

State of California

DEPARTMENT OF TOXIC SUBSTANCES CONTROL COMMUNITY PROTECTION AND HAZARDOUS WASTE REDUCTION INITIATIVE ADVISORY COMMITTEE

MEETING SUMMARY

May 5, 2016

California EPA Headquarters
Coastal Hearing Room, 2nd Floor
1001 "I" Street
Sacramento, California 95812

Webcast Information:

<http://www.calepa.ca.gov/broadcast/>

Committee Members in Attendance:

David Asti
Cynthia Babich
Ingrid Brostrom
Dawn Koepke
Nick Lapis
Oladele Ogunseitan, Ph.D.
Virginia St. Jean
Xonia Villanueva
Chuck White

CPHWR Initiative Team:

Natalie Marcanio, Team Lead and Senior Scientist
Jerry Lile, Senior Scientist
Eric Slaff, Senior Scientist
Lazaro Cardenas Jr., Outreach Coordinator

Also Present:

Greg Bourne, Facilitator, UC Davis Extension Collaboration Center
Rick Brausch, Chief, Policy & Program Support Division, DTSC
Barbara Lee, Director, DTSC
Elise Rothschild, Deputy Director, DTSC

1. Introductions, Agenda, & Objectives

Mr. Bourne welcomed everyone to the meeting. The committee members, team staff, and other DTSC staff introduced themselves.

Mr. Bourne noted for those listening to the podcast that they could send questions or comments to anna.hostler@dtsc.gov.

Mr. Bourne reviewed the agenda.

Staff acknowledged that Elise Rothschild would be leaving DTSC; no replacement has been settled upon as yet.

2. Review/discuss prior meeting summary and action items

Prior meeting summary

Ms. St. Jean noted that at the top of page 8, “suppressed gases” should read “compressed gases.”

Mr. White noted that in the middle of page 3, “under equipment” should read “other equipment;” he requested a correction and addition at the top of page 4 regarding cylinders; he requested an addition to the middle of page 5 regarding lead acid battery recycling statistics.

A quote in the middle of page 8 should be attributed to Ms. St. Jean rather than Ms. Brostrom.

Ms. Brostrom requested the deletion of “auto shredder” from her quote on page 14.

Action items

Mr. Cardenas reported on the action taken on the following items.

1. Staff had compiled a spreadsheet containing information on the 12 proposals, including alignment with the selection criteria.
2. For the overlay on data – permitted facilities and waste streams: staff had sent a Google Earth file and an Excel table to show the information.
3. The committee had been interested in speakers and additional technical information on batteries; for today’s meeting, staff was emphasizing selection of the other two projects.
4. Staff had been able to get the agenda and the overlays to the committee members prior to today’s meeting. They were contending with the time constraints between the two meetings.

Mr. White asked if someone could confirm the capability of Google Earth or EnviroScreen to produce an overlay of solid waste facilities with respect to impacted communities.

Dr. Ogunseitan had fully understood that the role of this advisory committee was to suggest pilot projects and make recommendations; the Director will choose them. He agreed that we cannot tell until implementation the questions that will come up regarding feasibility. He asked whether DTSC would have another committee to support the implementation stage, or have it completely in-house. Mr. Brausch responded that this committee would meet regularly but less frequently through the implementation process. DTSC intends to form stakeholder feedback groups; those impacted by the pilots will have the opportunity to speak during the project evolution. DTSC will seek feedback from the advisory committee as to how the stakeholder involvement is structured.

3. Impacts of Toxic Substances on Families and Communities

Ms. Villanueva gave the presentation for the committee.

- Toxic substance exposure impacts people physically, emotionally, and financially. It can have effects lasting a lifetime.

- We all share the symptoms and the disease process:
 - Allergies and dermal surfaces
 - Cardiac system
 - Gastrointestinal system
 - Musculoskeletal system
 - Neurological system
 - Respiratory system
- Ms. Villanueva showed photographs of community members who have respiratory issues and need hospital care.
- Hair loss, blisters, rashes, and swollen tongues are symptoms.
- Children suffer hives and facial swelling.
- Toxic substances cause death, as well as systemic, immunological, neurological, reproductive, developmental, genotoxic, and carcinogenic effects.
- Toxic substances cause vitamin deficiencies, increased inflammation markers, and other biological processes going out of range.
- Medical doctors are not trained to identify or treat toxic exposure, and treat the symptoms rather than the underlying causes.
- Pharmaceuticals are actually petrochemicals, and all chemicals affect the central nervous system.
- Ms. Villanueva described the cumulative impact of refinery emissions on two fenceline communities – Richmond and Wilmington.
- The American Dream has been crushed in communities contaminated by toxics.
- Ms. Villanueva showed photos of her family and described their physical conditions. She also showed photos of her abandoned home and possessions.
- Toxic substance exposure catapults people to the bottom of Maslow’s Hierarchy of Needs.
- Ms. Villanueva shared stories of individuals who have lost their health and their lives.

