

**Petition to Review Water Resources Control Board Position that
Minimum Subtitle D MSW Landfills Conform to
WRCB's Chapter 15 Requirements of
Protecting Groundwaters from Impaired Use
for as Long as the Wastes Represent a Threat**

March 28, 1997

John Caffrey, Chairman
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Supplement to Petition A-1042
Order 96-228

Dear Chairman Caffrey:

Recently, several significant events have occurred that are pertinent to the petition I filed last September on the technical deficiencies in the Central Valley Regional Water Quality Control Board's (CVRWQCB) Order 96-228 devoted to the WDRs covering the University of California-Davis's (UCD) development of another campus landfill that will ultimately pollute groundwaters. As discussed below, there is ample justification for amending my Petition A-1042 covering Order 96-228. The primary justification for amending this petition is a March 19, 1997 memorandum from H. Schueller which brings out for the first time that the State Water Resources Control Board has adopted a "position" with respect to the ability of minimum Subtitle D landfills to protect groundwaters from impaired use by waste-derived constituents for as long as the waste in the landfill will be a threat.

Mr. Schueller states in his memorandum that:

"The performance standards are:

- *For Class II landfills [§2540 (a)], 'Class II waste management units shall be designed and constructed to prevent migration of wastes from the waste management units to adjacent geologic materials, ground water, or surface water, during disposal operations, closure, and the post-closure maintenance period';*

and

- *For Class III landfills [§2540 (c)], 'Class III landfills shall have containment structures which are capable of preventing degradation of waters of the state as a result of waste discharges to the landfills if site characteristics are inadequate.'*

"It is our position that a properly-installed single composite liner meets both performance standards, whereas a clay liner does not. It is important to note that these performance standards address the entire containment system for the landfill, not just the liner. The final cover also provides an important measure of protection over the lifetime of the landfill."

While Mr. Schueller did not define who "our" was or is, from his memo it appears that the WRCB has practiced rule-making on groundwater quality protection provided by a minimum Subtitle D landfill without public review, which is contrary to the public's interest and is leading to a highly inappropriate approach in the way in which the Regional Water Quality Control Boards are implementing Chapter 15 and Subtitle D requirements. Further, the "position" that Schueller described that has been adopted by the WRCB was at the time that it was adopted (during or post 1993) with the Board's incorporation of US EPA Subtitle D requirements and Chapter 15 requirements into the Board's current Landfilling Policy, not in accord to what was well known at the time of adoption of this position on the ability of a single composite liner and a minimum Subtitle D landfill cover as typically constructed and maintained and the groundwater monitoring systems that are allowed to be developed by Regional Water Quality Control Boards as part of issuing WDRs for new or expanded landfills to protect groundwaters from impaired use for as long as the waste in a MSW landfill will be a threat. It is highly inappropriate and contrary to the public's interest for the WRCB, without public rule-making, to allow its staff, H. Schueller et. al., to adopt this position since it was at the time of adoption and is now technically invalid.

While it is unclear whether H. Schueller understands the obvious technical deficiencies with a minimum Subtitle D landfill that he states in his March 19, 1997 memo, which sets forth the "position" that the WRCB has adopted on the protective nature of a Subtitle D landfill of the type being implemented today by Regional Water Quality Control Boards, members of the Clean Water Program Staff have for years understood these problems. In fact, as I testified at the CVRWQCB's February 28, 1997 hearing, former members of his staff (Gil Torres) have testified and produced documents concerned with specific landfill reviews (Azusa Landfill and Keller Canyon Landfill) that have been brought to the attention of the State Board that a single composite liner does not comply with Chapter 15's performance standards of protecting groundwater quality from impaired use for as long as the waste in the landfill will be a threat. Further, other members of the Clean Water Program staff who understand and will discuss landfill liner and cover properties and the unreliability of the current groundwater monitoring systems of the types being allowed by Regional Water Quality Control Boards in WDRs for minimum Subtitle D landfills have indicated to me, on a number of occasions, that a minimum Subtitle D landfill as it is being implemented by Regional Boards would not, in their opinion, prevent groundwater pollution by landfill leachate for as long as the waste in the landfill would be a threat.

