

# Summary of CWCCG Committee Meeting on 3/17/2008

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**Document Control**

Prepared by Steffi Becking/CH2M HILL  
March 24, 2008

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**Meeting Attendees**

<b>Attendee</b>	<b>Agency</b>
Kevin Norgaard	City of Fresno
Susan Suzuki	East Bay Municipal Utility District
Randy Schmidt	Central Contra Costa Sanitary District
Helen Hu	Sacramento Regional County Sanitation District
Meei-Lih Ahmad	San Francisco Public Utilities Commission
Frank Capone	Los Angeles County Sanitation District
Amanda Roa	Delta Diablo Sanitation District
Dave Richardson	RMC Water and Environment
Glen Daigger	CH2M HILL
Jay Witherspoon	CH2M HILL
Jim Sandoval	CH2M HILL
Stefaniya Becking	CH2M HILL
Vijay Kumar	CH2M HILL
<b>On the phone:</b>	
Omar Moghaddam	City of Los Angeles
Shahrouzeh Saneie	City of Los Angeles
Dipak Patel	City of Los Angeles
Greg Adams	Los Angeles County Sanitation District
Dan McGivney	Eastern Municipal Water District
Tom Alspaugh	City of San Diego
Stephanie Cheng	East Bay Municipal Utility District
Martha Davis	Inland Empire Utilities Agency

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**Meeting Time and Location**

Monday, March 17, 2008  
Sacramento Regional County Sanitation District

CWCCG Steering Committee  
11:45 am – 1 pm

CWCCG General Membership  
1 pm – 3 pm

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# Summary of CWCCG Committee Meeting on 3/17/2008, Continued

- Meeting Purpose** The purpose of the March 17, 2008, Steering Committee meeting (hereinafter “meeting”) was to establish consensus on:
- Development of the local government municipal operations wastewater protocol (hereinafter “local government protocol”),
  - Formation of Steering Committee core group,
  - CH2M HILL and CWCCG budget, and
  - Protocol for public distribution of White Paper.

- The purpose of the March 17, 2008, General Membership meeting was to:
- Update General Membership on recent regulatory and AB-32 Wastewater (WW) Protocol development, and
  - Present “next steps” for the WW Protocol development.

**Local Government Protocol**

- CWCCG Steering Committee (Committee) voted to accept the invitation from CCAR and CARB to draft the local government protocol.
- The Committee asked CH2M HILL to implement the development of this protocol and produce the draft of the protocol for review by the Committee by May 1, 2008.
- The local government protocol will be a top-down approach with NACWA’s updated default values (corresponding to Option 2 in the White Paper: US EPA Approach with updated default values). Option 1 (USEPA Approach/IPCC Approach) will be dropped. Also, the local government protocol will include an approach for measuring CH<sub>4</sub> from uncollected or uncontrolled anaerobic wastewater treatment processes (*e.g.*, anaerobic lagoons).
- The local government protocol will be presented as Phase I of the two-phase Wastewater Protocol.
- CWCCG should send a formal letter to CARB and CCAR to confirm CWCCG commitment to draft the local government protocol (for CCAR & CARB acceptance by August) and Phase II wastewater protocol (in two-year timeframe). The letter should include a request for a formal reply from CARB and CCAR. Frank Caponi/LACSD offered to start the letter, and CH2M HILL will complete the letter on behalf of CWCCG and send the letter to CARB and CCAR.

**Steering Committee Core Group**

- The Committee voted to form a Steering Committee Core Group to direct and manage CH2M HILL’s week-to-week activities and contract issues (*i.e.*, invoicing, additional meetings, *etc.*).
- The Committee will establish a cap on the amount of funding approvals or changes the Core Group can authorize.
- The table below summarizes the members of the Steering Committee Core Group.

Primary Contact	Back-up Contact
Helen Hu CVCWA/SCRSD	Kevin Norgaard CVCWA/City of Fresno
Randy Schmidt Chair of BACWA AIR/CCCSD	Randy Schmidt will appoint his back-up
Dan McGivney Chair of SCAP/EMWD	Greg Adams Vice chair of SCAP/LACSD

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# Summary of CWCCG Committee Meeting on 3/17/2008,

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## **CWCCG and CH2M HILL Budget**

The Committee directed CH2M HILL to present a detailed scope of work proposal for additional and new work related to changes in the protocol development approach, the new local government protocol, and additional meetings. After the cost for this is fully understood, the Committee will review the CWCCG budget and will need to request additional fees from member agencies.

Since the local government protocol has a short deadline, the Committee authorized CH2M HILL to:

- Implement this task utilizing the budget under Task 2 (Develop Estimation Methods), Task 3 (Develop Statewide Estimate), and Task 6 (Prepare Final Report) of the current scope of work/contract.
- Develop a second contract/scope of work for completion of the two-year WW Protocol by:
  - reviewing current funds available and evaluating what can be accomplished with the remaining CH2M HILL funds,
  - evaluating what can be accomplished with the \$31,000 of the remaining funds in the CWCCG's budget, and
  - evaluating what additional budget is needed to conclude Phase II of the WW Protocol (site-specific corresponding to Option 3 and 4 in the White Paper).

In the above scope of work re-evaluation, CH2M HILL will also:

- Provide the "literature search" of the four remaining GHGs as an optional item on the budget proposal.
  - Tie the logistics of the WERF study into the scope of work.
  - Provide an optional "literature search" to improve upon the published default emission factor and range of factors for discharge into varying types of water bodies (*i.e.*, deep/shallow ocean outfalls, bay outfalls, river outfalls, *etc.*).
  - Recommend a funding cap that the Core Group can approve.
  - Present the budget proposal to the CWCCG Steering Committee Core Group.
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## **Distribution of White Paper**

Once the White Paper is finalized, CH2M HILL will give the pdf version of the White Paper to the CWCCG Steering Committee. The finalized White Paper shall be free to distribute at anyone's request.

