loading rates, soil types and depth to water. Standard systems consist of shallow filter beds or leach lines depending on the area. MCDEH standard designs meet or exceed the design criteria in the Policy. Alternative Special Systems (designed by a qualified professional) are used when needed to mitigate certain issues, such as low permeability soils or shallow depth to water, and these may include mound and pressure dose systems. In addition, Alternative Treatment (ATS) or Advance Treatment (ATU) systems are utilized to address potential water quality issues.

LOCAL RESPONSIBILITY

MCDEH has regulated OWTS in Merced County for over 50 years using local guidelines and standards and regulation, and is in part, a function of our local land use processes. Chapter 9.54 provides regulations for the site evaluation, permitting, design, construction, operation, maintenance and destruction of OWTS. These regulations are in place to ensure systems are adequately designed, located, sized, spaced, constructed and maintained to prevent the creation of a nuisance, ensure there are no hazards to public health, and to protect potable water supplies, groundwater, and surface waters within Merced County boundaries.

PERMIT RECORDS AND PERMIT TRACKING

Merced County has maintained OWTS permit records since the 1950's. Older records are stored in paper form, currently; OWTS permits starting in the mid-1990's are maintained in a secure database. Older paper permits are currently being evaluated for indexed imaging. Records are available for review within ten days upon request through the Public Records Act process.

Since the mid 1990's in addition to the paper permit, data relating to the location and type of permit has been collected and stored in MCDEH's database. The database contains information in a variety of data fields that include details regarding permitting, inspections, compliance/enforcement action, complaint actions, and other OWTS details. Permits issued by the MCDEH will identify and document local OWTS activities in accordance with established Policy Tiers.

REPORTING

Merced County will submit by February 1 of each year an annual report to the CVRWQCB, organized in a tabular spreadsheet format, to include the following information:

1. The number and location of complaints.
2. The applications and registrations issued as part of the local septic tank cleaning registration program.

3. The number, location, and description of permits issued for new and replacement OWTS. The Tier the permit was issued under will also be reported. All permits issued by the MCDEH will be considered Tier 2 permits for the purposes of reporting pursuant to Policy section 3.3.3.
4. Every fifth year, an evaluation report of the local Water Quality Assessment Program (WQAP) will be submitted to the CVRWQCB. This report will evaluate the monitoring program, will assess whether water quality is being impacted by OWTS, and will identify any further actions, including changes to the LAMP, that may be warranted to protect water quality or public health.
5. The MCDEH will provide available OWTS records to the CVRWQCB within ten days of being requested. Any groundwater monitoring data generated will be submitted in electronic deliverable format for inclusion into Geotracker, surface water data will be provided in a Surface Water Ambient Monitoring Program (SWAMP) compatible format for inclusion into the California Environmental Data Exchange Network (CEDEN) where required.
6. OWTS related complaints are entered into MCDEH's secure database. Surfacing raw sewage complaints receive immediate attention including a site inspection by MCDEH staff. Site specific conditions observed while responding to OWTS related complaints are documented in the MCDEH database, correspondence is generated and directed to the property owner requesting compliance. Notices of Violation and Notices to Abate establish compliance objectives and due dates. Compliance dates are documented in the MCDEH database. MCDEH reports regarding OWTS complaints and outcomes to the CVRWQCB will be derived from MCDEH's database. Records are available for review within ten days upon request through the Public Records Act process.

SECTION 6 - PERMITTING, INSTALLATION, AND INSPECTION REQUIREMENTS

LAND USE PROCESS

OWTS considerations begin with each new land use project. All land use projects in Merced County are required to conform to the goals and strategies noted in the Merced County General Plan (General Plan) and the requirements in the Merced County Subdivisions and Zoning Codes. The General Plan goal for new land use projects is to provide a well-balanced and orderly development pattern to protect the County's natural resources, public health, and the environment. The Subdivisions and Zoning Codes requires that provisions of adequate infrastructure for wastewater disposal are consistent with the General Plan's goal and do not degrade the quality of waters of the state.

MCDEH serves as an integral part of the land use referral process in Merced County. Land use referrals are internal referrals from the Merced County Community and Economic Development Department (CEDD) to MCDEH. MCDEH sets conditions for land use proposals where OWTS are contemplated to ensure the proposed project does not cause a negative impact to public health and the environment, that adequate infrastructure for wastewater disposal is provided in accordance with the General Plan, the Subdivisions and Zoning Codes, and Chapter 9.54. CEDD is the lead agency for subdivisions of land and development projects in the unincorporated area. Land use review processes by MCDEH are initiated when CEDD refers and routes applications to MCDEH for comments and approval.

MCDEH conducts site inspections as requested by CEDD for referred subdivisions and other projects to determine the conditions required to ensure compliance with Subdivisions and Zoning Codes, including wastewater disposal. Conditions for the project's approval are determined and submitted to the CEDD, including requirements for OWTS siting and design. Soil suitability, nitrate loading studies, and soils reports are required for projects where

an OWTS is utilized or proposed and does not fall under the jurisdiction of the CVRWQCB. Merced County Building permit reviews performed by MCDEH staff rely on similar processes.

SOIL SUITABILITY AND NITRATE LOADING STUDIES

The soil suitability, nitrate and other loading studies determines if the site conditions are suitable for the use of an OWTS based on the following criteria:

1. The intensity and extent of the existing and the proposed development project's use of septic tanks within and around the area;
2. The suitability of the soil for utilizing septic systems, including percolation rates, loading rates, and soil profiles;
3. The depth and gradient of the water table;
4. The history of past uses in the project area to assess potential problems;
5. And other information as required to determine the cumulative effect of the existing and the proposed development project on groundwater contamination, including nitrate loading estimates.

Qualified professionals performing the site evaluation activities relating to percolation tests, soil suitability/nitrate loading studies and OWTS design activities are required (i.e. - Registered Environmental Health Specialist, licensed Civil Engineer, or Professional Geologist), dependent upon the scope of work to be performed. Other than an owner/builder, persons who install and construct OWTS must have the appropriate license issued by the California State Licensing Board (CSLB). There currently are no local requirements for the training and certification of service providers, maintenance personnel, and septage pumpers and haulers.

After the project has been approved with the conditions of approval, MCDEH tracks project implementation including the OWTS permitting and construction. The CEDD and Merced County Building Division require a Certificate of Occupancy for Commercial building projects to be signed off by MCDEH before the building may be occupied. This allows the Merced County Building Division to hold up the occupancy of the building until all MCDEH's requirements have been met.

Project referrals from outside agencies are reviewed and any action to be taken relating to sewage disposal and OWTS are provided to the referral agency. Outside agencies may include city, state, and federal government agencies, Merced County Local Agency Formation Commission (LAFCO), and the Department of Real Estate.

PERMITTING REQUIREMENTS

MCDEH issues permits for new OWTS installation, repair, replacement, and destruction. The permit specifies the location, OWTS specifications, property owner, and contractor information. Permit applications can be submitted by the property owner or a contractor licensed with the CSLB. The contractor must have an appropriate, current valid license issued from the CSLB which is verified at the CSLB website at the time of permit issuance. Permits are issued after MCDEH has determined the OWTS is compliant with established regulations (Chapter 9.54). MCDEH performs site inspections at the time the OWTS is constructed to ensure the system was installed as permitted. The MCDEH will not final an OWTS permit until the installation is complete and is in compliance with the issued permit requirements. The State Water Resources Control Board, Division of Drinking Water (DDW) will be engaged and or notified by MCDEH where drinking water systems are near or within applicable setback distances of existing or proposed OWTS in accordance with the Policy (i.e., Policy Sections 3.5, 11.1, 11.2, and 7.5.6 through 7.5.10 as examples).

Additionally, supplemental treatment as specified in 10.9 and 10.10 of the Policy will be required for OWTS that are within a horizontal sanitary setback of a public well or surface water intake point, alternatively Chapter 9.54 Special Design OWTS and Alternative OWTS in Section 9.54.080, (O), and (P), providing details for alternate siting and operational criteria for the proposed OWTS that would similarly mitigate the potential adverse impact to the public water source considering site specific criteria and conditions.

RESIDENTIAL SYSTEMS

Residential OWTS are designed based on the findings of the percolation testing, soil suitability and other studies required to be performed. Most studies find that the lots are suitable for a standard OWTS design criteria established for specific areas in Merced County.

For standard residential OWTS, sizing is based on the number of bedrooms and the hydrogeological area where the lot is located. The number of bedrooms is relative to occupancy and is indicative of potential wastewater loading. Shallow leach lines and mounded dispersal systems are common in areas with shallow depths to groundwater. Leaching pits are not allowed in shallow groundwater areas. In areas of less permeable soils, and where there is a greater separation to groundwater, deeper sumps and seepage/leaching pits may be allowed for effluent dispersal.

For residential OWTS where the soil suitability and other studies precluding a standard system use, a site specific, specially designed system is required.

COMMERCIAL SYSTEMS

Commercial OWTS are designed based on the findings of the soil suitability and other studies required to be performed at the time of the project development or prior to building permit issuance. These systems are sized either using a calculation in Chapter 9.54 or using percolation rates to determine application rates and infiltrative areas. Most OWTS designers utilize the percolation rate method consistent with Policy Section 8, Table 3. Comparing the commercial design calculations found in Chapter 9.54 to the percolation rate method indicates the Chapter 9.54 method results in dispersal system sizes that meet and often exceed those using the percolation rate method. Although the Chapter 9.54 method is more conservative, both methods are acceptable.

FAILING SYSTEMS

Failing OWTS usually become known to the MCDEH either when a voluntary repair permit application is submitted or as a complaint forwarded to MCDEH. Complaints are assigned to MCDEH staff and the property owner is issued a Notice to Abate or Notice of Violation to correct the failing septic system by obtaining a repair permit. MCDEH staff tracks and monitors compliance until a satisfactory repair is complete and the repair permit for the work has been finalized. When surfacing sewage is present, the owner is required to pump the septic tank as often as needed to prevent further surfacing of sewage until the repair is completed.

The MCDEH will notify the owner of the public water system and the SWRCB Drinking Water Program Staff as soon as practicable, but not later than 72 hours, after the discovery and confirmation of a failing OWTS that is located:

1. Within 2,500 feet of an intake point for a surface water treatment plant for drinking water;
2. In the drainage area catchment in which the intake point is located; and
3. Such that it may impact water quality at the intake point such as upstream of the intake point for a flowing water body; or
4. Within a horizontal sanitary setback from a public well.

ENFORCEMENT

The owner of any OWTS not in compliance with established laws, regulations, and standards are issued a Notice of Violation or Notice to Abate, citing the violation or violations and providing a date for compliance. If the OWTS remains out of compliance, the case is moved forward in the enforcement process, which may include the issuance of a citation, a referral to the Merced County District Attorney's Office, action by County Counsel, involuntary abatement by the County, referral to the CVRWQCB, or other appropriate action. Prior to referral to the CVRWQCB, MCDEH may collaborate with and request technical assistance from Regional Board staff during complex and challenging enforcement efforts.

OPERATING PERMITS

In addition to the initial design, construction and permitting requirements, alternative (nitrogen reducing ATU's), experimental and supplemental treatment systems installed in Merced County will be required to obtain a special system permit. Some OWTS will be required to submit operating and monitoring reports, including effluent sampling results, on an established frequency (i.e., annual).

PERMITTING AND NOTIFICATION OF OWTS NEAR SURFACE WATER INTAKES AND PUBLIC SUPPLY WELLS

When the MCDEH determines a permit has been submitted for an OWTS installation, including repair permits for failing systems, that is located:

1. Within 1,200 feet of an intake point for a surface water treatment plant for drinking water;
2. In the drainage area catchment in which the intake point is located; and
3. Such that it may impact water quality at the intake point such as upstream of the intake point for a flowing water body; or
4. Within a horizontal sanitary setback from a public well.

MCDEH will notify and provide a copy of the permit application to the owner of the public water system and the SWRCB Drinking Water Program Staff (if the owner cannot be found or if a large Public Water System). The permit will be issued only after all applicable conditions have been met to provide the highest protection of these sources in compliance with the SWRCB Policy.

Currently, there are five (5) public surface water treatment plants operating in Merced County that are regulated by the SWRCB Drinking Water Program. The SWRCB will provide MCDEH with the location details of surface water intakes and catchment of drainage areas for these systems through a confidentiality agreement. These are often located in rural areas or within city limits where development is most often served by public sewer systems, as such, MCDEH does not anticipate new OWTS installations or OWTS impacts by surfacing sewage occurring within 2,500 feet of the surface water catch basin or intake points in the areas of MCDEH jurisdiction.

When an OWTS dispersal area is proposed to be installed within the horizontal sanitary setback of a public well or surface water intake point, MCDEH will require a soil suitability/nitrate loading study to determine if supplemental treatment for nitrogen and pathogens is required, in accordance with Sections 10.9 and 10.10 of the Policy, or if appropriate alternative siting and operational criteria can be proposed to similarly mitigate the potential adverse impact to the public water source. For a dispersal system exceeding 20 feet in depth proposed to be installed within 600 feet of a public well, a two-year travel time study/report, for microbiological contaminants, will be required to be conducted by a qualified professional.

Additionally, MCDEH Well standards (Chapter 9.28) require annular seals of at least 50 feet for domestic and public water system wells, more protective than the California Water Well Standards, Bulletins 74-81 and 74-90. The

depths of these deeper annular seals may be preemptively mitigating possible water quality impacts by an OWTS that is located within established setbacks and may be a mitigating factor when these distances cannot be achieved for OWTS repairs and installations on existing, constrained parcels.

