Keith Wimer
1101 14th Street, Los Osos, CA 93402

April 2, 2008
Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

RE: Response to Basin Plan Revisions

Honorable Board Members:

The proposed revisions to the Basin Plan should not be approved.

As recommended, the revisions are vague and confusing, impose unknown and unfunded costs on individuals and agencies, and they're inconsistent with applicable standards, policies, laws, and ordinances, including the draft state-wide AB 885 ordinance. (1)

The changes, if approved, will discourage on-site system use, water recycling, decentralized (cluster) systems, and possibly STEP/STEG systems in the Region, at a time when local, state, and federal agencies are looking to these options to help communities protect water quality and deal with looming water and energy shortages in cost-effective ways. In other words, the changes may do more harm than good to the Region's waters, people, and economy. (1)

Rather than attempt to amend these proposals, your Board should postpone implementation of any new regulations relative to onsite systems and discharge until you have thoroughly reviewed related laws and policies, industry standards, current research on new onsite technology, additional stakeholder input from the Region, and the progress achieved at the state level on AB 885. I've provided links to a number of relevant resources. (2)

At a minimum, Basin Plan changes should use the same definitions and terminology used by virtually all wastewater authorities, and they should incorporate many more of the standards from the draft 885 ordinance. New language should also incorporate state and federal policies prioritizing sustainability, water conservation, energy-efficiency, and adequate funding. Finally, new regulations should be consistent with Basin Plan goals and the Porter-Cologne Act, which require economic feasibility and water recycling to be considered in water quality objectives. Note that the only references to these were deleted from the sections under consideration (see Chapter 4, VIII.D, pages 5 & 6). (3)

The Region is looking to your Board to lead us into a 21st Century, in which the people and businesses of the Region have ample water, as well as clean water, to support a thriving economy. Limiting the use of onsite and decentralized systems can actually take us in the opposite direction. (1)

A complete history and review of the AB 885 ordinance development process, with stakeholder input, is presented in the *National Decentralized Water Resources Capacity Development Project*, June 2004, available at http://www.ndwrcdp.org/userfiles/ACFoc1vrb.pdf. This contains a "Model Ordinance" by experts in the field of wastewater (Appendix K). The SWRCB website contains the AB 885 draft ordinance and EIR documents. Note that the SWRCB identified potentially "significant impacts" from the AB 885 ordinance (see AB 885 *Initial Study*, SWRCB website). Attached are more complete explanations of why the proposed changes should not be approved (with citations and attachments), along with a summary explaining why adoption of this language will lead the Region toward a less sustainable future. .

Respectfully,

Keith Wimer

Attachments: Additional Reasons, Sustainability Summary, Works Cited, Attachments #1-#10 (38 pages total)

Response to proposed changes to Chapters 4 & 5 of the Central Coast Basin Plan

Keith Wimer, 4/7/08

Reason #1—Unfunded mandates will lead to ineffective implementation and conflicts. (4)

Per the May 9 "Staff Report," upon approval of the "Resolution," all homeowners in the Region not hooked up to a community system will be subject to the new provisions. Where it is "mutually beneficial," local agencies can negotiate MOU's that require them to implement management plans, which "...regulate siting, design, construction, monitoring, and performance" of systems "in accordance with criteria specified in the Basin Plan" (p. 2). Agencies which sign MOUs will have to revise ordinances to align with new requirements, issue permits for system repairs, enforce the new criteria, and "identify additional measures ...to identify and address areas of degraded groundwater or surface water quality where onsite wastewater treatment systems are a potential source of pollution" ("Staff Report," p. 3). With numerous, open-ended, and unfunded requirements, it is doubtful agencies will choose to enter into MOUs. If they do, they will incur considerable costs for managing the program, and they will undoubtedly pass the costs onto consumers in the form of high fees or rate increases.

Homeowners not covered by agency MOUs, must submit applications to the Regional Board, pay fees, and meet all the proposed new criteria. Referring to Resolution 69-01, new language in Chapter 5 reads, "The Resolution ...states Regional Board intention to take enforcement action, if local jurisdictions fail to manage wastewater systems in a water quality protective manner" ("Staff Report," p. 2; Chapter 5, Part III, page 1). In the not too distant future, therefore, thousands of people within the Region will be required to meet all proposed regulations, pay fees, have their systems tested and inspected for compliance with new standards, pay for needed upgrades—or face enforcement actions. An unknown number of homeowners will be told they must stop using their systems because they're in a prohibition zone.

Although the "Resolution" "...finds (the) costs to be reasonable," agencies and individuals are not likely to ("Resolution,"p.2). Both are likely to avoid full implementation of the requirements, due to costs, resulting in poorly implemented plans. The USEPA considers inadequate funding a main reason for ineffective management plans, which, in turn, leads to poor onsite system performance. It suggests that "statewide public financing programs" and "cost-share grants" are needed for successful programs (USEPA, 2008) (also see Attachment #2).

The authors of AB 885 recognized the significant cost impacts of a statewide ordinance, so added, "It is the intent of the Legislature to assist private property owners with existing systems who incur costs as a result of the implementation of the regulations under this section by encouraging the state board to make loans..." (Water Code § 13291.7). However, the current proposed changes do not to provide assistance for agencies or individuals. Without a funding source for the proposed changes, the changes will undoubtedly meet considerable resistance from many sides. A percentage of homeowners and agencies will fail to comply, forcing the Regional Board to increase oversight and enforcement actions—adding significantly to Board workloads to achieve marginal results.

Reason #2—Vague, confusing, and open-ended language will lead to ineffective implementation and conflicts. (1)

The title and wording of Chapter 4, Section VIII.D. makes the intent of the section confusing (p. 1) (also see Attachment #1, p. 1). A person reading the title, with "Onsite" added, is not sure whether the language refers to decentralized (cluster) systems and/or STEP/STEG systems along with onsite systems. **(Note: The title of VIII.D., and several subsections are different from the *Basin Plan* posted on the website; an added word "onsite" appears in the version with proposed changes, but it is not underlined, nor**

are other altered or deleted *Basin Plan* sections identified with underlines or strikethroughs, e.g., Subsection VIII.D.3.f. "Community System Design"—see Attachment #5, p.2). If the language of this section does refer to decentralized and STEP/STEG systems, it should say so—and if it applies to low-pressure and vacuum systems, it should say so as well. All of these systems have onsite components and can be part of decentralized systems. If the language does not apply to low-pressure and vacuum systems, or centralized gravity systems, where are these systems covered?

Virtually all official wastewater resources use the terms "on-site, decentralized, and centralized" when categorizing wastewater systems. They also identify STEP/STEG, low-pressure, and vacuum systems specifically. If the proposed changes are to be clear, they must use standard terms and identify these major types of systems specifically.

When compared to the EPA definition of "decentralized" system, the revised proposed *Basin Plan* definitions for "community onsite" and "onsite system" highlight the need for clear terminology. The proposed language defines "Community systems" as "(1) residential wastewater treatment systems serving more that 5 units or more than 5 parcels, or (2) commercial institutional or industrial systems treating sanitary wastewater equal to or greater than 2,500 gallons per day...," and it defines onsite systems by saying "onsite wastewater systems may be used to treat and dispose of wastewater from: (1) individual residences; (2) multi-unit residences; (3) institutions or places of commerce" (Chapter 4, VIII.D., page 1) The USEPA's 1997 Report to Congress on the *Use of Decentralized Wastewater Treatment Systems (p. A-1)* defines a cluster system as "a decentralized wastewater collection and treatment system where two or more dwellings, but less than an entire community, is served," and Crites and Tchobanoglous, in a widely-used text book entitled *Small and Decentralized Wastewater Management Systems* state "Decentralized wastewater management (DWM) may be defined as the collection, and treatment, and disposal/reuse of wastewater from individual homes, clusters of homes, isolated communities, industries, or institutional facilities, as well as from portions of existing communities at or near the point of waste generation" (Hamilton, et al, 2004,p. 3; Crites and Tchobanoglous, 1998, p. 2). The draft statewide ordinance refers to "Onsite Wastewater Treatment Systems (OWTS)" (p. 1). The ordinance does not refer to "Community Onsite Systems." Obviously, the proposed language changes must be clearer about what they cover.

As noted in Attachment #1, the proposals also have open-ended language throughout. Of course, vague, confusing, and open ended language invites inconsistent and arbitrary interpretations and application, which, in turn, causes conflicts, litigation, additional staff time, and large costs for everyone involved. Note how many times language leaves unanswered questions, all to be decided by the Executive Officer (see Attachment #1). Clearer more specific and complete language/provisions are essential if the policy is to be implemented without prohibitive costs and conflicts.

Reason #3—Not Consistent with other standards and ordinances (5)

Chapter 5 (Subsection III.F. page 5) begins by stating "The Regional Board intends to discourage high density development on septic tank disposal systems and generally will require increased size of parcels with increasing slopes and slower percolation rates." It then states, "Unsewered areas having high density (one acre lots or smaller) should be organized into septic tank management districts and sewerage feasibility studies should be complete in potential problem areas. Local implementation should be encouraged by Regional Board actions." This prescriptive (yet vague) language strongly suggests that the Regional Board will encourage "sewerage" (i.e., centralized systems) in areas with parcels under one acre. This runs contrary to current expert opinion, since onsite systems (and decentralized systems) are considered viable options (and often the preferred option) for some urban settings and homes with small lot sizes. USEPA states, "With proper management oversight, alternative systems (e.g., recirculating sand filters, peat-based systems, package aeration units) can be installed in areas where soils, bedrock, fluctuating ground water levels, or lot sizes limit the use of conventional systems," and it adds, "The most arbitrary siting requirement, however, is the minimum lot size restriction incorporated into many state and

local codes. Lot size limits prohibit onsite treatment system installations on nonconforming lots without regard to the performance capabilities of the proposed system" (USEPA, 2008).

The proposed changes are also inconsistent with other related standards and ordinances. For example, the draft version of the AB 885 ordinance uses a different set of terms and definitions. It also requires homeowners to have "a service provider inspect" the septic tank every five years to determine if pumping is needed, and it requires owners to correct malfunctioning systems "within 90 days"—whereas, the proposed language calls for mandatory pumping every five years, and system repairs for alternative systems within 48 hours (Chapter 4, VIII.D., p. 5 & 11; SWRCB, 2007) (also see Attachment #4). Similarly, the 885 draft ordinance, does not prohibit "onsite discharge...in any area where continued use of onsite systems constitutes a public health hazard, an existing or threatened condition of water pollution, or nuisance" Chapter 4, VIII.D., p. 8, Item 20). Instead, it requires that onsite systems located near impaired water bodies provide supplemental treatment at levels necessary to protect the resource (SWRCB, 2007, page 16) (also see Attachment #4). Overall, the draft AB 885ordinance recognizes that advanced onsite systems can treat wastewater to levels equal to centralized systems, if they are well-managed. Therefore, it uses a combination of performance-based and prescriptive standards.

