MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Supplement to 3/17/14 MPWMD Board Packet

Attached are copies of letters received between February 4, 2014 and February 28 , 2014. These letters are also listed in the March 17, 2014 Board packet under Letters Received.

Author	Addressee	Date	Topic
Thomas Moore	MPWMD Board	2/4/14	Claim filed with various agencies
Roger Dolan	David Stoldt	2/6/14	MPWMD commentary to Monterey County
John A. Coleman	David Stoldt	2/21/14	ACWA's Drought Action Group
Chuck Della Sala	David Stoldt	2/26/14	484 Washington Street/Santa Lucia Café/Water Variance

U:\staff\Boardpacket\2014\20140317\LtrPkt.docx

ORIGINAL

TORT CLAIM

Monterey County Water Resources Agency
Monterey Peninsula Water Management District
City of Soledad

1. Name: Thomas E. Moore, D-62389 Tel. No.: N/A
2. Address: San Quentin State Prison 100 Main Street, San Quentin, California 94964
3. Date of Incident: October 23, 2013
4. County agencies or employees against whom this claim is filed:
   County of Monterey; Salinas Valley Water District; and Does 1 through 100, inclusive.
5. Dollar amount of claim: $5,000,000.00
6. Explain how you calculated the amount: See attachment 1
7. Location of the Incident: San Quentin State Prison 100 Main Street San Quentin Calif. 94964
8. Describe the specific damage or injury: See attachment 1
9. Explain the circumstances that led to the damage or injury: See attachment 1
10. Explain why you believe the County is responsible for the damage or injury:
    See attachment 1

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

Dated: January 22 2014

Thomas E. Moore
Claimant

RECEIVED
FEB - 4 2014
MPWMD

ATTACHMENT 1

In July 2004, the Plaintiff became ill while confined at the Salinas Valley State Prison, C Facility, and between July 2004 and August 2004, the drinking water become contaminated and undrinkable due to pollution and hazardous chemicals within the drinking water, and warnings were given by flyers and posters to the Plaintiff by the CDCR, Beard, SVSP, Warden, that the Plaintiff is not to drink the water at the SVSP within the Plaintiff's cellroom and within and throughout the SVSP facilities, although it was too late, and the Plaintiff had already consumed and drank the hazardous and polluted drinking water for many days before the Defendants, and each of them, had posted and handed out the warning flyers and posters to the Plaintiff. The Defendants CDCR, Beard, Warden of SVSP, the County of Monterey, The Salinas Valley Water District, and Does 1 through 100, inclusive, turned the Plaintiff's drinking water off from within the Plaintiff's cellroom and began issuing bottled water to be given out in cup fulls to the Plaintiff. On November 8, 2013, the Plaintiff discovered that he now has prostate cancer, (See exhibits A1-A2), and on October 23, 2013, the Plaintiff discovered from the list of chemicals known to the State to cause cancer (Cal. Code Reg. Title 22 §25306; and CCR §339) within the San Quentin Prison Law Library that contaminated drinking water that has hazardous chemicals within it can cause prostate cancer in men. On October 23, 2013, the Plaintiff discovered that the Defendants, and each of them, exposed the Plaintiff to extremely hazardous and toxic chemicals within their drinking water that has caused the Plaintiff prostate cancer inside the Plaintiff's prostate.

The Plaintiff requests monetary compensation in the amount of $5,000,000.00 from the Defendants, and each of them, for the hazardous and toxic exposure to harmful chemicals within the drinking water that has caused the Plaintiff to contract prostate cancer, and the harmful effects of prostate cancer. Also, the Plaintiff requests declaratory and injunctive relief of a compassionate release due to the prostate cancer.