PERMITTING OWTS NEAR PUBLIC SEWER AND WATER UTILITIES

MCDEH has access to Merced County web-based mapping applications that provides information for all parcels in Merced County that may be utilized in identifying parcels within a public sewer utility district boundary. The utility company may be contacted if the sewer utility is within 200 feet of the parcel to determine if a connection could be made instead of issuing an OWTS permit as referenced in Chapter 9.54.

SECTION 7 - REPAIR, MAINTENANCE, MONITORING, AND REPORTING REQUIREMENTS

OWTS REPAIR INFORMATION

In the event a homeowner experiences a system failure, information on permitting and repairs will be available by telephone (MCDEH staff are available 24 hours a day for surfacing sewage issues) and by posting related OWTS materials on the MCDEH website. A list of OWTS contractors will be updated periodically and posted on the MCDEH website.

VOLUNTARY MAINTENANCE PROGRAM

Other than OWTS with alternative, advanced and supplemental treatment and holding tank only OWTS, Merced County does not currently have a local voluntary maintenance program for OWTS maintenance and reporting. Chapter 9.54 requires that owners maintain their OWTS such that the OWTS will function in a sanitary manner and will not create a nuisance or endanger others.

When conditions warrant, MCDEH may require an owner to perform a system evaluation and submit the findings to MCDEH. These evaluations would be required to be conducted by a qualified entity when examining the septic tank, and other associated appurtenances of the OWTS, for signs of deterioration, corrosion, malfunction, or failure. Modifications or repairs needed would be determined based on the results of the evaluation.

EDUCATION AND OUTREACH

MCDEH provides education to OWTS owners, contractors, and others in a variety of ways as described below.

DIRECT STAFF CONTACT

The primary method of education and outreach is by direct interaction between MCDEH staff and the public including local watershed management groups. MCDEH routinely receives and responds to phone calls and office visits by private property owners, consultants and contractors with questions about regulations and or the permit processes. As part of MCDEH's role in the planning process, we will regularly answer questions and provide information to consultants, staff from other departments or agencies, and occasionally directly to decision makers such as members of the Planning Commission and the Board of Supervisors.

MCDEH educates property owners on matters regarding preventative management of their OWTS which can prolong the useful life of the OWTS, commonly at the time the OWTS is initially installed and when owners call in to MCDEH with concerns. In addition, MCDEH educates property owners regarding discharges prohibited per County ordinance, such as automobile and garage waste, storm drainage, solvents and toxics, solids, garbage, grease wastes, back wash from water softeners, filters, and swimming pools, and truck terminal wastes.

MCDEH WEBSITE

All OWTS permit application forms are available on the MCDEH website. In addition to standard OWTS forms, MCDEH posts or provides links to the various regulations such as the applicable sections of the Central Valley Regional Water Quality Control Board’s Basin Plan, the Policy, and the County’s OWTS ordinance.

INFORMATIONAL PAMPHLETS

Information for homeowners on the care and maintenance of their OWTS will also be available in a pamphlet format, which can be distributed during inspections, accessed at the MCDEH public counter, or downloaded from the MCDEH website. This information will include guidance to OWTS owners on steps to take within 48 hours of experiencing a failure of their system.

SECTION 8 - MINIMUM SITE EVALUATION STANDARDS, COMPARISON OF CHAPTER 9.54 TO SECTION 7 OF THE POLICY

This section of the LAMP compares the MCDEH requirements for the minimum site evaluation and siting standards with those contained in Section 7 of Tier 1 of the Policy. Each section is addressed in the table below and shows if Chapter 9.54 meets the Tier 1 requirements or if an alternative standard is used. Following this table, a narrative is presented providing more detailed discussion for each section.

Table 6-1: Summary of Comparison

Comparison of Merced County (MC) OWTS Standards with Policy Section 7 Minimum Site Evaluation and Siting		
OWTS Policy for Tier 1 Section Number	Chapter 9.54 Meets Tier 1?	Comments
7.1 Qualified Staff	Met	Soil/Site Evaluation: Qualified professional (i.e., Licensed or registered EHS, Civil Engineer, or geologist...Soil Scientist.) Design: Qualified professional. Installer: Licensed contractor per CLSB requirements or owner/builder.
7.2 Site Evaluations	Met	A site evaluation is performed at the time the lots are created.
7.3. High Groundwater Determination	Met	Historical data and direct observation methods are primarily used.
7.4 Percolation Test Results	Met and Exceeds	Fastest Rate Allowed is 5 MPI Slowest Rate Allowed is 180
7.5.1 Setbacks to Property Line and Structures	Met and Exceeds	Minimum distance is 5 feet to property line and to structures. Variance allowed for old lots of record only when cannot meet this provision.
7.5.2 Setbacks to Water Wells	Met and Alternative	All new OWTS meet this provision. Variance allowed for old lots of record only when cannot meet this provision.
7.5.3 Setback to Unstable Land Mass	Met	Have not locally encountered this issue in the past.
7.5.4 Setback to Springs and Flowing Surface Water Bodies	Met and Alternative	All new OWTS meet this provision. Variance allowed for old lots of record only when cannot meet this provision.
7.5.5 Setback to Vernal Pools, Wetlands, Lakes, Ponds	Met and Alternative	All new OWTS meet this provision. Variance allowed for old lots of record only when cannot meet this provision.
7.5.6 Setback to Public Water Well	Met and Alternative	All new OWTS meet this provision. Variance allowed for old lots of record only when cannot meet this provision.
7.5.7 Setback to Reservoir, Lake, Flowing Water Body for OWTS within 1,200 feet of Surface Water Intake	Met	Current and new OWTS meet this provision.
7.5.8 Setback to Reservoir, Lake, Flowing Water Body for OWTS between 1,200-2,500 feet of Surface Water Intake	Met	Current and new OWTS meet this provision.
7.6 Notification of OWTS within 1200' of Surface Water Intake	Met	Notification and permit requirements will be met for this provision.
7.7 Slope For Effluent Disposal < 25%	Met and Exceeds	Chapter 9.54 allows up to 20% slope.

7.8 Allowable Density for Dwelling Units	Met and Exceeds	This provision is met for initial dwelling unit. Additional units allowed only upon acceptable soil suitability/nitrate loading study or ATU required.
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DISCUSSION OF COMPARISON

POLICY SECTION 7.1 - QUALIFIED PROFESSIONAL – CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 requires a qualified professional in OWTS related work. Chapter 9.54, Section 9.54.020, Definitions states, ““Qualified professional” means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals.” MCDEH staffing includes 12 registered environmental health specialist positions. Additionally, MCDEH contracts annually with an outside engineering and hydrogeology firm for specialized services as needed; the scope of work in the contract specifically lists OWTS policy development and implementation.

POLICY SECTION 7.2 – SITE EVALUATION: SOIL DEPTH – CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 requires the suitability of an area for OWTS to be determined prior to certain development projects and prior to the issuance of a building permit. Soil suitability and other loading studies are required for all new lot splits, site approvals, and certain building permits, and includes soil depth and profiles, and depth to groundwater. Most areas in Merced County used for OWTS have adequate soil depth for standard dispersal areas.

POLICY SECTION 7.3 - SITE EVALUATION: GROUNDWATER DEPTH – CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54, Design Criteria, prohibits seepage pits in areas of normal high ground water and perched water table and requires the water table to be determined at the time when water is closest to the surface.

Chapter 9.54 prohibits the installation of dispersal systems in low areas subject to flooding or in areas where groundwater reaches the surface at certain times of the year.

Chapter 9.54 requires a soil profile and or percolation test for divisions of land or land developments at various depths of where the water table or clay strata are unknown. This information is included in the soil suitability study.

In accordance with Chapter 9.54, the depth to historical high groundwater is required to be included and evaluated as part of the soil suitability study when new lots are created. MCDEH uses a variety of historical data, such as depth to water maps, local hydrographs and static water level data from well completion reports. A site evaluation is conducted when there is a conflict between the depth of water noted from historical data and other sources or there is no historical data available. Chapter 9.54 may require a current direct observation determination in areas where the depth to water is known or suspected to be shallow to ensure the minimum setback of 5 feet from leach trench to groundwater is met.

POLICY SECTION 7.4 – PERCOLATION RESULTS - CHAPTER 9.54 MEETS OR EXCEEDS REQUIREMENT

The MCDEH accepts percolation results for percolation tests in shallow borings ranging from 1 minute per inch (MPI) to 60 MPI. In areas of less permeable soil where the shallow percolation results exceeded 60 MPI,

percolation tests are required to be performed at depths consistent with the expected design of the OWTS with a passing percolation rate not to exceed 5 to 180 MPI.

POLICY SECTION 7.5 - MINIMUM HORIZONTAL SETBACKS – CHAPTER 9.54 MEETS REQUIREMENTS FOR NEW LOTS

Overall, OWTS will meet the horizontal setback requirements specified in Tier 1. However, alternative minimum setbacks consistent with those previously established for existing old lots of record that cannot meet required setbacks may be allowed provided the Environmental Health Director finds that the use of supplemental treatment and/or alternative mitigation measures is sufficiently protective (see Table 2 – Minimum Horizontal Separation Distances, below from Chapter 9.54).

Table 2 – Minimum Horizontal Separation Distances (in feet)			
Facility	Septic Tank or Sewer Line	Leach Field	Leach Pit
Domestic Well*	50	100	150
Public Well*	100	150	200
Flowing Spring or Stream ¹	100	100	100
Drainage Course or Ephemeral Stream ²	25	50	50
Cut or Fill Bank ³	10	4 x H	4 x H
Property Line ⁴	25	50	75
Structures	5	10	15
Lake, Ponds, Reservoir, Wetlands ⁵	200	200	200
Public Water System Surface Water Intake	See foot notes 6 and 7 below	See foot notes 6 and 7 below	See foot notes 6 and 7 below
Unstable Land Mass	100	100	100

*Merced County Code, Chapter 9. Wells, Section 9.28.060. C. 5. A. requires a minimum 50 annular seal that is 2.5 times greater than the State minimum standard established by the Department of Water Resources.

¹As measured from the line which defines the limit of a 10-year frequency flood.

²As measured from the edge of the drainage course or stream.

³Distance in feet equal to four times the vertical height of the cut or fill.

⁴This distance shall be maintained when individual wells are to be installed and the minimum distance between waste disposal and well cannot be assured.

⁵As measured from the high water mark of the reservoir or flowing water body.

⁶Where the effluent dispersal system is within 1,200 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body.

⁷Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.

POLICY SECTION 7.6 – NOTIFICATION AND PERMITTING REQUIREMENTS FOR OWTS WITHIN 1200' OF WATER INTAKE LINE/CATCHMENT – CHAPTER 9.54 MEETS REQUIREMENT

For new OWTS that are proposed to be installed within 1200 feet and 2500 feet of a public surface water intake line or catchment area, MCDEH will provide a copy of the permit application to the owner of the water system describing the proposal to install an OWTS. In a case where an owner cannot be identified, the notification will be made to the State Water Resources Control Board, Drinking Water Division. The agency with lead regulatory oversight of the water system will also be notified. In addition, MCDEH will ensure that the permit application includes the following:

All onsite wastewater treatment systems shall be permitted and installed as designed and approved. Any variation from approved design may require a new onsite wastewater treatment system permit and approval. The onsite wastewater treatment systems permit application shall be signed by the property owner and appropriately licensed contractor in accordance with applicable laws affirming the information provided is accurate and representative of actual site conditions, and shall include a representational detailed drawing of the subject parcel or portion thereof, the plot plan shall be drawn to reasonable scale, no larger than one (1) inch equaling fifty (50) feet with the following information:

1. Owner's name, street address, job address and telephone number;
2. A diagram of the parcel showing all property lines, dimensions, the assessor parcel number (APN), and North arrow orientation;
3. Names of streets and roads fronting the property, and any existing and proposed internal roads and vehicle access and parking areas including driveways;
4. Dimensions, outlines, and locations of all existing and proposed structures, including hard surfaces such as patios, driveways and walks (e.g., earthen, asphalt, concrete and or gravel-covered);
5. Location of house sewer outlet and proposed location of septic tank and disposal system on the property;
6. Location and nature of any existing and proposed sewage disposal system on the property, and dedicated replacement areas in the event of system failure;
7. Location of any existing trees which may affect location of septic tank or disposal system.
8. Any prominent features on and adjacent to the property such as right-of-ways, easements, elevation changes, canals, creeks, lagoons, ponds, corrals;
9. Location of any existing or proposed well, in use or abandoned, either on this property or within 300 feet of the property lines;
10. A statement of the maximum expected waste volume per day: For dwelling units, pool houses, and/or guesthouses, provide the number of bedrooms and bathrooms (rooms with closets will be considered bedrooms for sewage disposal system design purposes);
11. Source and description of domestic water supply;
12. *Any public water supply well within 200 feet and any surface water intake for a public water system within 2,500 feet;*
13. Total square footage of lot, minimum useable disposal area and for all buildings;
14. Setback requirements of front, back and sides of property;
15. Name and telephone number of the preparer of the plot plan.

MCDEH will wait at least 15 days from the date the information is received by the water system owner to issue the permit. The MCDEH will consider any recommendations and comments provided by the water system owner prior to permit issuance.