A sample ordinance prepared by experts at Chico State includes procedures to promote the safe use of innovative systems, while EPA Onsite Guidelines provide for five levels of onsite management, depending upon specific conditions (California Wastewater Training and Research Center, Appendix K; USEPA, 2003) (also see Attachment #3). The 1998 Crites and Tchobanoglous textbook offers guidelines for effective management plans, as do several other resources (e.g., Nelson, 1998). Your Board should review these ordinances, industry standards, and related expert input—with serious consideration given to delaying implementation until a statewide, standardized policy per AB 885 can be developed. Such ordinance is sure to address the concerns mentioned here.

Reason #4—Not Consistent with Basin Plan Goals, Porter-Cologne Act, Water Code, and other laws (3)

Basin Plan goals emphasize the consideration of recycling in Basin Planning, as does the Porter-Cologne Act and the Water Code (Porter-Cologne Act § 13510 et seq and Water Code § 13520 et seq.) (see Attachment #5 for *Basin Plan* goals). Proposed changes, unfortunately, remove the only reference to "reuse" on page 5. (Chapter 4, VIII.D (p. 5). Onsite recycling and discharge of treated water close to where it is used is one of the most cost-and energy-effective ways to save water and to recharge local aquifers Centralized systems often transport the water out of a basin requiring energy-intensive pumping systems to transport it back to less-effective central recharge locations (Asano, et al, 2006; California Wastewater Training & Research Center, 2003, Pinkham, et al, 2004; Nelson, 1998). Modern onsite systems can treat water to tertiary standards, very close to the levels of centralized systems, while natural percolation provides free additional tertiary treatment (Asano, et al, 2006; California Wastewater Training & Research Center, 2003; Pinkham, et al, 2004). Therefore, onsite and decentralized systems can potentially clean up degraded basins faster than centralized solutions by replacing degraded aquifer water more effectively than centralized recharge systems. Thus, Basin Plan goals may be achieved more rapidly with onsite/decentralized systems than with centralized options.

Also, the Basin Plan and Porter-Cologne Act require economic considerations in Basin Planning. Unfortunately, one of the only references to costs (i.e., "cost effectiveness analysis...to select the recommended plan") was removed by the proposed changes (Porter-Cologne Act § 13515 and §13527; Chapter 4, VIII.D, p. 6)

The California Water Plan (Water Code § 10004-10013) calls for the "orderly and coordinated control, protection, conservation, development, and utilization of the water resources of the state..." which include strategies for "water conservation and water recycling." The Governor's Water-Energy Subgroup of the Climate Action Team (WET-CAT) recently presented five broad strategies to reduce global warming pollution from water use in California, including water recycling, water conservation, water infrastructure

efficiency, use of renewable energy, and the management of storm water in urban areas. A state law sponsored by the Planning and Conservation League, now going through the Legislative process, AB 2153, would ensure that the state adopt a "comprehensive water conservation plan" with feasible, cost-effective" targets" (*Planning and Conservation League Insider*, March 28, 2008) Clearly, state priorities support greater conservation and water recycling; onsite and decentralized systems can help achieve these goals.

Reasons #5—Reduced wastewater project funding opportunities

The Porter-Cologne Act and California Water Code give priority consideration to projects that emphasize the recycling of water. The SWRCB also has grant funding sources for low-impact and for onsite projects. Because proposed language changes would discourage use of on-site and decentralized projects, they would reduce opportunities for these grants. (1)

Reason #6—EIR is not adequate

The proposed changes also are sure to cause significant environmental impacts due to their tendency to reduce the use of onsite systems and onsite recharge provided by the systems. Note that the SWRCB determined an EIR was required for the AB 885 statewide ordinance (see *AB 885 Initial Study*, SWRCB website). (6)

Reason #7—Lack of support from the CCWQCB Staff precludes effective onsite regulation (7)

The Executive Officer and Staff have not supported innovated onsite systems, STEP/STEG systems, or onsite management plans in the past. The proposed changes would give ultimate authority to the Regional Board Executive Officer (and by implication the Regional Board Staff) to decide when, if, and how on-site, decentralized, and STEP-STEG systems and management plans would be approved and designed. (see Attachment #1). With Los Osos as the most obvious case, CCWQCB staff has shown an unwillingness to negotiate or oversee effective onsite management plans, and/or consider alternative onsite systems. The Executive Officer issued a letter refusing to approve use of the Reclamator, apparently under any circumstances, i.e., even if it meets specific water quality standards. The letter also appears to preclude use of all onsite systems in Los Osos, and to prohibit all onsite water recycling, by stating that all onsite discharges in Los Osos are prohibited (see Attachment # 6). This application of regulation provides a good indication of how the Executive Officer will interpret and apply proposed changes. Of course, precluding all onsite system use and discharge in a "prohibition zone" severely limits available options for conservation and aquifer recharge in those areas. (13)

Additionally, the Executive Officer has generally advocated and been willing to approve just one wastewater option for Los Osos, a centralized conventional gravity system. He argued against a STEP/STEG system in his input for the 2001 Project EIR, contradicting the project consultant and important authorities (e.g., Crites and Tchobanoglous) by stating that STEP/STEG systems had greater I/I than conventional gravity systems (see Attachment #7). In his response to the *Los Osos Wastewater Project (LOWWP) Rough Screening Report*, he contradicted Carollo Engineers and the NWRI Review Panel, questioning whether STEP/STEG systems weren't fatally flawed. On the other hand, he has never questioned whether a conventional gravity system is right for Los Osos, despite its known problems associated with greater amounts of inflow and infiltration (I/I) (leaks of water into the system) and exfiltration (leaks of raw sewage out of the system), especially as the system gets older. The *LOWWP Fine Screening Report* estimates wet weather flow (the design criteria for the project) will be 200,000 gallons per day (gpd) more than a STEP/STEG system's average wet weather flow, due to I/I (Carollo Engineers, 2007, 1-11) (also see Attachment #10). The *LOWWP Load and Flow Technical Memorandum* estimates peak wet weather flows for a conventional gravity system will go as high as 2.5 million gallons or 180% of average wet weather flows (almost a million gallons per day more than STEP/STEG systems) (Carollo Engineers, 2008, p,10) (also see Attachment #10). Authorities, including the EPA and SWRCB, recognize

I/I as a main cause of sewer overflows (SSOs)—and SSOs as a main cause of beach closures and surface water pollution (Asano, et al, 2006; Pinkham, et al, 2004; Nelson, 1998; USEPA, 2000).

The SWRCB's Statewide General WDR for Sanitary Sewer Systems (Order No. 2006-0003-DWQ) requires sewer system management plans (SSMPs) be developed for every public system with collections systems over one mile in length to reduce SSOs (see Attachment # 9). This document, plus USEPA documents (e.g., USEPA, 2004; see Attachment #8), points out the serious public health hazard SSOs cause. Leading authoritiees, (e.g., Asano et al., 2006) indicate that conventional gravity systems result in more exfiltration than cluster and STEP/STEG systems, while the EPA points out that exfiltration is believed to be a main cause of ground water and surface water pollution throughout the U.S. (USEPA, 2000). The 2000 USEPA study concludes that pipes "above, but in close proximity to the ground water" are most susceptible (USEPA, 2000. p. 25)—a condition that likely describes many areas within the Central Coast Region. These facts, and the above WDR, suggests why the CCWQCB and its staff should be at least as concerned about discharges from centralized gravity systems as discharges from onsite and decentralized systems. The WDR, in fact, raises the question of whether conventional gravity systems should even be considered for sensitive and impaired groundwater areas—since they are proven to leak significantly more than sealed systems (i.e., STEP/STEG, low pressure, or vacuum) and cause harmful releases of raw sewage into the environment.

Finally, high levels of I/I entering conventional gravity systems reduce natural ground water recharge by siphoning off rain water that would otherwise percolate to ground water (Asano, et al, 2006; Pinkham, et al, 2004; Nelson, 1998).

SUMMARY OF WHY THE PROPOSED CHANGES WORK AGAINST SUSTAINABLE DEVELOPMENT

The net effect of the proposed changes will be to discourage onsite and decentralized systems, onsite recycling, and possibly STEP/STEG systems, pushing the Region toward large-scale, energy- and cost-intensive water/wastewater options, such as centralized gravity collection systems and water-import pipelines—despite growing evidence these options are unsustainable. (1)

Global warming is likely to reduce the availability of state water in the future, and many communities in California are now facing extremely costly upgrades of their conventional gravity sewers to stop the pollution of local ecosystems and water supplies resulting from system failures and overflows. Experts agree that onsite and STEP/STEG systems can significantly reduce the costs, energy use, and environmental damage of wastewater treatment and disposal.

At a time when it is incumbent upon your Board to find ways to encourage sustainable solutions, I ask that you don't take the Region in the other direction. (1)

The proposed Basin Plan changes—and the Basin Plan in general—reflect water policies and priorities that seem to be out-of-date. They narrowly focused on federal zero discharge goals, without adequate consideration of water scarcity, resource-effectiveness, or the social and economic impacts of high-dollar water/wastewater projects, no longer funded with federal dollars. Too narrow a focus on discharge goals, in fact, can lead to greater water scarcity and dependence on threatened state water by focusing too much on expensive centralized treatment and not enough on replenishment of the Region's aquifers.

The CCWQCB can lead this Region into a 21st Century with ample, clean water for the people and businesses of the Region, but it will take forward-thinking plans and goals, which emphasize long-term, whole-systems thinking and a sustainable development approach. State-of-the-art, fair-minded standards and policies will inspire cooperation among residents and agencies, allowing Regional Board to achieve and exceed its goals.