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

Dated: 04/28/14

[signature]
Declarant

 D62389

Marin Medical Laboratories
SURGICAL PATHOLOGY REPORT

GERSHBEIN,BART MD
Account# SFBG3
1000 S ELISEO DRIVE SUITE 102
GREENBRAE CA 94904

Patient Name: MOORE, THOMAS, CDCD62389 ACCESSION #: 12-MS-010528

Procedure Date: 11/06/2012 Physician(s): BART GERSHBEIN MD
SAN QUENTIN PRISON

Age: 58y Sex: M DOB: 03/25/1954

Hospital #: Room #:

Clinical Data: 58 year old male with elevated PSA OF 4.4. (rr)

Gross Description: 8 specimens, including 14 thin cores of soft white-tan tissue.

A- "right apex", 1 tan core measuring 1.6 cm. in length.
B- "right mid", 2 tan cores measuring 1.4 cm. each in length.
C- "right base", 2 tan cores measuring 1.3 cm. each in length.
D- "right anterior", 1 tan core measuring 1.2 cm. in length.
E- "left apex", 2 tan cores measuring 1.2 and 1.4 cm. in length.
F- "left mid", 2 tan cores measuring 1.8 and 1.9 cm. in length.
G- "left base", 2 tan cores measuring 1.6 and 1.8 cm. in length.
H- "left anterior", 2 tan cores measuring 0.5 and 0.8 cm. in length.
(IC1,YS:pdm)

Diagnosis: MICROSCOPIC DIAGNOSIS:

1. PROSTATE, RIGHT APEX, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION.

2. PROSTATE, RIGHT MID, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION.

3. PROSTATE, RIGHT BASE, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION.

4. PROSTATE, RIGHT ANTERIOR, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION.

5. PROSTATE, LEFT APEX, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION.

6. PROSTATE, LEFT MID, CORE BIOPSY:
PROSTATE ADENOCARCINOMA, GLEASON GRADE 3+3 = 6,
MEASURING 13 MM OUT OF TOTAL 30 MM.

7. PROSTATE, LEFT BASE, CORE BIOPSY:
PROSTATE ADENOCARCINOMA, GLEASON GRADE 3+3 = 6,
MEASURING 2 MM OUT OF TOTAL 30 MM.

(Continued on page 2)

Electronically Signed By: Dr. Chi 11/08/2012 2:23 PM

Pathologists:
Imok Cha, M.D. Christopher Jacques, M.D. Fred Kretzschmar, M.D. K. Cha Prasad, M.D. Paul Wasserstein, M.D.

All surgical pathology tissue specimens processed by Marin Medical Laboratories
1615 Hill Road, Suite C, Novato, CA 94947 415-925-7170 Paul W. Wasserstein, M.D., Medical Director

Case reviewed and diagnosis rendered at: 250 Bon Air Rd, Greenbrae, CA 94904 415-925-7170 Paul W. Wasserstein, M.D., Medical Director

3-5 A1 RECEIVED NOV 05 2013

Marin Medical Laboratories
SURGICAL PATHOLOGY REPORT

GERSHBEIN,BART MD
Account# STBG3
1000 S ELISEO DRIVE SUITE 102
GREENBRAE CA 94904

Patient Name: **MOORE, THOMAS, CDCD62389** ACCESSION#: **12-MS-010528**

Procedure Date: 11/06/2012 Physician(s): BART GERSHBEIN MD
SAN QUENTIN PRISON

Age: 58y Sex: M DOB: 03/25/1954

Hospital #: Room #:

(DIAGNOSIS continued)

8. PROSTATE, LEFT ANTERIOR, CORE BIOPSY:
BENIGN PROSTATE GLANDS WITH ATROPHY AND INFLAMMATION. /* 1 (IC1,ic1)

Comment: Dr. Kretzschmar has reviewed this case and concurs. (IC1,ic1)

Electronically Signed By: Dr. Cha 11/08/2012 2:23 PM

Pathologists:
Inok Cha, M.D. Christopher Jacques, M.D. Fred Kretzschmar, M.D. K. Che Prasad, M.D. Paul Wasserstein, M.D.