POLICY SECTION 7.7 - GROUND SLOPE < 25 PERCENT - CHAPTER 9.54 HAS ALTERNATIVE, EXCEEDS REQUIREMENT

Chapter 9.54, special OWTS design limits are more restrictive allowing for a maximum of 20 percent for the ground slope in the dispersal field. Most OWTS in Merced County are installed in areas of little or no slope and the issue of slopes exceeding 25-30 percent rarely occurs. As this issue is rare and these current requirements are protective of any impacts, no change in local standards is warranted and the maximum allowable slope for the LAMP is 20 percent.

POLICY SECTION 7.8 - ALLOWABLE DENSITY FOR A SUBDIVISION - CHAPTER 9.54 HAS ALTERNATIVE REQUIREMENT

The overall annual average rainfall for the County is 8-12 inches, allowing for an average density of two and one-half (2.5) acres per single family dwelling according to Tier 1, Table 1. Merced County Chapter 9.54 allows for minimum parcel sizes of one usable net acre when utilizing a well and OWTS. In these instances MCDEH has an alternative requirement.

A minimum one acre parcel size is allowed when the parcel utilizes a special nitrogen reducing advanced treatment unit (ATU) as the OWTS and is provided water service from a private or public water system.

In addition, with the intent of providing adequate and reasonable housing, state law and local ordinance have provisions for second unit dwellings and farm labor housing to be allowed in appropriate areas. These parcels may or may not meet this requirement, depending on the parcel.

This LAMP may continue to allow the development of additional housing units over the minimum average density of 2.5 acres per single family dwelling only where a soil suitability/nitrate loading study have been conducted and shows that the area is suitable for OWTS and that any impact to groundwater has been mitigated.

SECTION 9 - MINIMUM DESIGN AND CONSTRUCTION STANDARDS, COMPARISON OF CHAPTER 9.54 TO SECTION 8 OF THE POLICY

COMPARISON OF CHAPTER 9.54 TO SECTION 8 OF THE POLICY

This section of the LAMP compares the MCDEH requirements for the minimum site evaluation and siting standards with those contained in Section 8 of Tier 1 of the Policy. Each section is addressed in the table below and shows if the MCDEH standards meet the Tier 1 requirements or if an alternative standard is used. Following this table, a narrative is presented providing more detailed discussion for each section.

Table 7-1: Summary of Comparison

Comparison of Merced County (CHAPTER 9.54) OWTS Standards with Policy Section 8 Minimum Design and Construction Standards		
Policy for Tier 1 with Policy Section Number	Chapter 9.54 Meets Tier 1?	Comments
8.1.1 Qualified Professional to design OWTS	Met	Design: Qualified Professional.

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8.1.2 No Surfacing Sewage, No Impact to Beneficial Uses of Water	Met	OWTS are sited, designed, and constructed to prevent surfacing sewage or impact to groundwater.
8.1.3 OWTS Design Criteria	Met	OWTS are designed based on domestic, low strength wastewater with flows not exceeding 10,000 gallons per day.
8.1.4 Dispersal System Soil Cover	Met	OWTS have a minimum soil cover of at least 12 inches over dispersal field and at least 6 inches for pressure distribution systems.
8.1.5 Minimum Depth to High Groundwater to Bottom of Leach Trench	Met and Alternative	The minimum distance from bottom of leach trench to seasonal high groundwater is 5 feet.
8.1.6 Minimum Trench Infiltrative Rate and Width, Maximum Application Rates	Met	Dispersal systems consist of shallow leach trenches. Sumps and seepage pits are allowed in appropriate areas. All leach trenches have a maximum width of three feet and depth of three feet with 18 inches of rock beneath the leach line. OWTS application rates meet provisions of Tier 1, Table 3 for dispersal systems.
8.1.7 Maximum Depth of Dispersal System	Alternative	Dispersal systems with sumps and seepage pits up to 50 feet in depth are allowed in certain areas.
8.1.8 100% Replacement Area	Met and Alternative	All new OWTS meet this provision.
8.1.9 Dispersal System Not Covered	Met	All dispersal systems shall not be covered or paved over.
8.1.10 Rock Fragment Content Not Exceed 50% Cobbles or Larger	Met	Dispersal systems are not installed in areas where percolation rates exceed Policy.
8.1.11 Increased Allowance for IAPMO Certified Dispersal System not allowed under Tier 1	Met and Exceeds	Dispersal systems using IAPMO Certified systems receive 0.75 credit
8.2.1 Tank Standards	Met	Tanks used for OWTS meet these provisions.
8.2.2.1 Watertight Risers	Met and Alternative	Risers are required.
8.2.2.2 Access Lids at Grade Secured	Met	MCDEH requires all access lids at grade to be locked or otherwise secured.
8.2.3 Septic Tank Approval	Met	All septic tanks are either IAPMO approved or are designed and certified by a California Registered Civil Engineer.
8.2.4 Prevention of Solids into Dispersal System	Met	Septic tanks are designed and sized for appropriate retention time. NSF/ANSI certified filters are required for new and replacement tanks.

8.2.5 OWTS Installer requirements	Met	Chapter 9.54 requires installers to be a contractor in accordance with contracting law (BPC, CCR) requirements or an owner builder.
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POLICY SECTION 8.1.1 - QUALIFIED PROFESSIONAL – CHAPTER 9.54 MEETS REQUIREMENT

OWTS design is performed only by a qualified professional.

POLICY SECTION 8.1.2 – NO SURFACING SEWAGE, NO IMPACT TO BENEFICIAL USES OF WATER – CHAPTER 9.54 MEETS OR EXCEEDS REQUIREMENTS

Chapter 9.54 requires OWTS to be located, designed, and constructed in a manner to ensure that effluent does not surface at any time, and that percolation of effluent will not adversely affect beneficial uses. These provisions are discussed in more detail relating to land use development. OWTS must be operated and maintained to prevent surfacing sewage issues and water quality impacts.

POLICY SECTION 8.1.3 – OWTS DESIGN CRITERIA – CHAPTER 9.54 MEETS REQUIREMENTS

MCDEH has historically regulated domestic OWTS with wastewater flows up to 10,000 gallons per day and intends to continue to regulate these systems under the LAMP. Chapter 9.54 indicates residential OWTS are sized based on average daily flow of 150 gallons per bedroom per day. Tank capacity is based on 300 gallons per bedroom with a minimum tank size of 1,200 gallons. Tank components are based on peak wastewater flow rates with a minimum tank retention time of 24-hours for all sewage. Average daily flows and site specific data collected from the site evaluation are used to design dispersal system absorption areas. Package treatment plants or alternative or supplemental treatment are required to mitigate any impacts to water quality, as determined based on site specific soil suitability/nitrate loading studies.

POLICY SECTION 8.1.4 – DISPERSAL SYSTEM SOIL COVER - CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 provides for a minimum of six inches and a maximum of 24 inches of soil cover over the dispersal system. All standard dispersal systems have a minimum of 12 inches of soil cover over the dispersal system. A minimum of six inches soil cover is allowed only for pressure distribution systems.

POLICY SECTION 8.1.5 – MINIMUM DEPTH TO HIGH GROUNDWATER – CHAPTER 9.54 MEETS MOST REQUIREMENTS AND HAS ALTERNATIVE REQUIREMENT

Merced County meets most of the minimum depth to high groundwater requirements with the exception of the minimum depth to water based on percolation rates as shown in Table 2 of Policy Section 8. However, fast percolation rates are addressed when the initial soil suitability and nitrate loading study is conducted and mitigations are required as part of the design parameters. Mitigations can range from engineered fill in the dispersal area to the installation of a supplemental treatment system. The standard provisions for this requirement are provided below.

Chapter 9.54 prohibits the installation of dispersal systems in low areas subject to flooding or in areas where groundwater reaches the surface at certain times of the year.

Chapter 9.54 requires a minimum five foot separation from the bottom of the leach trench to groundwater.

Chapter 9.54 requires a ten foot separation from the bottom of a leaching pit and the groundwater table. Greater depths are required if the soils do not provide adequate filtration. Chapter 9.54 prohibits seepage pits in areas of normal high ground water and perched water table and requires the water table to be determined at the time when water is closest to the surface.

POLICY SECTION 8.1.6 – MINIMUM TRENCH INFILTRATIVE RATE AND WIDTH – CHAPTER 9.54 MEETS REQUIREMENT

All standard OWTS must have shallow dispersal systems to improve aerobic interchange potential. Chapter 9.54 provides for the maximum width of these leach trenches to be three (3) feet and a depth of three (3) feet with a minimum of eighteen (18) inches of drain rock under the leach line.

POLICY SECTION 8.1.6 – MAXIMUM APPLICATION RATES – CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 requires the design of the OWTS to be determined based on the location, type of soil and groundwater level or as determined by percolation test and/or soil profile. This section is the basis for the standardized design criteria used for residential OWTS on parcels with acceptable soil suitability and other loading study results. To determine how Merced County criteria compares to the Policy, local percolation rates and standard OWTS design infiltration can be directly compared and correlated to the application rates and infiltrative areas found in Table 3, Policy Section 8.

Commercial systems are designed based on average daily flows calculated from maximum estimated usage. Chapter 9.54 refers the California Plumbing Code which provides tables for minimum gallons per day for various fixtures and typical land uses. Dispersal system design is generated from application rates as provided for in Policy Section 8, Table 3. The minimum septic tank volume for commercial systems is determined using calculations found in Chapter 9.54 for septic tank size requirements.

POLICY SECTION 8.1.7 – MAXIMUM DEPTH OF DISPERSAL SYSTEM – CHAPTER 9.54 HAS ALTERNATIVE REQUIREMENT

Chapter 9.54 limits standard OWTS and the associated dispersal systems to shallow leach trenches up to 36 inches in total depth and 36 inches in width. Otherwise, the OWTS is considered a special system requiring a qualified professional in the design.

POLICY SECTION 8.1.8 – 100% REPLACEMENT AREA – CHAPTER 9.54 MEETS AND ALTERNATIVE REQUIREMENT EXCEEDS

Chapter 9.54 requires new OWTS to meet a minimum usable disposal area that may vary and range from 6,000 square feet to 24,000 square feet, based on percolation rates. These minimum areas are equivalent to the 100% replacement areas for domestic uses and 300% required for commercial and other uses based on standardized dispersal areas.

POLICY SECTION 8.1.9 – DISPERSAL SYSTEM NOT COVERED - CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 provides that no leach line shall be placed under concrete, blacktop, roadway, or structure. Leach lines and disposal fields must be maintained in an open area and not compacted. Barricades may be required to maintain this area.

POLICY SECTION 8.1.10 – ROCK FRAGMENTS NOT EXCEED 50% COBBLES OR LARGER - CHAPTER 9.54 MEETS REQUIREMENT

Although not expressly addressed in Chapter 9.54, this requirement is addressed as part of a soil suitability study, percolation testing (restricts faster infiltration/percolation rates), and site evaluation. Cobbles and other rock fragments are only found in specific, limited areas in the County (example, adjacent to the upper reaches of the Merced River near Snelling) and these areas are sparsely populated.

POLICY SECTION 8.1.11 – ALLOWANCE FOR IAPMO CERTIFIED DISPERSAL SYSTEM - CHAPTER 9.54 EXCEEDS REQUIREMENT

Chapter 9.54, Section 9.54.080, Design standards and criteria, (M), (1), (o), indicates chamber systems may be installed as an alternative to drain rock. Decreased leaching area for IAPMO certified dispersal systems, such as chambers, using a multiplier equal to and less than 0.75 may be allowed. This local requirement meets and exceeds the Policy Section 9.4.5.

POLICY SECTION 8.2.1 – PLUMBING CODE, APPENDIX K, TANK STANDARDS - CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 relies on Building and Plumbing codes to address septic tanks as structures thereby providing septic tank requirements that are equivalent to the provisions found in the Plumbing Code, Appendix K, K-5 Septic Tank Construction.

POLICY SECTION 8.2.2.1 – WATERTIGHT RISERS - CHAPTER 9.54 HAS ALTERNATIVE REQUIREMENT

Many septic tank installations are placed at depths such that the effluent flows by gravity to the dispersal field, usually less than two (2) feet below grade. Risers installed on tanks at this shallow depth are necessary and must be maintained to avoid creating a hazard where not maintained properly. Chapter 9.54 requires the installation of watertight risers.

POLICY SECTION 8.2.2.2 – TANK ACCESS LIDS AT GRADE SECURED - CHAPTER 9.54 MEETS REQUIREMENT

Unsafe access to septic tanks is a very serious matter and, when identified, violations are required to be abated immediately. The requirement to secure the tank access is accomplished using California Health and Safety Code Section 115700(a) – unsafe open excavation or pit. Additionally Chapter 9.54 requires secured OWTS access lids.

POLICY SECTION 8.2.3 – SEPTIC TANK APPROVAL - CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 provides for septic tanks to be approved by a Registered Civil Engineer and the local Building Official as septic tanks are considered structures in California Plumbing Code.

POLICY SECTION 8.2.4 – PREVENTION OF SOLIDS INTO DISPERSAL SYSTEM - CHAPTER 9.54 MEETS REQUIREMENT

Current septic tank design parameters and regular maintenance minimize the movement of solids out into the dispersal system. Filters are required in Chapter 9.54.

POLICY SECTION 8.2.5 – OWTS INSTALLER REQUIREMENTS - CHAPTER 9.54 MEETS REQUIREMENT

Chapter 9.54 requires installers to be a contractor in accordance with contracting law (Business and Professions Code and California Code of Regulations) or an owner builder.