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ATTACHMENT 1

Problematic proposed revisions
Chapter 4 "Implementation Plan"
(Proposed amendments are underlined; my comments are italicized)

VIII.D. "Individual and Community Onsite Wastewater Systems"

Note: The wording in Section VIII.D (in the documents showing changes available on the CCWQCB's website) varies from wording Section VIII.D in the Basin Plan on the website. The differences include the title of the section, along with the titles and content of several subsections. In the Basin Plan the title of Section VIII.D is "Individual, Alternative, and Community Wastewater Systems;" on the version with proposed changes the title is "Individual, Alternative, and Community Onsite Systems" (emphasis added). If these changes have already been approved, they should be reconsidered because they add to the vagueness and potential confusion of the section. In effect, these changes (if they are changes) appear to have narrowed the definition of community systems to include only systems with on-site treatment components (e.g., STEP/STEG systems) and not other types of community systems (e.g., gravity, vacuum, and low-pressure systems). It is also not clear whether it refers to decentralized systems (or cluster) systems. For the Basin Plan to provide clear direction and adequately address and regulate wastewater alternatives, at a minimum, it must dedicate separate sections to (1) onsite systems, (2) STEP/STEG systems (and possibly other pressurized systems), and (3) gravity systems—as they all have different standards and potential benefits and requirements that would need to be addressed. (1)

VIII.D.1.a (Pages 3-5)

The first paragraph of the subsection (third paragraph, right column, page 3) states, "It is incumbent upon local governing jurisdictions to develop and implement programs to ensure conformance with this Basin Plan and local regulations" adding "Such programs shall include (but are not be (sic) limited to) procedures to…(with several procedures listed)" *This expands local agencies' responsibilities from administering "inspection programs" to complete responsibility for the brining all systems into "conformance" with the Basin Plan and local regulations. The Basin Plan's objectives and vague in most cases, while the "not limited to language makes the requirement even more open-ended.*

The sixth paragraph on Page 4 (left column) states, "Local agencies should ensure the terms of the enforcement actions are entered into the public record." *This places the obligation on local agencies to formally notify residents of Regional Board enforcement actions.*

The second paragraph on Page 4 (right column) states, "To protect this set-aside area (for a second leach field?—see note below) from encroachment, the local agency shall require restrictions on future use of the area as a condition of land division or building permit approval." *This requirement may make some lots unbuildable. Additionally, the language is vague, as "Onsite disposal area" was earlier defined (right column, paragraph 8, page 2) as "application area (trench, pit, bed) and surrounding 100' radius from any point in the application area that may be influenced by discharge from the disposal system."* (8)

The first paragraph on page 5 (right column) states, "Repairs to failing systems all shall be done under permit from the local agency. The local agency shall require failing systems to be brought into compliance with Basin Plan recommendations, requirements and prohibitions: or repair criteria consistent with locally implemented onsite management plan (approved by the Central Coast Water Board Water Board Executive Officer)." *This requires local agencies to formulate ordinances, police failing septic systems, and compel homeowners to comply with orders. It also appears to place liability on the local agency for failing to stop pollution. Further, the requirement is open-ended. The definition of a "failed system" (second paragraph, Page 2, right column) states, "Failed or failing onsite system is any system that displays symptoms of inadequate dispersion, treatment or assimilation of wastewater. These may include, but are not limited to, surfacing effluent, lush growth above the leach area, sluggish house drains, impacts to surface or groundwater from the onsite discharge, odors, frequent pumping, or backflow into tank when pumped." The "not limited to" in addition to the inclusion of "impacts to surface or groundwater" as criteria for failing systems leaves total discretion to the Executive Officer, as to whether a system is failing.* (13)

The second paragraph on page 5 (left column) states, "Land use changes should not be approved by the local agency until the existing onsite system meets criteria of this Basin Plan and local ordinances." *This expands the original language, which applied to "commercial, institutional or industrial uses" to include individual uses. This apparently prevents any land use changes, even General Plan Updates, until onsite systems meet all Basin Plan criteria.*

"Requirements" #5 (page 5) states "Wastewater Management Plans shall be prepared and implemented for urbanizing and high density areas served by onsite wastewater systems," *This apparently requires local agencies to undertake planning efforts but does not refer to funding sources.* (4)

"Requirements" #6 (page 5) states, "Local jurisdictions shall require replacements or repairs to failing systems to be in substantial conformance (to the greatest extent practicable) with Basin Plan recommendations, requirements and prohibitions or the local onsite wastewater management plan." *Since a local onsite wastewater management plans "shall be approved by the Central Coast Water Board Executive Officer," (third paragraph, page 6, right column), little authority will reside with local agencies on how to implement this language (e.g., deciding what "practicable" mean).* (13)

"Requirements" #7 (page 5) states, "Local jurisdictions shall ensure that alternative onsite systems owners are provided an informational maintenance or replacement document by the system design engineer or representative ... (which)... cite(s) homeowner procedures to ensure maintenance, repair, or replacement of critical items within 48 hours following failure." *This requirement is burdensome on agencies and may not even be possible for homeowners. It is also not consistent with the Draft AB 885 statewide ordinance.* (9)

"Prohibitions" #9 (page 5) states, "Alternative systems are prohibited unless consistent with a locally implemented onsite wastewater management plan approved by the Central Coast Water Board Executive Officer." *This, again, reflects that all discretionary authority resides with the Executive Officer.* (13)

VIII.D.1.b. "Onsite Waste Water Management Plans"

The first paragraph of this subsection (sixth paragraph, page 5, right column) states, "Onsite wastewater management plans shall be implemented in urbanizing areas to investigate and mitigate long-term cumulative impacts resulting from continued use of individual, alternative, and community onsite wastewater systems." *This appears to place responsibility for cleaning up any polluted waters on agencies, and the requirement is open-ended because it goes on to state, "Onsite wastewater management plans shall include (but not be limited to) the following elements:" (including) "Survey and evaluation of existing onsite systems...Water quality (ground and surface water) monitoring program...Alternative means of disposing of sewage in the event of disposal system failure and/or irreversible degradation from onsite disposal...Education and outreach program...Enforcement options...Septage management...Program administration, staffing, records keeping, installation and repairs tracking, and financing."*

VIII.D.2. "Criteria for New Systems"

The first paragraph of this subsection (paragraph 5, right column, page 6) states, "The following section includes criteria for all new onsite wastewater disposal systems. Local governing jurisdictions should incorporate these criteria and guidelines into their local ordinances. These criteria will be used by the Central Coast Water Board for Water Board regulated systems and exemptions. In the context of these criteria, new systems shall refer to onsite wastewater systems approved after May 9, 2008." *This language converts all the former recommended onsite system criteria to requirements (e.g., all the requirements and prohibitions on pages 7-9).*

The second paragraph on page 7 (left column) states, "Local agencies may authorize alternative onsite systems consident with locally implemented onsite wastewater management plans approved by the Central Coast Water Board Executive Officer." Once again, complete discretion is granted the Executive Officer. *This potentially removes a means of correcting on-site problems, if the Executive Officer prohibits alternative solutions.* (13)

VIII.D.2.a "Site Suitability"

"Requirements" #4 states (page 4), "At least one soil boring or excavation per onste system shall be performed to determine soil suitability, depth to ground water, and depth to bedrock or impervious layer...and be performed during or shortly after the wet season to characterize the most limiting conditions. *Limiting boring samples only to a certain time of year can place an onerous burden on the homeowner, delaying an entire building process for up to a year.* (10)

"Requirements" #11 (page 8) states, "Onsite disposal systems on slopes greater than 20% shall be designed by a certified professional." *This language is vague. Does it refer alternative systems or only "Engineered systems?"* (11)

"Prohibitions" #13 (page 8) states, For new land divisions (including lot splits served by onsite systems, lot sizes less than one acre are prohibited unless authorized under an onsite management plan approved by the Central Coast Water Board Executive Officer. For the purpose of this prohibition, secondary units are considered 'defacto' lot splits and shall not be constructed on lots less than two acres in size." *This is an arbitrary requirement, not supported by science. One-half acre is considered to be adequate to avoid contaminant* (12)

loading in the soil. Further, alternative systems (with supplemental treatment) are not limited by lot size.

"Prohibitions" # 18 (page 8) states, "Onsite discharge is prohibited where lot sizes, dwelling densities or site conditions cause detrimental impacts to water quality." This is vague and open-ended, once again affording complete discretion to the Executive Officer to decide which "densities or site conditions cause detrimental impacts to water quality." *Further, this language assumes all discharges are equal (i.e., all discharge is waste or pollution); whereas, some onsite systems produce tertiary treated water for beneficial uses. The introduction to this section of Chapter 4 (second paragraph, page 1, right column) also indicates that all discharge is considered non-beneficial, i.e., "Onsite wastewater systems may be used to treat and dispose of wastewater." This equates treated water with wastewater.* (13) (1)

"Prohibitions" #20 (page 8) states, "Onsite discharge is prohibited in any area where continued use of onsite systems constitutes a public health hazard, an existing or threatened condition of water pollution, or nuisance." This is open-ended and vague, again affording total discretion ultimately to the Executive Officer. Paragraph three on page 3 defines a threatened condition as "... one that if left uncorrected may cause or contribute to water quality or public health impacts. *This language, especially when considered with language pertaining to failing systems (noted above) does little to narrow the applicability of the prohibition, in effect, allowing the Executive Officer discretion to prohibit any discharge at any time.* (13)

VIII.D.2.b. "Onsite System Design"

"Requirements" #9 (page 9) states, "Leachfield loading application rate shall not exceed the following" (followed by a chart of loading rates). *This prescriptive language, in addition to other criteria, e.g., percolation rates, adds multiple layers of conditions and regulatory burden.*

"Requirements" #14 (page 9) states, "All onsite disposal systems shall reserve an expansion area (additional 100% disposal capacity to be set aside and protected from all uses except future drainfield repair and replacement. Community systems shall install dual drainfields (200% disposal capacity) and reserve replacement area (3rd 100% disposal capacity). *This, again, is vague, and may preclude many land uses, due to the requirement that large portions are set aside for individual and community disposal systems, when, in fact, advanced systems (e.g., that treat the water to reuse standards) would make this requirement unnecessary.* (12)

"Requirements" #17 (page 9) states, "Where site conditions permit water migration of wastewater to water, setback distances from disposal trench/pit shall be at least" (with set back distances listed). *This language is extremely vague and discretionary—even with the possible misprint corrected.*

"Prohibitions" #23 (page 10) states, "Inflow and infiltration shall be precluded from the system unless design specifically accommodates such excess flows." *With out reference to industry standards, this allows the Executive Officer to decide what flows are appropriate.* (13)

VIII.D.2.c. "Design for Alternative and Engineered Systems"

"Requirements" #4 (page 10) states, "Alternative and engineered onsite wastewater systems shall be located, designed, installed, operated, maintained, and monitored in accordance with a locally implemented onsite management plan approved by the Central Coast Water Board Executive Officer." *This language, without reference to industry standards, permits the Executive Officer to prohibit the use of a system arbitrarily.* (13)

"Prohibitions" #4 states, Alternative and engineered onsite wastewater systems are prohibited, except where consistent with a locally implemented onsite management plan approved by the Central Coast Water Board Executive Officer." *(See comment in previous paragraph.)* (13)

VIII.D.2.e. "Onsite System Maintenance"

"Requirements" #3 -#6 (pages 11 & 12) state, "Onsite wastewater systems shall be maintained in accordance with approved onsite management plans. Where onsite management plans have not been approved by the Central Coast Water Board Executive Officer, onsite systems shall be maintained as described in the following specifications." (with #4 specifying that tanks will be pumped every 5 years; #5 stating that disposal of solids will be "accomplished in a manner acceptable to the Central Coast Water Board Executive Officer;" and #6 requiring the system owner to maintain "Records of maintenance, pumping, septage disposal, etc." with records "available upon request." *This is vague and the 5-year requirement is arbitrary (i.e., not applicable to many systems and situations). The language makes homeowners responsible for a mandate, but does not provide for their notification of the requirement.*

VIII.D.2.g. "Onsite Wastewater System Prohibition Areas"

#3 states, "Discharges from individual and community sewage disposal systems are prohibited, effective November 1, 1988, in the Los Osos/Baywood Park area..." *The Los Osos prohibition was implemented many years ago, but language in this section has been change—possibly redefining what is meant by "community sewage disposal systems" The language may now mean the prohibition applies to STEP/STEG and decentralized systems, but not conventional gravity, low-pressure, or vacuum systems?* (1)

VIII.D.2.h. "Subsurface Disposal Exemptions"