Further, with respect to the Keller Canyon Landfill review that took place several years ago, the State Board staff documents clearly delineate that a single composite liner does not comply with Class II requirements of ". . .prevent(ing) migration of wastes from the

waste management units to adjacent geologic materials." It was in connection with the Keller Canyon Landfill review by the State Board that the State Board "management" decided to overrule the staff's position on this issue and inform the Board that a single composite liner in the Keller Canyon Landfill setting would conform to Chapter 15's Class II landfill liner requirements, even though it was obvious, as discussed by the State Board staff, that this was not a factual statement about the expected performance of a single composite liner. It appears that that may have been the situation where the Board adopted the position that Schueller referred to in his March 19, 1997 memorandum for Class II landfills. However, to my knowledge, the issue of whether a minimum Subtitle D landfill will conform to Chapter 15 groundwater protection performance standards of protecting groundwaters from impaired use for as long as the waste will be a threat has not been addressed by the WRCB, except in the case of the Azusa Landfill where the State Board concluded that BFI should not be permitted to expand that landfill with a single composite liner because of the inability of a single composite liner to protect the groundwaters in the San Gabriel Basin from landfill leachate pollution for as long as the waste in the Azusa Landfill will be a threat.

The ability of a minimum Subtitle D landfill of the type that is being permitted by Regional Boards across the state today to conform to Chapter 15's groundwater quality protection performance standard is the key issue that was raised in the Petition I filed to the State Water Quality Control Board on September 9, 1996 governing the waste discharge requirements for the University of California-Davis proposed expansion of its campus landfill. On August 9, 1996 the Central Valley Regional Water Quality Control Board adopted Order 96-228, allowing the development of a new campus landfill adjacent to an existing campus landfill that had produced a groundwater pollution plume of over one mile in length due to chloroform and other VOC's. This CVRWQCB Order allows UCD to construct a minimum Subtitle D landfill at a site where it is obvious that the natural strata underlying the location of the landfill will not prevent groundwater pollution by waste-derived constituents.

H. Schueller's March 19, 1997 memo has direct bearing on the adequacy of the State Board's review of this Petition. As it stands now, the focus of the Petition must be on the reliability of the "position" that was adopted by the State Board without rule-making that asserts that a minimum Subtitle D landfill such as that proposed by UCD for its fifth campus landfill covered by CVRWQCB Order 96-228 will prevent groundwater pollution by waste-derived constituents for as long as the waste in the landfill will be a threat. The UCD campus landfill situation is one where UCD administrations have been constructing campus landfills for managing the campus's solid wastes for over 50 years. While the past administrations and the current L. Vanderhoef administration assert that it is "cheaper" for UCD to continue to manage its campus solid wastes by constructing on-campus landfills, this economic evaluation has been found to be fundamentally flawed since it only considers the initial cost of landfilling and ignores the massive costs that the people of California are having to pay for cleaning up the polluted groundwaters that arise from UCD's campus landfills.

UCD now has four campus landfills, all of which are currently polluting groundwaters. The UCD Vanderhoef administration claims that it is cheaper to construct a fifth campus landfill, which even its own staff admitted to the public will also pollute groundwaters, rather than take the campus waste to the Yolo County landfill, which has the capacity to immediately accept these wastes. Three of UCD's former landfills are part of the UCD-DOE LEHR national Superfund site located on the UCD campus. It is important to note that it was not the DOE-sponsored activities that have led to the massive groundwater pollution by UCD's campus landfills. This pollution arises from the mismanagement of campus wastes by UCD. The fourth campus landfill is under clean-up orders because of the over one mile long plume of polluted groundwaters that it has created. It, too, should be part of the national LEHR Superfund site; however, for political reasons the regulatory agencies are unwilling to act on the public's request to have this site declared as part of the LEHR Superfund site.

It is clear that preventing UCD from continuing to construct campus landfills is in the best interest of the state of California since the ultimate cost to the state taxpayers of managing UCD's campus wastes by landfilling at the Yolo County Landfill is far less than the cost that the taxpayers will have to pay when they spend the tens of millions of dollars that will be needed for cleaning up the groundwater pollution that will occur at the UCD proposed fifth campus landfill. Therefore, the review of the Petition covering the significant technical deficiencies in Order 96-228 can and should focus on the technical issues of whether a minimum Subtitle D landfill system will protect groundwaters from impaired use for as long as the waste in the landfill will be a threat.

Mr. Schueller did not indicate in his March 19, 1997 memorandum whether he understands and acknowledges that the municipal solid waste in a minimum Subtitle D "dry tomb" landfill that it permitted under Order 96-228 will be a threat to pollute groundwaters effectively forever. Therefore, Mr. Schueller, in his March 19, 1997 memorandum is either stating that the WRCB has, within the past few years since adopting his stated "position", critically reviewed the professional literature on the expected performance of minimum Subtitle D landfill containment and monitoring systems in preventing pollution of groundwaters from waste-derived constituents impairing their use over the effective infinite period of time the waste in such a landfill will be a threat, or the State Board adopted his stated "position" without reviewing what is well known in the literature on the inability of the minimum Subtitle D landfill liner, cover, and groundwater monitoring systems to prevent groundwater pollution by waste-derived constituents for as long as the waste in the landfill will be a threat. In either case, the Board's action with respect to adopting this position is highly inappropriate.

