Archie D. McPhee
40482 Gavilan Mountain Road
Fallbrook, CA 92028
January 24, 2009

Nicholas O. Bartsch
California Energy Commission
Public Advisors Office
Sacramento, CA 95814-5512

Dear Mr. Bartsch,

Hey! How are things going? Sorry I could not correspond sooner about my comments on the truck transportation but my computer crashed and I ended up buying a new model and then learning where everything was in "Word" program. My dial up internet ended up with a virus and I will probably purchase an AT&T internet connection.

My response to the communication I received from Mr. Babula of the California Energy Resources Conservation and Development is attached. Mr.Babula's response to my Evidentiary Hearing report was filled with generalities and errors.

The California Health Laws Related to Recycled Water (CHLRRW) is a **series of LAWS specifically designed to the concerns of recycled water.** Every law in the USA specifically defines its lawful requirements in precise terms. A dog is a dog and not a cat, by law. A man is a man and not a woman, by law, and so on.

"Disinfected Secondary -23 recycled water" does not mean secondary treated water that has been disinfected; it has a precise meaning defined in the CHLRRW, Title 22, June 2001 Edition Section 60301.225 as "Disinfected secondary -23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 Milliliters utilizing the bacteriological results of the last seven days for which analysis has been completed and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more one sample in any 30 day period". Where in this definition is the terms "secondary treated recycled water"? It's a dream.

Disinfected tertiary recycled Water is defined in my attached response to Mr. Babula on pages 12, 13, and 14. Nowhere in any part of the CHLRRW Title 22 (or the Water Code), June 2001 Edition of the CHLRRW **(the Law and not a Standard) are the terms "Recycled Water that has undergone tertiary treatment and disinfection" or "meets all the requirements for Title 22 Disinfected tertiary treated water". There is no "tertiary treated" or "tertiary treatment" terms anywhere in Title 22 or the Water Code of the CHLRRW. How can anyone meet the terms of something that is not in existence?**

In Enclosure 4 there is a news report concerning the Olivenhain Water District. This water district wants to ship their recycled water from their water district to a landfill located in Riverside County by tank truck. The appeals court stated Olivenhain and the landfill need an Environmental Impact Report (EIR) in order to do so. The Environmental issues in my response # 8 on pages 6 through 7, my environmental issues in response # 11 on page 11 and my environmental issues on page 16 must, by law, require an EIR to be carried out by the OGP. Never in the history of California has a court refused a request for an Environmental Impact Report when the request was based on environmental issues.

Thanks for your assistance and in my opinion someone has perjured themselves and I am in the process of forwarding my attached response to the State Attorney General to investigate my claim. I can read plain English and so can the Attorney General. A law is still a law regardless of what SDG&E wants, and to deliberately add words to a law to in an attempt to make it agree to what you want it to be is unlawful, and, to me, is a form of perjury when it involves California official business.

Sincerely,

Archie McPhee

Archie D. McPhee
40482 Gavilan Mountain Road
Fallbrook, CA 92028
January 20, 2009

State of California Energy
Resources Conservation and Development
1516 Ninth Street, MS-14
Sacramento, CA 95814

Responding to:
Docket No. 08-AFC-4
"Brief Response to
Archie McPhee's Testimony"

Attention: Jared Babula

Dear Commissioners,

Thank you for your letter of January 9, 2009, it is filled with generalities and errors. I suggest you hire a consultant who has firsthand experience with water and wastewater engineering and has hands on experience in wastewater operating experience. Taking some ones word on a business transaction is something experienced business contractors never do if one expects to stay in business; it is mortal sin # 1. Tiny water/wastewater plants such as the tiny Fallbrook Public Utility District (FPUD) produces only non-disinfected tertiary treated sewage water called reclaimed water by the Wastewater Industry. Enclosure 1 is a chemical analysis of FPUD's reclaimed water (or if you prefer the terminology Recycled Water, but please note FPUD calls it Reclaimed Water). Enclosure 2 contains a copy of a Standard Water Disinfection curve together with explanations.

Response # 1-respondng to California Energy Resources Conservation and Development Commissions response to Archie McPhee page 1 paragraph 3

The California health Laws Related to Recycled Water (CHLRRW), Water Code, June 2001 Edition, Section 13050(n) states: " "Recycled Water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a control use that would not otherwise occur and is considered a valuable resource." **This definition means that primary treated sewage water, secondary treated sewage water, and tertiary treated sewage water all fit the above definition and all can be considered as recycled water.** Recycled water can then mean primary treated sewage water, secondary treated sewage water and tertiary treated sewage water all of which are **not** disinfected and is a health hazard to humans andanimals. For this reason two sections (the Water Code and Title 22) of the CHLRRW specifically define 5 different types of recycled water in detail and their distinctive, specified use. Many of the specified uses are based on health protection for humans, animals, birds, fish and vegetation. Has the California Energy Commission (CEC) done the same? No. Why not? If it is good enough for CHLRRW it is good enough for the CEC. **The difference is the CHLRRW is much more experienced with various business practices and contractor dirty tricks and it is, more important, CALIFORNIA LAW.** The CHLRRW protects against all possible business practices ,contractor dirty tricks, and the environment while the CEC does not.

Response #2 - CEC STAFF ERRORS ON YOUR PAGE 2

The trouble I am having with your response is your CLAIMS and RESPONSES are not numbered.

Page 2 paragraph 3 which states "Recycled Water that has undergone tertiary treatment and disinfection" and Page 2 paragraph 3 Option Agreement which states" meets all the requirements for Title 22 Disinfected tertiary treated water". The above CEC statements are **not acceptable** because they open to interpretation, there are at least four different specific, identified in detail types of reclaimed water in Title 22 CHLRRW, June 2001 edition. I repeat, **this is not acceptable** and the Potable Water Option contract must be changed to read **Disinfected Tertiary Recycled Water per Title 22 CHLRRW, June 2001 Edition, Section 60301.230** in all instances where recycled water is written or listed in the Option Agreement contract. There is nowhere in the Water Code or in Title 22 of the CHLRRW that uses the terminology "recycled water that has undergone tertiary treatment and disinfection" or "disinfected tertiary **treated** water". These are false statements.

Response # 2(a) - page 4 paragraph 4 and additional comments

I am angry because the CEC staff is not looking after the best interests of the citizens of California. They are kissing up to the Orange Gove Power Plant Project (OGP). Why? I would expect any responsible entity to welcome assistance in preventing standard contractor trickery. I have been certified by the State of California as an expert witness in water and wastewater engineering. The staff of the CEC does not know the difference between recycled water and reclaimed water and uses these terms interchangeably in same sections of official OGP/CEC documents (see my response # 3 on page 3 of this communication)

I am not a typist and had limited time to prepare for the evidentiary hearing but my Claim in paragraph 3 on page 4 was for Section 60307 of the CHLRRW, June 2001 Edition, Title 22 and my statement is correct even though a numbered typo was discovered by the searching detailers.

The CEC statements **"Water that has undergone tertiary treatment" and water that "meets all of the requirements for Title 22 tertiary treated water" is not an acceptable definition of "Disinfected Tertiary Recycled Water" as far as the CHLRRW (THE LAW), and as far as I, Intervenor Archie McPhee, an expert witness in water and wastewater, with many years of business experience, is concerned. There is no definition of the term "tertiary treated water" or "Water that has undergone tertiary treatment" anywhere in the CHLRRW, June 2001 Edition, in the Water Code or in Title 22".** For proof please search : CHLRRW, Title 22, June 2001 Edition, Sections 60301.200, 60301.220, 60301.225, 60301.230, 60301.250, 60301.300, 60301.320, 60301.600,60301.630,.60301.650, 60301.900, 60304, 60305, 60306, 60307, and 60310 and inform me exactly where this terminology can be located. The water required for the OGP must not **ONLY** be disinfected, it must also be **oxygenated**, **filtered** and **clarified** to a specified "NTU" measurement standard as specified in the CHLRRW sections

specified in the sections quoted above. See the exact dentition word for word of "Disinfected tertiary recycled water" below on pages 12, 13, and 14 of this response.

Someone in Sacramento is not doing their job. I was informed by the CEC plan checker that FPUD's Recycled/Reclaimed water was disinfected. By using FPUD's Reclaimed Water Quality Chemistry, (please note FPUD calls it RECLAIMED WATER) listed in Enclosure1, and the standard water disinfection curve with explanations attached (see Enclosure 2) I have proved to my satisfaction, as a certified expert witness, that FPUD has not disinfected their Reclaimed Water. Refer to the disinfection curve in Enclosure 2: if FPUD's reclaimed water were disinfected there could be no "Ammonia" in the reclaimed water quality chemistry data if it were disinfected but there is "Ammonia" listed as being present in this wastewater. In addition, to prove disinfection, by law, there must be an excess of the disinfectant in the residual and there is no evidence in Enclosure 1 that either an excess of chlorine or unreacted hypochlorite exists in FPUD's Reclaimed water Quality Chemistry Profile (se paragraph, page # 363 of Enclosure 2). Therefore FPUD's reclaimed water is not disinfected (another contractor trickery hard to identify by the average layperson).

Another problem with disinfection (see Enclosure 2, page 363, paragraph 1)) of FPUD's reclaimed water: During disinfection nitrogen oxides (**NOx)** will be produced which will increase turbine blade damage. I do not believe these gases will be removed by a Demineralizer System, they are not minerals. **Potable water at all times must be required for this service**.

Response #3 to the Introduction Statements

This statement says "Staffs use of the term 'recycled water rather than "reclaimed water" is a means for the Orange Grove project to use an unsafe and hazardous water source for industrial use because according to the intervenor..." This is mockery and slanderous and the writer has no idea of what he is referring to, and in addition it is unforgivable. The moto of this writer is don't deal with facts , crucify the carrier of real and correct information. Apparently Staff does not understand plain written English and has not done research into their own OGP documents.