Ms. Brostrom commented on the importance for those who do not live in the shadows of toxic facilities to hear what it is like – the tolls are so great. Part of the hope of the People’s Senate is to bring these 13 communities together in order to identify commonalities and find support in each other. In the advocacy world, it is very frustrating to find that these experiences are not respected or believed – it adds insult to injury. Legal recourse is difficult, particularly when multiple sources of toxics are involved. Agencies including DTSC are not equipped to deal with the contamination, to resolve it, or to respect the community’s voice.

The scenario plays out over and over again. It leads not only to physical ailments, but also to anger, depression, and a sense that nobody cares about those affected. There is much hopelessness in this work for both the people directly impacted and the advocates. Ms. Brostrom expressed the hope that this presentation would demonstrate the direction this advisory committee should be taking in the discussions to come.

Questions and Discussion

Ms. Babich commented that it is not just the individuals who are impacted, but also their families. She spoke of the dangers of homes being built on toxic soil, which is still happening. As this advisory committee discusses some of the projects and the polluters standing in the way, agency people can stand behind us as Director Lee has been doing in Ms. Babich’s community.

Mr. Lapis asked Ms. Villanueva if the contaminants and the source have been identified. She replied that there is a bigger issue with DTSC's final report. The EPA has reviewed the report and concluded that the soil is not clean. They have recommended that additional testing might benefit the community, who will meet with them to discuss the findings. The identified chemicals include formaldehyde, acrylene, acetaldehyde, petrochemicals, vinyl chloride, uranium, arsenic ethylbenzene, TCE, and PCE. Propane was vaporizing into Ms. Villanueva's home. When you consider the cumulative impact, you have a toxic cocktail; many of the chemicals impact the same organ systems.

Ms. Villanueva spoke more about the health impacts and not being able to get help from the medical community. A few doctors with knowledge of toxic exposure have suggested hyperthermia therapy: far-infrared sauna to sweat out the toxins, as well as detoxification elimination methods, diet, Vitamin B shots, and so on. All of the family's income goes to trying to reverse the impacts of toxic exposure in their home. Poor families cannot afford the medical treatment.

Dr. Ogunseitan asked if any pilot projects discussed here would be relevant to the Wildomar situation. Ms. Villanueva replied that refinery, groundwater, and legacy waste projects would be relevant.

(4.) Overview of additional pilot project proposals

Mr. White supplied additional information regarding the proposal he had presented at the previous meeting. The focus is improving the lead acid battery; even if we switch to some other new technology, we will still be dealing with lead acid batteries for a long time. It is important for DTSC to focus on ways to ensure that the lead acid battery industry is as safe as it possibly can be. There doesn't seem to be any safe level of lead, so we need to ensure that lead exposures are kept to a minimum.

The proposal focuses on the existing framework for managing lead acid batteries; how can it be improved? The proposal examines collection, storage, processing, and handling, as well as existing blood data.

Mr. White distributed copies of the National Emission Inventory's data from 2011 on air emissions of lead. There are 734 sources in the Los Angeles basin. By far, the largest source is airports. The total tonnage per year of lead into the air is 6.53 in the three counties.

Quemetco is 46th on the list: 8 pounds of lead emitted per year according to this data (which the EPA relies on). This seems to contradict the data given by Ms. Brostrom at the previous meeting that 74% of the lead exposure in the Los Angeles air basin comes from Quemetco.

Mr. White suggested a committee visit to the Quemetco plant to assess its safety.

He commented that batteries are 97-98% recycled and that is an impressive number. We need to deal with the remaining 3% and other types of releases that may be happening to impact the communities.

The 8 pound per year emission appears to have now decreased to 4.7 pounds according to the TRI 2014 study. Clearly, the lead acid battery industry seems to be doing everything they can to reduce if not eliminate their emissions, using the best technology available. Mr. White sought to verify that and to point out other ways to improve it further.

Ms. Brostrom made clear that she coordinates the People's Senate and works directly with community leaders from across the state. Each community has drafted its own reports and supplied figures. Ms. Brostrom was committed to going back to the community leaders who had done years of research, to provide a response to Mr. White's questions.

She commented on the data. When airports are taken out of the equation, petroleum refineries and batteries are left. Looking at community impacts, the most concentrated areas will be areas around a facility emitting lead. The data reconfirmed to Ms. Brostrom that localized impacts point to refineries and batteries; they should be high on the list of what is examined.