The third paragraph on page 12 (right column) states, The Central Coast Water Board or Executive Officer may grant exemption to prohibitions for: (1) engineered new onsite wastewater systems for sites unsuitable for standard systems: and (2) new or existing onsite systems..." adding "Such exemptions may be granted only after presentation by the discharger of sufficient justification, including geologic and hydrologic evidence that the continued operation of such system(s) in a particular area will not individually or collectively, directly or indirectly, result in pollution or nuisance, or affect water quality adversely. Individual, alternative, and community systems shall not be approved for any area where it appears that the total discharge of leachate to the geological system, under fully developed conditions, will cause: (1) damage to public or private property; (2) ground or surface water degradation; (3) nuisance; or, (4) a public health hazard." *This places an unfair burden on "dischargers" to prove that a system meets very vague criteria and/or standards.* (14)

Attachment #2 (1 of 3) Keith Wimer 4/2/08

http://www.epa.gov/nrmrl/pubs/625r00008/html/

EPA600/R-00/008

600R00008chap1.htm

Chapter1:
Background and Use of Onsite Wastewater Treatment Systems

1.1 Introduction

Onsite wastewater treatment systems (OWTSs) have evolved from the pit privies used widely throughout history to installations capable of producing a disinfected effluent that is fit for human consumption. Although achieving such a level of effluent quality is seldom necessary, the ability of onsite systems to remove settleable solids, floatable grease and scum, nutrients, and pathogens from wastewater discharges defines their importance in protecting human health and environmental resources. In the modern era, the typical onsite system has consisted primarily of a septic tank and a soil absorption field, also known as a subsurface wastewater infiltration system, or SWIS (figure 1-1). In this manual, such systems are referred to as conventional systems. Septic tanks remove most settleable and floatable material and function as an anaerobic bioreactor that promotes partial digestion of retained organic matter. Septic tank effluent, which contains significant concentrations of pathogens and nutrients, has traditionally been discharged to soil, sand, or other media absorption fields (SWISs) for further treatment through biological processes, adsorption, filtration, and infiltration into underlying soils. Conventional systems work well if they are installed in areas with appropriate soils and hydraulic capacities; designed to treat the incoming waste load to meet public health, ground water, and surface water performance standards; installed properly; and maintained to ensure long-term performance.

Figure 1-1. Conventional onsite wastewater treatment system

(update)
updated Tues, April 1, 2008

(over)

Attachment #2 (2 of 3) Keith Winier 4/7/08

1.5.2 Financial support

Funding is essential for successful management of onsite systems. Adequate staff is required to implement the components of the program and objectively enforce the regulations. Without money to pay for planning, inspection, and enforcement staff, these activities will not normally be properly implemented. Financial programs might be needed to provide loans or cost-share grants to retrofit or replace failing systems. Statewide public financing programs for onsite systems like the PENNVEST initiative in Pennsylvania provide a powerful incentive for upgrading inadequate or failed systems (Pennsylvania Infrastructure Investment Authority, 1997). Regional cost-share programs like the Triplett Creek Project in Kentucky, which provided funding for new septic tanks and drain field repairs, are also effective approaches for addressing failed systems (USEPA, 1997). Chapter 2 and the Resources section provide more information on funding options for onsite systems and management programs.

Managing onsite systems is particularly challenging in small, unincorporated communities without paid staff. Programs staffed by trained volunteers and regional "circuit riders" can help deliver technical expertise at a low cost in these situations. Developing a program uniquely tailored to each community requires partnerships, ingenuity, commitment, and perseverance.

1.5.3 Support from elected officials

In most cases the absence of a viable oversight program that addresses the full range of planning, design, siting, permitting, installation, operation, maintenance, and monitoring activities is the main reason for inadequate onsite wastewater system management. This absence can be attributed to a number of factors, particularly a political climate in which the value of effective onsite wastewater management is dismissed as hindering economic development or being too restrictive on rural housing development. In addition, low population densities, low incomes, underdeveloped management entities, a history of neglect, or other unique factors can impede the development of comprehensive management programs. Focusing on the public health and water resource impacts associated with onsite systems provides an important perspective for public policy discussions on these issues.

Sometimes state and local laws prevent siting or design options that could provide treatment and recycling of wastewater from onsite systems. For example, some state land use laws prohibit using lands designated as resource lands to aid in the development of urban uses. Small communities or rural developments located near state resource lands are unable to use those lands to address onsite problems related to space restrictions, soil limitations, or other factors (Fogarty, 2000).

The most arbitrary siting requirement, however, is the minimum lot size restriction incorporated into many state and local codes. Lot size limits prohibit onsite treatment system installations on nonconforming lots without regard to the performance capabilities of the proposed system. Lot size restrictions also serve as an inappropriate but de facto

Attachment #2 (3 of 3) Keith Winier 4/7/08

approach to land use planning in many localities because they are often seen as establishing the allowable number of housing units in a development without regard to other factors that might increase or decrease that number.

> Note: This manual is not intended to be used to determine appropriate or inappropriate uses of land. The information the manual presents is intended to be used to select appropriate technologies and management strategies that minimize risks to human health and water resources in areas that are not connected to centralized wastewater collection and treatment systems.

When developing a program or regulation, the common tendency is to draw on experience from other areas and modify existing management plans or codes to meet local needs. However, programs that are successful in one area of the country might be inappropriate in other areas because of differences in economic conditions, environmental factors, and public agency structures and objectives. Transplanting programs or program components without considering local conditions can result in incompatibilities and a general lack of effectiveness. Although drawing on the experience of others can save time and money, local planners and health officials need to make sure that the programs and regulations are appropriately tailored to local conditions.

Successful programs have site evaluation, inspection, and monitoring processes to ensure that regulations are followed. Programs that have poor inspection and monitoring components usually experience low compliance rates, frequent complaints, and unacceptable performance results. For example, some states do not have minimum standards applicable to the various types of onsite systems being installed or do not require licensing of installers (Suhrer, 2000). Standards and enforcement practices vary widely among the states, and until recently there has been little training for local officials, designers, or installers.

USEPA has identified more effective management of onsite systems as a key challenge for efforts to improve system performance (USEPA, 1997). In its Response to Congress on Use of Decentralized Wastewater Treatment Systems, USEPA noted that "adequately managed decentralized wastewater treatment systems can be a cost-effective and long term option for meeting public health and water quality goals, particularly for small towns and rural areas."

In addition, the Agency found that properly managed onsite systems protect public health and water quality, lower capital and maintenance costs for low-density communities, are appropriate for varying site conditions, and are suitable for ecologically sensitive areas (USEPA, 1997). However, USEPA identified several barriers to the increased use of onsite systems, including the lack of adequate management programs. Although most communities have some form of management program in place, there is a critical lack of consistency. Many management programs are inadequate, underdeveloped, or too narrow

Attachment #3

EPA 832-B-03-001
March 2003

Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems

Office of Water
Office of Research and Development
U.S. Environmental Protection Agency

Table 1: Summary of Management Models

TABLE 1: SUMMARY OF MANAGEMENT MODELS

TYPICAL APPLICATIONS	PROGRAM DESCRIPTION	BENEFITS	LIMITATIONS
MODEL 1 - HOMEOWNER AWARENESS MODEL			
• Areas of low environmental sensitivity where sites are suitable for conventional onsite systems.	• Systems properly sited and constructed based on prescribed criteria. • Owners made aware of maintenance needs through reminders. • Inventory of all systems	• Code-compliant system. • Ease of implementation; based on existing, prescriptive system design and site criteria. • Provides an inventory of systems that is useful in system tracking and area-wide planning.	• No compliance/problem identification mechanism. • Sites must meet siting requirements. • Cost to maintain database and owner education program.
MODEL 2 - MAINTENANCE CONTRACT MODEL			
• Areas of low to moderate environmental sensitivity where sites are marginally suitable for conventional onsite systems due to small lots, shallow soils, or low-permeability soils. • Small clustered systems.	• Systems properly sited and constructed. • More complex treatment options, including mechanical components or small clusters of homes. • Requires service contracts to be maintained. • Inventory of all systems. • Service contract tracking system.	• Reduces the risk of treatment system malfunctions. • Protects homeowner investment.	• Difficulty in tracking and enforcing compliance because it must rely on the owner or contractor to report a lapse in a valid contract for services. • No mechanism provided to assess effectiveness of maintenance program.
MODEL 3 - OPERATING PERMIT MODEL			
• Areas of moderate environmental sensitivity such as wellhead or source water protection zones, shellfish growing waters, or bathing/water contact recreation. • Systems treating high-strength wastes or large-capacity systems.	• Establishes system performance and monitoring requirements. • Allows engineered designs but may provide prescriptive designs for specific receiving environments. • Regulatory oversight by issuing renewable operating permits that may be revoked for noncompliance. • Inventory of all systems. • Tracking system for operating permit and compliance monitoring. • Minimum for large-capacity systems.	• Allows systems in more environmentally sensitive areas. • Operating permit requires regular compliance monitoring reports. • Identifies noncompliant systems and initiates corrective actions. • Decreases need for regulation of large systems. • Protects homeowner investment.	• Higher level of expertise and resources for regulatory authority to implement. • Requires permit tracking system. • Regulatory authority needs enforcement powers.
MODEL 4 - RESPONSIBLE MANAGEMENT ENTITY (RME) OPERATION AND MAINTENANCE MODEL			
• Areas of moderate to high environmental sensitivity where reliable and sustainable system operation and maintenance (O&M) is required, e.g., sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters. • Clustered systems.	• Establishes system performance and monitoring requirements. • Professional O&M services through RME (either public or private). • Provides regulatory oversight by issuing operating or NPDES permits directly to the RME. (System ownership remains with the property owner.) • Inventory of all systems. • Tracking system for operating permit and compliance monitoring.	• O&M responsibility transferred from the system owner to a professional RME that is the holder of the operating permit. • Identifies problems needing attention before failures occur. • Allows use of onsite treatment in more environmentally sensitive areas or for treatment of high-strength wastes. • Can issue one permit for a group of systems. • Protects homeowner investment.	• Enabling legislation may be necessary to allow RME to hold operating permit for an individual system owner. • RME must have owner approval for repairs; may be conflict if performance problems are identified and not corrected. • Need for easement/right of entry. • Need for oversight of RME by regulatory authority.
MODEL 5 - RESPONSIBLE MANAGEMENT ENTITY (RME) OWNERSHIP MODEL			
• Areas of greatest environmental sensitivity where reliable management is required. Includes sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters. • Preferred management program for clustered systems serving multiple properties under different ownership (e.g., subdivisions).	• Establishes system performance and monitoring requirements. • Professional management of all aspects of decentralized systems through public/private RMEs that own or manage individual systems. • Qualified, trained, owners and licensed professional owners/operators. • Provides regulatory oversight by issuing operating or NPDES permit. • Inventory of all systems. • Tracking system for operating permit and compliance monitoring.	• High level of oversight if system performance problems occur. • Simulates model of central sewerage, reducing the risk of noncompliance. • Allows use of onsite treatment in more environmentally sensitive areas. • Allows effective area-wide planning/watershed management. • Removes potential conflicts between the user and RME. • Greatest protection of environmental resources and owner investment.	• Enabling legislation and/or formation of special district may be required. • May require greater financial investment by RME for installation and/or purchase of existing systems or components. • Need for oversight of RME by regulatory authority. • Private RMEs may limit competition. • Homeowner associations may not have adequate authority.