Please refer to Enclosure 3. This is a copy of the CEC document titled "**Generation Facility Description, Design and Operation" (of the Orange Grove Power Plant)**

Please turn to page 2-15, Section 2.6.1 (Water Use Requirements) and read:

1) Paragraph 2 states "This design condition is the maximum use and would be 62 acre feet per year (AFY) for fresh water and 38.7 AFY for **RECLAIM WATER."**
2) Paragraph 3 states "The expected use case...and 12.1 AFY for **RECLAIM WATER.**

Please turn to page 2-16 Enclosure 3, Table 2.6-1b is titled:

3) Plant Operations **RECLAIMED WATER** Requirements:

Please turn to page 2-17 of Enclosure 3,Section 2.6.2.1, Cooling Water Supply

4) Line 3 " 45 AFY of tertiary-treated **RECLAIM WATER"**
5) Line 5 " **RECLAIM WATER** for 25 years"
6) Lines 7-8 "The 45 AFY of **RECYCLED WATER**

7) Paragraph 2, line 1 "**RECLAIM WATER** pickup station"

Please refer to page 2-19, Section 2.6.2.4.1

8) The title of this section is **"RECLAIM WATER"**
9) Line 1 "The **RECLAIM WATER** one-way haul distance"
10) Line 1 "The **RECLAIM WATER** haul route"
11) Paragraph 2, line 9 "**RECLAIM WATER** haul round trips"

Why is counsel mocking me when the CEC plan checkers cannot decide whether this sewage water is called Reclaimed Water or Recycled Water. If the CEC wishes to pay me $200/hour I will identify at least 100 instances in their documents where they have intermingled their hated **"RECLAIMED WATER" term with the favored "RECYCLED WATER" term.**

My greatest problem with the use of the tem recycled water is the many different definitions of Recycled Water used in both the water and wastewater industry. However, after reading the newer Title 22, June 2001 Edition of the CHLRRW and how this text takes specific care in identifying, in detail, the different types of recycled water and referring these different types of recycled water to its specific uses I began to appreciate the positive details in the Title 22, June 2001 publication of the **CHLRRW**. Please note , **these are laws, not suggestions**.

Response # 4 – to Discussion" bottom of page 1 to page 2.

The CHLRRW has indeed specified laws and penalties for violations of the laws, for recycled water use, and they are laws, not simply standards as stated in the response. All of these are laws found in Title 22, June 2001 Edition, CHLRRW that must be obeyed, even if the OGP does not like them.

Your statement "It is undisputed that the Water Code and Title 22 allow the widespread use of recycled water that has undergone tertiary treatment and disinfection, **is false**. CHLRRW definition of Disinfected Tertiary Treated Water is not, **I repeat is not, "recycled water that has undergone tertiary treatment and disinfection".** Please read the definition of the CHLRRW, Section 6030.230 **Disinfected tertiary recycled water, which is California law.** It is copied, word for word, below in my **Response # 12** on pages 11, 12, 13, and 14 of this response. The word "tertiary" in the CEC/OGP definition above refers to the sewage treatment process while the word "tertiary" in the CHLRRW definition (Disinfected tertiary recycled water) refers only to the disinfection process, two different definitions of the same word. This response is nothing less than a standard tricky contractor using the misapplication of words in attempt to confuse **and is unacceptable.**

The CHLRRW, 2001 Edition 2001, Title 22 , defines four types (and 1 more is permitted under the single title "Recycled Water in the Water Code section") of recycled water that are permitted by specified definition and specified use, namely:

1) Section 60301.220 "Disinfected secondary-2.2 recycled water
2) Section 60301.225 "Disinfected secondary-23 recycled water
3) Section 60301.230 "Disinfected tertiary recycled water
4) Section 60301.900 "Un-disinfected secondary recycled water.

5) Recycled water, CHLRRW, ,Water Code, June 2001 Edition

There is nothing in these CHLRRW titles or definitions (i.e. of 1, 2, 3, 4 and 5 above) that specifies or uses the terms tertiary **treatment**, or secondary **treatment** of wastewater. The title word "secondary" does not mean secondary waste water treatment and title word "tertiary" does mean tertiary wastewater treatment. In the titles located in 1, 2, 3, and 4 above , the words tertiary and secondary are simply a means of defining the different types of disinfection required for the use of these disinfected or un-disinfected recycled water . The CHLRRW, Title 22, June 2001 Edition defines specific uses for these 4 different types of disinfected recycled water(s). The tricky contractor is trying to trick the CEC plan checker with a play on words **which is unacceptable to Intervenor Archie McPhee**

Your quotation of CHLRRW, Section 60306(a) "Use of Recycled water for cooling" only part (a) is correctly stated but it applies only to industrial and commercial cooling or air conditioning that involves the use of mechanisms that create a mist and in which case disinfected tertiary recycled water must be used. However, the tricky contactor carefully omitted parts (b) and (c) of this Section.

Part (b) of CHLRRW, section 60306 states "Use of recycled water for industrial and commercial cooling or air conditioning that does not involve the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be at least disinfected secondary-23 recycled water.

Part (c) of CHLRRW, Section 60306 states "Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could that could come in contact with employees or members of the public, the cooling system shall comply with the following:

(1) A drift eliminator shall be used whenever the system is in use.
(2) A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of Legionella and other micro-organisms.

Note: Has CHLRRW, 60306 part (c) been included in the "Generation Facility Description Design Operation Section (for the OGP). **I cannot find this information anywhere in this design document. Is this why parts (b) and (c) of CHLRRW, Section 60306 were left out of the OGP response (more contractor trickery)?**

Response # 5 - to page # 2 paragraph 4

The contractor and/or others Statements: Orange Grove's option Water Agreement... and the Recycled Option Agreement states that "Fallbrook (not FPUD?) agrees to provide recycled water which meets all of the requirements for Title 22 tertiary treated recycled water" **This statement is unacceptable to intervenor Archie McPhee because it is open to interpretation by OGP and FPUD and their interpretation above is that "recycled water that has undergone tertiary treatment and disinfection" (your page 2, paragraph 3) is identical to Disinfected tertiary recycled water . This is a false interpretation and is**

trickery, and misleading. There is no such terminology as "tertiary treated recycled water" in Title 22 of the CHLRRW, 2001 Edition.

Response # 6 – to page 2 paragraph 5

The contractor and/or others statement: "whether the water is called recycled or **reclaimed water,** for such water to be used, it must be processed through modern primary, secondary, and/or tertiary treatment and disinfection following strict standards of the California ..." **This statement is false. Standard reclaimed water is not disinfected. In addition FPUD's reclaimed water is not disinfected (see my response # 2 (a), on page 2, paragraph 3).** San Diego City (S/D) was forced by a Judge to build a huge Reclaimed Water plant in their "North City" area for reclaimed water with the effluent reclaimed water to be fed into the sewers thereby diluting the sewage entering this primary sewage treatment plant. (S/D has no Secondary Wastewater Sewage Treatment).. If the Reclaimed water were disinfected it would kill the needed positive bacteria in their Primary treatment plant resulting in huge fines because S/D's primary treated water is discharged directly into the Pacific Ocean through a mile long pipeline from their Primary treatment plant.. Long Beach uses reclaimed water to irrigate their golf course on Studebaker Road. Long Beach's golf course irrigation pipes are colored purple and labeled "Contaminated: Do not Drink-does that sound like disinfected water? Not to me. Note the accepted use of the term **reclaimed water on line 1 of this page. You ridicule me for using the term reclaimed water and use it yourself in this document as a acceptable alternative to the term recycled water**

Response # 7- what does the definition of recycled water 13050(n) really mean

By definition, CHLRRW, Section 13050(n), means that recycled water can be primary treated sewage water, or secondary treated sewage water or tertiary treated sewage water. Read the definition which does not specify tertiary treated sewage water or secondary treated sewage water, or primary treated sewage water or any kind of sewage treated water (see my response #1, on page1)

Response # 8 –trucking of reclaimed/recycled water

The contractor and/or others statement on page 3, paragraph 4: The statement "There is nothing in this section that prohibits the use of trucks to haul recycled water". However, there is nothing in Section 13555.3 that permits the use of trucks to haul recycled water but Section 13555.3 (c) states "This section does not preempt local regulation for the delivery of water for potable and non-potable uses and any local governing body may adopt requirements which are more restrictive than the requirements of this section" The industry standard for transporting recycled/reclaimed water is by purple piping which is indeed more restrictive than the requirements of CHLRRW, Section 13555.3 and very much safer. There has never been an instance in California history when water for power plant use has been transported by tank truck from a water supplier and especially for 25 years and 2 months. You are setting a precedent for all of California and you are implementing trouble and hate hell and discontent. You will be

hated far and wide. Fallbrook is not a big City with many freeway accents; it is a tiny village. This is a stupid and dangerous method of permanently transporting water and it contributes to global warming by increasing CO2 emissions in violation of the Governor of California's policies. You are not playing little childhood games, you are interfering with peoples daily lives and work schedules and with school children. First, this truck route for reclaimed/recycled water drives through a residential area and then past one of the busiest shopping centers in Fallbrook, then past Fallbrook's only Post Office, then past a 3 block area of grade school children traffic where 25mph speed limits are mandatory when children are present, then past the intersection of Mission and Main Avenue (a very busy intersection where traffic during rush hours is backed up about 3 or 4 blocks) then past another moderately busy shopping center, then past a commercial business section on South Mission with dangerous access intersections into/out of businesses, then on a very winding two lane S. Mission road past dangerous residential intersections with only 1 traffic light, then past a large housing development and then to Highway 15 where the intersection onto Highway 76 is a very busy intersection during rush hours. East Highway 76 is a two lane highway which is also very busy much of the time (see Enclosure 4) because of Casino traffic with their usual DUI drivers. Highway 76 is a winding two lane highway from the intersection of Highway 15 to the OGP. On the east side of the intersection of Highway 15 and 76, Pardee Construction has submitted plans for huge commercial and shopping centers, with around 400 residential homes, and a community college. The CEC must be nuts to allow truck transportation of water for power plant water supply under these conditions. Furthermore, a 6,500 gallon designed water tanks for 4,500 gallons of water per trip? Who is going to verify that a 6,500 gal tank will not be loaded with 6,500 gallons of water, this is not intelligent.. Are you aware that Water weighs 8.337 pounds per gallon and 6,500 gallons of water weighs 54,190 pounds and could damage the traveled roads with this weight plus the combined weight of tank and truck. Is the CEC staff so willing to ignore safety, road damage, and air pollution to satisfy SDG&E and if so why? I have travelled the above described roads more than 1,000 times. Furthermore the portion of Highway 76 that is scheduled in the next 5 years for widening is that portion of 76 West of Highway 15 and not that portion of Highway 76 to the East of Highway 15 as stated by the OGP contractor at the Evidentiary Hearing. The distance from the reclaimed water pick-up station to highway 15 is at least 5 miles through heavy commercial service areas, shopping areas, a school district, mobile home parks, and residential areas.

