

State of California

DEPARTMENT OF TOXIC SUBSTANCES CONTROL COMMUNITY PROTECTION AND HAZARDOUS WASTE (HAZ-WASTE) REDUCTION INITIATIVE ADVISORY COMMITTEE MEETING

MEETING SUMMARY – DRAFT

November 14, 2016

1:00 – 4:00 p.m.

Junipero Serra State Office Building, First Floor
Carmel Room, 320 West Fourth Street
Los Angeles, California 90013

Committee Members:

David Asti
Cynthia Babich
Ingrid Brostrom
Virginia St. Jean
Chuck White

Haz-Waste Reduction Initiative Team:

Pauline Batarseh, Branch Chief
Antonette Cordero, Hazardous Waste Management Program Deputy
David Miller, Senior Environmental Scientist
Jerry Lile, Senior Scientist
Lazaro Cardenas Jr., Outreach Coordinator
Anna Hostler, Office Technician

Also Present:

Greg Bourne, Facilitator, UC Davis Extension Collaboration Center
Rick Brausch, Chief, Policy & Program Support Division, DTSC
Rita Loof, Director of Environmental Affairs, RadTech International
Jesse Marquez, Executive Director of the Coalition for a Safe Environment
Jim Wells, Ph.D., Environmental Geologist, L. Everett & Associates; and Technical Advisor,
Exide Advisory Group
Jane Williams, Executive Director, California Communities Against Toxics

1. Introductions, July 20 meeting summary, review of agenda

Mr. Bourne welcomed everyone to the meeting. He invited them to introduce themselves.

Mr. Brausch introduced new CPHWR Initiative Team members Antonette Cordero, the new Hazardous Waste Management Program Deputy; and David Miller, the new Senior Environmental Scientist.

Mr. Bourne reviewed the meeting agenda.

2. Overview of pilot project proposal summaries

a. Revision to proposal summaries

Mr. Miller directed the committee to the four pilot project proposal summaries in the packets. Changes made in response to the committee's review were shown in red. Mr. Miller noted that the changes mostly reiterated the commitments to have the report include a set of recommended actions that DTSC might consider as steps to pursue; changes also clarified sections in the pilot project summaries for the specific scope of the projects.

Mr. White asked if they were focusing on the reduction of the newly generated waste as a result of the manufacturing process, or on remediation waste from the different types of industries with respect to contaminated soils. Mr. Miller responded that for the overall project, it is both. For the individual focus projects, it will vary. For example, with the contaminated soil project, the focus will be on optimizing cleanups and wastes that are already contaminating soil. For projects such as the refinery industry, the focus will be on actual recurring waste generation at refineries. The group will see what comes to the fore as they develop the projects further.

- Organic solvent waste

Ms. St. Jean commented that she had wanted to specify solvents to narrow the category, and that had been nicely done. She was also satisfied with comments regarding upstream management of solvents, but needed more time to look at the changes.

Mr. White asked why the word *managed* appeared only in the solvent treatment project. Mr. Miller replied that it was not a conscious decision; the word could appear elsewhere.

- Lead-acid batteries

Mr. White questioned the term *significant contributor* in the bottom paragraph of page 1. By far the largest source of lead today is automotive leaded gasoline, and more recently, leaded aircraft engine fuels. He would like to see a breakdown of all the various sources of lead, to get a sense of where the lead-acid battery industry fits within the overall spectrum. Batteries are not generally the big problem with the exception of Exide.

Ms. Babich felt that there is a lot of investigation that needs to occur regarding these secondary smelters. She thought the verbiage was fine as is.

Mr. Brausch agreed, pointing out that lead acid batteries should be pursued as one of the contributors.

Mr. White clarified that he felt that lead-acid batteries should be put in context with all the other sources of lead that are out there, both historical and ongoing.

Ms. Brostrom did not feel that there was anything incorrect in how lead acid batteries were portrayed there. She also felt that this was not the place to insert an inventory of all the different sources. She suggested going a little further and indicating that the facilities are located in low-income communities of color – there is a cumulative burden.

Ms. St. Jean felt that the summary could mention that there are other places from which this contamination comes, but we are focusing on lead-acid batteries. She liked the lead smelting paragraph. She would still like to include verbiage on seeing upstream technology reviews for battery recycling.