SECTION 10 - AREAS OF CONCERN, VARIANCES, EXCEPTIONS, AND PROHIBITIONS

AREAS OF CONCERN IN THE COUNTY

Standard criteria for siting and design are intended to prevent adverse impacts on ground and surface waters from onsite sewage disposal systems. An important factor is the provision of sufficient depth of unsaturated soil below the dispersal field where filtering and breakdown of wastewater constituents can take place. Without adequate separation distance to the water table, groundwater becomes vulnerable to contamination with pathogenic bacteria and viruses, as well as other wastewater constituents (e.g., nitrogen).

Highly permeable soils (e.g., sands and gravels) also provide minimal treatment of the percolating wastewater and normally require greater separation distances to afford proper groundwater protection.

Additionally, where there is a high concentration or density of septic systems in a given area (e.g., small lot sizes), groundwater can be degraded from the accumulation of nitrate, chloride and other salts that are not filtered or otherwise removed to a significant extent by percolation through the soil. Adverse effects on groundwater quality from septic systems can show up in the form of degraded or contaminated well water supplies, or potentially as subsurface seepage into waters of the State.

Consistent and conservative planning policies and public service entity requirements have precluded any major issues with growth and development in Merced County. Historical areas of high density OWTS have been gradually served with public sewer eliminating the potential for surfacing sewage and water quality issues relating to OWTS. MCDEH developed a Salt and Nutrient Management technical study as part of our Integrated Regional Water Management Planning efforts for the Eastern portion of the County; a copy of the study can be found at the following link - <http://mercedirwmp.org/files/Appendix%20D%20Salt%20and%20Nutrient%20Study%20Revised.pdf>. A County-wide Salt and Nutrient Management technical study and Plan may be considered if resources and funding are identified. The MCDEH currently partners with numerous local water districts to address water quality and management issues affecting the Subbasins, including the requirements in the Sustainable Groundwater Management Act (SGMA). A few areas of Merced County have been identified as areas of concern; the areas are displayed in the Salt and Nutrient Management Plan described above and further discussion is provided below.

AREAS WITH HIGH OWTS DENSITY

Most areas in Merced County with higher density developments were built with the provision for public services, including some utilizing OWTS, but with water provided by a public water system. In areas with medium to higher density developments with OWTS and private domestic water wells, the minimum useable parcel size is one acre and Advanced Treatment Units (ATU) are required. These developments were processed with the benefit of soil suitability/nitrate loading studies developed by a qualified professional. In response to concerns regarding OWTS in higher density settings, MCDEH implemented a special OWTS requirement in 2005. The intent of the 2005 requirement is to reduce wastewater concentrations and protect surface and groundwater resources, particularly in higher density OWTS applications. The following conditions have been applied to all major subdivisions and certain commercial properties approved on or after November 18, 2005, as determined by the Division of Environmental Health. Merced County Code, Chapter 9.54, Section 9.54.080 Design standards and criteria describe special systems and ATUs in detail. Nitrogen-Reducing Advanced Treatment Systems are required for all major subdivisions and certain commercial properties in Merced County. Specially designed nitrogen-reducing ATU's are required that release an effluent concentration not to exceed 50% of the influent total nitrogen concentration. The specific system that meets this requirement shall be approved by the Division of Environmental Health prior to installation. Testing and performance certification of the nitrogen-reducing system is required by a third party independent organization (e.g., State or Federal agency, college/university, NSF, ANSI, etc.). Certification shall document at least six (6) months of successful operation during which the effluent total nitrogen did not exceed fifty (50) percent of the influent total nitrogen concentration. The property owner is responsible for the proper ongoing operation and maintenance of the nitrogen-reducing system (ATU). The owner shall demonstrate to the Division of Environmental Health, the approved system was installed and is continuously operated and maintained in accordance with manufacturer's requirements and recommendations. Performance reporting is required, with specific information and intervals (e.g., annual), to be determined by the Division of Environmental Health Director which may include, but not limited to, influent and effluent concentrations for nitrogen compounds, total suspended solids (TSS), biochemical oxygen demand (BOD), component function status, failures, and repairs.

Merced County Code, Chapter 9.54, Regulation of Onsite Wastewater Treatment Systems, requires a qualified professional in OWTS-related work. Chapter 9.54, Section 9.54.020, Definitions states, "Qualified professional" means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals

for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals.” MCDEH staffing includes 12 registered environmental health specialist positions. Additionally, MCDEH contracts annually with an outside engineering and hydrogeology firm for specialized services as needed; the scope of work in the contract specifically lists OWTS policy development and implementation.

VARIANCES AND EXCEPTIONS

Chapter 9.54 addresses OWTS variances and exceptions indicating an exception to any provision of these standards may be authorized when in the judgment of the Division of Environmental Health Director, the application of such provisions are unnecessary, or impose additional requirements if necessary to protect the quality of the water resources, public health and safety. Specific conditions or exceptions will be prescribed on the variance permit. Historically, variances and exceptions are noted on the OWTS permit; notations include the conditions and rationale for approval. MCDEH’s database generates unique identifiers for each OWTS permit issued as a “permit number” (example, ON0001234, “ON” prefix indicates the permit is an OWTS). Specified data related to each unique OWTS permit can be readily extracted from the database for reporting purposes. Section 6 of this document describes the data collected in a OWTS permit. MCDEH will add standardized codes to track and or include specific comments in the MCDEH database to assist in tracking and reporting variances and exceptions.

PROHIBITIONS

Chapter 9.54 addresses prohibited OWTS related activities and operations in Section 9.54.050 Prohibitions, indicating no person shall discharge or cause to be discharged into any onsite wastewater treatment system, any materials, including, but not limited to, pollutants, hazardous materials, or waters containing any pollutants or contamination that causes or contributes to a violation of applicable water quality standards. All sewage shall be disposed of by an approved method of collection, treatment and effluent discharge.

Chapter 9.54 addresses prohibited OWTS related activities and operations and includes sections regarding connections to public sewers, Chapter 9.54, Section 9.54.030 Sewage Disposal Systems (A)2, indicating the public sewer may be considered as not being available when such public sewer or any building or any exterior drainage facility connected thereto, is located more than two hundred (200) feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by public sewer. If special conditions exist, the Division of Environmental Health Director may waive this requirement.

Chapter 9.54, Section 9.54.080 Design standards and criteria, J. Unacceptable Disposal Areas, indicates installation of drain fields in low lying areas and areas subject to flooding, or in areas where ground water reaches the ground surface at certain times of the year, are not acceptable unless otherwise approved by the Division of Environmental Health. The following areas are also considered unsuitable for the location of disposal areas, disposal replacement and expansion areas; areas within any easement which is dedicated for surface or subsurface improvement and any paved area, areas for vehicle parking, areas not owned or controlled by property owners unless said area is dedicated for wastewater disposal purposes, areas occupied or to be occupied by structures, and slopes for effluent disposal greater than twenty (20) percent. Section 9.54.040 prohibits at and above grade surface OWTS effluent disposal.

Additionally, Chapter 9.54.090 Implementation indicates the Division of Environmental Health shall have authority to investigate any activity subject to this chapter. Compliance with this chapter will be determined based on the submission of a technical report to the Division of Environmental Health. The Division of Environmental Health is

authorized to enforce the prohibition of any activity that is determined to be in violation of this chapter or regulations adopted by the Board of Supervisors.

SECTION 11 - ALTERNATIVE TREATMENT SYSTEMS/SUPPLEMENTAL SYSTEMS

Merced County, through existing land use and building permit processes, utilizes soil suitability and nitrate loading studies to define the characteristics of each parcel and determine its suitability for use with OWTS, including any potential impact to ground or surface water. At times, these studies have indicated a potential impact and alternative or supplemental treatment systems are installed as a mitigation measure. The types of alternative or supplemental treatment systems are discussed below.

ALTERNATIVE SYSTEM TYPES

The most common alternative systems are those that are evaluated and designed taking into consideration additional site specific characteristics and using the latest technologies and design innovations. These systems may include organic fill systems, pressure dose systems, and expanded treatment and dispersal systems.

MOUNDED SYSTEMS

A mounded system is a soil adsorption system that is elevated above the natural soil surface. The purpose of the design is to overcome site restrictions that prohibit the conventional use of OWTS. Such restrictions include slowly permeable soils, slowly permeable soils with high water tables, and permeable soils with high water tables. The design of the system must conform to the EPA Design Manuals and Chapter 9.54.

PACKAGE TREATMENT PLANTS AND SUPPLEMENTAL TREATMENT PLANTS

For parcels where a potential for groundwater impact has been identified, package treatment plants or supplemental treatment plants are used. A qualified professional is required to evaluate and design these systems. Regular monitoring and reporting may be required for these systems as well as inspection by the MCDEH.

HOLDING TANKS

Holding tanks with regular pumping have been used as a means for sewage management at Duck Clubs, as a temporary measure and, in very limited cases, where an OWTS could not be repaired due to limitations of the parcel. The owners of these systems are required to maintain a current contract with a licensed sewage hauler and keep pumping records available for review by the MCDEH.

CHEMICAL TOILETS

Chemical toilets are acceptable for temporary use only and are used for special events, agricultural field operations, and construction projects. Development projects are required to install a permanent sewage disposal system and chemical toilets are not used as a permanent method of waste management.

PERMITTING AND CONSTRUCTION

Chapter 9.54 requires plans for an alternative or supplemental treatment system be completed by a qualified professional and submitted to the MCDEH for review. Once approved, a construction permit is issued. The MCDEH performs inspections during the construction to ensure the system is built as approved. The MCDEH consults with CVRWQCB staff when issues or concerns arise.

MAINTENANCE AND OPERATION

Chapter 9.54 requires the OWTS must be operated and maintained in accordance with procedures established by the manufacturer and/or the designer. Water Code Section 13627.1 requires that persons operating the system be properly licensed with the SWRCB.

MONITORING AND REPORTING

The owner of a supplemental or advanced treatment unit (ATU) or system must monitor the system in accordance with the manufacturer's or designer's specifications. A sampling and reporting program for the system is determined at the time of the design review and approval. The MCDEH may consult with the CVRWQCB staff during this process for supplemental guidance and direction, if needed. In accordance with Chapter 9.54, sampling and reporting will be required for advanced treatment units and nitrogen reducing systems. Reports required must be submitted to the MCDEH for review to determine the system is performing as expected. Should the system not perform to the required performance standards, an evaluation of the system may be requested and changes to the system implemented.

SECTION 12 - WATER QUALITY ASSESSMENT PROGRAM

The purpose of this LAMP is to establish standards and policies for the installation, operation and maintenance of OWTS in order to protect water quality and public health. The water quality monitoring element is intended to track the impact of OWTS effluent on groundwater and surface water as well as the effectiveness of this LAMP in addressing those impacts over time.

Surface bodies of water will be further described in subsequent revisions to this LAMP. None of the water ways in Merced County are listed as an impaired water body from OWTS pursuant to Section 303(d) of the Federal Clean Water Act.

The water quality monitoring element of the LAMP focuses on the water resources of the County, especially in areas where higher density of OWTS are used, representing the highest risk to groundwater quality.

MONITORING PROGRAM ELEMENTS

The water quality assessment program consists of the following elements:

1. Water quality data collection from various sources
2. Water quality data management, tabulation, mapping and evaluation
3. OWTS permit types, volumes, and locations data management and evaluation
4. OWTS sewage complaint data management, tabulation and mapping
5. Wastewater treatment plant and alternative systems reporting evaluation
6. Septage pumping reports evaluation
7. Percolation test results, mapping and evaluation

WATER QUALITY DATA COLLECTION

INDIVIDUAL WELLS

Individual domestic wells are sampled for general minerals and inorganics, including nitrate, and bacterial analyses (Total and Fecal Coliforms) as part of all domestic well permits as required by Merced County Well standards (Chapter 9.28). Chapter 9.28 requires newly constructed domestic wells to be sampled for bacteriological and chemical analysis, including nitrate, post well development, pump installation, and disinfection to determine the

quality of the water produced by the well. The public can and does utilize MCDEH's private well sampling program relying on MCDEH's certified water samplers and MCDEH's contract ELAP certified laboratory for reporting water quality to requestors. Merced County does not have a real estate transfer sampling program.

FOOD FACILITIES

California Health and Safety Code, Section 113869 requires food facilities utilizing individual wells to meet the requirements of transient, non-community water systems per the Safe Drinking Water Act. These systems are required to sample for nitrate every three years and for bacteria quarterly. This information is submitted to the MCDEH as part of the food protection program.

LOCAL WATER QUALITY SURVEY PROGRAM

MCDEH has historically and continues to sample sixteen domestic wells, with well total depths ranging from 75 to 335 feet below ground surface, on a quarterly basis, County-wide, for full general minerals and inorganics, including nitrate, specific to OWTS operation in Merced County. Five domestic wells are routinely sampled near the City of Merced, three near Atwater, two near Hilmar, two near Stevinson, two near Los Banos, one in Dos Palos, and one in Gustine. Access to the water quality survey sites are through an agreement with MCDEH and the private well owners. An enhanced water well/water quality sampling program is under consideration related to SGMA efforts in Merced County.

OTHER SOURCES OF WATER QUALITY DATA

Other water quality reporting sites and direct contact request for data with numerous governmental agencies can be utilized by MCDEH for OWTS program implementation related to a local Water Quality Assessment Program in complying with the Policy (e.g., GeoTracker GAMA-secure, USGS, DWR, SWRCB Division of Drinking Water, CVRWQCB Milk Cow Dairy Program - Dairy facility well sampling and reporting, etc.).

