

RESOURCE MANAGEMENT AGENCY

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KERN COUNTY WATER RESOURCES COMMITTEE

MEMORANDUM

TO: BIOSOLIDS TASK FORCE MEMBERS
KERN COUNTY WATER RESOURCES COMMITTEE

FROM: DAVID PRICE III
Water Resources Committee Secretary
Resource Management Agency Director

DATE: SEPTEMBER 8, 2003

SUBJECT: REPORT TO THE KERN COUNTY WATER RESOURCES COMMITTEE REGARDING
THE LAND APPLICATION OF KERN COUNTY CLASS A-EQ BIOSOLIDS AND
GROUNDWATER ISSUES

As promised at the Biosolids Task Force (Task Force) meeting on August 18, 2003, staff has prepared the following sections addressing the background, summary of presentations issues, and information provided at the four meetings held as part of the referral from the Kern County Water Resources Committee (Committee) to your Task Force. There has been a great deal of valuable information presented since our first meeting on March 17, 2003 and all interested parties have had an opportunity to share their perspective on this challenging issue. Also included for consideration by the Task Force is a draft final recommendation. Staff would encourage discussion on this matter and will seek the guidance of the Task Force at the September 8, 2003 meeting with respect to subsequent action to be considered by the full Committee.

BACKGROUND

The County of Kern (County) has regulated by ordinance the land application of Biosolids during the past three years. When adopted, the ordinance contained a successor ordinance that was to become effective on January 1, 2003. This successor ordinance banned any further land application of Class B Biosolids and allowed land application of Kern County Class A-EQ Biosolids without restriction. Subsequent to that time, the ordinance has been administered by the Environmental Health Services Department (EHS), a component department of the Resource Management Agency (RMA).

EHS staff have amassed a considerable body of experience regarding Class B Biosolids land application activity. During this period, staff found that the permitting, data collection and reporting, field inspection, and enforcement programs contained in the ordinance worked in the public interest and were efficient to administer. Based on this experience, staff recommended that a new ordinance be considered that in essence would not restrict the land application of Class A-Exceptional Quality (Class A-EQ) Biosolids, but would regulate the activity similar to the permitting, reporting, inspection, and enforcement programs under the prior ordinance.

Accordingly and at the request of the RMA, the Board of Supervisors (Board) on October 22, 2002 introduced an ordinance to regulate the land application of Class A-EQ Biosolids. As a part of its action, the Board accepted a public request that a task force be formed to consider groundwater quality impacts and that the RMA Director report back to the Board in four months. As a part of the November 26, 2002 ordinance adoption letter to the Board, the RMA Director proposed that rather than appoint a new entity, the Committee be designated to address the issue and advise the RMA Director regarding future actions. This recommendation was made because the Committee has existing authority to advise on water issues, including those related specifically to groundwater, and that the Committee is a more broadly representative body than would be a group comprised of parties only interested in the biosolids issue. The ordinance was adopted as introduced.

Since adoption of the permanent ordinance three years ago, there has been little in the way of new research or scientific findings regarding land application practices and/or health risk assessments. The predominant body of evidence has failed to establish a clear indication of risk to either humans or natural resources due to land application activities when those activities are conducted in accordance with existing regulations.

Based on the available information, the County now permits the land application of Class EQ Biosolids under a new program of monitoring and inspection that will create an otherwise unavailable body of information that identifies where and how land application activity has taken place. It is anticipated that this information will be useful as monitoring and evaluating continues to identify the implications related to land application activities in an arid climate, for which little data is available from other sources.

Nonetheless, there remained lingering concerns about any potential risk to groundwater resources. In order to be responsive to these concerns, a focused review of this issue was proposed to be undertaken while the new ordinance was implemented and thereby acquired additional information. To assist in this process, a task force of Committee members was appointed to work with County staff and other interested persons. The Biosolids Task Force would review groundwater issues related to the land application of Class A-EQ Biosolids and would report back to the Committee.

TASK FORCE MEETINGS SUMMARY–PRESENTATIONS, ISSUES, INFORMATION

A synopsis of key issues and information, chronologically presented by meeting date of the Biosolids Task Force, is listed below:

March 17, 2003

Stuart Pyle, Chairman of the Committee and the Task Force, provided an overview of the referral from the Board to the Committee.