Note: If applicable, NPDES requirements under the CWA or UIC requirements under the SDWA supercede any less stringent or inconsistent provision.

Attachment #4 (1 of 6)

SWRCB (http://www.waterboards.ca.gov/ab885)

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Division 4. Onsite Wastewater Treatment Systems

Subdivision 1. General Requirements

CHAPTER 7. ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS)

ARTICLE 1. GENERAL PROVISIONS

§24900. SWRCB – General Definitions.

Except as otherwise indicated in this Article, definitions of terms used in the SWRCB-promulgated portions of this Chapter shall be those set forth in Division 7 (commencing with Section 13000) of the Water Code and Chapter 6.5 of Division 20 of the Health and Safety Code (commencing with Section 25100).

"**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.

"**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 Board, approved by the SWRCB 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. Copies are available from the Regional Water Boards.

"**Bedrock**" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

"**Certification**" means an expression of professional opinion in the form of a certificate, stamp, or signature that the OWTS, or its components, meets industry standards that are the subject of the certification, but does not constitute a warranty or guarantee, either express or implied. For proprietary supplemental treatment systems, certification is a statement that indicates the subject system has demonstrated performance through an independent, third-party evaluation of performance data as required in §24913(e), but does not constitute a warranty or guarantee, either express or implied.

"**Cesspool**" means an excavation in the ground receiving 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.

"**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 in diameter. As a soil texture, clay is the soil material that is comprised as 40 percent or more clay particles and not more than 45 percent sand and not more than 40 percent silt particles.

"**Community water supply**" means a public water system regulated by the California Department of Health Services or a local health department.

"**Conventional system**" means an OWTS consisting of a septic tank and a subsurface system for dispersal of septic tank effluent. A gravity subsurface dispersal system may be a leachfield or seepage pit. A conventional system may include septic tank effluent pumping where the dispersal area is located at a higher elevation than the associated septic tank or to accomplish uniform distribution. Properly sited, designed, installed and operated conventional systems are capable of nearly complete removal of suspended solids, biodegradable organic compounds and fecal coliform bacteria. However, other pollutants may not be removed to acceptable levels. Conventional systems can be expected to remove no more than 10 to 40% of the total nitrogen compounds (TN) in domestic wastewater after final soil treatment.

"**Dispersal system**" means a leachfield, seepage pit, mound, at-grade, subsurface drip field, evapotranspiration and infiltration bed, or other type of system for final wastewater treatment and subsurface discharge.

"**Domestic wastewater**" means 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 does not include wastewater from industrial processes other than inputs considered *de minimis* (less than 5 percent).

Attachment #4 (2 of 6)

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(2) Access openings shall be secured to prevent unauthorized access.

(q) The installation of new prefabricated septic tanks shall be limited to those approved by the International Association of Plumbing and Mechanical Officials (IAPMO) and their installation shall be installed according to the manufacturer's instructions. If IAPMO certified tanks are not available locally, other prefabricated tanks may be allowed only if they comply with subsection (r) below;

(r) New non- prefabricated tanks or prefabricated tanks not certified by IAPMO shall be installed only after the design is stamped and certified by a California registered civil engineer as meeting the general industry standards necessary to comply with these requirements;

(s) New and replaced OWTS septic tanks shall be designed to prevent solids in excess of one-eighth (1/8) inch in diameter from passing to the dispersal system. Septic tanks that use a National Sanitation Foundation/American National Standard Institute (NSF/ANSI) Standard 46 certified septic tank filter at the final point of effluent discharge from the OWTS and prior to the dispersal system shall be deemed to meet this requirement.

(t) OWTS owners with onsite domestic wells on their property must monitor groundwater by sampling and analyzing water from:

(1) a monitoring well down-gradient and within 100 feet of the OWTS dispersal system within 30 days upon the installation of a new OWTS and no less than once every five years thereafter; or

(2) an existing onsite domestic well on the property within 30 days upon the installation of a new OWTS and no less than once every five years thereafter

Groundwater analyses shall be conducted in accordance with ¶u. Existing OWTS and new OWTS installations shall be exempt from this requirement if the facility that the OWTS serves is provided water from a community water supply system.

(u) The owner or owner's authorized representative shall collect groundwater samples pursuant to ¶(t) and shall have them analyzed by a laboratory certified by the California Department of Health Services. The laboratory shall be capable of producing laboratory results in EDF format. The groundwater samples shall be analyzed for the following: calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), iron (Fe), manganese (Mn), zinc (Zn), sulfate (SO_4), chloride (Cl), Nitrate (NO_3), nitrite (NO_2), fluoride (F), TDS, total alkalinity (as $CaCO_3$), carbonate (CO_3), bicarbonate (HCO_3), MBAS, pH and total coliforms. If a sample tests positive for total coliforms, the sample shall be analyzed for fecal coliform bacteria. The name of the site owner, the site address and the laboratory results shall be transmitted to the SWRCB in EDF format. The names and addresses of owners of tested domestic wells shall not be released.

(v) Any person owning a septic tank shall have a service provider inspect the septic tank a minimum of once every five years to ensure that the level of settleable solids and/or floatable solids do not impair the performance of the septic tank. It is recommended that septic tanks be pumped if the sum of the scum depth and sludge depth exceeds 25% of the septic tank depth as measured from the water line to the bottom of the tank.

(w) The SWRCB recommends that the regenerating saline backwash from water softeners not be discharged either to the OWTS or to the ground in any manner.

(x) All owners of any OWTS requiring a major repair shall correct the malfunctioning OWTS within 90-days of the date that the malfunction was discovered. The Regional Board may exempt a property from the 90-days requirement and extend the time frame, but such exemptions shall not be greater than 180 days.

Authority Cited: CA Water Code §1058, 13291

Reference: CA Water Code §13291(d), 13291(e)

ARTICLE 2. GROUNDWATER LEVEL DETERMINATIONS FOR NEW OWTS

§24912 SWRCB – Groundwater Level Monitoring

Attachment #4 (3 of 6)

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(a) Unless the seasonal high groundwater level at the site is known to be greater than 10 feet below the ground surface, based on local knowledge of groundwater conditions with the relevant source cited (e.g. previous evaluations and studies, well driller information), a site evaluation conducted by a qualified professional to establish the depth to the seasonal high groundwater shall be performed. Soil mottling observed during the site evaluation by a qualified professional may be used to determine the seasonal high groundwater level. Where soil mottling observations cannot be made or lead to unreliable conclusions, a qualified professional shall use the following protocols to determine seasonal high groundwater prior to design and installation of an OWTS:

(1) To measure depth to seasonal high groundwater, a groundwater level monitoring well shall be installed to a minimum depth of ten feet in the vicinity of a proposed wastewater dispersal system. If an impermeable layer is present at a depth of less than ten feet below the ground surface, the depth of the groundwater level-monitoring well shall be decreased to the depth of the impermeable layer.

(2) For OWTS serving facilities other than single family homes, the Regional Water Board shall determine the number and depth of groundwater level monitoring wells. Such determinations by the Regional Water Board shall supercede the depth requirements in §24912(a)(1).

(3) Measurements of depth to seasonal high groundwater shall be conducted from November 1, to April 1 unless otherwise specified by the Regional Water Board. Groundwater levels shall be measured continuously using a piezometer to record the seasonal high groundwater level. The piezometer may be a float device that mechanically or electrically records the highest water level.

(4) For areas that are subject to special circumstances such as seasonal high groundwater caused by snowmelt or irrigation, measurements to determine the annual high groundwater level shall be conducted during a period specified by the Regional Water Board. Groundwater levels shall be measured continuously using a piezometer to record the seasonal high groundwater level. The piezometer may be a float device that mechanically or electrically records the highest water level.

(5) The Regional Water Board may exempt sites or areas from this Section where an alternative protocol for determining seasonal high ground water is established in the basin plan.

Authority Cited: CA Water Code **§1058, 13291**

Reference: CA Water Code §13260, 13264, 13267, 13269, and 13291

ARTICLE 3 PERFORMANCE REQUIREMENTS AND SPECIFICATIONS

§24913. SWRCB – Performance Requirements for Supplemental Treatment Components

(a) Local agencies or the Regional Water Board may require supplemental treatment systems where treatment is needed to mitigate for insufficient soil depths, as required in §24914(c) for a conventional system or 24914(d), or to provide for protection of the water quality and public health, as deemed necessary.

(b) Supplemental treatment components, other than for disinfection or nitrogen reduction, shall be designed to reduce biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations. Supplemental treatment components, other than for disinfection or nitrogen reduction, shall produce an effluent that meets the following requirements:

(1) The 30-day average carbonaceous BOD (CBOD) concentration shall not exceed 25 milligrams per liter (mg/L), or alternately, the 30-day average BOD shall not exceed 30 mg/L; and

(2) The 30-day average TSS concentration shall not exceed 30 mg/L;

(c) Supplemental treatment components designed to perform disinfection shall have sufficient pretreatment of the wastewater so that effluent does not exceed a 30-day average TSS of 10 mg/L and shall further achieve an effluent total coliform bacteria concentration, at the 95 percentile, of not greater-than either of the following;

Attachment #4 (4 of 6)

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(1) 10 MPN per 100 milliliters prior to discharge into a dispersal field where the soils exhibit percolation rates between 1 and 10 minutes per inch (MPI) or where the soil texture is sand; or

(2) 1000 MPN per 100 milliliters prior to discharge into a dispersal field where the soils exhibit percolation rates greater than 10 MPI or consist of a soil texture other than sand.

(d) Effluent from supplemental treatment components shall not exceed a 30-day average TN concentration of 10 mg/L as nitrogen.

(e) Before the installation of any proprietary supplemental treatment OWTS, all such treatment components shall be tested by an independent third party testing laboratory. The independent third party laboratory shall certify that the type of system being installed and its components are capable of reliably meeting the performance requirements when installed according to manufacturer specifications, as applicable, based upon the results from the testing protocol. The testing protocol shall include but not be limited to ¶1 thru ¶5 below:

(1) a testing duration of not less than six continuous months.

(2) the wastewater used for testing shall consist primarily of municipal or domestic wastewater and shall have concentrations in the following ranges:

(A) BOD: 125 to 300 milligrams per liter;

(B) TSS: 125 to 300 milligrams per liter;

(C) TN (as N): 50 to 75 milligrams per liter,

(D) total coliform bacteria: $1X10^6$ to $1X10^8$ MPN/100 ml, and

(E) alkalinity (as $CaCO_3$): 50 to 200 milligrams per liter.