OWTS PERMIT NUMBERS, DESCRIPTIONS, AND LOCATIONS DATA MANAGEMENT AND EVALUATION

The MCDEH database also stores the information relating to OWTS permitting, including the total number of permits issued, the descriptions of the permits issued, and the locations of the permits issued. The number and locations of permits issued under variance are tracked in this system and can be easily exported and reported. The data can also be mapped as part of the OWTS Water Quality Assessment Program.

OWTS SEWAGE COMPLAINT EVALUATION AND MAPPING

The MCDEH database stores all complaint information for the MCDEH including complaints related to OWTS and surfacing sewage. This information can also be exported and mapped for reporting and evaluation purposes.

WASTEWATER TREATMENT PLANT AND SUPPLEMENTAL SYSTEMS REPORTING EVALUATION

The data received from the monitoring and reporting from wastewater treatment plants (if any), flows equal to or less than 10,000 gallons per day, and supplemental treatment systems can be evaluated and included in the OWTS Water Quality Assessment Program.

SEPTAGE PUMPING REPORTS EVALUATION

The monthly septage pumping reports received at the MCDEH are maintained and archived in an imaging database and will be evaluated and included in the OWTS Water Quality Assessment Program.

EVALUATION OF THE MONITORING PROGRAM

As the MCDEH evaluates and prepares for the annual reporting requirement in the Policy, any trends or issues of concern that become apparent will be reviewed and the sources identified. Based on the findings, appropriate changes will be made to the program to mitigate any issues. These activities will be summarized and reported as part of the five year Evaluation and Assessment Report required to be submitted to the CVRWQCB per Section 9.3.3 of the Policy.

ANNUAL REPORTS

By February 1 of each year, the MCDEH will submit an annual report to CVRWQCB as specified by the Policy. This report will summarize the water quality data the MCDEH has collected through the OWTS Water Quality Assessment Program. Any groundwater monitoring data the MCDEH has collected for the OWTS Water Quality Assessment Program will be submitted in EDF format to be uploaded into Geo-Tracker and any surface water monitoring will be submitted to CEDEN in a SWAMP comparable format as and if required.

WATER QUALITY DATA MANAGEMENT, TABULATION, MAPPING AND EVALUATION

The water quality data received at MCDEH from private domestic wells is entered into a database management system. This database also stores information on OWTS, including percolation rates, and water wells and therefore can provide a mechanism for relational evaluations. Data can be queried, tabulated, mapped and then evaluated for trends and impacts.

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ORDINANCE NO. 1947

AN ORDINANCE ESTABLISHING THE REGULATION OF ONSITE WASTEWATER TREATMENT SYSTEMS

(ADDING CHAPTER 9.54 TO TITLE 9 OF THE MERCED COUNTY CODE)

THE BOARD OF SUPERVISORS OF THE COUNTY OF MERCED, STATE OF CALIFORNIA, ORDAINS AS FOLLOWS:

SECTION 1: Chapter 9.54 of Title 9 of the Merced County Code, for Regulation of Onsite Wastewater Treatment Systems Ordinance of Merced County is added as follows:

Chapter 9.54

Regulation of Onsite Wastewater Treatment Systems

9.54.010 Title, purpose, findings and declaration

9.54.020 Definitions

9.54.030 Sewage Disposal Systems

9.54.040 On-site Sewage System Requirements

9.54.050 Prohibitions

9.54.060 Permit requirement

9.54.070 Site evaluation

9.54.080 Design standards and criteria

9.54.090 Implementation

9.54.100 Authority

9.54.110 Penalty for violation

9.54.120 Severability and effect

9.54.130 Conflicting regulations

9.54.010 Title, purpose, findings and declaration

A. Title. The ordinance codified in this chapter may be cited as "Regulation of Onsite Wastewater Treatment Systems."

B. Purpose and Intent. The purpose and intent of this chapter is to ensure the health, safety, and general welfare of citizens, and to protect and enhance the water quality of watercourses and water bodies in Merced County.

C. Findings and Declarations. The Merced County Board of Supervisors makes the following findings and declaration in support of the enactment of the ordinance codified in this chapter:

1. The protection of the health, welfare, and safety of the residents of Merced County require that the water and other resources of Merced County be protected from adverse impacts resulting from the improper design, siting, installation, operation, and maintenance of onsite wastewater treatment systems (OWTS); and
2. An orderly means of preventing potential environmental degradation and unsanitary conditions from occurring in the County must be established, and that a safe and sanitary means of sewage disposal must be provided; and
3. Regulations are required for the control of individual OWTS facilities in the County, to protect the public health, safety and welfare of the inhabitants thereof; and
4. The risks to health, safety and well-being in Merced County related to potential improper sewage disposal require the County to take action as Merced County transitions to implementation of the State Water Resources Control Board, Resolution No. 2012-0032, adoption of the Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy).
5. Therefore, in order to protect the public health, safety and welfare, the Board of Supervisors of Merced County hereby adopts the provisions of this chapter relating to OWTS.

9.54.020 Definitions

A. Definitions:

1. "303(d) list" means the same as "Impaired Water Bodies."
2. "Abandoned well" means a well whose use has been discontinued or which is in such a state of disrepair that no water can be produced, water quality is at risk, or as otherwise defined within the California Water Well Standards.
3. "At-grade system" means an OWTS dispersal system with a discharge point located at the preconstruction grade (ground surface elevation). The discharge from an at-grade system is always subsurface.
4. "Average annual rainfall" means the average of the annual amount of precipitation for a location over a year as measured by the nearest National Weather Service station for the preceding three decades. For example, the data set used to make a determination in 2012 would be the data from 1981 to 2010.
5. "Basin Plan" means the same as "water quality control plan" as defined in Division 7 (commencing with Section 13000) of the Water Code. Basin Plans are adopted by each Regional Water Quality Control Board, approved by the State Water Resources Control Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective beneficial uses and water quality objectives.

6. "Bedrock" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.
7. "Board" means the Board of Supervisors of Merced County.
8. "Cesspool" means an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspool systems do not have septic tanks and are not authorized under this chapter. The term cesspool does not include pit-prives and out-houses which are not regulated under this chapter.
9. "Clay" means a soil particle; the term also refers to a type of soil texture. As a soil particle, clay consists of individual rock or mineral particles in soils having diameters <0.002 mm. As a soil texture, clay is the soil material that is comprised of 40 percent or more clay particles, not more than 45 percent sand and not more than 40 percent silts particles using the USDA soil classification system.
10. "Contamination" means the impairment of the quality of the waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease including any equivalent effect resulting from the disposal of waste, whether or not the waters are affected. (California Water Code Section 13050(l)(2).)
11. "Community Sewerage System" means a piped collection system which delivers sanitary wastes from a number of dwelling, business, commercial units to one or more waste water treatment plants and is normally under the jurisdiction of a public entity and operates under waste discharge requirements issued by the Regional Water Boards.
12. "County" means the County of Merced.
13. "Disposal area" means the area to be used for systems that receive the effluent discharge from a septic tank or other OWTS treatment unit, means the same as "dispersal area."
14. "Dispersal area" means the area to be used for systems that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal, means the same as "disposal area".
15. "Division of Environmental Health" means the office within the Merced County Department of Public Health responsible for environmental health issues.
16. "Domestic wastewater" means wastewater with a measured strength less than high strength wastewater and is the type of wastewater normally discharged from, or similar to, that discharged from plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as office buildings, retail stores, and some restaurants or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater may include incidental RV holding tank dumping but does not include wastewater consisting of a significant portion of RV holding tank wastewater such as at RV dump stations. Domestic wastewater does not include wastewater from industrial processes.
17. "Drainage Course" means channels or low lines of the terrain in which water flows either continuously or intermittently.

18. "Duck Club" means a facility located in an isolated area, occupancy is intermittent from October to January, groundwater level is at or near the surface preventing the installation of a standard OWTS, and the existing shallow groundwater precludes any beneficial domestic utilization.
19. "Dump station" means a facility intended to receive the discharge of wastewater from a holding tank installed on a recreational vehicle. A dump station does not include a full hook-up sewer connection similar to those used at a recreational vehicle park.
20. "Domestic well" means a groundwater well that provides water for human consumption.
21. "Earthen material" means a substance composed of the earth's crust (i.e. soil and rock).
22. "Ephemeral stream" means a stream, segment or portion of a stream which flows in direct response to precipitation.
23. "Effluent" means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, aerobic treatment unit, dispersal system, or other OWTS component.
24. "Escherichia coli" means a group of bacteria predominantly inhabiting the intestines of humans or other warm-blooded animals, but also occasionally found elsewhere. Used as an indicator of human fecal contamination.
25. "Existing OWTS" means an OWTS that was constructed and operating prior to the effective date of this chapter, and OWTS for which a construction permit has been issued prior to the effective date of this chapter.
26. "Flowing water body" means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.
27. "Groundwater" means water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.
28. "Hazardous materials" means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. (California Health and Safety Code Section 25117).
29. "High-strength wastewater" means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams per liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.
30. "IAPMO" means the International Association of Plumbing and Mechanical Officials.
31. "Individual disposal system" means a collection system and wastewater treatment or disposal facility for individual dwelling, business, commercial, etc. units.
32. "Impaired Water Bodies" means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Resources Control Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

33. "Impervious layer" means a strata, such as a clay or shale, that does not permit water to move through perceptibly.
34. "Leach field" means any dispersal system equal to or less than ten (10) feet below ground surface.
35. "Leachline" means a perforated pipe used to distribute septic tank effluent in a leach trench.
36. "Leach pit" means any dispersal system greater than ten (10) feet below ground surface.
37. "Local agency" means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries; typically a county, city, or special district.
38. "Major repair" means either: (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating.
39. "Minimum useable disposal area" means the minimum area that must be available on a parcel or lot to be used for effluent discharge from a septic tank or other OWTS treatment unit.
40. "Mottling" means a soil condition that results from oxidizing or reducing minerals due to soil moisture changes from saturated to unsaturated over time. Mottling is characterized by spots or blotches of different colors or shades of color (grays and reds) interspersed within the dominant color as described by the USDA soil classification system. This soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of groundwater.
41. "Mound system" means an aboveground dispersal system (covered sand bed with effluent leachfield elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.
42. "New OWTS" means an OWTS permitted after the effective date of this chapter.
43. "NSF" means NSF International (a.k.a. National Sanitation Foundation), a not for profit, non-governmental organization that develops health and safety standards and performs product certification.
44. "Oil/grease interceptor" means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.
45. "Onsite wastewater treatment system(s)" (OWTS) means individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal with flows not exceeding 10,000 gallons per day. The short form of the term may be singular or plural. OWTS do not include "graywater" systems pursuant to Health and Safety Code Section 17922.12.
46. "Perennial stream" means a stream that flows throughout the year.
47. "Percolation test" means a method of testing water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design.

48. "Permit" means a document issued by a local agency that allows the installation and use of an OWTS, or waste discharge requirements or a waiver of waste discharge requirements that authorizes discharges from an OWTS.
49. "Person" means and includes natural persons, corporations, firms, partnerships, joint stock companies, associations and other organizations of persons, and public entities. "Person" includes any individual or firm who directs, or engages in, construction, repair, abandonment or destruction of an OWTS.
50. "Pit-privy" (a.k.a. outhouse, pit-toilet) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above a pit in the ground into which human waste falls.
51. "Pollutant" means any substance that alters water quality of the waters of the State to a degree that it may potentially affect the beneficial uses of water, as listed in a Basin Plan.
52. "Porosity" means the ratio of the aggregate volume of interstices in a rock or soil to its total volume.
53. "Projected flows" means wastewater flows into the OWTS determined in accordance with any of the applicable methods for determining average daily flow in the USEPA Onsite Wastewater Treatment System Manual, 2002, or for Tier 2 in accordance with an approved Local Agency Management Program.
54. "Public Water System" is a water system regulated by the California Department of Public Health, State Water Resources Control Board, Division of Drinking Water, or a Local Primacy Agency pursuant to Chapter 12, Part 4, California Safe Drinking Water Act, Section 116275 (h) of the California Health and Safety Code.
55. "Public Water Well" is a groundwater well serving a public water system. A spring which is not subject to the California Surface Water Treatment Rule (SWTR), CCR, Title 22, sections 64650 through 64666 is a public well.
56. "Qualified professional" means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals.
57. "Regional Water Board" is any of the Regional Water Quality Control Boards designated by Water Code Section 13200.
58. "Replacement OWTS" means an OWTS that has its treatment capacity expanded, or its dispersal system replaced or added onto, after the effective date of this chapter.
59. "Report of waste discharge" means a report required under Section 13260 of the Porter-Cologne Water Quality Act.
60. "Rock" means any consolidated or coherent and relatively hard, naturally formed mass of mineral matter that cannot be excavated by manual methods alone.
61. "Sand" means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0

millimeters. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent.