Mr. White stated that we should look at both tons of lead from cleanups of various sources as well as tons of lead from newly generated wastes from the lead-acid battery industry. He added that lead-acid batteries are a small fraction of the ongoing sources of lead in the environment in Southern California.

- Contaminated soil

Ms. Brostrom stated that she was very disappointed to see that the project goal had changed in quite a fundamental way. She specifically called out the addition of prioritizing onsite treatment over offsite land disposal. It does a disservice to having community discussions and dialogues about how we value the input of the communities involved. She strongly recommended removing that addition.

Ms. Babich felt the opposite; she wanted to look at new ways of doing disposal. She also noted that when communities have good information in front of them, they can make good decisions.

Mr. White agreed with Ms. Brostrom regarding the absolute prioritization of onsite treatment over offsite land disposal in all cases. It needs some caution. He cited the cost, time table, and noise level of the General Atomics operation for cleaning up Montrose Chemical onsite. The overall impact should be considered.

Ms. Brostrom questioned where the project goal change had come from so suddenly; it signaled a process issue. In addition, it will raise a lot of red flags for communities who do not feel comfortable with DTSC's management of their cleanup sites.

Ms. St. Jean stated that her intent had been to involve communities so they know what the pros and cons are of in situ versus offsite treatment. She did not know where the prioritizing aspect had come from in the wording.

Ms. Batarseh stated that staff was looking at innovative technologies that would lead to destruction of the contaminants. In the staff's attempt to capture everyone's comments, the wording had come out this way. They did not intend to add new language or change the scope of the project, but to come to agreement that works for everyone.

Ms. St. Jean stated that they had wanted to bring new treatment technologies to the table and to see what ideas were out there for an in situ situation. She did not like the wording of the bullet item.

Ms. Babich felt that it had always been the intention to look at destruction technologies. An important factor is how to define costs; there are many cost benefits that are not included in an equation involving total destruction technology.

Mr. Bourne suggested that a way forward would be to take the two bullets toward the bottom and talk about discussions with community involvement – to identify prioritizing onsite treatment over offsite land disposal as one of the key points, and to combine it with the two bullets into a more robust summary of how to move forward. He suggested that the committee work on it and come back with some alternative language.

Mr. White preferred to *emphasize* rather than *prioritize* onsite treatment over offsite land disposal, particularly when it is shown to be more protective and cost effective.

- Refinery waste

Mr. White reiterated that three of the projects lacked the word *managed*. Ms. Batarseh responded that staff had been following the comments received at the last meeting. The word could be added to the other projects where appropriate.

Ms. Babich noted that the committee has been asking for staff to provide the distinction between the parts of refinery waste brought to landfills and the parts being disposed of in other ways (e.g., burned).

b. Response to comments and discussion of terms

Mr. Miller introduced the document in the packet entitled “Response to Comments.” It gave general and specific comments, explaining how staff addressed them. Some were addressed in the actual project proposals, while quite a few will be addressed in the actual pilot projects as we develop the implementation plans.

Mr. Bourne directed the committee to look at the revisions in each proposal and to look at the Response to Comments, to ensure that their comments were addressed.

Mr. Brausch noted that the committee’s comments were excellent. The staff meant to determine whether comments belonged in the project description or in the implementation phase; comments were not intended to be discounted.

Ms. Brostrom referred to the soil contamination project: she held with her original comment that the project should focus on alternative destruction technologies rather than best management practices. It is a pilot project; we are trying to be innovative.

Ms. Batarseh stated that DTSC proposed to have a broad discussion on the two issues of the meaning of *cost effectiveness* and of *technical feasibility*.

For the cost effectiveness issue, Ms. Brostrom suggested using CalEPA’s EnviroScreen tool to indicate the areas of the state most impacted.

Mr. Asti wished to hear from a resource economist who has modeled and taken survey data that monetizes real benefits. It is time to bring in an expert on this complicated subject. Ms. Babich agreed.

Mr. White noted that the subject involves risks and relative risks; it is complicated. In the solid waste industry they had debated for a long time on the true cost of a landfill.