It is now clear that as long as Mr. Schueller's stated WRCB "position" stands, that there is no way that the public who are concerned about the quality of future generations' groundwater resources in the state can receive a fair review of the adequacy of WDRs issued by Regional Boards for proposed landfills or landfill expansions to incorporate what has been readily know for a number of years in the professional literature about the inability of a minimum Subtitle D landfill liner and cover system and groundwater monitoring system as typically implemented by Regional Boards for Subtitle D landfills

to protect groundwaters of interest to the public and future generations from impaired use by MSW leachate for as long as the waste in the landfill will be a threat.

For a period of about a year in 1994-1995, I was involved in a review of the operations of Placer County's Western Regional Sanitary Landfill (WRSL). The client for whom I worked subsequently sold the property that is being significantly adversely impacted by the WRSL. I have not been involved with the new owners in review of the CVRWQCB's proposed WDRs for the proposed expansion of the WRSL. I did, however, on my own initiative, as part of my concern about more reliable groundwater quality protection than is being practiced in California by Regional Water Quality Control Boards in the permitting of landfills, submit comments to the CVRWQCB on the significant deficiencies in the staff's proposed WDRs for the continued operation of the WRSL. Since, based on past experience, the CVRWQCB conducts its hearings for some issues, which the Board Chairman or certain Board members want to see approved, in a manner that the public finds is strongly contrary to enabling the public to express their concerns on issues, I attempted to ask the CVRWQCB staff at the February 28, 1997 Board hearing on the staff's proposed waste discharge requirements for the continued operation of the Placer County Western Regional Sanitary Landfill about the appropriateness of the review conducted by the staff in determining whether the proposed WDRs complied with Chapter 15's requirements of protecting groundwaters from impaired use for as long as the wastes represent a threat.

The questions focused on the appropriateness of the CVRWQCB's approach for developing the WDRs for the WRSL relative to the WRCB's regulatory requirements. It is this situation that led Mr. Pinkos to ask Mr. Schueller for information on the State Board's position on the protective nature of a minimum Subtitle D landfill single composite liner cover and groundwater monitoring systems to comply with Chapter 15's requirements of protecting the groundwater from impaired use where it is understood that the waste in such landfills will be a threat effectively forever. As I testified at the February 28, 1997 CVRWQCB hearing, in the past it has been the State Board's position as evidenced by testimony at hearings, memos, and personal discussions that a single composite liner would not comply with Chapter 15's requirements of protecting groundwater quality from impaired use at a geologically unsuitable sites where natural protection of groundwater resources was not available. It appears now from Mr. Schueller's memorandum in response to Mr. Pinkos's request, that the State Board has, since 1993, reversed its position on this matter without proper rule-making. Further, this reversal of its position is not in accord with what is known in the professional literature about the ability of a minimum Subtitle D landfill containment system and groundwater monitoring systems as being implemented by Regional Boards today to protect groundwaters from impaired use for as long as wastes in the landfill remain a threat.

Mr. Pinkos, through his request, has opened the door to a more comprehensive review of issues than would have been possible without Mr. Schueller announcing for the first time to my knowledge that "*our*", presumably the Board, either directly or through delegated authority, had adopted a "position" that a minimum Subtitle D landfill could be sited anywhere in California and be protective of groundwater resources in accord with

Chapter 15 requirements of no expected impaired use for as long as the waste in the landfill will be a threat. This represents a significant change in Board policy from what was adopted by the Board in connection with the Board's position on the expansion of the Azusa Landfill in the early 1990's.

It is important in reviewing this matter to incorporate the Porter-Cologne requirements for addressing a threat of pollution, in which,

"Threaten,' for purposes of this section, means a condition creating a substantial probability of harm, when the probability and potential extent of harm make it reasonably necessary to take immediate action to prevent, reduce, mitigate damages to persons, property, or natural resources."

Clearly, the permitting of a minimum Subtitle D landfill at a geologically unsuitable site such as the UCD West Landfill site, or the WRSL site, where it is obvious that the proposed WDRs will not be protective in accord with Chapter 15 requirements of preventing impaired use of groundwaters for as long as the waste in the landfill will be a threat would be in violation of Porter-Cologne "threaten" requirements.