62. "Sanitation system contractor" means a contractor that fabricates and installs septic tanks, storm drains, and other sewage disposal and drain structures. This classification includes the laying of cast-iron, steel, concrete, vitreous and non-vitreous pipe and any other hardware associated with these systems (California Code of Regulations, Title 16, Division 8, Article 3. Classifications).
63. "Seepage pit" means a drilled or dug excavation, often three (3) and up to six (6) feet in diameter, either lined or drain rock filled, that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.
64. "Septage" means solid residue with lower water content from septic tanks, or wastewater treatment facilities.
65. "Septic tank" means a watertight, covered receptacle designed for primary treatment of wastewater and constructed to: 1. Receive wastewater discharged from a building; 2. Separate settleable and floating solids from the liquid; 3. Digest organic matter by anaerobic bacterial action; 4. Store digested solids; and 5. Clarify wastewater for further treatment with final subsurface discharge.
66. "Sewage" means any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.
67. "Sewer pipe" means an unperforated pipe carrying wastewater from fixtures to a septic tank or from a septic tank to a leach line.
68. "Service provider" means a person qualified to and capable of operating, monitoring, and maintaining an OWTS in accordance with this chapter.
69. "Silt" means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.
70. "Single-family dwelling unit" means a structure that is usually occupied by just one household or family and for the purposes of this chapter is expected to generate between 150 to 250 gallons per day of wastewater.
71. "Site" means the location of the OWTS and, where applicable, a reserve dispersal area capable of disposing 100 percent of the design flow from all sources the OWTS is intended to serve.
72. "Site Evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this chapter.
73. "Soil" means the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material. The various combinations of particles differentiate specific soil textures identified in the soil textural triangle developed by the United States Department of Agriculture (USDA) as found in Soil Survey Staff, USDA; Soil Survey Manual, Handbook 18, U.S. Government Printing Office,

Washington, DC, 1993, p. 138. For the purposes of this chapter, soil shall contain earthen material of particles smaller than 0.08 inches (2 mm) in size.

74. "Soil Structure" means the arrangement of primary soil particles into compound particles, peds, or clusters that are separated by natural planes of weakness from adjoining aggregates.
75. "Soil texture" means the soil class that describes the relative amount of sand, clay, silt and combinations thereof as defined by the classes of the soil textural triangle developed by the USDA (referenced above).
76. "Special System" means an onsite wastewater treatment system other than a standard system.
77. "State Water Board" is the State Water Resources Control Board.
78. "Standard System" means an onsite wastewater treatment system for a single family dwelling which uses an approved concrete, two-compartment septic tank that disperses to a three (3) foot wide by three (3) foot deep trench utilizing drain rock or chambers, relying on gravity for influent and effluent flows, and has no additional treatment features.
79. "Supplemental treatment" means any OWTS or component of an OWTS, except a septic tank or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field.
80. "TMDL" is the acronym for "total maximum daily load." Section 303(d)(1) of the Clean Water Act requires each State to establish a TMDL for each impaired water body to address the pollutant(s) causing the impairment. In California, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.
81. "Total coliform" means a group of bacteria consisting of several genera belonging to the family Enterobacteriaceae, which includes Escherichia coli bacteria.
82. "USDA" means the U.S. Department of Agriculture.
83. "Vertical Leaching Pit" means a bore hole, often three (3) feet in diameter, greater than ten (10) feet below ground surface, either lined or drain rock filled, that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.
84. "Waste discharge requirement" or "WDR" means an operation and discharge permit issued for the discharge of waste pursuant to Section 13260 of the California Water Code.
85. "Water table" means the zone of saturation, except where that surface is formed by an impermeable body such as cemented sands and hardpans.
86. "Wastewater" means sewage, graywater, and any and all other contaminated liquid waste substances often associated with human habitation.
87. "Zone of Saturation" means the area below the water table at which the soil is completely saturated.

9.54.030 Sewage Disposal Systems

A. Systems Required:

1. Every building in which plumbing fixtures are installed and every premises having drainage piping thereon, shall have a connection to an approved public or private sewage disposal system.

2. The public sewer may be considered as not being available when such public sewer or any building or any exterior drainage facility connected thereto, is located more than two hundred (200) feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by public sewer. If special conditions exist, the Division of Environmental Health Director may waive this requirement.
3. If a connection to a public sewer is available, a permit shall not be issued for the installation of an OWTS, or for the alteration or repair of an existing OWTS.
4. On every lot or premises hereafter connected to public sewer, all plumbing and drainage systems or parts thereof, on such lot or premises, shall be connected with such public sewer.

9.54.040 On-site Sewage System Requirements

A. Where permitted or required by code or regulation, the building sewer may be connected to an OWTS complying with the provisions of this chapter. The type of the system shall be determined on the basis of location, soil character, loading rate, and groundwater level and shall be designed by a qualified professional to receive all sewage from the property. The OWTS, except as otherwise provided, shall consist of a septic tank with effluent discharging into an approved, subsurface disposal field.

B. Where conditions are such that the above system cannot be expected to function satisfactorily for commercial, agricultural and industrial plumbing systems; for installations where appreciable amounts of industrial or indigestible waste are produced; estimated flows from hotels, hospitals office buildings, schools, and other occupancies not specifically listed in applicable plumbing code; and for occupancies producing unusual quantities of sewage or liquid waste; the method of sewage treatment shall be first approved by the Division of Environmental Health.

C. One acre parcels with restrictive/severe soils will require that disposal systems be designed to utilize the most permeable or absorptive portions of the soil formation as determined by a percolation test on each parcel in the disposal field area. There shall be a minimum of five (5) feet of permeable soil below the bottom of the proposed OWTS.

D. All OWTS shall be so situated on the parcel so that additional subsurface drain fields, equivalent to at least one hundred (100) percent, and in some cases three hundred (300) percent (commercial and other sources) of the required original system, may be installed.

E. No property shall be improved in excess of its capacity to absorb sewage effluent in the quantities and by the means provided in this chapter.

F. In the event the Division of Environmental Health determines that there is insufficient lot area or improper soil conditions for adequate sewage disposal by percolation methods for the building or land use proposed, no building permit shall be issued and no OWTS shall be permitted. The land developer or owner may submit additional data, test reports, design calculations and other materials to the Division of Environmental Health for re-evaluation.

G. Nothing in this chapter shall prevent the Division of Environmental Health from requiring compliance with more stringent requirements than those contained herein where such additional requirements are essential to maintain a safe and sanitary condition.

H. An exception to any provision of these standards may be authorized when in the judgment of the Division of Environmental Health Director, the application of such provisions is unnecessary or impose additional requirements if necessary to protect the quality of the water resources, public health and safety. Specific conditions or exceptions will be prescribed on the variance permit.

9.54.050 Prohibitions

A. No person shall discharge or cause to be discharged into any onsite wastewater treatment system, any materials, including, but not limited to, pollutants, hazardous materials, or waters containing any pollutants or contamination that causes or contributes to a violation of applicable water quality standards. All sewage shall be disposed of by an approved method of collection, treatment and effluent discharge.

B. The location, installation, operation and maintenance of OWTS and each part thereof shall be such that it will function in a sanitary manner and will not create a nuisance or endanger the safety of any water supply, groundwater or surface water. In determining a suitable location for the system, consideration shall be given to the size and shape of the lot, location of building, slope of ground surface, depth to groundwater, proximity of existing future water supplies, and expansion of system or connection to future public sewers.

9.54.060 Permit requirement

A. Permit requirement. The property owner, and any contractor required by law, shall apply for and obtain a permit from the Division of Environmental Health prior to commencing construction, repair, or abandonment/destruction of any an OWTS within the unincorporated areas of Merced County and incorporated areas where authorized. The application for a permit shall be in the form prescribed by the Division of Environmental Health and contain such information as the Division of Environmental Health may require. Every permit issued shall be contingent upon compliance with the requirements specified in this chapter.

1. An application for an OWTS may be submitted to the Division of Environmental Health by mail, however, construction of the proposed OWTS shall not commence until the permit application has been approved and the property owner and contractor is in receipt of the approved permit.
2. It shall be the responsibility of the property owner or any contractor engaged, to post the permit at the work site, prior to commencement of work for which the permit is required and provide a minimum twenty-four (24) hours notification for standard OWTS, and forty-eight (48) hours notification to the Division of Environmental Health prior to commencing work. The permit shall be posted in a readily accessible location on the property before work commences, and shall remain posted during all phases of inspection and until final approval is documented. Inspections shall be requested from the Division of Environmental Health not less twenty-four hours in advance. Any owner or contractor who fails to comply with this requirement and

commences work, for which a permit is required but has not been secured, shall be in violation of this chapter.

3. A permit shall be required for repair of any part of the septic tank and/or leach field and/or leach pit other than pumping of the septic tank.
4. An application for an OWTS permit shall be accompanied by a nonrefundable permit fee, when a fee is required.

B. Permit Validity. A permit issued under this chapter shall be valid for a period of six (6) months from the date of issuance. At any time prior to the expiration of the six month permit period, a permittee under this chapter may apply for one extension of the permit, for a period of one year. The extension of a permit under this section may be granted at the discretion of the Division of Environmental Health Director, upon a showing of good cause. Completion of the permitted work in accordance to this ordinance shall be within twelve (12) months from the date of issuance of the permit, or twelve (12) months from the date of any permit extension under this section.

C. Permit Applicant Requirements. When a contractor makes an application for a permit, said contractor shall have on file a copy of a valid contractor's license and a certificate of insurance which states that there is in existence a valid policy of workmen's compensation insurance in a form approved by the Insurance Commissioner. Said certificate shall show the following:

1. The expiration date;
 2. Coverage is provided for construction permits in accordance with Labor Code § 3800;
 3. The insurer shall give the County at least ten (10) days' notice of the cancellation of the policy.
- No permit shall be issued without the insurance information above.

9.54.070 Site evaluation

A. Site Evaluation. Soils in Merced County vary dramatically from parcel to parcel, and within a parcel boundary. Some parcels and lots will be unusable where OWTS are contemplated. Percolation test results, soil analyses and reports, groundwater data, loading rates, and plot plans shall be submitted to the Division of Environmental Health for review and approval. The Division of Environmental Health may exempt these requirements (except plot plan) on parcels where documented OWTS performance is adequate, or when special sewage system designs in comparable soil conditions are on file and have demonstrated satisfactory operational histories. OWTS component locations and sizes shall be established and computed as set forth in the design standards of this chapter.

B. Percolation Rates and Tests. In designated areas of where subsurface OWTS are planned, the soil must have an acceptable percolation rate without interference from groundwater or impervious soil strata below the proposed dispersal area. Percolation tests in proposed sewage disposal area(s) will be required in areas of restricted soils, commercial installations, proposed and new divisions of land relying on private OWTS, and special systems to determine the suitability of soils to receive effluent from OWTS. Percolation rate tests may be specified as to the number of tests and the locations on the division of land plat or other land development plan by the Division of Environmental Health Director. Percolation tests must be performed within the designated sewage disposal area(s).

1. Percolation Rate Criteria. Percolation rate testing must be performed by a qualified professional. Advance notice, minimum of 24 hours, shall be given to the Division of Environmental Health so that the performance of a percolation rate test may be observed.
2. A minimum of one (1) percolation test per parcel, or more if required by the Division of Environmental Health, shall be performed to clearly show the absorptive capacity of the soils throughout the area to be developed. These tests shall be performed according to the percolation test standards and procedures approved by the Division of Environmental Health.
3. Percolation tests should be performed at various depths in order to determine the optimal soil(s) for OWTS sewage dispersal. The percolation test criteria presented in this chapter are designed to standardize percolation test procedures and thereby establish a uniform basis for evaluating percolation test results.
4. Percolation test procedures:
 - a. Dig, or bore a test hole with a minimum diameter of eight (8) inches. The bottom of the test hole shall be located at the same depth as the bottom of the proposed leaching field.
 - b. There shall be at least five (5) feet of undisturbed soil extending around all sides of the percolation test hole.
 - c. Roughen or score the bottom and sidewalls of each test hole to expose the natural surface of the materials encountered. Remove all loose materials from the test hole.
 - d. Evenly spread two (2) inches of coarse sand or fine gravel into each test hole to protect the bottom surface of the test hole. Insert a perforated pipe, vertically oriented, into the test hole resting on the surface of the emplaced sand or gravel. The pipe shall be secured in place to prevent movement during the test.
 - e. Pour clean water into the perforated pipe to a minimum depth of 12 inches above the bottom of the hole. Recheck the water level in the perforated pipe routinely and refill if necessary to ensure the test hole is saturated. The test hole shall be presoaked for a minimum of 24 continuous hours. If the soil is known to have a low shrink-swell potential, the 24-hour presoaking period is unnecessary. In this case, fill the test hole with clean water to a depth of 12 inches. Allow the water to completely seep away, then proceed with subsection "f" below.
 - f. Immediately following the 24-hour soaking period, adjust the water level to six inches above the sand or gravel layer. From a fixed reference point, measure the drop in water level at approximately 30 minute intervals, 10 minute intervals or less for sandy soils, measurement interval will vary. When a stabilized absorption rate has been reached, the test may be ended. Percolation rates will be considered stabilized when four (4) consecutive readings demonstrate a consistent rate of fall has been obtained. The smallest drop that occurs during the stabilized period will be used to calculate the percolation rate.

C. Soils Report. A soils report regarding the feasibility of using onsite wastewater treatment system is required for subdivision land development and may be required for an individual parcel and other developments. The Division of Environmental Health will determine OWTS design specifications from the soil report. The report must be prepared and signed by a qualified professional or other specialist acceptable to the Division of Environmental Health containing the following information at a minimum:

1. Soils Report Criteria.
 - a. Soil borings must be completed to clearly describe the types of soil beneath the dispersal area. Borings should extend to a point at least five (5) feet below the finished grade of proposed dispersal areas including horizontal trenches and ten (10) feet for vertical leaching

pits. A minimum of one soil boring for every five (5) acres in the dispersal area, or if conditions indicate, a greater number of soil borings will be required as determined by the Division of Environmental Health Director.