Mr. Bourne suggested that a presenter could be given these questions ahead of time to be incorporated into a presentation. This plan could move forward for the next committee meeting. Ms. Batarseh requested to have long-term impacts and life cycle analysis addressed.

Mr. Brausch recognized that some of the current models of assessing costs are very limited and narrowly focused. Historically they have been techniques used by businesses looking at business decisions, which may not have brought into play some of these external factors. Is monetization the best technique, or are there other techniques out there?

Ms. Babich commented that we are trying to get at looking at cost in a different way, and to consider the terminology that we are using in our documents.

Mr. Bourne raised the issue of the term *technical feasibility*. Ms. Babich asked to whom technical feasibility would be directed. She felt that it does go back to cost – many ideas are

taken off the table by agencies because they are not technically feasible. The other facet of the term is the technology involved.

Mr. White felt that it would be a judgment call: if you have a technology that actually destroys the toxicity of something, making it no longer a threat, it is related to a present cost to achieve that reduction in toxicity. The other alternatives that do not involve elimination of toxicity will have a cost somewhere in future years.

Mr. Bourne noted that there has been a conflation between cost and technical effectiveness. Maybe there needs to be clarity: *technical feasibility* should be called *technical effectiveness* or *technical applicability*.

3. Status of Request for Information and Request for Partnerships

a. Ongoing data and information gathering

b. SB 14 source reduction information summary

c. Potential partnerships

Mr. Miller directed the committee to the brief summary of some of the key initiative outreach meetings that had been held with General Atomics, the Battery Council, Reterro, and the Center for Creative Land Recycling. DTSC has an ongoing dialogue with those groups to obtain any particularly useful information to help with the project backgrounds and design implementation. DTSC is also gathering information for interest in partnerships to do pilot projects.

Staff did a focused, proactive outreach toward people in the various industries associated with the projects. DTSC identified the larger generators who would be subject to SB 14 (our source reduction planning and progress reporting requirements in the law). We get quantitative information about those generators.

Staff requested SB 14 documents from 45 of the organic solvent generators, 4 of the lead-acid battery waste generators, and 19 of the California refineries. They received responses from 20 of the solvent generators, all of the lead-acid battery waste generators, and 14 of the refineries.

Staff has begun looking at the documents. For the most part, the responders all identified some source reduction measures they could put in place. Most identified that they had put some of those measures in place and showed documentable source reduction to the waste that they had targeted under SB 14.

The bottom line is that there are some opportunities within those industries. Staff will be following up with those that look to have the most potential as partners to showcase what they have done. Staff is still looking for input from the committee members and others on potential partnerships.

Ms. Babich stated that she had requested at least five times to be more involved when the data is gathered. She asked for an explanation so she could adjust her expectations.

Ms. St. Jean expressed interest in the results of the June 14 meeting. She asked how to get reports back. Ms. Batarseh stated that she could make available a summary of the meeting minutes. Ms. St. Jean continued that she was very interested in the numbers of doing business in Reno versus California, as regulations are much stronger in California.

Ms. Brostrom asked if there were any impediment to putting the word out regarding when these meetings are going to happen. Would the committee members be welcome? Ms. Batarseh replied that moving forward, she envisioned many things happening on multiple fronts. They need to discuss the level of involvement of the committee to help staff out. DTSC is reaching out to other governmental agencies and industries. As staff continues the data gathering process, the committee can help staff with research as well.

Mr. Bourne asked the committee if they would like DTSC to do an initial screening before engaging the committee.

Ms. Babich stated that she expected to be fully engaged. She has thought about one of these projects for a long time and has some ideas she would like to roll out. Communities have some good information to bring to the table as well. She mentioned that her trust level was not yet secure. She felt that the committee was messing a big piece, and that staff was missing the dynamic diversity on this panel to help them.

Mr. White stated that he would like just to have the opportunity to engage in the meetings, if he could be notified about them least a week ahead of time. A calendar could be kept listing all the activities of this project.

Mr. Brausch stated that the committee members represent various constituencies. Therefore, their presence can be amplified many times over by people they represent. Staff's commitment is to let the committee know when things are happening; it is then the committee's choice to engage or not engage. He sought the feedback of the committee on the level of information staff is providing.