Mr. White commented that airport lead emissions seem to occur mainly during landings and takeoffs – the heavy deposition of lead would seem to affect the communities immediately surrounding airports. This source is significant with an order of magnitude or two higher than the any of the other sources.

Ms. Babich commented that although Quemetco has reduced its emissions considerably, the waste exists and will be here for a long time. Today's contamination is going to be legacy waste. She had attended Exide Community Advisory Groups (CAGs), and they don't quite get to the real issues. We do need help with looking at the smelters, but people are already working on that. Ms. Babich hoped for this type of committee to keep trying to do pilots and trying innovative ideas, rather than tackling issues too large.

Dr. Ogunseitán commented that Mr. White's data reinforces the need to put aviation fuel on the agenda of the DTSC, and in fact the entire world. The data should in no way remove our resolve to replace lead acid batteries ultimately. This committee can endorse that long-term strategy. The data also shows that it is not just about recycling; there are six other battery manufacturing facilities emitting lead. Further, we are not just looking at the Exide situation; we are looking at broad-based, long-term, far-reaching projects.

Dr. Ogunseitán's last point was that in addition to emissions, what really matters is the blood lead concentrations in the people living around these facilities. This is putting them at risk. The goal of the committee is to address this.

Ms. St. Jean felt that the committee would be very short-sighted not to recognize the huge impacts from airplane fuel, even though it may not be our agenda to tackle it. Eventually lead came out of the gasoline for our cars, and the airline industry can take this issue on. Unless we say something, they are not going to change the formulation.

Mr. Lapis commented that the lead emission data at airports was shocking. Runways and communities around airports should be tested. Director Lee responded that there are jurisdiction issues here: provisions in the law state that aerially deposited lead from transportation fuels is not a hazardous waste. It only comes under DTSC jurisdiction once ground is disturbed.

Mr. Lapis observed that some of the smaller airports have much more lead than some of the big ones. Mr. White surmised that this may be due to smaller piston engine airplanes.

(5) Lead-acid batteries pilot project proposals – review and evaluation and (6) Lead-acid batteries proposals – next steps

Mr. Lile referred to the document that staff had prepared regarding the lead acid batteries pilot project proposal. It matches up well with Mr. White's proposal.

- It goes through the life cycle of the battery from manufacturing to recycling the waste streams.
- It looks at the governing regulations and statutes: can improvement be made there?
- What are best management practices (BMPs); what can be improved upon?
- What is the state-of-the-art technology?

Mr. Lile stated that alternative battery technology interfaces with the subject but is really outside of its realm.

Mr. Brausch noted that staff had been confronted with acceptance of certain assumptions. They were grappling with questions about the data, support, underlying principles – how do we focus on how to be most effective? Certain data gaps need to be filled. Where is lead leaking from the system the most? (The manufacturing end, the recycling end, potential illegal disposal, etc.)

To be intentional rather than hasty (which would force acceptance of assumptions), staff felt that getting the data and informing the process could constitute the pilot itself.

Ms. Brostrom was disappointed with the absence of focus on alternatives. Director Lee clarified that there was a forward-looking effort in parallel with this under the Safer Consumer Products program. The DTSC has been charged with doing two things relative to lead acid batteries:

- Have a pilot project under this initiative to evaluate any near-term strategies we could implement related to any part of the handling of batteries in their life cycle, that would lessen the generation of hazardous waste and impacts on communities.
- Evaluate under the Safer Consumer Products program a listing of lead acid batteries as a priority product, which requires the manufacturers to put together alternatives analyses, including a full life cycle evaluation. Based on those alternatives, the DTSC then takes regulatory steps.

Ms. Brostrom commented that Safer Consumer Products does have a slow timeframe. This pilot project could be used to bring innovators together, to spur development of ideas, to partner with universities, to create incentives.

Dr. Ogunseitan mentioned the fugitive emissions at Johnson Controls that had been described at the last meeting. He liked the idea of filling data gaps, and this was one. There may be data already at this Florence, South Carolina facility that we can use in thinking about the existing facilities in California, to prevent us reinventing the wheel. He also wanted the committee not to forget about the manufacturers mentioned earlier today; any kind of data collection needs to take this into consideration.

Mr. White pointed out that his proposal had two components: to do all we can to minimize exposure to lead acid batteries, and to give at least a nod to the future – new technologies and their timeframe and limitations. Green Chemistry is also looking at this subject.

Mr. White continued that the Quemetco toxic release inventory shows a huge amount of lead slag sent to Nevada for disposal. That could be an element of a study – could more processing be done in a safe way to recover the lead, minimizing the amount of lead slag?