- b. The soils encountered must be accurately described in accordance with the USDA, "Unified Soil Classification System." Specified field-derived information on each soil type encountered shall include: typical name and group symbol; approximate percent of gravel, sand and fines (silt or clay); plasticity; color; dilatancy; moisture conditions; type and degree of cementation; consistency (clays) or degree of compactness; structure and drainage characteristics; and other pertinent descriptive information affecting soil permeability. Laboratory testing may be required to substantiate suitability of soil for individual sewage systems.
- c. The soils report must accurately define and describe areas where hardpan or other impermeable layers of soil and rock exist within fifteen (15) feet of the ground surface.
- d. The soils report must provide a detailed description of the groundwater table in and adjacent to the project area.

9.54.080 Design standards and criteria

A. Design Standards, Criteria and Design Revision. The Division of Environmental Health shall prepare design standards for OWTS. When necessary and as required, the Division of Environmental Health shall revise and design OWTS standards to reflect contemporary engineering concepts and other legal requirements.

1. Design Standards and Criteria. The OWTS system shall be designed to receive all domestic sewage from the property. No basement, footing, surface drainage, water softener, or discharge from swimming pool filters (backwash) shall be permitted to enter any part of this system.
 - a. The OWTS shall consist of a house sewer, a septic tank, and drainage/dispersal area. Package sewage treatment plants will be evaluated on their engineered design.
 - b. Where soil porosity and available area permit, the drainage system shall consist of a subsurface horizontal leaching field.
2. Where soil porosity and available area do not permit the use of a subsurface horizontal leaching field, and an adequate absorption soil stratum can be found at a greater depth without endangering the water table, the effluent may be discharged into one or more vertical leaching pits.

B. Qualified Professional. Only those persons knowledgeable and experienced shall conduct site evaluations and engage in the design of OWTS. Only qualified professionals shall design OWTS and practice as professionals as allowed under their specific license or registration.

C. Special OWTS and Experimental Systems. Special OWTS designs shall be accepted for review from a qualified professional acceptable to the Division of Environmental Health. Re-evaluation and follow up reporting is required to validate the proper performance and functionality of any special or experimental system.

D. Commercial, Industrial and Multi-Use OWTS. Evaluation of these proposed OWTS may require additional information not required for a single family residential/standard system. The applicant for

such an OWTS shall provide the Division of Environmental Health drawings, data, and other engineering calculations and materials as may be required by the Division of Environmental Health in order to evaluate the proposed system.

E. Responsibility. The property owner and/or their contractor(s) are responsible for compliance with installation requirements. The property owner is responsible for proper operation, maintenance, abandonment, and destruction of any OWTS.

F. Abandonment. Abandoned OWTS shall be properly disconnected from the building or sewage source, and pumped by a licensed septic tank pumper. , Components removed must be disposed of at an approved location, or destroyed in-place and backfilled with compacted earth, sand or other approved materials; septic tanks destroyed in-place shall be rendered incapable of fluid storage. All abandonment/destruction work must be performed under permit obtained from the Division of Environmental Health.

G. Plot Plan. All OWTS shall be permitted and installed as designed and approved. Any variation from approved design may require a new OWTS permit and approval. The OWTS permit application shall be signed by the property owner and appropriately licensed contractor in accordance with applicable laws affirming the information provided is accurate and representative of actual site conditions, and shall include a representational detailed drawing of the subject parcel or portion thereof. The plot plan shall be drawn to reasonable scale, no larger than one (1) inch equaling fifty (50) feet, with the following information:

1. Owner's name, street address, job address and telephone number;
2. A diagram of the parcel showing all property lines, dimensions, the assessor parcel number (APN), and North arrow orientation;
3. Names of streets and roads fronting the property, and any existing and proposed internal roads and vehicle access and/or parking areas including driveways;
4. Dimensions, outlines, and locations of all existing and proposed structures, including hard surfaces such as patios, driveways and walks (e.g., earthen, asphalt, concrete and or gravel-covered);
5. Location of house sewer outlet and proposed location of septic tank and disposal system on the property;
6. Location and nature of any existing and proposed OWTS on the property, and dedicated replacement areas in the event of system failure;
7. Location of any existing trees which may affect location of septic tank or disposal areas and related systems.
8. Any prominent features on and adjacent to the property such as right-of-ways, easements, elevation changes, canals, creeks, lagoons, ponds, corrals;
9. Location of any existing or proposed well, in use or abandoned, either on this property or within 300 feet of the property lines;
10. A statement of the maximum expected waste volume per day: For dwelling units, pool houses, and/or guesthouses, provide the number of bedrooms and bathrooms (rooms with closets will be considered bedrooms for OWTS design purposes);
11. Source and description of domestic water supply;

12. Any public water supply well within 200 feet and any surface water intake for a public water system within 2,500 feet;
13. Total square footage of the lot, minimum useable disposal area on the lot, and all buildings;
14. Setback requirements of front, back and sides of property;
15. Name and telephone number of the preparer of the plot plan.

H. Soil Conditions:

1. Soil depth separation from the bottom of the leachfield trench to the highest anticipated level of groundwater shall not be less than five (5) feet for any horizontal dispersal field or ten (10) feet for any vertical leaching pits.
2. A permeable soil strata with a percolation rate equal to or faster than the OWTS design rate, but not faster than five (5) minutes per inch, shall extend to a depth of at least one foot below the bottom of the leachfield trench.

I. Minimum Disposal/Dispersal Field Area:

1. The minimum disposal field area shall conform to Table 1 - Percolation Rates and Minimum Usable Disposal Areas below. Minimum lot size for parcels with OWTS is one (1) net acre of useable area with an individual domestic well or public water system.
2. The minimum disposal area shall conform to the following:

Table 1 - Percolation Rates and Minimum Usable Disposal Areas	
Percolation Rate (minutes/inch)*	Minimum Usable Disposal Area (square foot)
5-10	6,000
11-20	8,000
21-40	10,000
41-60	12,000
61-80	14,000
81-100	16,000
101-120	18,000
121-140	20,000
141-160	22,000
161-180	24,000
180+	++

* Determined in accordance with procedures contained in current U.S. Department of Health, Education and Welfare "Manual of Septic Tank Practices", E.P.A. Manual, Onsite Wastewater and Disposal Systems or an alternative method approved by the Division of Environmental Health Director.

++ A minimum parcel size of five (5) acres is required when percolation rates are greater than 180 minutes per inch.

J. Unacceptable Disposal Areas:

1. Installation of drain fields in low lying areas and areas subject to flooding, or in areas where groundwater reaches the ground surface at certain times of the year, are not acceptable unless otherwise approved by the Division of Environmental Health.

2. The following areas are also considered unsuitable for the location of disposal areas, disposal replacement and expansion areas;
 - a. Areas within any easement which is dedicated for surface or subsurface improvement and any paved area.
 - b. Areas for vehicle parking.
 - c. Areas not owned or controlled by property owners unless said area is dedicated for wastewater disposal purposes.
 - d. Areas occupied or to be occupied by structures.
 - e. Slopes for effluent disposal greater than 20 percent.

K. Minimum Horizontal Separation Distances:

Table 2 – Minimum Horizontal Separation Distances (in feet)			
Facility	Septic Tank or Sewer Line	Leach Field	Leach Pit
Domestic Well*	50	100	150
Public Well*	100	150	200
Flowing Spring or Stream ¹	100	100	100
Drainage Course or Ephemeral Stream ²	25	50	50
Cut or Fill Bank ³	10	4 x H	4 x H
Property Line ⁴	25	50	75
Structures	5	10	15
Lake, Ponds, Reservoir, Wetlands ⁵	200	200	200
Public Water System Surface Water Intake	See foot notes 6 and 7 below	See foot notes 6 and 7 below	See foot notes 6 and 7 below
Unstable Land Mass	100	100	100

*Merced County Code, Chapter 9. Wells, Section 9.28.060. C. 5. A. requires a minimum 50 annular seal that is 2.5 times greater than the State minimum standard established by the Department of Water Resources.

¹As measured from the line which defines the limit of a 10-year frequency flood.

²As measured from the edge of the drainage course or stream.

³Distance in feet equal to four times the vertical height of the cut or fill.

⁴This distance shall be maintained when individual wells are to be installed and the minimum distance between waste disposal and well cannot be assured.

⁵As measured from the high water mark of the reservoir or flowing water body.

⁶Where the effluent dispersal system is within 1,200 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body.

⁷Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.

L. Minimum Requirements.

1. Septic Tank Specifications:

a. Minimum septic tank size is as follows:

Capacity of Septic Tanks	
Number of Bedrooms	Liquid Capacity in Gallons
1 - 3	1,200
4	1,500
5 ¹	1,800

¹Tank capacity shall be increased by three hundred (300) gallons per bedroom for each additional bedroom over five (5).

2. To compute the septic tank size for commercial or institutional use, the following formulas are used:

a. Waste/sewage flow, up to 1,500 gal/day -

$$\text{Flow} \times 1.5 = \text{tank size}$$

b. Waste/sewage flow over 1,500 gal/day -

$$(\text{Flow} \times 0.75) + 1,125 = \text{tank size}$$

3. Materials of Construction:

a. The septic tank shall have a minimum of two compartments and be constructed entirely of reinforced watertight precast concrete.

b. Wood or metal septic tanks are not permitted.

c. Tanks constructed of durable and non-corrodible synthetic materials may be allowed subject to the approval of the Division of Environmental Health.

4. The inlet and outlet baffles (tees) shall extend at least four (4) inches above and twelve (12) inches below the water surface.

5. The inlet compartment shall not be less than two-thirds (2/3) of the total capacity of the septic tank.

6. Access to the septic tank shall be provided by at least two (2) manholes, a minimum of twenty (20) inches in diameter. One shall be located over the inlet compartment, the other over the outlet compartment.

7. Each compartment of any septic tank, where the septic tank is installed greater than two (2) feet below ground surface, and all holding tanks, shall be accessible via a water tight riser to or above grade, with a bolted or locked water-tight lid. The tank-riser interface shall be water-tight.

8. NSF/ANSI certified effluent filters (less than 3/16" passage) are required for new and replacement septic tanks.

9. Septic tank construction shall conform to California Plumbing Code regulations. Inlet and outlet baffles or compartment partitions shall have a free vent area equal to the required cross sectional area of the house sewer or private sewer discharging therein to provide free ventilation above the water surface from the disposal field through the septic tank, house sewer and stack to the outer air.

10. Horizontal drainage piping from the building or other sewage source to the septic tank shall be a uniform slope of not less than one quarter (1/4) inch per foot. In special cases the slope may be reduced to one-eighth (1/8) inch per foot.
11. Minimum horizontal distance from the septic tank to building foundation is five (5) feet.
12. The building or other sewage source stub out shall exit the building or other source no less than six (6) inches and not more than eighteen (18) inches below adjacent finish grade.
13. The septic tank shall be covered with not less than twelve (12) inches of soil.

M. Leachfield:

1. Leachfield Specifications:

- a. Leachline trench absorption area shall be based on the sidewall area of the trench.
- b. Gravity flow leachlines (perforated pipe) shall be laid level in the trench with a maximum length of 100 feet.
- c. Drain rock shall be round, a minimum of three-quarter (3/4) inch and not more than two and one-half (2-1/2) inch, washed gravels, relatively free of fines, sand, very fine silt and clay (no crushed rock).
- d. In clay soils, smeared or compacted surfaces of horizontal trenches and shallow pits must be scored prior to filling with drain rock or installation of other approved materials.
- e. Distribution boxes shall be constructed of watertight precast concrete with an integral bottom and shall be designed and positioned to assure equalized flow. All inlets and outlets shall be sealed.
- f. Leachfields shall not be installed in saturated soils.
- g. Leachlines must be ten (10) feet away from any building foundation.
- h. Minimum distance between leachlines is ten (10) feet measured horizontally center to center.
- i. A minimum fifty (50) foot perimeter setback is required from all lot lines adjacent to undeveloped property and a five (5) foot perimeter setback is required from all other parcel lot lines.
- j. Leachlines shall not be less than four (4) inches in diameter and laid with one-quarter (1/4) to one-half (1/2) inch perforations.
- k. Before leachlines are laid, approved drain rock shall be placed in the trench to a minimum depth of eighteen (18) inches. A minimum cover of four (4) inches of drain rock over the leachline is required. A cover of untreated building paper, or suitable substitute (e.g., fine mesh geotextile fabric), shall be used to cover the drain rock to prevent trench backfill materials from entering the voids in the emplaced drain rock; there shall be a minimum backfill of one foot of earthen cover over the building paper.
- l. Distribution boxes shall be constructed at the head of each subsurface disposal field. The box shall be at least twelve (12) inches across inside. Each leachline shall be connected individually. Distribution box alternatives may be approved by the Division of Environmental Health Director.
- m. The leachfield trench should not be more than three (3) feet wide nor less than two (2) feet wide for maximum secondary treatment.
- n. A standard leachline is considered to be three (3) feet wide, three (3) feet deep with a length as required.

- o. Chamber systems may be installed as an alternative to drain rock. Decreased leaching area for IAPMO certified dispersal systems, such as chambers, using a multiplier equal to and less than 0.75 may be allowed.
- p. The minimum soil cover for standard systems shall be at least six (6) inches below surface grade for pressure systems and twelve (12) inches below surface grade for standard gravity systems.

N. Sewage Flow Specification:

1. Sewage Flow Specification Applicability. The sewage flow from a residential OWTS shall be based on a minimum of one hundred fifty (150) gallons per bedroom per day.
 - a. Other OWTS shall be designed according to site specific percolation tests, loading rates, and other factors.
 - b. Other design flows shall be approved by the Division of Environmental Health upon submission of supporting data and calculations.