The Committee in turn established the Biosolids Task Force to further review and make recommendations regarding the potential impact of the continued land application of biosolids on groundwater and to recommend changes to the current ordinance should they be deemed necessary. Mr. Pyle introduced the members of the Task Force, which include members of the KCWRC from each Supervisorial District (S.D.), as Will Boschman (S.D. #3), Robert Jasper (S.D. #2), Edward Herrera (S.D. #5), Allan Jaffe (S.D. #1), and Kenneth Paul (S.D. #4). In addition, David Price III, Director of the Kern County Resource Management Agency (RMA), was introduced as Committee Secretary, and Steve McCalley and Guy Shaw with the Environmental Health Services Department were introduced as staff.

David Price III, Secretary to the Task Force, informed the Task Force that this meeting would provide them with an understanding of the history of regulation of biosolids in Kern County, how the current program is administered, how permits are reviewed and processed and an overview of current application activities. He further outlined the content of future meetings, while noting that the April meeting would include a presentation by members of the generators and the Food Growers Against Sewage Sludge. The May meeting originally was to include a presentation by the Kern County Water Agency to share a perspective of the application of biosolids on groundwater banking activities and a general overview of ground water quality issues. This meeting was delayed until August to allow the Water Agency and staff to obtain more up to date and detailed information.

Steve McCalley, Director of EHS, provided comments on the development and evolution of the ordinance and implementation of the program to date, as follows:

- In 1997, desert residents raised initial concerns regarding odors emanating from trucks transporting "sludge". Subsequently, residents in the Cantil area voiced complaints regarding odors, blowing material, and the failure of farmers to use the material to grow crops. In the San Joaquin Valley, additional concerns were raised about deteriorating roads, odors, and nuisance flies in the vicinity of Shafter and Buena Vista Lake. These concerns prompted the Board to refer the issue to the RMA for an investigation of possible solutions to the alleged problems. This began a several year process of ordinance proposals, community meetings, scientific debates, modifications, and ongoing review of the issues that has led to our current referral and review.
- The general consensus was that the Federal Part 503 regulations failed to adequately address the issues of health, nuisance, and impacts to groundwater and agriculture. Also, there appeared to be a failure of the Federal agencies and the Regional Water Quality Control boards to effectively monitor the permitted sites to minimize nuisances. The Board took action on several occasions by enacting successive ordinances to address local concerns.

- At the high point of application under the Regional Board and Federal Part 503 oversight, there were approximately 53,000 acres approved for application of sludge. Our best estimates, however, indicate that a total of no more than 24,000 acres of that permitted area actually received material. As the level of Kern County regulation became more stringent, the amount of acreage under permit has been reduced to less than 9,000 acres today.

Guy Shaw, the EHS staff person charged with the daily oversight of the program, provided the following information regarding the Kern County Biosolids Ordinance:

- Unlike prior versions of the ordinance, the current ordinance allowed the application of Kern County Class A-EQ Biosolids on parcels anywhere throughout the county. Further the Kern County definition of biosolids was stricter than the Federal standard requiring testing and limits for polychlorinated biphenyls and dioxins, both possible contaminants that may be found in sludge hence causing concern for contamination.
- The ordinance requires a lengthy application including testing for agronomic constituents of soil, various chemical constituents that may be part of the biosolids including helminth ova and salmonella, as well as a variety of information regarding site-specific criteria, application procedures, and agronomic needs. The key element of the testing is to assure that the material meets the Kern County Class A-EQ standard before it is applied.

Blake Sandin, an advisor with the University of California Cooperative Extension Service, offered to share his experience and information gained during his four years of field trial and observations of biosolids use in Kern County. A research paper prepared by Mr. Sandin was provided to Task Force members.

As the presentations occurred, members of the Task Force asked numerous questions of the presenters seeking clarification. An opportunity was also accorded to members of the audience to ask questions or clarify issues that occurred during the presentations.

The next meeting was scheduled for April 21, 2003 with presentations by the Publically Owned Treatment Works (POTW's) and Food Growers Against Sewage Sludge.

April 21, 2003

Chairman Pyle called the meeting to order. Chairman Pyle noted that today's meeting would be focused on the Impacts to Groundwater of Land Application of Kern County Class A-EQ Biosolids. Presentations would be made by the Publicly Owned Treatment Works (POTWs) – a collaborative presentation by the City of Los Angeles, Orange County Sanitation District, and the City of Oxnard – all producers of biosolids that are land applied in Kern County. Another viewpoint would be presented by the Food Growers Against Sewage Sludge. Each of the two was limited to 45 minutes for their presentation.

The presentation by the POTWs began a very informative session.