Ms. St. Jean was in favor of such communication. Committee members have expertise in different areas. She would like to look at staff questions and possibly add to them.

Mr. Bourne summarized the discussion.

1. DTSC will share the questions to be posed in meetings.
2. DTSC will share the schedule as meetings are set up.
3. DTSC will provide a summary report after meetings.
4. Committee members will contribute information on potential partners.

Ms. Brostrom asked what mechanisms will be used to push the envelope past the SB 14 source reduction measures. Mr. Miller responded that this would be part of the recommendations in reports DTSC will write for the Legislature. They will be looking to the committee members, community members, industry, and all the experts out there on barriers and obstacles to optimizing source reduction – what DTSC can do as a regulatory agency to encourage alternative technologies.

Mr. Brausch felt that DTSC needs to reach out aggressively to other states, the U.S. EPA, other countries, and academia to determine the cutting edge for waste reduction techniques.

Regarding the refineries proposal, Ms. Brostrom asked if crude weight is going to be considered. Mr. Miller responded that in the refinery industry, the approach to their feedstocks and opportunities for optimizing their performance overall, really is almost site by site. Each refinery is unique.

Ms. Babich commented that pertaining to the refineries, enforcement and penalties may be the needed approach – we don't want to lose sight of that. She also noted that her community had

been through a technology screening. They had recognized that all technologies have risks and there are trade-offs. The communities themselves should be the ones to decide what risks and tradeoffs are acceptable to them.

4. Public responses to Request for Information – Presentations on waste topics

a. Soil separation/washing

Dr. Jim Wells, Environmental Geologist with L. Everett & Associates in Santa Barbara and Technical Advisor to the Exide Advisory Group, gave a presentation to the committee. He stated that although he advises clients on remediation strategies for soil and groundwater, he had no financial interest in any of the technologies he discussed.

He gave a brief overview of the soil remediation technology of physical separation or “soil washing.”

- The nature of the problem is that soil remediation can entail huge volumes. The remedy itself has cost implications.
- There is an intrinsic inefficiency: the sorts of contaminants that drive cleanup projects are toxic, and in many cases the volume of contamination is very small.
- For organic compounds such as PCE or TCE, cleanup standards in California are down around one part per billion or even less.
- The theory of physical separation is simple in concept but rather complicated in practice. The fundamental requirement is that the contaminant be partitioned into some characteristic such as size fraction or density, that can be exploited by physical separation technologies.
- This technology requires that the soil be excavated. Soil is separated into two streams: one that is mostly clean and one that is not so clean.
- Soil washing technology has gained wider acceptance in Europe, which has stronger restrictions on landfilling of hazardous wastes.
- Much of the evaluation process for different technologies that are applied to contaminated sites find their origin in the CERCLA regulations, in which feasibility study is required. We can now clean up the environment in a way that minimizes waste and cost, and increases community acceptance.

Questions

Mr. White asked Dr. Wells to share his experience at Exide and the range of cleanup levels that can be achieved with the contamination he has encountered. Dr. Wells replied that he could not give specifics for Exide, because they are having parallel conversations with DTSC on that site regarding looking into this technology as something that can be integrated into the residential cleanups there. From other sites, he could say that the value of pilot tests is crucial. You must have the right kind of contaminant and the right kind of soil for this remediation technology to be viable. If conditions are correct, you can achieve an 80-90% volume reduction. This means that the clean stream is not completely devoid of the contaminant, but it can reliably meet the remediation goals. The not-so-clean stream is not pure contaminant, but the segregation can be quite profound in terms of what can be disposed of or more thoroughly treated.

Dr. Wells explained that the first step is a detailed analysis of the microscopic soil characteristics. The nature of the physical separation then plays off of whatever the characteristic is that distinguishes the contaminant from the native soil.

Mr. White asked about cost per ton for a 100,000 ton project with moderate contamination. Dr. Wells answered that it is the suitability of the soil that makes or breaks the cost. For sites that have gone forward, the cost range is around \$30 per ton, not counting transportation to a centralized treatment area.

(c.) Organic solvent waste

Rita Loof, Director of Environmental Affairs for RadTech International, gave the presentation. She stated that her background is in air rather than waste, but she was happy to explain RadTech technology.