Enclosure 4 involves a case where the Olivenhain Water District plans to deliver recycled water from its water plant to a landfill. The participants must evaluate their plan under the California Environmental Quality Act. In other words, an Environmental Impact Report is needed. Shouldn't this same court ruling apply to the trucking of reclaimed water from FPUD to OGP?

Response # 9 – page 3 bottom paragraph

This is so silly - the author is trying his stupid trickery and essentially is grouping all of the CHLRRW categories into one category which is not permitted by the CHLRRW, June 2001 Edition, Title 22. This is the same old, same old contractor trickery and sales pitch. It sounds like a used car salesman type challenging the CHLRRW June 2001 Edition, Title 22.

A. **Disinfected tertiary recycled water uses required by the CHLRRW, June 2001 Edition, Title 22:**

1) **Section 60304: Disinfected tertiary recycled water (not simple recycled water) used for surface irrigation.** (1) Food crops, including all edible root crops, where the recycled water comes in contact with the edible portion of the root. (2) Parks and playgrounds. (3) School yards. (4) Residential Landscaping (5) Unrestricted golf courses.(6) No recycled water used for irrigation, or soil that has been irrigated with recycled water shall come in contact with the edible portion of food crops eaten raw by humans unless it is disinfected tertiary recycled water
2) **Section 60305: Disinfected tertiary treated water (not simple recycled water) for impoundments.** Disinfected tertiary treated recycled water shall be used for non restricted recreational impoundments.
3) **Section 60306: Use of Recycled Water for Cooling.** Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be **Disinfected tertiary recycled water**.
4) **Section 60307" Use of Recycled Water for other purposes.** Recycled Water for the following shall be **Disinfected tertiary recycled water:** (1) flushing toilets and urinals (2) Priming drain traps (3) Industrial process water that may come in contact with workers (4) Structural fire fighting (5) Decorative Fountains (6) Commercial Laundries (7) Consolidation of backfill around potable water pipelines (8) Artificial snow making for commercial outdoor use. (9) Commercial car washes, including hand washes if the recycled water is not heated, where the general public is excluded from the washing process

B. **Disinfected secondary-2.2 recycled water uses permitted by the CLRRW, June 2001 Edition, Title 22:**

1) **Section 60304 (b): Disinfected secondary-2.2 water.** Recycled water used for surface irrigation of food crops where the edible portion is produced above ground and not contacted by the recycled water shall be at least disinfected secondary-2.2 recycled water.

C Disinfected secondary-23 recycled water use permitted by the CHLRRW, June 201 Edition, Title 22, SECTION 60304 part c, and 60307 part b.

Recycled water used for the surface irrigation of the following **shall be at least disinfected secondary-23 recycled water.**

(1) Cemeteries
(2) Freeway Landscaping
(3) Restricted access golf courses

(4) Ornamental nursery stock and sod farms when access by general public is not restricted
(5) Pasture for animals producing milk for human consumption
(6) Any non-edible vegetation where access is controlled so that the irrigated area cannot be used as if it were part of a park, playground or school yard.
(7) Industrial boiler feed.
(8) Nonstructural fire fighting.
(9) Backfill consolidation around non-potable piping.
(10) Soil compaction.
(11) Mixing concrete.
(12) Dust control on roads and streets.
(13) Cleaning roads, sidewalks and outdoor work areas.
(14) Industrial process water that will not come in contact wiry workers.

No irrigation with, or impoundment of, un-disinfected secondary recycled water shall take place within 150 feet of any domestic water supply well.

D. Un-disinfected Secondary Recycled Water use permitted by the CHLRRW, June 2001 Edition,, Title 22: (note: this water must be oxidized)

(1) Orchards where the recycled water does not come in contact with the edible portion of the crop.
(2) Vineyards where the recycled water does not come in contact with the edible portion of the crop.
(3) Non-food bearing trees (Christmas farm trees are included in this category provided no irrigation with (un-disinfected secondary) recycled water occurs during a period of 14 days prior to harvesting or allowing access by the general public).
(4) Fodder and fiber crops and pasture for animals not producing milk for human consumption.
(5) Seed crops not eaten by humans.
(6) Food crops that must undergo commercial pathogen-destroying before being consumed by humans.
(7) Ornamental nursery stock and sod farms provided no irrigation with (un-disinfected secondary) recycled water occurs for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public..
(8) Flushing sanitary sewers

Section 60310, Use Area Requirements. CHLRRW, June 2001 Edition, Title 22, places restrictions on the use of recycled water. For example subsection (a) states "No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic supply ... " Subsection (b) No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well. Subsection (c) No irrigation with, or impoundment of, disinfected-2.2 or secondary-23 recycled water shall take place within 150 feet of any domestic water supply well. Subsection (d) No irrigation with, or impoundment of, un-disinfected secondary recycled water shall take place within 150 feet of any domestic water supply well. Subsection (f) No spray irrigation of any recycled water, other than disinfected tertiary recycled

water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, or school yard. There are also restrictions on spray, mist, and runoff, of the different types of recycled water. Consequently:

It is shameful contractor misconduct as well as typical contractor trickery to group a bunch of dissimilar items together for example Industrial water that may come in contract with workers shall be Disinfected tertiary recycled water **BUT** Industrial water that will not come in contact with workers shall be at least disinfected secondary-23 recycled water. Note also that the use of recycled water for Unrestricted access golf courses must be disinfected tertiary recycled water **BUT** restricted access golf courses may use disinfected secondary-23 recycled water. The author of this response cannot understand the difference between recycled water and , disinfected tertiary recycled water, disinfected secondary-2.2 recycled water, disinfected secondary-23 recycled water, un-disinfected secondary recycled water. All of these terms are defined in the CHLRRW, June 2001 Edition Title 22. Please read the definition of recycled water in Section 103050(n), then the definition of disinfected tertiary recycled water in Section 60301.230, then the definition of disinfected secondary-2.2 recycled water in Section 60301.220, then the definition disinfected-23 recycled water in Section 60301.225, and then the definition of Un-disinfected secondary recycled water, 60301.900. If after reading the above definitions and the reader does not find thee 5 different types of recycled water with 5 different meanings and 5 different specified uses then the reader is totally uneducated. The specific uses of 4 of the five different types of recycled water mentioned in this response is found above on pages 7, 8, and 9..

Response # 10- to the top 3 paragraphs on page 5

First of all only Title 22 is the "California **Health Law** Related to Recycled Water". The statement that "Orange Grove Option Water Agreement dated December 10, 2007", and the Recycled Water agreement state that "Fallbrook (not FPUD?) agrees to provide recycled water which meets all the requirements for Title 22 tertiary treated recycled water" First, it is open to interpretation and on page 2, paragraph 3 of your reply to me you have stated that "Title 22 allow(s) for the widespread use of recycled water that has undergone tertiary treatment and disinfection" **this is false and is obviously a false interpretation by both FPUD AND OGP of the CHLRRW, 2001 Edition, Title 22 which requires Disinfected tertiary recycled water not tertiary treated recycled water.** A business must specify exactly what is required by the LAW and leave no room for interpretation. For example, in your above quoted response there is nothing anywhere in the CHLRRW, June 2001 Edition , Title 22, or the Water Code that defines the term **"TERTIARY TREATED RECYCLED WATER"**. Look it up, "tertiary treated" is not a health term it is a wastewater term. **The definition of recycled water in the CHLRRW, June 2001 Water Code, Section 103050(n) states** ""recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefor considered a valuable source". There is no "tertiary or tertiary treated" wording in this definition. Sections 60301.220, 60301.225, 60301.230, and 60301.900 are definitions of 4 different types of recycled water **and not one of these definitions contain the term "tertiary treated".** My question, how can 'Fallbrook (FPUD?)"

agree to meet the requirements of the CHLRRW, Title 22 for something that is not defined in the CHLRRW, Title 22 ? Impossible. This to me is a violation of California Law, namely the California Health Laws Related to Recycled Water by deliberate misrepresentation and note these laws are specifically related to recycled water which is exactly what the CEC is dealing with. It also appears to me that the CEC will be an accomplice to breaking a California Law if this is permitted. I have spent years with the City of San Diego checking on contractor misconduct in the certification of new pump stations during operational acceptances. Contractor errors and/or misconduct is a never ending process: The more money a contractor saves by using sub-standard products the more money in his/her pocket and with many contractors trickery and deception it is a practiced art.

Response # 11 – to page 5 paragraph 5 concerning Section 13555.3, part c

Sorry for the typo, glad you caught it.

Trucking of water from a water district to a power plant has never been permitted before in the history of California. What are you starting? Are you prepared for lawsuits due to accidents with the trucks or accidents caused by automobiles passing the slow trucks on hills, or traffic injuries or traffic deaths? These are mostly 2 lane highways. There is nothing on record to allow the transfer of water from a water district to a power plant located in another water districts service area, against the wishes of that service areas management. For more on this topic see my Response # 8 above. I believe an Environmental Impact Report must be obtained (see Enclosure 4) for this trucking of water.

Response # 12 – to page 5 paragraph seven (bottom paragraph)

CHLRRW Section 60306 (see response # 9). **Use of recycled water for cooling part (a).** This section states "Recycled water used for industrial of commercial cooling or air condition that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist **shall be disinfected tertiary recycled water**. So what is the big deal. Mr McPhee only quoted what is required by California Law, specifically the CHLRRW. There is no instance in any of the CEC or OGP documents where the term "DISINFECTED TERTIARY RECYCLED WATER" is used: OGP and FPUD avoid that term like the plague; instead they use the term ":tertiary treated recycled water" which is not defined or used in any part of the CHLRRW , Water Code or Title 22, June 2001 Edition.". Is this contractor trickery and a play on words not picked by the CEC plan checkers? Why?