Diane Gilbert, with the City of Los Angeles, began the POTW presentation with a three-minute video entitled "Imagine" showing how the biosolids "product" is trucked to and applied in the field. This video noted many of the requirements contained in the Kern County Ordinance such as assuring the loads are covered; the material is incorporated into the soil in a timely manner, and the agronomic aspects of the process.

Ms. Gilbert was followed by Layne Baroldi, with the Orange County Sanitation District, who presented a power point presentation entitled "OCSD's Pretreatment Program and the SWRCB General Order EIR." This presentation focused upon the key aspects of sewage monitoring prior to arrival at the treatment plant intended to assure that potentially harmful industrial materials are not received and do not become part of the treatment process and hence part of the biosolids material applied in Kern County. It was noted that all POTW's have this type of program that physically inspects the sewage flows for chemical content. He further shared key aspects of the evolution of the State Water Resources Control Board (SWRCB) General Order EIR.

It was noted that the requirements of this Order provide for the standards that biosolids may be applied under including testing, reporting, application standards, cropping restrictions and process for approval. These requirements use the Federal Part 503 standards as their basis yet are less restrictive than Kern County Ordinance requirements.

Both presentations by Ms. Gilbert and Mr. Baroldi included the significant changes that have been made by the POTWs to meet the Class A-EQ Kern County standard including significant plant upgrades, testing, and on-site monitoring. All of which have had an impact on their respective budgets.

Sterling Cox, a consultant for the City of Oxnard, also made a brief statement regarding the City's program and application process.

The Food Growers Against Sewage Sludge followed with their presentation.

Rebecca Lewis, with Marko Zaninovich Inc., provided a power point presentation entitled "Kern Food Growers Against Sewage Sludge." This presentation focused upon the concerns that the content of sewage sludge is a problematic combination of industrial wastes processed through the POTW system as a means of disposal. Further, that the materials contained in the sludge have an unknown impact on the soil, water and crops grown where the material is applied hence the need to strictly regulate or ban entirely the use of biosolids as a soil and crop amendment.

Paul Giboney, with M. Caratan Inc., followed Ms. Lewis with a power point presentation entitled "Sludge, Water Quality and Organic Chemicals." Mr. Giboney provided more detail regarding specific chemicals, including hazardous waste and pharmaceuticals, that may be found in sludge and the concern for health impacts and for long term impacts on soils, ground water, crops and perceptions of the agricultural community where sludge is used. He noted that there have been significant concerns in recent years regarding the adequacy of sewage treatment processes, including that the material is not being adequately treated yet becomes part of the effluent and is further concentrated in the sludge. Mr. Giboney introduced Ken Schmidt.

Ken Schmidt, a groundwater hydrologist, then presented an overview of groundwater issues entitled "Hydrology Issues with Sewage Sludge in Kern County" accompanied by a handout of key issues and facts. Mr. Schmidt shared concerns as to the potential impacts of sludge on the vast water basin under the San Joaquin Valley, the unknown fate and transport of sludge constituents, and the case for caution on the use of sludge in an effort to protect this valuable resource.

Howard Frick, a local farmer in the Lamont-Arvin area, reiterated the case for concern in recognition of the material presented by his fellow speakers.

Thirty minutes were then allowed for questions and answers related to the presentations.

With the formal presentations completed, Chairman Pyle took input from the audience. General comments were made and a discussion ensued regarding the effects of dairies, as well as the potential pollutants from fertilizers, manures, pesticides, and chemicals used in farming operations.

The next meeting was announced to be on May 19, 2003, with a presentation by the Kern County Water Agency, a perspective on land application, and the impacts of biosolids on their water banking and general operations.

May 19, 2003

The meeting originally scheduled for May 19, 2003, was postponed to August 18, 2003, due to scheduling concerns.

August 18, 2003

Chairman Pyle called the meeting to order. It was then announced that Mr. Herrera had submitted his resignation from the Task Force due to personal obligations. His resignation was accepted with regret.

Chairman Pyle briefly summarized the goals and objectives of the Task Force and then introduced the program for this meeting, which was a presentation by the Kern County Water Agency (KCWA). The KCWA staff was asked to provide an overview of the KCWA activities regarding water banking, surface and groundwater management, and protection of water quality.

Chairman Pyle introduced Rick Iger, with the KCWA, who presented a multimedia program on the activities and concerns of KCWA with regard to biosolids. Mr. Iger narrated a power point presentation, which included numerous maps (copies of which were provided to all Task Force members and members of the public that were present) outlining the broad soil conditions, underlying water quality, water depths, areas of concern for land application activities, and noted the relationship of past and current biosolids land application permitted sites. The presentation was informal and allowed for questions and discussion from the Task Force and the public throughout.