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## **Action Items**

- On behalf of CWCCG, CH2M HILL will submit a formal letter to Richard Bode/CARB and Gary Gero/CCAR to confirm CWCCG commitment to work with CCAR on the draft of the local government protocol and Phase II Wastewater Protocol (two-year timeframe).
  - CH2M HILL will provide a budget proposal to the CWCCG Steering Committee Core Group.
  - CH2M HILL will start drafting the local government protocol and provide the draft to the CWCCG Steering Committee by May 1, 2008.
  - Glen Daigger/CH2M HILL will suggest to WERF study group to sample CH<sub>4</sub> and CO<sub>2</sub> (when feasible) whenever they sample N<sub>2</sub>O, so we can accumulate data to show that sources of WERF's study do not emit significant amounts of CH<sub>4</sub> and CO<sub>2</sub>.
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# Development of Wastewater Protocol (Phase I & Phase II)

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## Key Definitions

- Direct emissions include biogenic or short-cycle CO<sub>2</sub> (*i.e.*, in the atmosphere anyway).
  - Influent wastewater is a source of direct emissions.
  - Indirect emissions include energy and chemicals, which have embedded energy.
  - We want to document biogenic emissions by definition.
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## Expected GHG Emissions

The Wastewater Protocol approach was laid out by Jim Sandoval/CH2M HILL and Glen Daigger/CH2M HILL. The rest of this document summarizes the presentation and discussion of the Wastewater Protocol approach.

- CH<sub>4</sub> is inconsequential at central POTWs (except sludge lagoons and lagoon treatment plants). For CH<sub>4</sub> Option 3, the 1% default value in the IPCC actually makes sense and is useful. It's possible to calculate lagoon emissions and/or implement source testing with a flux chamber.
  - IPCC/EPA estimates nitrogen "as a whole"; they use coefficient value of 26, but should be industry standard of 15.
  - More N<sub>2</sub>O is produced in more O<sub>2</sub> limited environments. Since oceans or deep bays do not have O<sub>2</sub> limitations, N<sub>2</sub>O emissions are probably not a problem in those environments.
  - It's worth obtaining CH<sub>4</sub> samples where we can, even if we can justify that CH<sub>4</sub> emissions are de minimus. Hopefully this can be accomplished along with some of the WERF study field testing for N<sub>2</sub>O.
  - The two key locations of N<sub>2</sub>O emissions include the central plant and the point of discharge into the environment:
    - A receiving stream model needs to be developed since this is the potential greatest point of N<sub>2</sub>O emissions. Since every receiving body is different, this is complicated and not in the scope of the WERF study or the protocol development.
    - WWTPs with NDN process have their N<sub>2</sub>O emissions mostly occurring at the plant; only these types of plants will benefit from the WERF study.
    - The science developed during the WERF study can someday be applied to developing a new model for N<sub>2</sub>O emissions at points of discharge in the future.
  - Current calculation methodologies and formulae can be utilized to estimate biogenic CO<sub>2</sub> emissions at WWTPs.
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# Development of Wastewater Protocol (Phase I & Phase II), Continued

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## **The Detailed Table of Treatment Processes and Expected GHG Emissions**

- The level of detail in the table presented on PowerPoint slides 26 & 27 is realistically one level of detail too great for the protocol.
  - We do not need a detailed source testing program for many of the treatment processes listed in the table and the diagram of slide 28. The IPCC Protocol just needs fine tuning.
  - The Secondary Treatment needs to show a category for Effluent Discharge, with N<sub>2</sub>O in the effluent as an emission.
  - CO<sub>2</sub> emissions from aeration basins are related to BOD conversion. In open basins, CO<sub>2</sub> is emitted in the atmosphere directly. In covered basins, the CO<sub>2</sub> is retained in the water or emitted through a gas vent.
  - Although emissions from anaerobic lagoons or reactors can be calculated, it's possible to field-test for the emissions with a flux chamber.
  - The IPCC estimate of 1% CH<sub>4</sub> emissions for sludge treatment is appropriate because these are merely de minimus fugitive emissions.
  - CH<sub>4</sub> emitted from incomplete combustion of digester gas is also a de minimus fugitive emission.
  - Biogenic CO<sub>2</sub> emissions from sludge incineration or combustion of digester gas can be calculated.
  - Incineration of sludge could also be included in the General Operations GHG source category.
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## **Wastewater Collection Systems**

- Make sure that the protocol states that there are no emissions from collection systems.
  - Collection system modeling for GHGs is very poorly developed.
  - Wastewater when generated contains minimal CH<sub>4</sub> or N<sub>2</sub>O; only biological processes contribute to emissions of those gases.
  - N<sub>2</sub>O is not emitted because typically wastewater does not contain nitrates. However, in rare cases someone's discharge or surrounding groundwater has high levels of nitrate. Perhaps there are some odd systems out there with this exception or having special anaerobic conditions occurring caused by trapped or stored WW. However, these rare conditions do not merit development within the protocol.
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## **Schedule**

CH2M HILL can probably develop the draft protocol 2-4 months sooner than June 2009, depending upon the consistency of the first three or four quarters of WERF WWTP emissions data. The overall framework of the protocol can be developed prior to finalizing N<sub>2</sub>O emissions factors for publication.

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