Response # 13 – to page 6 "Conclusion", paragraph 1

See my Response # 9 and Enclosure 3. Both OGP and the CEC consider Recycled water and reclaimed water to be one and the same. So why the sarcasm?

Again by definition CHLRRW, June 2001 Edition, Water Code, Section 13050(n) defines "Recycled Water" as follows ""Recycled Water" means water which , as the result of

treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefor considered a valuable resource" Where in this definition does the words "tertiary treated" occur? IT DOES NOT. Where in this definition does the word disinfected occur? IT DOES NOT.

Consequently, this definition, by wording, must include primary treated un-disinfected sewage water, secondary treated un-disinfected sewage water, and tertiary treated un-disinfected sewage water. These waters are toilet waters and domestic/commercial wastewaters which have been flushed into sewer mains. They stink, are not disinfected, they are contaminated with: waterborne diseases, harmful bacteria, and commercial and hospital waste containing blood and chemicals. They also contain Methane gas which, in my opinion, makes them a hazardous material. These water are harmful to humans.

Therefore, for this reason Title 22 Code of Regulations, was added to the California Health Laws Related to Recycled Water, June 2001 Edition. Specific definitions and specific uses were added in this section, namely:

1) Disinfected secondary-2.2 recycled water (Section 60301.220, CHLRRW ,June 2001 Edition , Title 22)
2) Disinfected secondary-23 recycled water (Section 60301.225, CHLRRW, June 2001 Edition, Title 22)
3) Disinfected tertiary recycled water (Section 60301.230, CHLRRW, June 2001 Edition, Title 22)
4) Un-disinfected secondary recycled water (Section 60301.900, CHLRRW, June 2001 Edition, Title 22.

Specific uses were required or permitted for the 4 new definitions of recycled water above in the Title 22 Section of the CHLRRW and most of these specific or permitted uses are presented in my "Response # 9" above. However, Disinfected Tertiary Recycled Water is the most important definition, and must, by law, be used in the OGP, and for that reason its definitions are presented in the following pages of this document.

60301.230. Disinfected tertiary recycled water

"Disinfected tertiary recycled water" means a filtered and subsequently disinfected wastewater that meets the following criteria.

(a)The filtered wastewater has been disinfected by either:

(1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater . A virus that is at

least as resistant to disinfection as polio virus may be used for the purpose of the demonstration.

(b) The median Concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per100 milliliters.

Note: this is definitely not "recycled water" whose definition can be found on my page 11 above..

60301.300. F-Specific bacteriophage MS-2

"F-Specific bacteriophage MS2" means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. coli (ATCC 15597).

60301.600. Modal Contact Time

"Modal Contact time" means the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the effluent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

60301.650. Oxidized wastewater

"Oxidized wastewater" means wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

60301.320. Filtered wastewater

"Filtered wastewater" means an oxidize wastewater that meets the criteria on subsection (a) or (b).

(a) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:

(1) At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, up flow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in traveling bridge automatic backwash filters, and

(2) So that the turbidity of the filtered wastewater does not exceed any of the following:

(A) An average of 2 NTU within a 24 hour period;
(B) 5 NTU more than 5 percent of the time within a 24-hour period; and
(C) 10 NTU at any time.

(b) Has been passed through a micro-filtration, ultra-filtration, nano-filtration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

(1) 0.2 NTU more than 5 percent of the time within a 24-hour period; and
(2) 0.5 NTU at any time.

60301.630. NTU

"NTU" (Nephelometric turbidity unit) means a measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light as measured by method 2130 B, in Standard Methods for the Examination of Water and Wastewater, 20 th ed.; Eaton, A.D., Clesceri, L. S. , and Greenberg, A.E., Eds; American Public Health Association: Washington, DC, 1995; p. 2-8.

Response # 13 defines word, for word, the CHLRRW Title 22, June 2001 Edition for "Disinfected tertiary recycled water", and this definition is, most certainly, not recycled water, or reclaimed water or tertiary treated recycled water or tertiary treated water that has been disinfected, it is California Law, and NOT California Standards for recycled water. Any violation of this law by OGP which is permitted by the CEC is a violation of California Law by both parties. What part of California Law does OGP not understand? For any lawful response the OGP/FPUD Recycled Water and the FPUD Potable Water Option Agreement must be changed to read specifically, and exactly, "DISINFECTED TERTIARY RECYCLED WATER" in all locations in all of their documents because all of the recycled water required or otherwise used by OGP must be "Disinfected tertiary recycled water" At present FPUD and OGP specified a non-existent Title 22 "tertiary treated recycled water" in the above agreements which is a prime example of contractor trickery because the CHLRRW, June 2001 Edition, Title 22 or Water Code has no definition in its written documents anywhere defining the term "tertiary treated recycled water". How can FPUD meet all of the requirements of the "Title 22 tertiary treated recycled water" when the term "tertiary treated recycled water" does not exist anywhere in Title 22 of the CHLRRW, June 2001 Edition . If this farce is permitted not only is OGP violating California Law but the CEC plan checker referenced is an accessory after the fact. What's in it for the Cheryl Closson as mentioned in paragraph 3, page 5 of "Brief Response to Archie McPhee's testimony, dated January 9, 2009"? Is she not supposed to be working for the State of California to prevent Contractor abuse and/or error? What is every Californian taxpayer paying the CEC to do? We require corrections to be made to violations of California Law and so does California Law.

It is certain that the State of California Energy Resources Conservation and Development Commission "CONCLUSION" is not correct and disobeys all of the use requirements of Title 22, California Health Laws related to Recycled Water. See Title 22 Section 60307, subsection (a), line 1, which defines specifically "Recycled water used for the following shall be disinfected tertiary recycled water" and lists "(4) industrial process water that may come in contact with workers" as a required use of disinfected tertiary recycled water and not just plain, "Water Code recycled water". However, the term Recycled Water, used alone in the California Health Laws Related to Recycled Water, Water Code (Section 13050(n) define the term "Recycled water" as ""Recycled Water" MEANS water as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not other wise occur and is therefore a valuable resource".

Where in this definition is the term "recycled water" preceded by the terms DISINFECTED SECONDARY- 2.2, or DISINFECTED SECONDARY-23, or the term DISINFECTED TERTIARY , or the term UN-DISINFECTED SECONDARY. Somebody in Sacramento must be smoking some of that strange stuff if they call these specific terms in Title 22 of the California Health LAWS Related to RECYCLED WATER as identical to " Water Code Recycled Water". If that is the case why did Title 22 of the CHLRRW , June 2001 Edition specify these four different types under separate lawful written identities and separate lawful written uses.

What the California Commission is exactly saying is "don't confuse me with facts and detailed descriptions my mind was already been made up 6 months ago because WE ARE SO WILLING TO AGREE TO ANYTHING SDG&E WANTS"

Why have a California Dept of Health and have them designate laws specifically for disinfected secondary-2.2 recycled water, and disinfected secondary-23 recycled water, and disinfected tertiary recycled water and un-disinfected secondary recycled water and their specific uses when the commission's primary desire is to only ignore them. Why have any "intervenors" when the commissions primary desire is to ignore them and ridicule them for being correct. Your attitude in this activity is to ignore the message and attack the messenger .

YES, just plain recycled water is a serious health hazard. Yes, primary treated sewage water, and secondary treated sewage water A.K.A. recycled water, as well as tertiary treated sewage water A.K.A Recycled Water and/or Reclaimed Water is a serious health hazard because primary, secondary, and tertiary treated sewage water is not disinfected (see my analyses on the bottom of page 2 and top of page 3 of this response and prove me wrong). Shame on you for permitting this deception.

I treat your decision in the same manner as the US Dept of the Armies decision to subject American Soldiers to be directly placed at different distances from an atomic bomb explosion to test for health reactions of humans to radiation with respect to distance

from atomic bomb explosion. Some of these soldiers died horrible deaths as the result of these tests and the army could care less. You are in the same category, you don't have to work in the Orange Grove Power Plant. You don't have to contend with the traffic congestion created by tanker trucks because it is not your problem. You do not have to worry about your school child being run over because of traffic congestion caused by these tanker trucks because you don't care. You don't have to worry about traffic injuries or deaths caused by these tanker trucks because it is not in Sacramento. You don't care if the tanker trucks are overloaded and tear up the highways and village streets, (they are not your streets). You don't care about the air pollution caused by tanker trucks because it is not your air. You have not required an EIR for this truck transportation. I would never do to another human being what you are doing to the people of Fallbrook, Rainbow, and Pala but you could care less because you do not live there. You do not care if all the chemistry of tertiary treated recycled water is carried out because you have not created a system of checks, inspections, and counter checks. A previous FPUD wastewater treatment supervisor was terminated for falsifying records but you don't care because you never checked to see if anyone checked out backgrounds and qualifications. If the same thing happens again because you had not created any required checks or proof of accomplishments you would not care. Any private business that you managed would be bankrupt in less than a year because you do not care about anyone except yourselves and have less concern for us average Californians because your only care is satisfying SDG&E I repeat, I could not do what you are doing to the people of California and the people of Rainbow, Fallbrook, and Pala and still call myself a human being who cares for other human beings.

My conclusion is that the OGP should not be constructed under the present design conditions for water and wastewater. The proposed recycled water is a health hazard and FUD cannot manufacture Disinfected tertiary recycled water in the quantities required, prove me wrong with inspections and with me as a witness.. This stupid, stupid method of trucking recycled (actually reclaimed) water 15 to 20 miles through congested domestic housing areas, congested shopping areas, mobile home park areas, in possibly overloaded tank trucks is **so** irresponsible its irresponsible is irresponsible. An EIR must be required, see Enclosure 4. Based on the Appeals Court Decision reported by the North County Times in Enclosure 4 and environmental concerns expressed above in my Responses # 8 on pages 6 through 7 and in my Response # 11 on page 11, an Environmental Impact Report must, by law, be carried out by OGP for this truck transportation and be required for the Application for Certification by the CEC.