He suggested a DTSC meeting in Los Angeles with an afternoon tour of some of the four battery facilities.

Last Mr. White commented that Johnson Controls is now turning to California facilities to get a better handle on managing and controlling their emissions.

Director Lee responded that there are requirements for certification under the Hazwoper program before DTSC could take people onto a site such as a battery facility. She also mentioned the distinction between air emissions from a site and DTSC's regulatory authority over the site. She encouraged the committee to choose pilot projects within the scope of DTSC authority. There could be the possibility of partnering with air quality agencies.

Ms. Koepke asked about the mechanics and details of moving forward with this project.

Director Lee replied that the Governor has directed DTSC to do two things:

1. Evaluate lead acid batteries for potential listing as a priority product under the Safer Consumer Products program. Director Lee is very open to hearing the committee's input to the evaluation.
2. Evaluate other near-term strategies. Director Lee also sought the committee's input to this approach.

Director Lee hoped to maximize opportunities by choosing pilot projects that could augment the work of the Safer Consumer Products program.

In terms of mechanics, Mr. Brausch stated that for each of the three pilots selected, staff envisions developing an implementation plan that they will share with the committee. The plan will include the methods and approaches, as well as an outreach strategy to stakeholders to ensure that the relevant communities, industries, and practices come into play, as well as engagement with other regulatory agencies. The committee will have an opportunity to see the plan and give input.

Mr. Lapis was in favor of the data-gathering proposal. It is well-thought-out and needs to be accomplished before we tackle the other ideas.

Ms. St. Jean asked if the committee was to give Green Chemistry just a list of priority recommendations, or are they going to be part of the actual pilot? She saw two phases for each of the projects.

Ms. St. Jean felt strongly that the significant missing agency was the Air Resources Board – they should be at least coming to some of these meetings. Director Lee clarified that the Air Resources Board typically does not enforce these kinds of requirements – it is the individual local air districts. The Air Resources Board does have jurisdiction over fuels. They have the authority to adopt fuel standards for purposes of attaining ambient air quality standards.

Director Lee encouraged the committee to focus on what we can do using DTSC's authority, in view of the time constraints. Ms. St. Jean confirmed that the committee can come up with findings and further action recommendations.

Ms. Brostrom stressed that at the end of the data gathering, there should be goals to actually require some of this control technology in order to ensure impact. Director Lee confirmed that the intent was to get some sort of near-term reductions benefits. She stated that the committee was here to advise DTSC in how to best focus its resources to get the best near-term results.

Ms. Babich cautioned that we don't need to be studied to death. Jane Williams is a resource with a wealth of information we can use.

Dr. Ogunseitan made a related comment with a view to strategy: prior to commencing the pilot project, DTSC should assess the information it has now in order to put the Data Gap assessment in a better perspective.

Ms. Koepke recognized that DTSC does need some information in order to make headway for impacting the communities. She also pointed out that there will be an ongoing need for this type of battery – we must have facilities in place, and this information will help in terms of looking at future permitting, making permit adjustments, devising improved BMPs for new technologies, etc.

Director Lee stated that her goal was to have the committee help DTSC understand where the best opportunities are in the whole chain of battery management. Ways to prevent illegal disposal, ways to add to BMPs – everything is on the table. She felt that the staff summary fell short in conveying this.

Ms. Brostrom stated that the committee had been wanting a closer feedback loop with Director Lee, and having her here has been very useful. Ms. Brostrom hoped to see her at the future meetings; if she cannot attend, it would be nice to have someone else present who is authorized to help the committee know the expectations. Director Lee responded that she did not want the committee to feel that she is pushing in a particular direction or trying to control their recommendations. She will continue to try to attend at least a portion of the advisory committee meetings. If there are specific parts of an agenda where the committee feels her participation to be most helpful, she asked them to let her know.

Mr. Bourne summarized five points the committee had developed thus far:

1. It would be helpful to provide some context in this proposal as to how it connects and integrates with the Safer Consumer Products program.
2. Identify what is known about the topics so we can focus on what is missing.
3. Identify how we can link this to community impacts and waste reduction impacts – through BMPs and so on.
4. Make sure the proposal discusses specific outcomes, such as requirements to use a specific technology.
5. Acknowledge the two-phase aspect; maybe later in the advisory committee's process after some early results, we can look at where it leads.

Mr. Bourne suggested a redraft of the pilot project proposal that would give some specifics where it needs to be strengthened. Then the committee could submit it to Director Lee.