RadTech is a nonprofit organization headquartered in Maryland. They are comprised of raw material suppliers, formulators, and equipment manufacturing dealing with ultraviolet, electron beam, and LED technology. They have an Environmental Health and Safety Committee, and they promote environmental benefits of this technology, specifically through agencies such as the South Coast Air Quality Management District.

The material is essentially a very viscous paint with the texture of shoe polish. It is a photo-chemical material that only reacts when it sees light. At that point it cures and creates a giant polymer. The materials are designed to stay inside or on the substrate. The cure is instantaneous with no drying time.

Because of the low VOC nature of the products, they are considered a pollution prevention technology; there is no need to install air pollution control devices. They generate no greenhouse gases. It is an electric light with no combustion contaminants; hazardous waste is minimized.

The EPA has produced a document that concluded that pollution prevention can reduce waste.

The AQMD has made several findings on the technology. In a wood coating study, they concluded that RadTech goes above and beyond.

RadTech has been identified as advanced technology in the Air Quality Management Plan at South Coast.

On the waste minimization side, RadTech products are typically managed as a nonhazardous waste. The products do not generate significant waste water streams or contaminants.

Suppliers recycle the bulbs as universal waste at no cost to the end user.

Barriers:

- Permitting has been a problem because there is a backlog.
- There is a capital cost.
- Companies are loathe to implement a process change.
- There is a learning curve in converting from solvent to this nontraditional technology.

Future trends:

- An incentives-based approach.
- Partnering, for example with the Sustainable Green Printing Partnership, an industry group promoting voluntary reductions in solvent waste and energy efficiency.

RadTech can offer waste reduction due to reduced use of solvent, and it can increase production because products are curing whenever they see light. There are process advantages such as improved chemical resistance and no secondary air pollutants.

Questions

Mr. White asked if this technology is primarily applicable to reducing solvent waste from printing processes. Ms. Loof replied that the printing industry accounts for 46% of product sales. However, they are in every category of paint and coating.

Mr. White asked DTSC staff what percentage of organic solvent waste is from the coating industry. Mr. Brausch replied that they would have to look into it.

Ms. Brostrom asked what Ms. Loof saw this advisory panel's process doing to further the use of the RadTech product. Ms. Loof responded that awareness is key. RadTech does not actually sell the product; they have members who formulate it for end use. RadTech sees the advantage as getting the word out to the end users that there is an option. The company does not delve into the mandate area, as they are not a regulatory agency.

Mr. White asked if there is an industry code that captures all of this kind of activity, such as SIC. Ms. Loof replied that they would fall under whatever the designated code for printing would be. Mr. Miller responded that DTSC had reached out to the SB 14 arena, but they only cover the very largest generators. Staff could take a look at more segmentation of DTSC hazardous waste tracking data, to get a better sense of what is being transported on a manifest that comes from that SIC code. The challenge with solvents is that it is such a diverse category.

Ms. St. Jean commented that there were some employee exposure concerns with UV light and its carcinogenicity. Ms. Loof responded that for people who are allergic to the chemistry, even with personal protection equipment (because it does build over time), it is going to be a problem. However, that is a minority. For liability purposes, RadTech is putting forward safety guides on the UV light and chemicals.

Ms. St. Jean stated that she would like to see health and safety feedback regarding LED versus electron beam versus UV. She wondered if DTSC would see this as approved treatment for paint waste.

(d.) Lead-acid batteries

Jane Williams, Executive Director of California Communities Against Toxics, gave a presentation entitled "The Legacy and the Promise." She began by describing the legacy.

- The environmental forensics Eckles List identifies thousands of potential secondary lead smelters in the U.S. from years ago. Currently there are about fifteen left.
- In California, mid-size smelters are clustered in East L.A. and San Francisco.
- The Battery Feed bill was passed by the Legislature; it places a fee on batteries that will generate possibly \$30-40 million per year to clean up ghost smelters as a whole (not just Exide).
- The Exide facility in Frisco, Texas is estimated to have emitted 300,000 pounds of lead into the air. It contaminates roughly five square miles of the Frisco community. They have decided to entube the contaminated soil and place it in a pit.
- The Mercury Policy Project has looked at major uses of mercury, encouraged passage of legislation, stopped the exportation of mercury cell chlor-alkali, and other actions, to stop mercury from being released into the air.