(3) hydraulic and organic design loading shall be varied during the test to simulate OWTS operational stress at different levels of use, including all of the following:

(A) regular daily use, where the following daily wastewater flow regime entering the supplemental treatment system is as follows:

i. approximately 35% of the daily wastewater design flow enters the OWTS from 6:00 a.m. to 9:00 a.m.

ii. approximately 25% of the daily wastewater design flow enters the OWTS from 11:00 a.m. to 2:00 p.m.

iii. approximately 40% of the daily wastewater design flow enters the OWTS from 5:00 p.m. to 8:00 p.m.

(B) working parent use, where the following 5-day wastewater flow regime entering the supplemental treatment system is as follows:

i. approximately 40% of the daily wastewater design flow enters the OWTS from 6:00 a.m. to 9:00 a.m.

ii. approximately 60% of the daily wastewater design flow enters the OWTS from 5:00 p.m. to 8:00 p.m.

(C) wash-day use, where following a 5-day regular daily use flow regime provides additional wastewater from a clothes washing machine during the first, third and fifth days. Additional clothes washing water shall have a minimum of 3 wash cycles (including 6 rinse cycles) interspersed between 6:00 a.m. to 2:00 p.m. per 500 gallons of design flow..

(D) vacation (e.g., one week rest).

(4) testing of supplemental treatment components to comply with the performance requirements of ¶b, ¶c or ¶d shall be conducted with the following detection limits listed in Table 1:

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(h) Dispersal systems using shallow pressurized drip or orifice dispersal shall meet the following requirements:

(1) The allowed application area shall not exceed one square foot per emitter/orifice. In no case are application areas allowed to be overlapping or less than one square foot per lineal foot; and

(2) all systems shall be designed and maintained to reduce orifice clogging and root intrusion.

(i) Seepage Pits shall be designed on sidewall area as the infiltrative surface and are allowed where the following conditions apply:

(1) the site has been determined by a qualified professional to be unsuitable for other types of dispersal systems due to soil properties or amount of area available at the site;

(2) the bottom of the seepage pit shall be a minimum of ten feet above seasonal high groundwater level; and

(3) the site shall meet one of the conditions:

(A) There must be a minimum of ten feet of soil below the bottom of the seepage pit and above the seasonal high groundwater level, impervious layer, or bedrock. All strata to a depth of 10 feet below the pit bottom must be free of groundwater in accordance with §24912, or

(B) When an OWTS has supplemental treatment components designed to meet the performance requirements specified in §24913(b), and §24913(c) are met, a seepage pit may have less than 10 feet of soil below the bottom of the seepage pit, but no less than two feet of soil, or

(C) When an OWTS has supplemental treatment components designed to meet the performance requirements specified in §24913(b) and §24913(c)(1), a seepage pit may have less than two feet of soil beneath the bottom of the seepage pit.

(j) Evapotranspiration and infiltration (ETI) systems shall be designed such that evapotranspiration and infiltration exceed the design waste flow combined with a 25-yr return rate precipitation event on an annual, monthly and seasonal basis. ETI systems shall be operated in a manner that prevents human exposure to wastewater.

Authority Cited: CA Water Code §1058, 13291

Reference: CA Water Code §13260, 13264, 13267, 13269, and 13291

ARTICLE 4: PROTECTING IMPAIRED SURFACE WATER

§24940. SWRCB – Applicability and Requirements.

This section shall apply to any water body that has been designated as impaired due to nitrogen or pathogens pursuant to Section 303(d) of the Clean Water Act but only where a TMDL has been approved that includes a determination that OWTS contribute to the impairment of the water body.

(a) No new OWTS dispersal area shall be constructed or operated within 600 linear feet [in the horizontal (map) direction] of the water body unless one of the following applies:

(1) where the waterbody is listed as impaired due to nitrogen, OWTS meets the performance requirements for supplemental treatment contained in §24913(b) and §24913(d).

(2) where the water body is listed as impaired due to pathogens, OWTS meets the performance requirements for supplemental treatment contained in §24913(b)(1) and §24913(c).

(b) Unless modified or exempted pursuant to ¶c, ¶d, or ¶e, an owner of any existing OWTS dispersal area within 600 linear feet [in the horizontal (map) direction] of the water body shall have the OWTS inspected by a qualified professional within one year of the effective date of these regulations or within one year after the effective date of a TMDL that includes a determination that OWTS contribute to impairment of the water body, whichever is later.

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

(1) The inspection shall include but not be limited to:

(A) a determination of whether the OWTS is discharging to the surface;

(B) a determination of whether the OWTS complies with the depth to seasonal high groundwater requirements of this Chapter, unless the OWTS owner chooses to assume that the OWTS is contributing to the impairment;

(C) for a water body impaired for pathogens, a determination of whether fecal coliform in the OWTS discharge is reaching groundwater, unless the OWTS owner chooses to assume that the OWTS is contributing to the impairment; and

(D) for a water body impaired for nitrogen, a determination of whether nitrogen exceeding 10 mg/l is reaching groundwater, unless the OWTS owner chooses to assume that the OWTS is contributing to the impairment.

(2) The OWTS owner shall send a report of the inspection to the Regional Water Board within 30 calendar days of the completion of the inspection.

(3) Where a determination is made by a qualified professional that an OWTS discharge of fecal coliform or nitrogen exceeding 10 mg/l is reaching groundwater, the owner of the OWTS shall have four years following the date of the determination to meet the applicable requirements of ¶a.

(c) Adoption or amendment of a TMDL may alter the 600-foot distance requirement or compliance dates in ¶a and ¶b.

(d) This Section does not apply to impaired waters where, prior to the effective date of this Chapter, the Regional Water Board has adopted a TMDL requiring implementation of a wastewater management plan. The wastewater management plan must include methods to reduce the OWTS contribution to the impaired water body, a plan for water quality monitoring, and a program for the repair or replacement of existing OWTS. The wastewater management plan must be designed to result in either elimination of the impairment or the reduction of the contribution of OWTS to the impairment.

(e) The requirements contained in this Section do not apply to OWTS owners who commit by way of a legally binding document to connect to a centralized wastewater collection and treatment system regulated through WDRs within nine years. To become effective, the owner must sign the document within forty-eight months of the effective date of this Chapter or the effective date of a TMDL, whichever is later. The specified date for the connection to the centralized community wastewater collection and treatment system shall not extend beyond nine years following a Regional Water Board determination made pursuant to this Section.

§24940 to §25500 [Reserved for SWRCB]

Attachment #5 (1 of 2)

CCWQCB Basin Plan

I. REGIONAL WATER QUALITY CONTROL BOARD GOALS

To insure that the water resources of the Central Coastal Basin are preserved for future generations of Californians, the California Regional Water Quality Control Board, Central Coast Region, determined it was desirable to establish certain planning goals. These goals pertain to utilization of the basin's water resources and guidelines for control of waste discharges, as follows:

1. Protect and enhance all basin waters, surface and underground, fresh and saline, for present and anticipated beneficial uses, including aquatic environmental values.

2. The quality of all surface waters shall allow unrestricted recreational use.

3. Manage municipal and industrial wastewater disposal as part of an integrated system of fresh water supplies to achieve maximum benefit of fresh water resources for present and future beneficial uses and to achieve harmony with the natural environment.

4. Achieve maximum effective use of fresh waters through reclamation and recycling.

5. Continually improve waste treatment systems and processes to assure consistent high quality effluent based on best economically achievable technology.

6. Reduce and prevent accelerated (man-caused) erosion to the level necessary to restore and protect beneficial uses of receiving waters now significantly impaired or threatened with impairment by sediment.

II. GENERAL CONTROL ACTIONS AND RELATED ISSUES

The Regional Water Quality Control Board (Regional Board) regulates the sources of water quality related problems which could result in actual or potential impairment or degradation of beneficial uses or degradations of water quality. The Regional Board regulates both point and nonpoint source discharge activities. A point source discharge generally originates from a single identifiable source, while a nonpoint source discharge comes from diffuse sources. To regulate the point and nonpoint sources, control actions are required for effective water quality protection and management. Such control actions are set forth for implementation by the State Water Resources Control Board (State Board), by other agencies with water quality or related authority, and by the Regional Board.

III. CONTROL ACTIONS UNDER STATE WATER RESOURCES CONTROL BOARD AUTHORITY

The State Board has adopted several water quality plans and policies which complement or may supersede portions of the Water Quality Control Plan. These plans and policies may include specific control measures. See Chapter Five, "Plans and Policies" for summaries of the most significant State Board plans and policies which affect the Central Coast Region.

Attachment #5 (2 of 2).
Basin Plan (Language varies from subsections w/ proposed changes.)

VIII.D.3.e. INDIVIDUAL SYSTEM MAINTENANCE

Individual septic tanks should be maintained as follows:

1. Septic tanks should be inspected every two to five years to determine the need for pumping. If garbage grinders or dishwashers discharge into the septic tank, inspection should occur at least every two years.

2. Septic tanks should be pumped whenever: (1) the scum layer is within three inches of the outlet device; or (2) the sludge level is within eight inches of the bottom of the outlet device.

3. Drainfields should be alternated when drainfield inspection pipes reveal a high water level.

4. Disposal of septage (solid residue pumped from septic tanks) should be accomplished in a manner acceptable to the Executive Officer. In some areas, disposal may be to either a Class I or Class II solid waste site; in others, septage may be discharged to a municipal wastewater treatment facility.

VIII.D.3.f. COMMUNITY SYSTEM DESIGN

Community systems should be designed and maintained to accommodate the following items:

1. Capacities should accommodate build-out population.

2. Design should be based upon peak daily flow estimates.

3. Design should consider contributions from infiltration throughout the collection system.

4. Septic tanks should be pumped when sludge and scum levels are greater than 1/3 of the depth of the first compartment.

5. Operation and maintenance should be in accordance with accepted sanitary practice.

6. Maintenance manuals should be provided to system users and maintenance personnel.

7. Discharge should not exceed 40 grams per day total nitrogen, on the average, per acre of total development overlying ground water recharge areas, unless local governing jurisdictions adopt Wastewater Management Plans subsequently approved by the Regional Board.

VIII.D.3.g. LOCAL AGENCIES

Recommendations for local governing jurisdictions:

1. Adopt a standard percolation test procedure.

   The California State Water Resources Control Board Guidelines for Evapotranspiration Systems provides a percolation test method recommended for use to standardize test results. A twelve-inch diameter percolation test hole may be used.

2. Percolation tests should be continued until a stabilized rate is obtained.

3. Percolation test holes should be drilled with a hand auger. A hole could be hand augered or dug with hand tools at the bottom of a larger excavation made by a backhoe.