Rather than filing another petition with the State Board to address these issues, such as could be filed on the significant technical deficiencies in the CVRWQCB's WRSL expansion, I have decided that the best way to address the issues that have arisen because of H. Schueller's March 19, 1997 stated State Board "position" on the protective nature of minimum Subtitle D landfills, would be to amend the Petition filed with the State Board on the CVRWQCB's inadequate WDRs set forth in Order 96-228 to ask the State Board to specifically address in a full public arena the appropriateness of the position that H. Schueller indicates was adopted by the Board that a minimum Subtitle D landfill has a high probability of protecting groundwaters from impaired use, i.e. does not threaten groundwaters, for as long as waste in the landfill remains a threat.

This amendment to my Petition includes asking the State Board members and their staff to review the questions that were originally developed for the WRSL's WDRs in the context of basically the same issues associated with the UCD's West Landfill site under Order 96-228. While I am not filing a petition on the significant technical deficiencies in the CVRWQCB's WDRs adopted for the expansion of the WRSL, I have included the questions that are pertinent to the WRSL situation in the set of questions since addressing these questions will demonstrate a pattern that has been adopted by the CVRWQCB's staff and Board in failing to conduct a proper analysis of site conditions in developing WDRs for landfills. With few exceptions, the same issues apply to the WDRs governing both landfills. Both landfills are proposed to be developed at geologically unsuitable sites, where natural protection has been demonstrated to not exist. Therefore, the basic question that the State Board must address is whether a minimum Subtitle D liner system, the minimum Subtitle D cover system, and the groundwater monitoring systems that the CVRWQCB has allowed for the UCD West Landfill development can be expected to have a high degree of reliability of containing waste-derived constituents effectively

forever, i.e. that the construction of the UCD West Landfill as proposed under Order 96-228 has a low probability of threatening groundwater quality, impairing its use forever.

Please find enclosed a recent report that I have developed: "Deficiencies in US EPA Subtitle D Landfills in Protecting Groundwater Quality For As Long as MSW is a Threat." This report summarizes many of the key issues that need to be addressed in connection with evaluating whether a minimum Subtitle D landfill will protect groundwaters from impaired use for as long as the wastes in the landfill represent a threat. I ask that this report and the enclosed questions become part of the administrative record for this amended Petition and be reviewed by the State Board as part of addressing the issues raised in the Petition. These materials, coupled with the papers and reports that are part of the administrative record associated with my appeal of CVRWQCB Order 96-228 serve as a technical basis to the literature which demonstrates that since the early 1990s, it has been well understood by professionals in the landfilling field that a minimum Subtitle D landfill containment system and groundwater monitoring system as typically implemented by Regional Boards cannot comply with Chapter 15's groundwater quality protection standards. Further, as discussed herein, the Regional Boards have been adopting WDRs for landfills that obviously cannot comply with Subtitle D requirements. While it may be possible after appropriate rule-making for the State Board to adopt Mr. Schueller's stated "position" which is contrary to the literature, such adoption must be done in a full public process where the public has the opportunity to review and inform the Board of the appropriateness of such a position.

I request as part of my Petition on the significant technical deficiencies of Order 96-228 that the Board conduct this review. If the Board concludes after proper public rule-making that it is in the best interest of the state of California to adopt a "position" on the ability of a minimum Subtitle D landfill containment system and groundwater monitoring system as implemented by Regional Boards to protect future generations' groundwaters from pollution by landfill leachate even though such a position is contrary to the professional literature pertinent to this topic, then the public will have had an appropriate opportunity to have reviewed this position as it should have had before it was adopted by the State Board without proper rule-making. Adopting that position is a clear indication that this Board wishes to continue to practice cheaper than real cost garbage disposal in minimum Subtitle D landfills at the expense of future generations' groundwater resources, as well as their health, welfare and interests.

Thank you for consideration of this matter. Please contact me if you have any questions about it.

Sincerely yours,

Fred

G. Fred Lee, PhD, DEE

Copy to:
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W. Pettit
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GFL:ad
Enclosures

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***References as: "Lee, G. F., 'Petition to Review Water Resources Control Board Position that Minimum Subtitle D MSW Landfills Conform to WRCB's Chapter 15 Requirements of Protecting Groundwaters from Impaired Use for as Long as the Wastes Represent a Threat,' submitted to State Water Resources Control Board, Sacramento, CA, March (1997)"***