You statements that **recycled water** (California Health Laws Related to Recycled Water (CHLRRW), Water Code, June 2001 Edition, Section 13050(n), definition copied word, for word above on Page 15, paragraph1, and bottom paragraph, Pages 11 through 12) is identical to **Disinfected tertiary recycled water** (CHLRRW, Title 22, June 2001 Edition, Sections 60301.230, 60301.300, 60301.320, 60301.600, 60301.630, 60301.650 definitions copied word, for word above on Pages 12, 13 and 14) is an outright lie. It is a form of perjury and I am not willing to be victimized, or allow the citizens of California to be victimized, by perjured statements. I was born at night, but not last night.

The State of California Energy Resources Conservation and Development Commission's reply concerning Docket No. 08-AFC-3 titled "Brief in Response to Archie McPhee's Testimony", dated January 9, 2009" is far removed from being a truthful response; a copy of which is found in Enclosure 5. It is filled with errors and perjured statements and requires me to forward this response together with the Commissions January 9, 2009 response to me to the State of California Attorney General. Hopefully Mr. Brown, California's Attorney General can hire knowledgeable chemists experienced in water chemistry that can understand technical terms.

Archie D. McPhee
California Registered Professional Engineer and
Certified by the State of California on December 19,2008
As an Expert Witness in Water and Wastewater Engineering.

CC Ken Celli, CEC
Nicholas O. Bartsch, CEC
State of California Attorney General
Others

Enclosure 1

Table 6.5-1– FPUD Reclaimed Water Quality Chemistry Profile For 2006 And 2007

Month	TDS (mg/L)	G&O (mg/L)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Nitrate (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrite (mg/L)	Fluoride (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total Phosphorus (mg/L)	MBAS (MG/l)	Sodium Adsorption Ratio
Jan	768	<5.0	0.261	0.027	0.021	79.2	33.9	14.3	132	24.8	154	237	5.7	0.23	6.8	8.2	0.82	0.07	
Feb	830	<5.0	0.346	0.114	0.062	82.3	32.1	15	144	13.4	166	227	1.7	0.25	13.9	14.6	0.49	0.06	
Mar	822	<5.0	0.288	0.102	0.032	70.1	31.9	13.5	135	18.5	172	252	2.9	0.2	8.68	9.24	0.45	0.15	
Apr	786	<5.0	0.365	0.277	0.038	62.1	32	14.2	132	18.4	178	223	2.6	0.26	9.7	9.8	1.2	0.1	
May	980	<5.0	0.42	0.048	0.053	73.8	32	13.6	145	10.7	177	233	1.3	0.35	12.4	17.5	1.04	0.17	
Jun	610	<5.0	0.334	0.071	0.037	66.2	28.9	13.5	136	17.3	160	232	6.9	0.3	9.3	11.5	<.02	0.08	
Jul	850	<5.0	0.415	0.033	0.046	76.5	32	16.9	156	9.5	179	255	3.5	0.3	13.7	13.8	1.58	0.04	
Aug	860	<5.0	0.354	0.049	0.033	83.6	30.9	16.3	142	10.5	194	283	6.1	0.31	12.1	14.2	1.96	0.04	
Sep	850	<5.0	0.365	0.058	0.033	60.6	27.7	15.5	134	15.4	165	227	3.8	0.27	9.1	11.8	2.22	0.05	
Oct	840	<5.0	0.377	0.037	0.04	66.2	28.5	15.3	138	11.8	181	240	2.9	0.27	11.5	13.6	2.07	0.05	
Nov	830	8	0.44	0.063	0.03	71.2	31.9	16.6	142	9.0	161	241	2.4	0.26	11.2	18.8	2.09	0.06	
Dec	490	<5.0	0.323	0.091	0.028	79.6	30.7	18.3	154	1.9	97	229	<.04	0.28	14.9	18.5		<.02	
Avg.	**793**	**<5.0**	**0.357**	**0.081**	**0.038**	**72.6**	**31.0**	**15.3**	**141**	**13.4**	**165**	**240**	**3.6**	**0.27**	**11.1**	**13.5**	**1.39**	**0.08**	
Jan	860	<5.0	0.330	0.279	0.043	69.6	32.5	15.8	147	20.9	172	251	1.7	0.41	8.5	9.6	2.17	0.08	
Feb	780	<5.0	0.340	0.180	0.038	72.9	30.7	16.8	155	9.3	162	222	1.5	0.23	17.2	18.2	0.02	0.1	
Mar	720	<5.0	0.294	0.056	0.037	68.4	28.7	15.6	138	2.1	157	224	0.56	0.35	15.9	16	0.83	0.07	
Apr	710	<5.0	0.344	0.060	0.017	57.7	24.1	13.1	123	35.8	145	207	2.8	0.16	10.9	15.4	1.2	0.05	
May	740	<5.0	0.335	0.045	0.027	65.8	29.8	16.2	135	54	159	208	1.3	0.25	4.5	8.5	3.45	0.09	
Jun	960	<5.0	0.365	0.065	0.028	65.1	24.3	15.1	136	26.1	151	204	5.9	0.2	8.9	11.9	0.92	0.07	
Jul	720	<5.0	0.360	0.023	0.04	66	26	18	130	5.6	150	210	2.2	0.49	7.2	11	3.6	0.11	
Aug	720	<5.0	0.340	0.030	0.029	59	24	16	120	3.2	140	230	2.0	0.39	9.7	15	3.5	0.11	3.4
Sep	730	<0.9	0.360	0.039	0.037	55	23	16	120	2.3	160	220	1.1	0.48	12	20	1.4	0.25	
Oct	670	<0.95	0.410	0.066	0.033	68	27	19	140	4.7	150	190	1.0	0.43	9.5	14	1.3	0.09	

Enclosure 2

chloramines. The chloramines also serve as disinfectants, although they are extremely slow reacting. The reactions of importance are

$$NH_3 + HOCl \rightleftharpoons NH_2Cl + H_2O \quad (9\text{-}54)$$

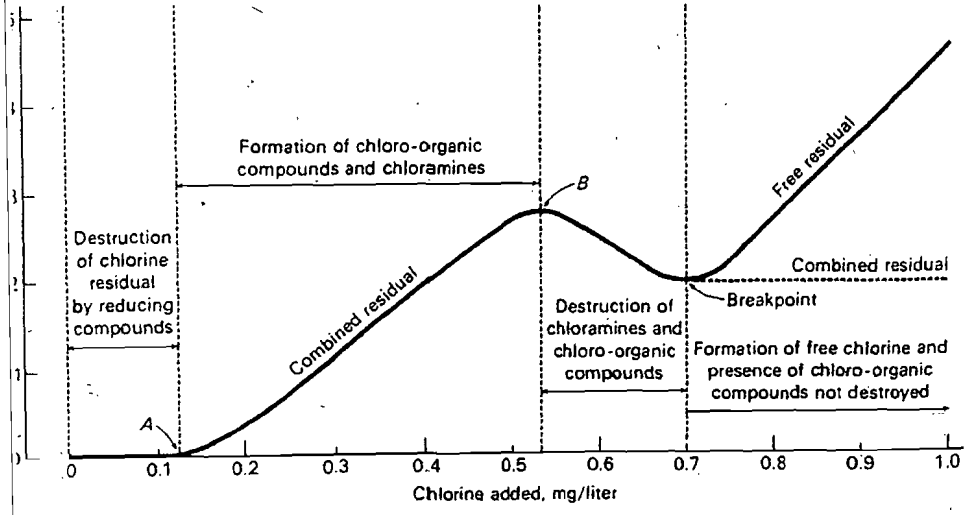
$$NH_2Cl + HOCl \rightleftharpoons NHCl_2 + H_2O \quad (9\text{-}55)$$

$$NHCl_2 + HOCl \rightleftharpoons NCl_3 + H_2O \quad (9\text{-}56)$$

where monochloramine (NH_2Cl), dichloramine ($NHCl_2$), and nitrogen trichloride (NCl_3) are formed in the successive substitution reactions. The two species that predominate, in most cases, are NH_2Cl and $NHCl_2$; they are commonly called combined available chlorine.

Break-Point Chlorination The fact that free chlorine will react with ammonia, coupled with the fact that free chlorine is a strong oxidizing agent, complicates the maintenance of a residual (combined or free) for the purpose of wastewater disinfection. The phenomena that result when chlorine is added to a wastewater containing ammonia can be explained by referring to Fig. 9·12.

As chlorine is added, readily oxidizable substances such as Fe^{++}, Mn^{++}, H_2S, and organic matter react with the chlorine, reducing most of it to the chloride ion (point A in Fig. 9·12). After meeting this immediate demand, the chlorine will continue to react with the ammonia to form chloramines between points A and B. For mole ratios of chlorine to ammonia less than one, monochloramine and dichloramine will be formed. The distribution of these two forms is governed by their



·12 Generalized curve obtained during break-point chlorination.

rates of formation, which are dependent on the pH and temperature [5]. Between point B and the break point some of the chloramines will be converted to nitrogen trichloride (see Eq. 9·56), while the remaining chloramines will be oxidized to nitrous oxide and nitrogen with the chlorine being reduced to the chloride ion. With continued addition of chlorine, essentially all of the chloramines will be oxidized at the break point. Possible reactions to account for the appearance of the aforementioned gases and the disappearance of chloramines are as follows (see also Eq. 9·56).

$$NH_2Cl + NHCl_2 + HOCl \rightarrow N_2O + 4HCl \quad (9\text{-}57)$$

$$4NH_2Cl + 3Cl_2 + H_2O \rightarrow N_2 + N_2O + 10HCl \quad (9\text{-}58)$$

$$2NH_2Cl + HOCl \rightarrow N_2 + H_2O + 3HCl \quad (9\text{-}59)$$

$$NH_2Cl + NHCl_2 \rightarrow N_2 + 3HCl \quad (9\text{-}60)$$

Continued addition of chlorine past the break point will result in a directly proportional increase in the free available chlorine (unreacted hypochlorite). The main reason for adding enough chlorine to obtain a free chlorine residual is that disinfection can then usually be assured. Occasionally, due to the formation of nitrogen trichloride and related compounds, serious odor problems have developed during break-point chlorination operations. In practice, the hydrochloric acid formed during chlorination will react with the alkalinity of the wastewater and, under most circumstances, the pH drop will be slight.

The presence of additional compounds that will react with chlorine may greatly alter the shape of this curve. The amount of chlorine that must be added to reach a desired level of residual is called the chlorine demand.