4. Percolation tests should be performed at a depth corresponding to the bottom of the subsurface disposal area.

Attachment #6 (1 of 2)

California Regional Water Quality Control Board
Central Coast Region

Linda S. Adams
Secretary for Environmental Protection

Internet Address: http://www.waterboards.ca.gov/centralcoast
895 Aerovista Place – Suite 101, San Luis Obispo, CA 93401-7906
Phone (805) 549-3147 • FAX (805) 543-0397

Arnold Schwarzenegger
Governor

March 6, 2008

Ms. Piper Reilly
691 Woodland Drive
Los Osos, CA 93402-3817

Dear Ms. Reilly:

INSTALLATION OF THE RECLAMATOR IN THE LOS OSOS PROHIBITION ZONE

This letter responds to your emailed inquiry dated February 19, 2008 regarding installation of a Reclamator at your residence. To our knowledge, the effluent quality from a Reclamator would not be any worse than that from your existing septic system, and may even be of higher quality. The Central Coast Water Board supports measures to minimize ongoing adverse impacts from septic systems. However, even if it works as well as its promoter's claim it will, the Reclamator will still discharge waste. The Reclamator therefore does not comply with the Basin Plan which prohibits all discharges of waste from individual sewage disposal systems, including engineered alternative systems.

The Central Coast Water Board has indicated that it does not intend to take individual enforcement action for violations of the Basin Plan prohibition as long as the County's process stays on track. Once a community sewer system is available, or sooner if the County discontinues its efforts to build one, you will be required to eliminate all onsite discharges of sewage waste. You can do this by connecting to the sewer system or by proposing and obtaining approval of another legal alternative to eliminate all onsite discharges. The requirement to eliminate onsite discharges does not violate Water Code Section 13360, even if the only feasible compliance alternative is connecting to a public system.[1]

Your email also states that the Reclamator is NSF (National Sanitation Foundation) certified. We suggest you investigate that claim, since our understanding is that it is not certified.

[1] *Tahoe-Sierra Preservation Council v. State Water Resources Control Bd.* (1989) 210 Cal.App.3d 1421

Attachment #6 (2 of 2)

Should you decide to proceed, we would be interested in reviewing the data that you say will be available. We recommend you also contact the County of San Luis Obispo and obtain the necessary local permits that may be required.

If you have any questions please contact **David LaCaro at (805) 549-3892** or Harvey Packard at (805) 542-4639

Sincerely,

Roger W. Briggs
Executive Officer

cc: Frances McChesney

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Attachment #7 (1 of 2)

California Regional Water Quality Control Board
Central Coast Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb3
81 Higuera Street, Suite 200, San Luis Obispo, California 93401-5411
Phone (805) 549-3147 • FAX (805) 543-0397

Gray Davis
Governor

January 3, 2001

RECEIVED
JAN 04 2001
BY:

David Moran
Crawford Multari & Clark Associates
641 Higuera Street, Suite 302
San Luis Obispo, CA 93401

Dear Mr. Moran:

DRAFT ENVIRONMENTAL IMPACT REPORT FOR LOS OSOS WASTEWATER FACILITIES PROJECT, LOS OSOS, SAN LUIS OBISPO COUNTY

Thank you for the opportunity to review and comment on the draft Environmental Impact Report (DEIR) for the Los Osos Community Wastewater Facilities Project. We have reviewed the report and find it provides a comprehensive evaluation of potential impacts that could result from the project. Also, the report provides such information in a straightforward and easily-understandable manner, which is helpful in evaluating the potential impacts and alternatives to this complex and difficult project. We have the following comments.

1. Page 4, paragraph 2 lists issues of concern regarding the project proposed by San Luis Obispo County in 1997. You should clarify that these concerns are based upon public perception and are not necessarily scientifically based. 9-1

2. Page 9, paragraph 9 indicates a National Pollutant Discharge Elimination System (NPDES) permit will be issued for construction and operation of the wastewater facility. This is true, coverage under the statewide general NPDES permits for construction and industrial sources of storm water will be necessary to prevent pollution of storm water runoff. However, Waste Discharge Requirements (a separate type of discharge permit) will also be required for the proposed effluent discharge. Waste Discharge Requirements should be included under "Discretionary Approvals Required". 9-2

3. Page 13, paragraph 3 provides a project description. This description, and several other locations throughout the report, indicate the project is designed to reintroduce effluent to ground water. Ultimately, most of the effluent discharged to the ground (leachfields, percolation basins, or other methods) will incidentally percolate to ground water, however we are unaware that ground water recharge is specifically included as part of the proposed project. If the District includes ground water recharge as one of the specific goals of the project, then it must demonstrate compliance with California Department of Health Services requirements for such systems. 9-3

4. Page 35, Table 3-1 specifies units of measurement for biochemical oxygen demand, suspended solids and total nitrogen in milliliters per liter. These units should be corrected to state milligrams per liter. 9-4

5. Page 35, paragraph 4 lists proposed project components. Item D of the list should be reworded to "Wastewater disposal facilities and ground water harvesting and monitoring wells" to clearly indicate that harvesting and monitoring apply to ground water, not effluent. Similarly, throughout the report, 9-5

Attachment #7 (2 of 2)

terms such as "recovery" and "harvesting" should be clearly identified with ground water to prevent confusion that the District proposes to harvest or recover effluent.

6. Our copy of the draft EIR appears to be missing Page 42. Please send us this page to complete our copy of the report. 9-6

7. Page 55, paragraph 1 states that biosolids will be disposed at a Class I or Class II landfill. Class I and Class II landfills are reserved for hazardous and designated wastes respectively, therefore would be an inappropriate disposal site for biosolids (which are relatively inert). Biosolids can be disposed at some Class III landfills (standard municipal wastes). Also, San Luis Obispo County Health Department is currently developing policy regarding land application biosolids, which is likely to be considered by the Board of Supervisors early next year. 9-7

8. Page 60 describes future phases of the proposed project. We commend the District's continuing efforts to address the wastewater project in a manner designed for long-term success and cost-effectiveness, as well as in a comprehensive (multi-resource) manner. 9-8

9. Page 138, paragraph 7 states that a STEP/STEG collection system is less susceptible to infiltration during storm events. Regardless of weather conditions, shallow ground water areas of Los Osos are likely to be an almost limitless source of infiltration into a STEP/STEG system due to the difficulty in making the residential on-site portion of the system truly water-tight. It is our opinion that the statement on page 138 is not applicable in Los Osos. 9-9

10. Page 141, paragraph 3 states that harvested ground water will be returned to the wastewater facility for further treatment. It may be more clear to state that additional water treatment will be provided when needed. In this way the statement does not leave the reader thinking ground water will be treated with (or in the same processes) as wastewater. 9-10

11. Page 228 and the table on page 233 indicate there would be comparable potential impact to public health and safety associated with sewage spills from the STEP/STEG system than with the proposed system. We disagree with this evaluation and believe that the large number of pumps and the cumbersome nature of maintaining a STEP/STEG system (pump and tank maintenance) poses higher likelihood of impacts to public health and safety due to more frequent sewage spills. 9-11

12. Traffic impacts resulting from the collection system alternatives do not appear to be addressed in the report. Operation and maintenance of a STEP/STEG collection system is likely to result in considerably more truck traffic due to pump and tank maintenance throughout the service area. 9-12

Despite the length of the list of items above, they are mainly minor issues that can be easily addressed in the final EIR. Again, we found the DEIR comprehensive and clear and look forward to completion of the final document as an important step toward resolving wastewater issues in Los Osos.

If you have questions regarding these comments, please call Sarrel Marks at (805) 549-3685 or Gerhardt Hubner at (805) 542-4647.

Sincerely,

for: Roger W. Briggs
Executive Officer

Attachment #8 (1 of 2)

http://www.epa.gov/npdes/pubs/csosso_rtc_factsheet.pdf

August 2004

Report to Congress on Impacts and Control of Combined Sewer Overflows and Sanitary Sewer Overflows

Fact Sheet

EPA has published a Report to Congress on the impacts and control of combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs). This report was published to comply with a request from Congress. This report summarizes what is known about the characteristics of CSOs and SSOs, the human health and environmental impacts of CSOs and SSO, and the resources spent and technologies used by municipalities to reduce the impacts of CSOs and SSOs. This report makes clear that EPA views CSOs and SSOs as threats to human health and the environment. This Report provides interested parties with a wealth of information on the impacts of sewer overflows and establishes a baseline of data for regulatory agencies to use in policy making related to the management of sewer collection systems.

Why is EPA publishing this Report to Congress?

EPA prepared this Report to Congress in response to a statutory requirement established on December 15, 2000. Section 112 of the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554, required EPA to provide a report summarizing:

(A) the extent of the human health and environmental impacts caused by municipal combined sewer overflows and sanitary sewer overflows, including the location of discharges causing such impacts, the volume of pollutants discharged, and the constituents discharged;

(B) the resources spent by municipalities to address these impacts; and

(C) an evaluation of the technologies used by municipalities to address these impacts.

What is a CSO?

A combined sewer system is a wastewater collection system, owned by a state or municipality, that is specifically designed to collect and convey sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater) and storm water through a single pipe. During precipitation events (e.g. rainfall or snowmelt), the systems are designed to overflow when collection system capacity is exceeded, resulting in a combined sewer overflow (CSO) that discharges directly to surface waters.

Today, there are 746 communities with combined sewer systems with a total of 9,348 CSO outfalls that are identified and regulated by 828 NPDES permits. Combined sewer systems are found in 32 states (including the District of Columbia) and nine EPA Regions. CSO communities are regionally concentrated in older communities in the Northeast and Great Lakes regions. EPA estimates that about 850 billion gallons of untreated wastewater and storm water are released as CSO each year in the United States.

Attachment #8 (2 of 2)

What is an SSO?
A sanitary sewer system is a wastewater collection system, owned by a state or municipality, that is specifically designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater). In such systems, storm water is conveyed through an additional set of pipes. These systems can overflow when collection system capacity is exceeded due to wet weather (as the result of infiltration and inflow), when normal dry weather flow is blocked for any of several reasons, or when mechanical failures prevent the system from proper operation.

In the Report to Congress, EPA estimates that between 23,000 and 75,000 SSOs occur each year in the United States, resulting in releases of between 3 billion and 10 billion gallons of untreated wastewater. These events take place throughout the United States.

What does the Report to Congress say?
This report includes 10 chapters covering all aspects of the statutory requirement from Congress. The report also includes a series of 23 technology descriptions providing detailed information, including case studies, on technologies for reducing the impacts of CSOs and SSOs.

This report finds that CSOs and SSOs can have impacts on human health and the environment at the local watershed level. The report makes clear that the United States has made progress in reducing sewer overflows to protect human health and the environment. Much remains to be done, however, to fully realize the objectives of the Clean Water Act and the CSO Control Policy

What impacts do CSOs and SSOs have?
Because CSOs contain raw sewage along with large volumes of storm water and contribute pathogens, solids, debris, and toxic pollutants to receiving waters, CSOs can create significant public health and water quality concerns. CSOs have contributed to beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and public health concerns

Because SSOs contain raw sewage and can occur on land and in public spaces, SSOs can create public health and environmental concerns. SSOs have contributed to beach closures, contamination of drinking water supplies, and other environmental and public health concerns.

What recommendations does the Report to Congress make?
This report does not make specific policy recommendations, but does suggest four strategies that should be taken to reduce the impacts of CSOs and SSOs. The strategies include: providing adequate funding for maintenance and improvement of the nation's wastewater infrastructure; integrating of wastewater programs and activities at the watershed level; improving monitoring and reporting programs to provide better data for decision-makers; and supporting stronger partnerships among federal and state agencies, municipalities, industry, non-governmental organizations, and citizens.