7) Pilot project proposals – review and evaluation

Ms. St. Jean reported that she had found Dr. Ogunseitan's **Asbestos** pilot proposal to be thorough; she agreed with vitrification as better than cementation for the asbestos legacy waste focus, as well as his viewpoint to cease making any products with asbestos.

Ms. St. Jean had reworked the single-use propane canisters proposal with Mr. White, Heidi Sanborn, and Christine Flowers. As a local regulator, she was concerned about who is going to be collecting and storing the empties safely; Ms. Flowers is looking at that.

Ms. St. Jean had also reworked the flare proposal. She had been interacting with the Department of Boating and Waterways, the Coastal Commission, and various task forces on alternatives.

Some grant requests are in progress. She is exploring decommission and locales, including capturing all the emissions.

Mr. White commented on the small propane tanks proposal: as a pilot project, he had thought to work with one or two retailers to see what issues arise, and to see how scalable the project would be in a larger operation. Ms. St. Jean responded that much of that is already happening through the Product Stewardship Council and Calrecycle. She intended the project to deal better with the collected flares.

Mr. Brausch commented that historically, DTSC had made efforts to deal with the fireworks; some burn units were constructed. The biggest hurdle was air district permitting. Most of the units currently available are single-stage, not two-stage; part of this effort would be finding a technology vendor able to meet the two-stage mandate. Ms. St. Jean felt that blowing these things up was irresponsible in terms of public safety. Neither was she in favor of sending them all to Georgia to someone else's backyard. She sought more research on safe, portable detonation chambers that capture all of the emissions.

Mr. Lapis felt that a good opportunity was at hand in starting with a small pilot and expanding it to a statewide retailer.

Ms. Babich mentioned the portable blast chambers owned by CH2M Hill.

Ms. Babich had followed up with General Atomics after the last meeting and now presented a PowerPoint done by Mr. Follin. (She also pointed out that the EPA was expanding its hazardous waste landfill in Nevada.)

- General Atomics can completely clean up the soil without any residual. The dirt can then be backfilled into the site, not delivered to another site.
- General Atomics was offering a proof of principle test to be performed at their facility on four 55-gallon drums of contaminated soil. They can also have soil washing or soil separation done there.
- Once they are doing this test, the more contamination the better; if there is more material that DTSC wants to put through, they can do it.

Ms. Babich noted that many of the pilot projects deal with contaminated soil, and she felt that we should use this opportunity with General Atomics. Super critical water oxidation (SCWO) has been around for a long time – Ms. Babich felt confident as a proponent of it.

She noted that this project would be under DTSC's purview.

Ms. St. Jean commented that she had found quite a few substances on which to use SCWO: other organic solids, unspecified oil-containing waste, unspecified solvent mixtures, unspecified organic liquid mixtures, oil-water separation sludge, and possibly PCBs.

Ms. Marcanio asked about the possibility of Ecology Control Industries (ECI) having some of their contaminated soil run through this process as one of the test pilots. Ms. Babich felt that this was an option for the Montrose site, if someone from DTSC were to contact them.

Ms. Marcanio asked for more information from Ms. Babich about the monitoring process; this seems to be a large component of community acceptance as the treatment goes along. Ms. Babich replied that in the SCWO closed-loop system, the destruction itself is contained. The General Atomics offer takes the soil out of the community to a more controlled environment.

Mr. White very much supported the idea of using SCWO as one of the pilot projects. He liked the commitment of General Atomics to do four barrels at their facility as a place to start. Possibly later it could be moved to an onsite facility such as ECI. He hoped that four-drum test would include an economic evaluation.

Mr. Bourne observed a two-step piece here: first a demonstration, then a pilot.

Ms. Koepke asked about funding for this on a pilot basis, as Director Lee had previously mentioned. She also asked about the cost of the demonstration piece. Ms. Babich answered that General Atomics was willing to fund the four barrels as a demonstration to the state. Ms. Koepke agreed with Mr. White that assessing the cost should be part of the demonstration project.

Ms. Koepke ascertained with Ms. Babich that if this pilot project goes forward, the equipment would be brought to the test site to run there. Ms. Babich said that for the demonstration, soil washing and soil separation would be done at their facility. For a pilot project, it would be done onsite; Ms. Koepke asked about community acceptance. Ms. Babich replied that her own community did not want the soil shipped off to ECI's chosen destination – they wanted any solutions to happen within the community.

Ms. Brostrom said that the proposal regarding getting community buy-in on treatment versus removal could be combined with the SCWO proposal.

Mr. Slaff asked about the process of driving water out of the slurry to be left with reusable soil. He will follow up with General Atomics.