O. Special Design OWTS:

1. Special Design OWTS Applicability. Special design OWTS are required for OWTS that do not comply with the design criteria for standard systems including systems where the soil conditions, topography, or ultimate use are included in, but, not limited to the following categories.
 - a. Disposal field soils where percolation rates are slower than sixty (60) minutes per inch or faster than five (5) minutes per inch.
 - b. Installation on slopes greater than ten (10) percent and not more than twenty (20) percent.
 - c. Disposal systems for other than single family residential use.
 - d. Disposal systems requiring advanced or alternative treatment (e.g., advanced treatment units/ATU).
2. Special Design OWTS System Designer. Special systems shall be designed by qualified professionals.
3. Special Design OWTS Processing Procedure. The plot plan and supporting data relative to the proposed site must be submitted to the Division of Environmental Health for evaluation and approval.

P. Alternative OWTS (ATS) and Advanced Treatment Units (ATU). Where centralized public waste water services are not proposed for a subdivision or certain commercial properties relying on individual onsite waste water treatment systems, the Division of Environmental Health will require Nitrogen-Reducing ATS or other approved ATU to be properly installed, operated and maintained.

1. Alternative OWTS (ATS) and Advanced Treatment Units (ATU) Applicability. The intent of this requirement is to reduce wastewater concentrations and protect surface and groundwater resources, particularly in higher density OWTS applications. The following conditions shall be applied to all major subdivisions and certain commercial properties approved on or after November 18, 2005 as determined by the Division of Environmental Health.
2. Nitrogen-Reducing Advanced Treatment Systems requirements for all major subdivisions and certain commercial properties in Merced County:
 - a. Specially designed nitrogen-reducing OWTS are required which release an effluent concentration not to exceed 50% of the influent total nitrogen concentration. The

specific system that meets this requirement shall be approved by the Division of Environmental Health prior to installation.

- b. Testing and performance certification of the nitrogen-reducing system is required by a third party independent organization (e.g., State or Federal agency, college/university, NSF, ANSI, etc.). Certification shall document at least six (6) months of successful operation during which the effluent total nitrogen did not exceed fifty (50) percent of the influent total nitrogen concentration.
- c. The property owner is responsible for the proper ongoing operation and maintenance of the nitrogen-reducing system, ATS and ATU. The owner shall demonstrate to the Division of Environmental Health, the approved system was installed and is continuously operated and maintained in accordance with manufacturer's requirements and recommendations. Performance reporting is required, with specific information and intervals (e.g., annual), to be determined by the Division of Environmental Health Director which may include, but not limited to, influent and effluent concentrations for nitrogen compounds, total suspended solids (TSS), biochemical oxygen demand (BOD), component function status, failures, and repairs.

Q. Duck Clubs. Duck clubs contemplating OWTS reliance often experience difficulty meeting setback requirements related to surface water and/or groundwater and percolation rates are routinely greater than 60 minutes per inch in these settings requiring large disposal areas. When waterfowl ponds are flooded, area groundwater rises as soils become saturated. As a result, required minimum separation from the bottom of leach lines to anticipated high groundwater is difficult or impossible to achieve.

1. Minimum Requirements:

- a. All human toilet waste material contained in a chemical toilet or a watertight holding tank shall be serviced as frequently as necessary and/or at least once a year at the end of the season by a Licensed Septic Tank Pumper with ultimate disposal at an authorized location.
- b. Graywater from kitchen sinks, showers or laundry facilities may be discharged to a stabilization/oxidation pond in a design approved by the Division of Environmental Health.
- c. The Division of Environmental Health may prescribe more stringent requirements if considered necessary for the protection of public health and safety.
- d. Existing Duck Club OWTS may continue using their present OWTS provided a potential or actual nuisance or health and safety hazard is not created, and the facilities are upgraded to the minimum required specified in this chapter upon any major modification or replacement of existing structures.
- e. Caretaker dwelling units occupied on a permanent basis shall have a special designed OWTS approved by the Division of Environmental Health.

3. Holding Tank/Septic Tank Criteria for Duck Clubs. The Division of Environmental Health may permit septic-tank-only systems for Duck Clubs under the following conditions:

- a. The minimum holding tank size is 1,800 gallons for 1, 2, and 3-bedroom dwellings. Each additional bedroom (or equivalent sleeping area) requires an increase in tank capacity of 300 gallons.
- b. Holding tanks may be single compartment, all sewage holding tanks must be water tight.

- c. Holding tanks (all compartments) shall be pumped dry at the end of each season's use and in-between as needed. No septic tank or holding tank shall be allowed to overflow.
 - d. Each compartment of any septic tank or holding tank shall be accessible via a water tight riser to or above grade, with a bolted or locked water-tight lid. The tank-riser interface shall be water-tight.
 - e. Septic tanks are considered structures by the Building Codes. All tanks, risers, and lids shall be compliant with applicable building and plumbing codes enforced by the Merced County Department of Public Works, Division of Buildings and Safety.
 - f. These tanks can be subject to buoyant forces from shallow groundwater particularly when empty; tie down systems may be necessary.
3. Septic Tank and Leach Line Systems Criteria for Duck Clubs. Septic tank and leach line systems may be allowed at Duck Clubs only if all of the following conditions are met:
- a. All septic tank and leach line setbacks shall be maintained at all times, including setbacks to surface water; and
 - b. A minimum of five (5) feet of separation can be maintained between the bottom of the leach trench and highest historical and anticipated groundwater level; and
 - c. The soil percolation rate in the proposed leach line/dispersal area is between 5 and 60 min./inch; and
 - d. Leach lines on systems approved for such are constructed no deeper than standard systems; and
 - e. Septic tanks shall meet the septic tank requirements described in this chapter; and
 - f. Tank size and total leach line length shall be determined by the Division of Environmental Health; and
 - g. The septic tank shall be covered with not less than twelve (12) inches of soil.

9.54.090 Implementation

- A. The Division of Environmental Health shall be responsible for implementation of this chapter and regulations adopted by the Board of Supervisors.
- B. The Division of Environmental Health shall establish a permitting system to authorize the construction, repair, use, abandonment, and destruction of any OWTS within the unincorporated areas of Merced County and incorporated areas where authorized.
- C. The Division of Environmental Health shall have authority to investigate any activity subject to this chapter. Compliance with this chapter will be determined based on the submission of a technical report to the Division of Environmental Health. The Division of Environmental Health is authorized to enforce the prohibition of any activity that is determined to be in violation of this chapter or regulations adopted by the Board of Supervisors.
- D. The applicant, permit holder or other interested person or entity may appeal an administrative determination made by the Division of Environmental Health under this chapter which: (1) finds that an application is complete or incomplete; (2) establishes or modifies operating conditions; (3) grants or

denies a permit; or (4) suspends or revokes a permit. Administrative appeals under this section must be made in writing, must clearly set forth the reasons why the appeal ought to be granted, and must be received by the clerk of the board within fifteen (15) calendar days of the postmark date on the envelope that transmits the administrative determination. Any appeal that is not timely filed, or that is not accompanied by the required fee, will be deemed ineffective and the administrative determination that is being appealed will become final. The Board of Supervisors shall fix a reasonable time for the hearing of an appeal of an administrative determination at a regularly scheduled meeting of the Board of Supervisors. The Board of Supervisors shall provide written notice of the appeal hearing to the appellant and all interested parties and to all landowners within one-quarter mile of the parcel where operations will occur. The Board of Supervisors shall hear the appeal and issue a decision within thirty (30) days after the hearing. The Board of Supervisors may take any appropriate action upon the original administrative action that was appealed, including granting or denying the appeal in whole or in part, or imposing, deleting or modifying operating conditions of the permit. The decision of the Board of Supervisors shall be final forthwith.

9.54.100 Authority

A. General Authority. The Division of Environmental Health Director, or authorized designee(s), is authorized to take all necessary action to enforce the provisions of this chapter and to carry out any other special enforcement programs initiated by order or resolution of the Board of Supervisors.

B. Right of Entry and Inspection. The Division of Environmental Health Director, or authorized designee(s), may enter at any and all reasonable times any places, property, premises, or enclosure for the purpose of carrying out any activity required or authorized by the provisions of this chapter, including to make examinations and investigations to determine whether any provision of this chapter is being violated. Upon request, the County personnel entering and inspecting shall provide adequate identification. Except under extreme circumstances, an inspection warrant shall be obtained if entry is refused.

C. Stop Orders. The Division of Environmental Health Director, or authorized designee(s), is authorized to issue stop orders to prohibit further construction or use of OWTS or related facilities that any of them deem in violation of the provisions of this chapter. Such stop orders shall remain in effect until violations are corrected.

D. Citations. The Division of Environmental Health Director or authorized designee(s), are authorized to issue citations and/or abatement orders to persons for violations of the provisions of this chapter.

E. Enforcement Costs. The Division of Environmental Health Director, or authorized designee(s), is authorized to recover from the property owner or the person in control of the property, all administrative costs associated with the enforcement of the provisions of this chapter or the enforcement of any condition to the issuance or granting of any permit or entitlement provided for by this chapter.

F. No Entitlement for OWTS with Violations. No permits of any kind or other entitlement shall be accepted or processed for OWTS in violation of provisions of this chapter unless such entitlement corrects the violation.

G. Revocation or Modification for Cause. A permit may be revoked or modified for cause as provided by the provisions of this section. For purposes of this section, such modification may include the

modification of the terms of the permit itself or the waiver, alteration, and imposition of new conditions.

1. Grounds for Revocation or Modification. Revocations or modifications may be made upon a finding of any one or more of the following grounds:

- a. That such permit was obtained or extended by fraud;
- b. That one or more of the conditions upon which such permit was granted have been violated or is not followed;
- c. That the use for which the permit was granted is so conducted as to be a nuisance or detrimental to the public health, welfare, or safety; or unreasonable within the meaning of Article X, Section 2 of the California Constitution.

2. Initiation of Action. An administrative action to revoke or modify may be initiated by order of the Board of Supervisors, on its own motion or on the request of the Division of Environmental Health Director, or authorized designee(s).

3. Notice, Review Hearing, and Decision. An action to revoke or modify shall be noticed, reviewed, heard, and decided in the same manner and by the same authority that originally granted the permit.

4. An action to revoke or modify may be appealed pursuant to the appeal procedure.

H. Any OWTS use which is established, operated, used, erected, moved, altered, enlarged, or maintained contrary to the provisions of this code, is declared to be unlawful and shall be subject to the remedies and penalties set forth in this chapter.

9.54.110 Penalty for violation

A. Any person violating any of the provisions of this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished as set forth in Section 1.28.020 of Merced County Code. Each person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or allowed and shall be punishable accordingly.

B. In addition to or in lieu of the penalty provisions or remedies set forth in this chapter, any violation of any of the provisions of this chapter, and any condition caused or allowed to exist in violation of any of the provisions of this chapter, shall be deemed a public nuisance and shall, at the discretion of the County, create a cause of action for injunctive relief, including but not limited to any remedy under Chapter 5 (commencing with Section 17200) of Part 2 of Division 7 of the Business and Professions Code.

9.54.120 Severability and effect

A. The provisions of this chapter are hereby declared to be severable. If any provision, clause, word, sentence or paragraph of this chapter or the application thereof to any person, establishment or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this chapter.

B. The prohibitions of this chapter shall not be applicable to the extent that their application would result in a violation of the Constitution or other laws of the United States or the state of California. The Division of Environmental Health shall issue a permit to authorize conduct otherwise prohibited under

this chapter if the applicant demonstrates that such permit is necessary to avoid such a violation of State or federal law.

9.54.130 Conflicting regulations

Where there is a conflict between the regulations of this chapter and any other chapter of local, state or federal regulation, the greater or more stringent regulation or restriction shall apply and shall be enforced by persons authorized in this chapter.

This ordinance shall become effective and be in full force on and after thirty (30) days of its passage and adoption, and prior to the expiration of fifteen (15) days from the passage and adoption thereof, shall be published in a newspaper of general circulation printed and published in the County of Merced, State of California, together with the names of the members of the Board of Supervisors of the County of Merced, voting for or against the same.

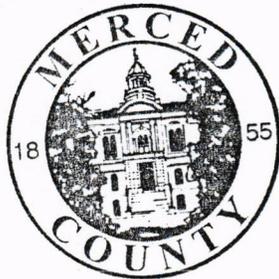
The foregoing ordinance was passed and adopted by the Board of Supervisors of the County of Merced, State of California, at a regular meeting thereof, held on the 6th day of December, 2016 by the following vote:

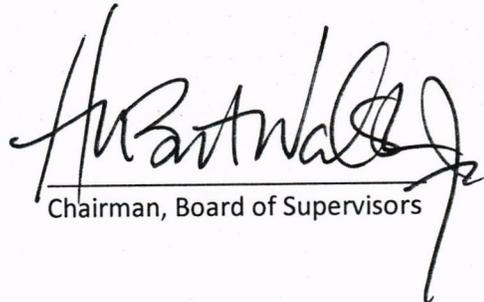
SUPERVISORS

AYES: Hub Walsh, John Pedrozo, Daron McDaniel, Deidre F. Kelsey, Jerry O'Banion

NOES: None

ABSENT: None

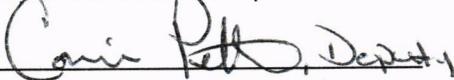



Chairman, Board of Supervisors

ATTEST:

JAMES L. BROWN

Clerk of the Board of Supervisors

By: 
Corie Pelt, Deputy

APPROVED AS TO LEGAL FORM AND EFFECT:

MERCED COUNTY COUNSEL

BY: 