How can I get more information?
You can find the Report to Congress and additional information on the Internet by visiting http://www.epa.gov/npdes. You can ask for hard copies of these documents by calling the Office of Water Resource Center at (202) 566-1729.

Attachment #9 (1 of 4)

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2006-0003-DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
SANITARY SEWER SYSTEMS

The State Water Resources Control Board, hereinafter referred to as "State Water Board", finds that:

1. All federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to comply with the terms of this Order. Such entities are hereinafter referred to as "Enrollees".

2. Sanitary sewer overflows (SSOs) are overflows from sanitary sewer systems of domestic wastewater, as well as industrial and commercial wastewater, depending on the pattern of land uses in the area served by the sanitary sewer system. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. SSOs may cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.

3. Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO. A proactive approach that requires Enrollees to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state. This approach will in turn decrease the risk to human health and the environment caused by SSOs.

4. Major causes of SSOs include: grease blockages, root blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, excessive storm or ground water inflow/infiltration, debris blockages, sanitary sewer system age and construction material failures, lack of proper operation and maintenance, insufficient capacity and contractor-caused damages. Many SSOs are preventable with adequate and appropriate facilities, source control measures and operation and maintenance of the sanitary sewer system.

SEWER SYSTEM MANAGEMENT PLANS

5. To facilitate proper funding and management of sanitary sewer systems, each Enrollee must develop and implement a system-specific Sewer System Management Plan (SSMP). To be effective, SSMPs must include provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. Additionally, an SSMP must contain a spill response plan that establishes standard procedures for immediate response to an SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.

6. Many local public agencies in California have already developed SSMPs and implemented measures to reduce SSOs. These entities can build upon their existing efforts to establish a comprehensive SSMP consistent with this Order. Others, however, still require technical assistance and, in some cases, funding to improve sanitary sewer system operation and maintenance in order to reduce SSOs.

7. SSMP certification by technically qualified and experienced persons can provide a useful and cost-effective means for ensuring that SSMPs are developed and implemented appropriately.

8. It is the State Water Board's intent to gather additional information on the causes and sources of SSOs to augment existing information and to determine the full extent of SSOs and consequent public health and/or environmental impacts occurring in the State.

9. Both uniform SSO reporting and a centralized statewide electronic database are needed to collect information to allow the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) to effectively analyze the extent of SSOs statewide and their potential impacts on beneficial uses and public health. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. 2006-0003-DWQ, are necessary to assure compliance with these waste discharge requirements (WDRs).

10. Information regarding SSOs must be provided to Regional Water Boards and other regulatory agencies in a timely manner and be made available to the public in a complete, concise, and timely fashion.

11. Some Regional Water Boards have issued WDRs or WDRs that serve as National Pollution Discharge Elimination System (NPDES) permits to sanitary sewer system owners/operators within their jurisdictions. This Order establishes minimum requirements to prevent SSOs. Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, Regional Water Boards may issue more stringent or more

water quality in the area, costs associated with compliance with these requirements, the need for developing housing within California, and the need to develop and use recycled water.

16. The Federal Clean Water Act largely prohibits any discharge of pollutants from a point source to waters of the United States except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the United States must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. Hence, the unpermitted discharge of wastewater from a sanitary sewer system to waters of the United States is illegal under the Clean Water Act. In addition, many Basin Plans adopted by the Regional Water Boards contain discharge prohibitions that apply to the discharge of untreated or partially treated wastewater. Finally, the California Water Code generally prohibits the discharge of waste to land prior to the filing of any required report of waste discharge and the subsequent issuance of either WDRs or a waiver of WDRs.

17. California Water Code section 13263 requires a water board to, after any necessary hearing, prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. The requirements shall, among other things, take into consideration the need to prevent nuisance.

18. California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.

19. This Order is consistent with State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) in that the Order imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than prescribed in State Water Board or Regional Water Board plans and policies.

20. The action to adopt this General Order is exempt from the California Environmental Quality Act (Public Resources Code §21000 et seq.) because it is an action taken by a regulatory agency to assure the protection of the environment and the regulatory process involves procedures for protection of the environment. (Cal. Code Regs., tit. 14, §15308). In addition, the action to adopt

prescriptive WDRs for sanitary sewer systems. Upon issuance or reissuance of a Regional Water Board's WDRs for a system subject to this Order, the Regional Water Board shall coordinate its requirements with stated requirements within this Order, to identify requirements that are more stringent, to remove requirements that are less stringent than this Order, and to provide consistency in reporting.

REGULATORY CONSIDERATIONS

12. California Water Code section 13263 provides that the State Water Board may prescribe general WDRs for a category of discharges if the State Water Board finds or determines that:

    - The discharges are produced by the same or similar operations;
    - The discharges involve the same or similar types of waste;
    - The discharges require the same or similar treatment standards; and
    - The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

    This Order establishes requirements for a class of operations, facilities, and discharges that are similar throughout the state.

13. The issuance of general WDRs to the Enrollees will:
    a) Reduce the administrative burden of issuing individual WDRs to each Enrollee;
    b) Provide for a unified statewide approach for the reporting and database tracking of SSOs;
    c) Establish consistent and uniform requirements for SSMP development and implementation;
    d) Provide statewide consistency in reporting; and
    e) Facilitate consistent enforcement for violations.

14. The beneficial uses of surface waters that can be impaired by SSOs include, but are not limited to, aquatic life, drinking water supply, body contact and non-contact recreation, and aesthetics. The beneficial uses of ground water that can be impaired include, but are not limited to, drinking water and agricultural supply. Surface and ground waters throughout the state support these uses to varying degrees.

15. The implementation of requirements set forth in this Order will ensure the reasonable protection of past, present, and probable future beneficial uses of water and the prevention of nuisance. The requirements implement the water quality control plans (Basin Plans) for each region and take into account the environmental characteristics of hydrographic units within the state. Additionally, the State Water Board has considered water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect

Attachment #10 (2 of 4)

San Luis Obispo County
Los Osos Wastewater Project Development

VIABLE PROJECT ALTERNATIVES

FINE SCREENING ANALYSIS

FINAL
August 2007

Carollo
Engineers...Working Wonders With Water™

In association with Crawford Multari & Clark Associates

Cleath & Associates
Engineering Geology/Hydrogeology

Attachment # 10 (2 of 4)

In the Rough Screening Report, 1.3 MGD was identified as the likely wet weather flow for both STEP/STEG and gravity collection systems. However, it was recognized that because of the difference in a pressure tight joint system utilized for STEP/STEG, versus a gasketed bell and spigot joint system utilized for gravity collection system, that there is a higher potential for a gravity system to experience I/I flows over time than there is for a STEP/STEG system. As a result, the wet weather flow for the gravity collection system option was recalculated to be 1.5 MGD (at buildout). This was based on collection system textbook models and was consistent with the calculations previously used by previous studies prior to providing a reduction factor to account for the sandy soils of the area.

The 1.5 MGD does not take into consideration conservation, however, which is a stated goal of the community for the project. With conservation practices, (i.e. toilet retrofit program and water efficient appliances in all new construction) it is estimated that the total flow can be decreased by at least 0.1 MGD. As a result, a likely scenario to anticipate would be that a portion of the increase in I/I flows for the gravity collection system would be offset by the implementation of conservation practices. Therefore, the wet weather flow used to size the wastewater treatment plant for the gravity collection system was 1.4 MGD (1.5 MGD wet weather flow with I/I minus 0.1 MGD of conservation). For sizing of wastewater treatment plant for the STEP/STEG system the reduction in flow due to the implementation of conservation would similarly apply. The wet weather flow used to size the wastewater treatment plant for the STEP/STEG collection was 1.2 MGD (1.3 MGD wet weather flow with minimal I/I, minus 0.1 MGD from conservation).

1.4 BASIS FOR SCREENING OF ALTERNATIVES

Each of the component alternatives that passed through rough screening was investigated in greater detail for this Fine Screening Report. Cost is an additional element that will be used for screening in this report that was absent in the Rough Screening Report. Conceptual-level cost estimates have been prepared for the component alternatives to enable their comparison. The interdependency of the components (Figure 1.3) will also be used to examine and screen the component alternatives to a greater extent than was done in the Rough Screening Report. Seawater intrusion mitigation will also be considered, since as discussed in earlier, any project that worsens the current groundwater basin condition will be screened out of consideration. All viable projects were developed so they did not worsen the existing seawater intrusion problem.

Following the development of viable project alternatives, the County's project selection process will include a community-wide survey, workshops, and other community participation efforts so that final project decisions meet the needs and desires of the community to the greatest extent possible. In accordance with State and Federal laws, those additional work efforts and final project selection decisions will be completed concurrently with the environmental review efforts.

Attachment #10 (3 of 4)

San Luis Obispo County
Los Osos Wastewater Project Development

TECHNICAL MEMORANDUM

FLOWS AND LOADS

FINAL DRAFT
February 2008

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Attachment #10 (4 of 4)

using closed-circuit television equipment to visually inspect the sewer pipes. Leaks in pressurized sewers can be detected with a microphone, since the release of pressure produces noise. Remediation can be performed by grouting leaks, by adding an elastomeric compound to failed joints, by adding a lining (although this reduces the pipe capacity) or by replacing the failed areas of pipe.

6.0 FLOW SUMMARY

Estimates of the projected wastewater flows and loads were outlined in the Fine Screening Report and are updated in this TM. The estimate for the dry weather flow at buildout without conservation remains at 1.2 mgd and with conservation at 1.1 mgd.

Inflow/infiltration (I/I) estimates for the collection system alternatives were the main source of uncertainty in calculating the future treatment facility influent flow volume. If a gravity collection system is selected, only a system that was constructed of fusion welded PVC piping could be operated with as little I/I as the other types systems. However, fusion welded PVC sewers are a fairly new technology with little long-term operating history, and can be significantly more costly to install than traditional bell-and-spigot gravity sewers. Therefore, I/I for a gravity system will be higher than for the other systems.

The summary of flow estimates for each type of sewer is shown in Table 6.

Table 6 Flow Estimates, 2006 Water Use Estimate
Los Osos Wastewater Project Development
San Luis Obispo County

Collection System	Population Estimate	Water Use Estimate (gpcd/mgd)	Conservation (mgd)	$I/I_{average}$ (mgd)	ADWWF (mgd)(1)	PHWWF
Gravity	18,428	66/1.2	0.1	0.3	1.4	2.5
STEP	18,428	1.2	0.1	0.1	1.2	1.7
Low Pressure	18,428	1.2	0.1	0.1	1.2	1.9

Note:
(1) Average Daily Wet Weather Flow = Water Use (mgd) - Conservation + $I/I_{average}$ Utilized for sizing processes.

7.0 SENSITIVITY ANALYSIS

The flow estimates presented in Table 6 were calculated based on assumptions derived from literature data and previous experience with I/I as well as information about current water use in Los Osos. However, the estimates would vary if the assumptions changed. A