Ms. St. Jean stressed that early on, we need to ensure that the community is a part of this as a solution. She also stated that she did not want another residual waste to deal with. From the General Atomics presentation, it seemed as if the process would destruct anything liquid except metals. Mr. Bourne said that after the presentation at the previous meeting, he had clarified with Mr. Wong that the process can actually run soil through the chamber. After they take the metal out, the larger particles are crushed and everything goes through.

Mr. Asti explained that in his experience using a variety of peroxygen and chlorine-based oxidants to oxidize pyrite, he did not crush a lot of samples. Particle size is critical because you create a reaction rind around the outside, thus effectively cutting off the contaminated material underneath the rind – there is not enough mass transfer of the oxidizer to get to the contaminant. He agreed with Ms. St. Jean about the crushing process creating potential air issues.

Dr. Ogunseitani commented that General Atomics has done DDT and PCBs. He was not sure of the difference between what they will do at their site and the field locations. Also, he recalled that another company actually does the soil washing; that interface needs to be coordinated so that it works at the field site as well. Further, he recalled that part of the reason for using liquid is that soil would be hard on the equipment – the titanium lining or washers would have to be changed more often. Last, he recalled that General Atomics would sell the equipment to DTSC who would have to run it at the field site.

Mr. White described two kinds of processes used in soil washing. It is expensive and hard to commercialize.

Ms. Babich commented that she would hate to see the SCWO fail because the soil washing was not working out.

Ms. St. Jean commented that she had envisioned the soil washing to be a different solvent – in order to solubilize organics, we would have to use some kind of organic.

Mr. Bourne directed the committee to the *Pilot Project Summary Sheet* – the first-cut screening from DTSC staff. He separated the proposals into four sections.

- **Flares and pyrotechnics, Portable gas cylinders, and Flame retardants** did not seem highly to benefit EJ communities.
- There is an entirely separate effort underway for **Automobile/metal shredder waste**.
- **Asbestos and N-methylpyrrolidone** have some connectivity to the Safer Consumer Products program.
- **Legacy waste from petroleum refining and Solvent waste** have high impact to EJ communities but are not part of Safer Consumer Products initiatives or other initiatives such as SB 1249.

Mr. Lapis commented that the sanitation workers impacted by **Portable gas cylinders** improper disposal likely come from EJ communities. Ms. Brostrom commented that in terms of volume, some of the other proposals would seem to have a higher impact.

(Mr. Bourne pointed out that this discussion was not one of merit – it was an assessment of how the proposals met the established criteria.)

Mr. White suggested combining **Legacy waste from petroleum refining** with the contaminated soil proposals. Mr. Slaff noted that **Legacy waste from petroleum refining** had aspects of dealing with both currently processed waste and legacy waste.

Ms. St. Jean had done a different grouping where the Consumer Protection and Green Chemistry proposals linked with the Product Stewardship proposals. She had also linked the proposals by treatment technologies, not just waste streams.

Ms. Koepke suggested dropping the bottom three as not being hazardous waste per se and not having a significant EJ community component. She would drop **Automobile/metal shredder waste** because DTSC is already working on it. **N-methylpyrrolidone** is not regulated as a hazardous waste and perhaps should drop out and go to the Green Chemistry program. She was also inclined to combine **Legacy waste from petroleum refining** with the contaminated soil proposals. She conceptually supported Ms. Brostrom's **Contaminated soil** proposal.

Ms. Brostrom pointed out that *Benefits to disproportionately affected communities* is a *Fundamental Pilot Project Aspect* as assigned by the committee. She felt that all three pilot projects must benefit EJ communities. She noted that in terms of **Legacy waste from petroleum refining**, she also had a proposal that was looking at BMPs not only for the soils, but also for the production and actual process. Mr. Bourne agreed that it needs to be added to the list. It should not go into the contaminated soil discussion because it is looking at the process.

Ms. Brostrom was surprised at DTSC's response to the proposal about involving impacted communities in decisions about where contaminated soil should end up: DTSC said it was not readily apparent how the project would reduce hazardous waste. The project creates buy-in for treatment. If there are in fact safe leave-in-place methods that are protective of communities, you will drastically reduce the amount of dig-and-haul, making a huge reduction in hazardous waste.

Mr. Bourne reiterated the idea of combining that dialogue with the SCWO.

Ms. Babich said that community acceptance needs to be an overarching issue. She pointed out the differences among communities. In the community near the ECI property, the people care about the hours of operation, not so much about what happens to the DDT. The reason we have coalitions is that the members can pass the details back out to the communities.

Ms. St. Jean stated that **Flares and pyrotechnics** does have an EJ effect, but the three landfills are outside of the state. She hoped to keep this proposal as something for the committee to recommend.