It was noted that the two northerly application sites appear to pose a minimal risk to groundwater as they are located in areas with existing quality problems, the depth to groundwater is a great distance, and/or the surrounding uses are less sensitive. The area noted near Buena Vista Lake, however, is located in a sensitive area and is of concern.

Discussion and questions centered around monitoring options, data development, and the review of possible strategies to contain or limit the potential adverse impacts of biosolids application.

Jim Beck, KCWA Assistant General Manager, provided a brief discussion of the KCWA Board of Directors' concerns as to biosolids application as it related to the various multi-million dollar efforts currently being undertaken to bank, protect and enhance water availability in Kern County.

Considerable discussion among the Task Force and the public occurred with respect to possible standards and implementation measures that could be considered to improve the administration of land application activities in Kern County.

Chairman Pyle and other Task Force members all expressed appreciation to the KCWA presenters and all previous presenters for a thorough exploration of the issues and concerns related to biosolids.

Shaen Magan, a farmer and biosolids applier, offered a tour of his facility to acquaint members of the Task Force with site-specific details of material application. It was agreed that the Task Force and interested public would meet at the Tule Ranch on August 29, 2003, at 10:00 a.m. to tour the facility. As this tour is an official special meeting of the Task Force, public notice of the meeting was mailed to interested parties and posted.

August 29, 2003

Task Force members and the public convened at Tule Ranch for a description of the lime stabilization process employed to process biosolids into Kern County Class A-EQ Biosolids for land application purposes. Shaen Magan provided a detailed discussion of the mixing process as well as the staging, spreading, and incorporation practices used on the ranch.

CONCLUSIONS AND FINDINGS

On October 22, 2002, the Board asked the RMA Director to convene a committee of persons that would consider whether additional safeguards were required to protect groundwater with respect to the land application of Kern County Class A-EQ Biosolids. On November 26, 2002, the RMA Director advised the Board of the future role of the Committee in further review of this issue. It was determined that the Committee, which is authorized by California Government Code section 25699 and enabling Board adopted local ordinances, was the appropriate body to conduct the review because the Board has vested it with authority to advise the Board on the water resources of the County.

On January 13, 2003, the Committee approved a staff recommendation that the chairman of the Committee appoint a representative cross-section of Committee members to the Task Force. The chairman did so at that meeting and all those appointed accepted their appointments. Subsequently, notice of all meetings has been posted and mailed to all those on the Biosolids and Committee mailing lists.

During the activities and deliberations of the Task Force, correspondence and other information has been received from a number of sources including proponents, opponents, and the University of California and all has been made a part of the record. Its proceedings to date has led the Task Force to the following conclusions:

- The Board has found that the land application of Kern County Class A-EQ Biosolids can be permitted to occur with appropriate regulatory oversight.
- Although some research activity is continuing, there has been no substantially conclusive body of

knowledge established since the ordinance banning the land application of Class B Biosolids was enacted by the Board. Even the recently published National Academy of Sciences' National Research Council report, "Biosolids Applied to Land: Advancing Standards and Practices", did not establish a clear public health threat.

- Much of the acreage now under land application permit does not pose a verifiable risk to groundwater resources. One permitted site adjacent to groundwater recharge projects is, however, a site of concern due to as of yet undetermined but potential risk.
- Due to the amount of County resources required to undertake ongoing reviews related to this topic, it is desirable to select a course of action that would require a lesser amount of attention while still allowing for efficient and consistent regulatory oversight of land application activities.
- As new information becomes available that would justify new and more detailed examination of new evidence, then such a reassessment should be undertaken.
- County staff should work with the POTWs to develop localized research programs that can obtain data useful to the further review of potential impacts of land application practices.

RECOMMENDATION

THEREFORE, IT IS RECOMMENDED that the Kern County Water Resources Committee recommend the following actions to the Board of Supervisors:

1. The Biosolids Land Application Ordinance be amended as follows:
 - a. Allow continued permitting of fields that were permitted prior to January 1, 2004, and
 - b. Allow staff to require groundwater monitoring for sites of concern that overlay water aquifers, and
 - c. Restrict permitting of new sites to those areas that are determined to pose minimal risk to groundwater resources, and
 - d. Readopt the previously adopted Biosolids Transportation Impact Fee, and
 - e. Make minor, non-substantive changes.
2. Direct staff to work with the POTWs concerning the creation of local, specialized research activities that support efforts to better assess the impact of land application activities on groundwater resources.