COMBUSTION

To reduce the weight and volume of sludge and to product an odorless and inert residue for final disposal, combustion of the organics is practiced in many of the larger municipal and industrial wastewater treatment plants. "Sludge incineration" is the term applied to dry combustion of sludge, which usually has undergone vacuum filtration for reduction of water content. This may be accomplished in a multiple hearth furnace, similar to the one shown in Chap. 8 in Fig. 8·22 in which maximum temperatures are maintained slightly above 1400°F to prevent odors. In another type of unit, dried sludge is blown into a furnace and used for fuel to heat the air which, in turn, is used for flash drying and/or incineration of the sludge. In another type of unit, the sludge is burned in a fluidized bed at high temperatures. The fuel value

Enclosure 3

Table 2.5-1 – Natural Gas Quality

GAS PARAMETERS	VALUES[1]
Low Heating Value	990 BTU/ Cubic foot (ft^3)
High Heating Value	1,150 BTU/ft^3
Moisture	< 7 lb/MMSCF
Hydrogen Sulfide	< 0.25 grain/100 SCF
Mercaptan Sulfur	< 0.3 grain/100 SCF
Total Sulfur	< 0.75 grain/100 SCF
Carbon Dioxide (CO_2)	< 3 percent (v/v)[2]
O_2	< 0.2 percent (v/v)
Inerts	< 4 percent (v/v)
Hydrocarbons Dew Point	< 45 °F at below 400 psig

(1) Source: SDG&E Gas Rule 30 Section H.
(2) v/v = volume per volume

2.6 WATER SUPPLY AND USE

2.6.1 Water Use Requirements

The annual, average, and maximum water requirements for plant operations are identified in Table 2.6-1a and 2.6-1b. Water balances in Appendix 2-D provide additional details of the plant water demand.

The Design Case is both units operational at full load summer design conditions with 3,200 hours of operation on each of the two CTGs. This Design Condition is the maximum water use and would be 62 acre feet per year (AFY) for fresh water and 38.7 AFY for reclaim water.

20.2 MILLION GALS/YR

The Expected Use Case is both units operational at full load summer design conditions with 1,000 hours of operation on each of the two CTGs. This Expected Use Case is the expected average water use and would be 21.1 AFY for fresh water and 12.1 AFY for reclaim water.

6.9 MILLION GALS/YR

Table 2.6-1a – Plant Operations Fresh Water Requirements

SERVICE	AVERAGE USE RATE [1]	INSTANTANEOUS USE RATE [2]	ANNUAL USE[3]
Design Case [4]			
Demineralizer Systems treated water used for SPRINT Power Augmentation/ NO_x Control	41.6 gpm (raw water)	114.0 gpm (raw water)	67.2 AFY
Sanitary and wash down (Intermittent)	0.15 gpm (raw water)	--	0.24 AFY
Landscape Drip (Intermittent)	1.4 gpm (raw water)	--	2.3 AFY

AFY X 325,851 = GALLONS (US)/Y

SERVICE	AVERAGE USE RATE [1]	INSTANTANEOUS USE RATE [2]	ANNUAL USE[3]
Recovered Tower Blowdown – RO Concentrate recycled to Raw Water System (Shown as negative value)	-4.7 gpm	-13.0 gpm	-7.7 AFY
Total	**38.5 gpm (raw water)**	**101 gpm**	**62.0 AFY**
Expected Use Case [5]			
Demineralizer Systems treated water used for SPRINT Power Augmentation/ NO_x Control	13.0 gpm (raw water)	114.0 gpm (raw water)	21.0 AFY
Sanitary and wash down (Intermittent)	0.15 gpm (raw water)		0.24 AFY
Landscape Drip (Intermittent)	1.4 gpm (raw water)	--	2.3 AFY
Recovered Tower Blowdown – RO Concentrate recycled to Raw Water System (Shown as negative value)	-1.5 gpm	-13.0 gpm	-2.4 AFY
Total	--	**101 gpm (raw water)**	**21.1AFY**

(1) Annual Use converted to gallons per minute. (Instantaneous Rate X 3200 operating hours / 8760 hours)
(2) Instantaneous use rate with ongoing operations at the summer design condition.
(3) Annual use based on 3,200 hours of two CTGs operations at the summer design condition.
(4) Design Case based on both units operating at full load at summer design condition.
(5) Expected Use Case based on both units operating at full load at summer design condition for a total of 1000 hours of annual plant operation of two CTGs, concurrent with operation of the truck-mounted demineralizer system.

Table 2.6-1b – Plant Operations Reclaimed Water Requirements

SERVICE	AVERAGE USE RATE [1]	INSTANTANEOUS USE RATE [2]	ANNUAL USE[3]
Design Case [4]			
Air Inlet Chiller Cooling System	38.0 gpm (raw water)	104.0 gpm (raw water)	61.3 AFY
Recovered Waste Water from Tower Blowdown and Inlet Air Chilling Coils – RO Permeate recycled to Cooling System (Shown as negative)	-14.0 gpm	-38.3 gpm	-22.6 AFY
Total	**24.0 gpm**	**65.7 gpm**	**38.7 AFY**
Expected Use Case [5]			
Air Inlet Chiller Cooling System	11.8 gpm	104.0 gpm	19.2 AFY
Recovered Waste Water from Tower Blowdown and Inlet Air Chilling Coils – RO Permeate recycled to Cooling System (Shown as negative)	-4.4 gpm	-38.3 gpm	-7.1 AFY

SERVICE	AVERAGE USE RATE (1)	INSTANTANEOUS USE RATE (2)	ANNUAL USE(3)
Total	**7.4 gpm**	**65.7 gpm (raw water)**	**12.1 AFY**

(1) Annual Use converted to gallons per minute. (Instantaneous Rate X 3200 operating hours / 8760 hours)
(2) Instantaneous use rate with ongoing operations at the summer design condition.
(3) Annual use based on 3,200 hours of two CTGs operations at the summer design condition.
(4) Design Case based on both units operating at full load at summer design condition.
(5) Expected Use Case based on both units operating at full load at summer design condition for a total of 1000 hours of annual plant operation of two CTGs, concurrent with operation of the truck-mounted demineralizer system.

2.6.2 Water Supply and Treatment Systems

Bottled water will be provided for drinking. Other water needs will be satisfied with water trucked to the Site as described in the following subsections.

The natural gas fuel compressors will be air cooled, as will the CTGs lubricating oil systems. Use of this technology will reduce plant water consumption to only that necessary for production of demineralized water for turbine injection and for chiller system cooling tower makeup.

The packaged cooling towers that are part of the CTGs combustion inlet air chiller system will require make-up water. Water-cooling is the selected technology for the air inlet chiller system instead of air-cooled technology because of a critical need to preserve power output and plant efficiency during hot days, as well as the need to reduce noise output from the facility. Section 5.0, Alternatives Analysis, describes the alternatives to water cooling that were evaluated, and the reasons those alternatives were not selected for the Project.

2.6.2.1 Cooling Water Supply

Orange Grove Energy has secured a source of recycled water for power plant cooling through an option agreement with FPUD. Through the option agreement, Orange Grove Energy has obtained rights to purchase up to 45 AFY of tertiary-treated reclaim water. Under Orange Grove Energy's option agreement with FPUD, Orange Grove Energy has rights to a take-or-pay obligation for the reclaim water for 25 years, to accommodate the 25-year operation of the project. Orange Grove Energy will obtain water from FPUD in an annual amount that meets or exceeds the Project's water demand for the air inlet chiller cooling system. The 45 AFY of recycled water secured through the option agreement is more than adequate to supply these needs considering the maximum permitted hours of plant operation for any given year. The water will be trucked to the Site and offloaded into a 414,000 gallon water storage tank. The water will be picked up from the FPUD Wastewater Treatment Plant No. 1 located on the west side of Alturas Road in Fallbrook (Figure 2.6-1).

Only minimal improvements are needed at the reclaim water pickup station, and the required minimal improvements will be within FPUD property. Figure 2.6-2 shows the location of the required improvements. Appendix 2-E provides layouts prepared by FPUD for the improvements. The pickup location will be approximately 500 feet west of Alturas Road and

will be accessed via an existing driveway that traverses FPUD property from Alturas Road. The existing graded earth driveway will be smoothed and paved for a 24-foot width, and an approximately 100- to 125-foot diameter turn-around will be graded and paved at the west end of the driveway. There is an existing pipeline at the pickup point and a concrete loading pad, riser, and 6-inch meter will be installed. The improvements will be completed by FPUD and will not require permits. (Mike Page, FPUD Engineering Manager, personal communication with TRC, December 12, 2007 and January 3, 2008). All work will occur within disturbed areas. Total grading for construction of the improvements will be approximately 500 cubic yards (cy) of excavation and 500 cy of fill.

Water chemistry and additional details of the FPUD water option agreement are provided in Section 6.5, Water Resources.

2.6.2.2 Non-Cooling Water Supply

Water for demineralizer makeup, sanitary and washdown uses, landscaping and firewater reserve will be fresh water provided by the FPUD. The Applicant is securing this source of water for 25-years through an option agreement with FPUD. The water will be trucked to the Site and offloaded into a 535,000 gallon water storage tank. The water will be picked up from a hydrant station to be constructed on the south side of Mission Road in Fallbrook. (Figures 2.6-1 and 2.6-3).

Only minimal improvements are needed at the reclaim water pickup station. Improvements will be constructed, owned and operated by FPUD, and will occur on an existing FPUD easement and/or an adjacent easement. Appendix 2-E provides a preliminary layout for the improvements. The pickup location will be between Mission Road and Live Oak Park Road and is in an area that is extensively disturbed. A driveway will be smoothed and paved connecting Mission Road and Live Oak Park Road. Water trucks will approach via Live Oak Park Road westbound and will depart via Mission Road eastbound. There is an existing pipeline at the pickup point. A concrete loading pad, riser, and meter will be installed. All work will occur within disturbed areas. Total grading for construction of the improvements will be less than 500 cy of excavation and 500 cy of fill.

Water chemistry and additional details of the FPUD water option agreement are provided in Section 6.5, Water Resources.