Dr. Ogunseitán looked at all of the proposals on the back page and the top two on the front page as potentially sensitive to the SCWO approach. If DTSC has money to invest in one of the chambers, this committee can presumably write one pilot project for all of those proposals.

Dr. Ogunseitán felt that the **Asbestos** proposal meets all of the primary and secondary criteria. He recommended that it be part of the work plan for Safer Consumer Products, and one of the pilot projects should be **Conversion to a non-toxic version of asbestos**.

Ms. Brostrom commented that the committee should have a conversation soon about what else we want to do, for example, a recommendation document for Safer Consumer Products. We should recognize most of the pilot project proposals as being very important, and discern the means for making the recommendations public and getting movement on them.

Ms. Brostrom commented that if any committee members have a specific financial interest in any of the topics, they should disclose it.

Mr. Lapis liked the idea of compiling a list of other things that it would make sense for DTSC to do. Ms. Brostrom suggested tailoring the recommendations for where they would make the most sense.

Mr. Bourne pointed out to the committee that they could offer more than three pilot project proposals to DTSC, depending on the scale and scope.

Mr. White felt that **Asbestos** did not warrant inclusion; California has all kinds of serpentine mining regulations and he did not know of any new asbestos products – it is a legacy issue. Asbestos can be buried in a landfill safely where it does not leach into the groundwater or go up into the air. Creating a more expensive remediation method result in more of an obstacle for removing it from the path of exposure.

Dr. Ogunseitán responded that California ships asbestos out to other states that do not call it hazardous waste.

Ms. Koepke stated that she does not have any conflict of interest regarding any of the topics, and that she is representing the business interest. She clarified her comments on the EJ community engagement proposal: at a minimum the business community should be able to make public comment. Further, the business community can share alternative technologies (for example, General Atomics) and be a part of solutions.

Ms. St. Jean did not want any of the committee's work to disappear. The committee could have easily five, six, or more projects that can be presented as recommendations – they are well-vetted with stakeholders although not always a priority for EJ.

Ms. St. Jean agreed with combining some of the SCWO treatment substances into one proposal, to get a lot of bang for one technology; anything organic with a liquid or even a solid waste can

go through SCWO. She felt that we should address asbestos because we are sending it somewhere else. We should look at vitrification – possibly if we promote the technology enough the cost will go down.

Ms. Babich liked the thought of capturing all the ideas in the proposals. Also, she considered a community to be all who are impacted. Everyone needs to try to figure out solutions.

Mr. Bourne ascertained with Ms. Brostrom that the impacted community was intended to be driving the process. She stressed that the goal here is to provide more power to communities to devise how to deal with their contaminated waste.

Mr. Brausch stressed that staff and the committee should both look at whether a sponsored interest is present for a potential project as opposed to the DTSC needing to garner funds. This will be a critical feature. Although vitrification of asbestos is promising in terms of technology, the availability of funding could be an issue.

Ms. St. Jean wondered if there is an option of forcing someone whom DTSC has an existing case against to do a supplemental environmental project as a course of corrective action. Mr. Brausch thought that was a great idea.

8. Pilot project proposals – next steps

Mr. Bourne asked about data the committee needed to winnow the pilot proposal list down further. He agreed with Dr. Ogunseitan that the committee may have to examine what implementation would look like and what kinds of things could be a barrier.

Ms. St. Jean pointed out that the petroleum and utility industries were large producers of contaminated waste. She would like to learn more about current BMPs and current violations of standards. She would also like to know more about where solvent waste is coming from.

Mr. Asti asked for clarification about the term “utilities.” Mr. Brausch replied that within the data system, staff can look at teasing some of the large numbers into subcategories to give a better feel for generation points and generation types.

Ms. Babich asked if DTSC has a technology innovation division. Also, she had heard that Canada is going to try to deal with its refinery wastes where it is generated. She suggested looking into that. Mr. Brausch responded that DTSC does not have an organizational unit focused on technology development. Much DTSC evaluation is done project by project and site by site.

Following up, Ms. Brostrom suggested for the committee to propose a science and technology advisory panel or board as a pilot. She agreed with Ms. Babich that California is falling behind because there is no one looking at new technologies; it is a huge missing piece at DTSC.

Mr. Lapis mentioned the California Council on Science and Technology which is supposed to serve that function for state government. In the current budget process, there is at least one recommendation for them to do research on biomethane.

Ms. St. Jean requested not to look at BMPs for utilities – she had not realized all that is categorized that way. As a regulator, she expressed worry about having many resources going into one company (General Atomics) and helping them with technology that they will be making money on. She did feel strongly about including as many legacy wastes as possible into the SCWO project.