- Ms. Williams compared what we have done with mercury and with lead. In this generation we have significantly reduced mercury use and its release into the environment – but not so with lead.
- Ms. Williams described the massive Omaha lead site cleanup.
- Johnson Controls in South Carolina is the newest secondary lead smelter to be built in the country. The facility operated for less than two years when inspectors found major violations; the human factor can never be overcome.
- Quemetco is considered one of the best-controlled smelters in the country because of the wet electrostatic precipitator, an add-on pollution control technology that gets remarkable reductions when it is operating correctly. However, Ms. Williams receives notifications when Quemetco's air pollution control system fails – and they come much too often. When Southern California Edison has a brownout or blackout, Quemetco's equipment goes down because it runs on electricity; facilities need to have power backups.
- Ms. Williams cautioned the committee about the validity of emissions estimates, which do not include failures.
- A "Race for the Cure" is happening between Japan, Germany, and the U.S. Department of Defense. It is a race to replace lead-acid batteries. Most people in the industry feel that within the next five years people will not have to use lead-acid batteries to start cars. Somewhere down the road we will have a very serious waste management problem regarding the old lead-acid batteries – California uses 15 million of them a year.

b. Petroleum refineries

Jesse Marquez spoke last. He is Executive Director of the Coalition for a Safe Environment, an environmental justice organization in Wilmington specializing in freight transportation and the petroleum industry.

- Mr. Marquez supports the pilot project.
- He has compiled a list of 46 questions involving the different types of information that we feel that the public needs and has a right to know.
- He described the abundance of refinery operations in Wilmington.
- Increasing amounts of crude oil are being imported to the U.S. More refined and partially refined products are also coming to refineries.
- With fracking occurring, the crude oil is going to have other chemicals mixed in, but we don't know the chemical compounds resulting. The same goes for shale rock being processed.
- Junkyards may be exposing people to radiation from truckloads of oil coming in from out of state.
- Mr. Marquez asked if any of the processes performed on oil to make it into a product – asphalt, motor oil, brake fluid, transmission fluid – causes accumulation of heavy metals or radioactivity. We do not know.
- We need information on the sources, and the best source is the refinery itself. Third parties are needed to validate the information.
- Trucks and trains transporting hazardous materials have accidents; there is a danger to the public in this way. Do the companies have a risk assessment plan?
- Proper containment at refineries in the event of earthquakes is a concern.
- We need to know the history of violations at refineries.

Questions

Ms. Brostrom asked if DTSC would be willing to add an objective to the list of pilot projects: Getting necessary information to the public to enable them to protect themselves. Mr. Miller responded that many of the questions Mr. Marquez was asking were the same as those asked by DTSC whenever they do any industry assessments. They have done quite a few assessments under SB 14 and assessments of the refinery industry. They have also historically done a refinery industry profile project that went beyond SB 14, examining compliance history, multimedia use, and worker safety. Some of the questions on the list may not be under DTSC purview or capability, but for those that are, Mr. Miller would be open to taking a look. Ms. Brostrom emphasized that such information would be for the public rather than a DTSC internal document.

Mr. Asti pointed out that at least some of this information is required in the hazardous materials business plans – much of it is already public information. Mr. Miller responded that while information may be public, it is located in multiple places. With some of the industry assessments, DTSC has tried to take relevant information (SB 14 focused on source reduction) and compile it in one place.

Mr. White asked why DTSC doesn't ask refineries to answer some of the questions in a way the public can understand. Mr. Miller replied that as DTSC goes forward with source reduction research and information requests, they will be having a dialogue with generators. Right now DTSC is focused on source reduction opportunities.

Mr. Brausch pointed out that with self-reported information being what it is, DTSC will need to work with sister agencies to validate the information received.

5. Next steps and project timeline

Regarding the previous meeting summary, Ms. St. Jean requested a correction to the misspelling of her name on page 2.

Mr. Asti clarified language on page 10 regarding the pool of enforcement cases.

6. Public comment

There was no public comment.

Mr. Bourne adjourned the meeting at 4:12 p.m.