2.6.2.3 Water Treatment

The 535,000-gallon raw water/fire water storage tank will serve as a multi-purpose tank. It will be used to store raw water for makeup to the demineralized water system, sanitary system, landscaping system and firewater system. The firewater storage capacity of the tank will be 360,000 gallons which leaves 175,000 gallons of reserve for the other systems.

Demineralized water is required for injection into the turbines for power augmentation and NO_x emissions control. Minor quantities will also be required for CTG compressor washes. Demineralized water will be produced by a trailer-mounted demineralizer system, which will be

regenerated offsite. Demineralized water will be stored in a 100,000-gallon demineralized water storage tank which will provide capacity for up to 14 hours of operation of two CTGs at the full load design condition.

Water for use in the CTGs for NO_x emissions control and power augmentation must be of very high purity or turbine blade damage will result. On-line water condition monitors will be installed and the plant operators will conduct frequent tests to ensure that water purity remains within manufacturer specifications.

HIGH PURITY

2.6.2.4 Water Trucking

Orange Grove Energy will purchase new single-trailer semi trucks for hauling the operations water supply to the Site. The trucks will be fueled with ultra low-sulfur diesel fuel and will have a capacity of approximately 6,500 gallons. As previously described, the water supply is planned to be obtained using both a reclaim water pickup station and a fresh water pickup station.

As described below, water hauling will entail approximately one truck per hour for fresh water and one truck per hour for reclaim water for times that the plant is operating. Based on expected use of the plant, water hauling is expected to typically occur about 60 days per year. The plant will typically run the most during summer months and onsite storage will provide substantial storage capacity for peak operating days.

2.6.2.4.1 Reclaim Water

The reclaim water one-way haul distance is 15.6 miles. The reclaim water haul route from the FPUD property will be north on Alturas Road, then east on Ammunition Road, then south on Mission Road, then east on SR 76, then north on Pala Del Norte Road to the Site. The return route will use these same roads. The reclaim water haul route is shown in Figure 2.6-1.

The instantaneous water use rate for the cooling system with both turbines running at summer design conditions is 65.7 gpm (Table 2.6-1). Due to the Orange Grove Project being a peaking plant, operations would normally occur only during hours of high demand, typically 12 hours or less each day that the plant operates. For 12 hours of operation at summer design conditions, the daily cooling water demand would be 47,300 gallons (65.7 gpm x 60 minutes per hour x 12 hours = 47,300 gallons). The cycle time for the 31.2 mile round trip haul, including travel, loading and unloading, will be approximately 1 hour. Based on use of a 6,500 gallon water truck, operations for a 12-hour day at summer design conditions will require a total of 7.3 reclaim water haul round trips. Based on typical peaker plant usage in the SDG&E service area, water hauling is only expected to occur about 60 days per year.

2.6.2.4.2 Fresh Water

The operations phase fresh water trucking one-way haul distance is 9.0 miles. The operations fresh water haul route from the FPUD fresh water pickup station will be east on Mission Road, south on Interstate 15, then east on SR 76, then north on Pala Del Norte Road to the Site. The

return route will use these same roads. The operations fresh water haul route is shown in Figures 2.6-1 and 2.6-3.

With both turbines running at summer design conditions, the plant fresh water demand will be approximately 101 gpm (Table 2.6-1). Due to the Orange Grove Project being a peaking plant, operations would normally occur only during hours of high demand, typically 12 hours or less each day that the plant operates. For 12 hours of operation at summer design conditions, the daily demineralizer feed demand will be 72,720 gallons (101 gpm x 60 minutes per hour x 12 hours = 72,720 gallons). Based on use of a 6,500 gallon water truck, operations for a 12-hour day at summer design conditions will require a total of 11.2 fresh water haul round trips. The cycle time for the 18 mile round trip haul, including travel, loading and unloading, will be approximately 1 hour. Based on typical peaker plant usage in the SDG&E service area, water hauling is only expected to occur about 60 days per year. 6.1 MILLION GALLONS/YR MIN.

2.7 WASTEWATER AND STORM WATER

Water effluents from the plant will include process wastewater, sanitary wastewater, and storm water. These are described in the following sections.

2.7.1 Process Wastewater

Process wastewater streams are identified in Table 2.7-1.

Table 2.7-1 – Plant Operations Process Wastewater Streams

SOURCE	AVERAGE VOLUME	SHORT-TERM PEAK VOLUME
Water Treatment System Blowdown	None (regeneration of demineralizer vessels performed offsite).	None
Air Inlet Chiller Cooling System Blowdown and Air Inlet Filter Chilled Water Coil Condensation	None (blowdown is sent to RO system and reused as chiller package system cooling tower makeup)	None
General Plant Drains (Intermittent): Miscellaneous Non-Oily Water Drains to Emergency Containment Tank Turbine and Compressor Washdown	 Negligible Negligible Negligible	 Negligible Negligible Negligible
Facility Washdown Drains (Intermittent)	Negligible	35 gpm
Total	**Negligible**	**35 gpm**

Blowdown water from the chiller system cooling towers and other non-oily wastewater streams will be collected and forwarded to a RO system. The RO permeate (clean water) will be directed to the tower makeup water storage tank. The RO concentrate (cycled water) will be directed to the raw water/firewater storage tank. With the RO system incorporated to recycle cooling tower blowdown and other miscellaneous non-oily wastewater streams, the plant will recycle all of its

Enclosure 4

NCT 1/21/09

Gregory Canyon landfill hits another snag

■ Appeals court rules developers must prove they have water source

TOM PFINGSTEN
STAFF WRITER

FALLBROOK — Opponents of the proposed Gregory Canyon landfill this week were celebrating a recent court ruling regarding water supply, a setback for the developers of the solid-waste dump who need to prove they have water available to control dust at the site.

Attorney Everett Delano, who represents RiverWatch, said the Jan. 9 appeals court decision essentially invalidates an agreement between Gregory Canyon Ltd. and the Olivenhain Water District in Encinitas to import recycled water to the dump for 60 years.

Nancy Chase, a spokeswoman for Gregory Canyon Ltd., said Monday that the ruling would not significantly delay plans to build the 1,770-acre landfill in a canyon south of Highway 76 between Interstate 15 and Pala.

"We have a lot of options, all of which our lawyers have been studying since the ruling came out," Chase said. "It isn't going to affect our moving forward at all."

In 1994, 68 percent of voters in San Diego County approved Proposition C, which amended the zoning rules to allow for a dump in Gregory Canyon, near the San Luis Rey River two miles east of the Pala reserva tion.

Opponents, including the nonprof it group RiverWatch and the Pala band of Mission Indians, have fough doggedly to block the landfill, claim ing that it would strain the already jammed Highway 76 and eventually pollute the San Luis Rey.

In addition to proving that the project won't pollute the river and that any harmful environmental

➤ LANDFILL, B-5

➤ LANDFILL

Continued from B-1

effects will be mitigated, Gregory Canyon Ltd. must also prove that it has water available to run the landfill — mostly for dust-control purposes.

In March 2006, the developer and Olivenhain agreed to a deal that would provide the landfill with the needed water.

Delano said the Olivenhain district didn't perform any environmental analysis before it approved the deal, and that the court agreed the district should have evaluated the plan under the California Environmental Quality Act.

He called the ruling a "very significant victory."

"Water has always been a critical question for this landfill, and this appellate court is saying, 'You don't have a valid source of water,'" he said.

"Water has always been a critical question for this landfill, and this appellate court is saying, 'You don't have a valid source of water.'"

— EVERETT DELANO
Attorney representing RiverWatch

Kimberly Thorner, general manager of the Olivenhain water district, said that the district hasn't decided how to proceed, pointing out that the appeals court ruling sends the case back to the original trial court in San Diego.

"At this point, I think Olivenhain is just going to wait and see what the original trial court tells us," Thorner said.

According to court documents, the agreement called for up to 244,000 gallons per day to be trucked from the water district's Santa Fe Valley Reservoir and pump station near the intersection of Artesian Road and Maranatha Way in Rancho Bernardo to the landfill near Pala.

At peak times, the service would require 89 truck trips per day, the ruling stated.

The court also noted that, in order to fulfill the agreement, a 1,000-foot-long road would need to be built at the water district's pump station to allow water trucks to access the recycled water.

Building the road "presumably will cause noise, traffic, air pollution, and possibly other physical changes in the environment," the ruling said.

It also cited the 89 potential truck trips every day as a factor that required environmental analysis.

Chase, the Gregory Canyon spokeswoman, said that even though the ruling didn't favor the landfill developer, it wasn't as significant as past court decisions.

"Water (supply) is a relatively minor issue — it's water that helps control the dust," as opposed to the more important water-related issues of runoff and river pollution, which have also been addressed in court, she said.

Contact staff writer Tom Pfingsten at (760) 740-3516 or tpfingsten@nctimes.com.

Enclosure 5

State of California
Energy Resources Conservation and Development Commission

In the Matter of:	)	Docket No. 08-AFC-4
	)	
Application for Certification	)	BRIEF IN RESPONSE TO
for the Orange Grove Energy Project	)	ARCHIE MCPHEE'S TESTIMONY

At the conclusion of the December 19, 2008, evidentiary hearing the hearing officer for the Orange Grove Power Plant Project ("Orange Grove") directed parties to file briefs in response to the testimony of intervener Archie McPhee regarding the Orange Grove project's use of recycled water. Briefs must be filed no later than 3:00 p.m. on January 9, 2009.

INTRODUCTION

Intervener Archie McPhee makes two primary contentions which are repeated throughout his oral testimony presented during the evidentiary hearing and in letters submitted to the Committee in advance of the prefiling conference. These two contentions are as follows:

1) Staff's use of the term "recycled water" rather than "reclaimed water" is a means for the Orange Grove project to use an unsafe and hazardous water source for industrial use because, according to the intervener, there are no legal restrictions on the use of recycled water, whereas there are restrictions on reclaimed water.

2) The Orange Grove facility will not be using appropriately disinfected recycled/reclaimed water and this presents a human health risk.

Staff respectfully submits that, on both these contentions, the intervener is incorrect.

DISCUSSION

Code Sections Cited and Claims Made by Archie McPhee with Responses

Mr. McPhee's claims and citations from the transcript are quoted below in italics. Each claim is followed by staff's response.