Mr. Bourne noted that government procurement guidelines stipulate that all purveyors of a technology have equal opportunities to bid on a project.

Ms. St. Jean mentioned a DTSC group from the 1990s and early 2000's: the Office of Pollution Prevention and Technology Development.

Mr. Asti stated that the rest of the country is indeed watching California in terms of technology.

Mr. Bourne summarized the committee's thinking at this point.

- There seems to be universal support for some kind of SCWO project, combining two or three things on the list for that technology.
- There are some other proposals that would benefit from more information and more discussion: asbestos, solvent waste, and BMPs of refineries associated with the upstream piece.
- There are other proposals that have merit but are being addressed somewhere else, or have lower impact to the EJ community.
- The committee wishes to make some kind of statement showing support for all of the proposals. It would have positive statements about each one and suggestions for how to move them forward.

Ms. St. Jean agreed with Mr. Bourne's points.

Ms. Brostrom agreed in principle. She had some concerns with the battery proposal as written. She asked how we could ensure that the SCWO demonstration works before we go down that path – a timing mechanism would be in order. She felt that the “second tier” proposals all need to be more spelled out in terms of work plan and implementation.

Mr. Bourne stated that two outstanding issues are how to tighten up the battery proposal so that the committee members are all comfortable with it, and the timing of the demonstration project on the SCWO technology.

Mr. Brausch stated that regarding the SCWO, he had seen documents entitled *Treatability Studies* that set up a bench scale which precedes a pilot scale which also precedes a third phase, all internal to the project. He offered to look into this approach. With this project design the technology itself must sit inside a testing protocol whose results can show effectiveness and scalability.

Mr. Brausch concurred with Mr. Bourne on the possible outcomes of this project design: if you do not prove yourself at the bench scale, you either redesign the bench or you conclude that the project is not feasible.

Dr. Ogunseitán felt this to be a very important distinction. The soil washing is the limiting step – the unknown. As a committee we are responsible for getting as much information as possible on the likelihood of success before we recommend a pilot project.

Mr. Bourne stated that at the next meeting, General Atomics or someone who can speak to these issues should come and respond.

Mr. Lapis suggested that the same framework could be used to think about the lead acid battery proposal, with first the knowledge gap requiring answers and second the recommended changes to BMPs, regulations, etc.

Mr. Brausch stated that enhancements are needed to the project description; staff will try to capture what they heard today. They will also try to engage the issue more broadly to see how to integrate more features that actually gather data that is useful long-term.

Ms. St. Jean felt that maybe the committee was putting too much energy into one treatment technology. For example, in Australia they are using gas phase chemical reduction for PCB destruction.

Ms. Babich pointed out that with SCWO, the company will have to prove their existing claims to the committee. It differs from having a problem and asking the company to fix it. She added that Jane Williams is a valuable resource who can help the committee develop a matrix of treatment technologies. Mr. Brausch responded that in most treatability studies, there is an evaluation of alternative technologies that are generally available that might generally work.

9. Next meeting – agenda, goals, and expectations

Ms. Brostrom reminded the group of the past suggestion of an offsite trip to General Atomics. Also, she offered to help set up a trip to the community bordering Quemetco.

Mr. White said that he would like to see the Quemetco facility and perhaps another facility in a format that would not require Hazwoper training.

Mr. Asti felt that anything that adds to our knowledge base has an overriding benefit-to-cost ratio.

Ms. Koepke agreed; the issue for her would be scheduling.

Ms. Babich recommended a trip even to view just the outside of the Quemetco facility, and to meet with the community.

Dr. Ogunseitan felt that it was less important for each committee member to go on the site visits, than to know the questions and agree on the information we want before the visits. Mr. Bourne noted that these questions could be developed via email.

Mr. Brausch asked if a field trip would influence how the committee is looking at the lead acid battery proposal, or if it would help advise the project during its course. In contrast, would the SCWO would be a pre-pilot decision visit?

Ms. Brostrom suggested that the committee could split up on visiting the two sites.

Mr. Bourne suggested holding the committee meeting in San Diego or at General Atomics itself.

10. Meeting evaluation and action items

Mr. Bourne listed the following action items to be done before the next meeting.

1. A list of questions will be started via email to bring to General Atomics.
2. DTSC staff will look at some of the BMPs and technologies available for some of the projects in the top two tiers. They will use a perspective of what implementation would look like.
3. The committee will need to make specific comments on the lead acid battery proposal before the end of next week.

Mr. Cardenas will work with Ms. Babich and Mr. Follin regarding May 24 or 25 availability for a visit.