CLAIM: *Recycled water may or may not be tertiary treated water but FPUD's standard wastewater treatment process is only capable of tertiary treated sewage water, also known as reclaimed water. (RT p. 105: 4-8.)*

Proof of Service (Revised 10/27/08) filed with original.
Mailed from Sacramento on 1-9-09.

RESPONSE: The California Department of Public Health has set standards for recycled water use in regulations found in Title 22 of the California Code of Regulations. (Cal. Code Regs., tit. 22, §§ 60304, 60305, 60306, 60307.) Section 60306(a) states:

> Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be a disinfected tertiary recycled water.

It is undisputed that the Water Code and Title 22 allow for the widespread use of recycled water that has undergone tertiary treatment and disinfection. Such uses include all the proposed applications by the Orange Grove project. Condition of Certification Soil and Water 8 requires the applicant to comply with all recycled water use requirements established in Title 22 and Title 17 of the California Code of Regulations.

Orange Grove's Option Water Agreement dated December 10, 2007, and the Recycled Water agreement state that "Fallbrook agrees to provide recycled water which meets all requirements for Title 22 tertiary treated recycled water." (Covenant No. 4 Appendix 6.5-G.1 of the Application for Certification. *See also,* testimony of Cheryl Closson, RT, p 92: 18-25 and p. 93: 1-9.)

Regardless of whether the water is called recycled or reclaimed water, for such water to be widely used, it must be processed through modern primary, secondary, and/or tertiary treatment and disinfection following the strict standards of the California Department of Public Health. (Testimony of Cheryl Closson, RT. p 92: 18-25, p.93: 1-9. *See also*, the written testimony of Richard Jones and Joseph Stenger, Applicant's Exhibit 23.)

CLAIM: *Transportation of reclaimed water, A, the wastewater industry's transportation requirements for tertiary treated sewage water, reclaimed water, or if one prefers the term recycled water, is it must be transported in purple piping and labeled, contaminated, do not drink. Orange Grove Power and FPUD plan on violating this requirement by transporting tertiary treated sewage water by tanker truck. B, California Health Laws related to recycled, reclaimed water Section 13555.3, Separate Pipelines, part C (RT .p105: 15-25, p. 106: 1-2.)*

RESPONSE: In his November 27, 2008 letter and during his testimony at the evidentiary hearing, the intervener stated that recycled\reclaimed water must be delivered to private property by way of a separate purple pipeline and therefore the trucking of such water is prohibited. To support this claim, the intervener cited section 13555.2 and 13555.3(a) from the manual entitled, "California Health Laws Related to Recycled Water." This manual cites Health and Safety Code section 116815 as the regulatory source for the purple pipe requirement.

Health and Safety Code section 116815 states the following:

> (a) All pipes installed above or below the ground, on and after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape.
>
> (b) Subdivision (a) shall apply only in areas served by a water supplier delivering water for municipal and industrial purposes, and in no event shall apply to any of the following: (1) Municipal or industrial facilities that have established a labeling or marking system for recycled water on their premises, as otherwise required by a local agency, that clearly distinguishes recycled water from potable water;. (2) Water delivered for agricultural use.

There is nothing in the section that prohibits the use of trucks to haul recycled water or restricts conveyance of recycled water only by pipes painted purple. The Orange Grove facility is not being served by a water supplier delivering recycled water via pipeline, therefore section 116815 does not apply to the offsite delivery via trucks. In this case, Orange Grove's water trucks will be serving the facility. In addition, there is nothing in the record to indicate trucking of recycled water is prohibited by any local law or ordinance. (*See also,* the written testimony of Richard Jones and Joseph Stenger, p. 2 of Applicant's Exhibit 23.)

CLAIM: *The only approved use of recycled water by the California Health Laws Related to Recycled Water, 1991 Edition, Sections 13552.4 and 13552.8 are: One, for irrigation, floor trap priming, cooling towers and air conditioning. This is the standard, normal recycled water. That's all it can be used for. (RT p.106: 19-25)*

RESPONSE: Again the intervener has cited to a manual on recycled water. The use of recycled water is determined according to the level of treatment and disinfection. The process which produces the cleanest type of recycled water and thus has the broadest available use is tertiary-treated water with disinfection.

The California Department of Public Health has set standards in regulations for recycled water use (Cal. Code Regs., tit. 22, §§ 60304, 60305, 60306, 60307). The following are appropriate uses for various types of recycled water under these sections: irrigation of food crops, parks, playgrounds, school yards, residential landscaping, cemeteries, freeway landscaping, golf courses, ornamental nurseries, pasture for animals, orchards, and vineyards. In addition, recycled water can be used for fishing or boating recreational impoundments, fish hatcheries, cooling towers and decorative fountains. Other allowable uses include flushing toilets and urinals, industrial process water, commercial laundries, making artificial snow, soil compaction, mixing concrete and flushing sanitary sewers. As is clear from Title 22, the use of recycled water for cooling towers and industrial processes is completely acceptable and is desirable as a means to reduce the use of potable water. Section 60306(a) of the regulations states:

> "Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be a disinfected tertiary recycled water."

(Cal. Code Regs., tit. 22, § 60306, subd. (a).) It is undisputed that the Water Code and Title 22 allow for the widespread use of recycled water that has undergone tertiary treatment and disinfection. Such uses include all the proposed applications by the Orange Grove project.

CLAIM: *Now we have the 2001 Edition of Title 22 of the California Health Laws Related to Reclaimed Water, Section 607 stipulates, stipulates that recycled wastewater used for industrial water that comes in contact with workers as well as recycled water used for toiletry and other defined uses must be disinfected, tertiary water. (RT p. 107: 1-7)*

RESPONSE: It is unclear what section the intervener intended as there is no section 607 within Title 22. The California Department of Public Health has set standards for recycled water use (Cal. Code Regs., tit. 22, §§ 60304, 60305, 60306, 60307). Section 60306(a) of the regulations states:

> "Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be a disinfected tertiary recycled water."

(Cal. Code Regs., tit. 22, § 60306, subd. (a).) It is undisputed that the Water Code and Title 22 allow for the widespread use of recycled water that has undergone tertiary treatment and disinfection. Such uses include all the proposed applications by the Orange Grove project. Condition of Certification Soil and Water 8 requires the applicant to comply with all recycled water use requirements established in Title 22 and Title 17 of the California Code of Regulations.

Orange Grove's Option Water Agreement dated December 10, 2007, and the Recycled Water agreement, states that "Fallbrook agrees to provide recycled water which meets all requirements for Title 22 tertiary treated recycled water. (Covenant No. 4 Appendix 6.5-G.1 of the Application for Certification. *See also,* the testimony of Cheryl Closson, RT, p. 92: 18-25, p. 93: 1-9)

CLAIM: *Section 60301 through 603.620 of Title 22 defines disinfected tertiary water as filtered, oxygenated, clarified and subsequently disinfected water which meets certain, strict specifications. The production of disinfected, not tertiary treated reclaimed water, disinfected tertiary reclaimed water requires specific and defined disinfection and filtration (RT p. 107: 18-25). FPUD cannot provide this quality of disinfected tertiary treated water, it can only provide reclaimed water, also known as tertiary treated sewage water. (RT p.108: 19-22)*

RESPONSE: As identified by the intervener, California Code of Regulations, title 22, section 60301.230, establishes the process for how tertiary treated recycled water must be disinfected and the testing methods for how the efficacy of the disinfection can be measured.

Condition of Certification Soil and Water 8 requires the applicant to comply with all recycled water use requirements established in Title 22 and Title 17 of the California Code of Regulations.

Orange Grove's Option Water Agreement dated December 10, 2007, and the Recycled Water agreement, state that "Fallbrook agrees to provide recycled water which meets all requirements for Title 22 tertiary treated recycled water. (Covenant No. 4 Appendix 6.5-G.1 of the Application for Certification. *See also,* the testimony of Cheryl Closson, RT p. 92: 18-25, p. 93: 1-9)

CLAIM: *California Health Laws Related to Reclaimed Water Section 13554.3 part c states that wastewater industry standards prevail if they are more restrictive to the transportation of recycled and/or reclaimed water. (RT p. 118: 6-10)*

RESPONSE: Mr. McPhee's statement is inaccurate. His reference to section 13554.3 is in error and should be to section 13555.3, part c, of the manual entitled, "California Health Laws Related to Reclaimed Water." Section 13555.3, part c, of the manual states, "This section does not preempt local regulation of the delivery of water for potable and nonpotable uses and any local governing body may adopt requirements which are more restrictive than the requirements of this section." There is nothing in the record to indicate trucking of recycled water is prohibited by any local law or ordinance. (*See also,* the written testimony of Richard Jones and Joseph Stenger, p. 2 of Applicant's Exhibit 23.)

CLAIM: *I think tertiary, disinfected tertiary recycled water would be preferred for some of the obvious uses. For example, for the cooling portion of the problem. (RT p. 129: 20-23)*

RESPONSE: On cross examination, Mr. McPhee agreed that disinfected tertiary recycled water would be preferred for facility cooling. This is the same type of water the Orange Grove project will be utilizing for some of the facility operations. (RT, p. 129: 20-23; Covenant No. 4 Appendix 6.5-G.1 of the Application for Certification; Testimony of Cheryl Closson, RT, p.92: 18-25, p. 93: 1-9. *See also*, the written testimony of Richard Jones and Joseph Stenger, Applicant's Exhibit 23).

CONCLUSION

The evidence before the Committee indicates that under Title 22, recycled water may be used for industrial purposes including cooling towers. Most importantly, there is no evidence to support intervener Archie McPhee's contention that, by using the term "recycled water," the applicant can somehow use an unsafe, unregulated or hazardous water source.

Date: January 9, 2009

Respectfully submitted,

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APPLICATION FOR CERTIFICATION
ORANGE GROVE POWER PLANT PROJECT

DOCKET NO. 08-AFC -4
PROOF OF SERVICE
Revised 10/27/08

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-4
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DECLARATION OF SERVICE

I, Teraja` Golston declare that on January 29, 2009 I deposited copies of the attached Archie McPhee Response to J. Babula's Brief in Response (08-AFC-4) Orange Grove in the United States mail at Sacramento, CA, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Original signature in Dockets
Teraja` Golston

Attachments