All surgical pathology tissue specimens processed by Marin Medical Laboratories
1615 Hill Road, Suite C, Novato, CA 94947 415-925-7170 Paul W. Wasserstein, M.D., Medical Director

Case reviewed and diagnosis rendered at: 250 Bon Air Rd, Greenbrae, CA 94904 415-925-7170 Paul W. Wasserstein, M.D., Medical Director

SURGICAL PATHOLOGY REPORT
CONFIDENTIAL

RECEIVED NOV 0 5 2013

4-5 A2

ORIGINAL

DECLARATION OF SERVICE BY MAIL BY PERSON IN STATE CUSTODY

(C.C.P. §§ 1013(A), 2015.5)

I, Glenn McCurdy, the undersigned, declare:

I am over the age of 18 years, and a party to this matter. I am a resident of SAN QUENTIN STATE PRISON, in the County of Marin, State of California. My Prison address is:

________________________,

CDCR#: __________, CELL#: __________

SAN QUENTIN STATE PRISON

SAN QUENTIN, CA 94974

On, Jan. 28, 2014, I served the attached:

1) Tort claim

on the parties, at the addresses listed below, by placing true and correct copies thereof, enclosed in a sealed envelope (verfied by prison staff) with postage fully prepaid, in a deposit box provided by San Quentin State Prison, for mailing in the United States Mail as per the regulations governing out-going Legal Mail.

(1) Monterey County Water Resource Agency
893 Blanco Circle
Salinas, Calif. 93940

(2) Monterey Peninsula Water Management District
5 Haines Court
Monterey, CA 93940

(3) City of Soledad
P.O. Box 156
Soledad, CA 93960

I declare under the penalty of perjury, under the laws of the State of California, that all the foregoing is true and correct.

Executed on 01/28/14, at San Quentin, State California.

Glenn McCurdy

Declarant

Carmel Valley Association

P.O. Box 157, Carmel Valley, California 93924

www.carmelvalleyassociation.org

RECEIVED

FEB 12 2014

MPWMD

Since 1949

February 6, 2014

Mr. David Stoldt
General Manager
Monterey Peninsula Water Management District
P.O. Box 85
Monterey CA 93942-0085

Dear David:

Thank you for sending us the commentary from the Monterey Peninsula Water Management District (WMD) to Monterey County concerning the pending Well Ordinance. We were pleased to see that WMD agreed with several points that we raised and we appreciate the thoughtful analysis. However, there are two very important points on which we still are not in agreement. Reaching a correct understanding of these points is essential to ensure the environmental protection of the watershed. The WMD commentary reflects the current water policy, which we believe to be in error in these two important aspects. We have based our opinion on first principles of physics, as well as groundwater hydrogeology and geochemistry as we understand them.

We understand that the arguments that we are advancing are based on a very limited amount of data and will need to be confirmed and improved upon by credentialed experts. For that reason, our position has been to request that a watershed study be undertaken by WMD to determine the safe, sustainable yield of the Carmel River watershed. We would like the opportunity for the CVA water committee to meet with you and your staff to discuss these concepts further.

We emphasize that we have no wish to upset any of the current users of the river, but we are concerned that the current policy is not based on sound science and may result in creating more future water shortages in an area where inadequate water supplies are already an unfortunate reality.

We hold that:

1) The Carmel River watershed is comprised of a system of tributaries and aquifers integrated with the river that needs to be comprehensively analyzed and better understood to ensure that wise policy decisions are made relative to the watershed; and,

2) While all of the water being pumped by CalAm is from wells located within the CVAA, as described in Order 95-10, not all of the water is surface water or river underflow. Some of the well water is almost certain to have originated as percolated rainwater that has had a long residence time in the valley sediments and has never flowed in the Carmel River or its underflow; and,

3) A detailed watershed study that considers at least the ecological water requirements of the valley, surface and groundwater geology and hydrology, long term weather patterns and trends, existing ground and surface water rights, as well as the present and future uses of the water resources of the watershed has never been done and will be needed to determine the safe yield for the watershed that will provide adequate environmental protection; and,

4) Revised WMD and Monterey County policy should be based on the aforementioned study to fully protect the current users and the valley ecosystem.

1) The various component water systems of the Carmel Valley work together to form an integrated system

In its comment letter to Monterey County referencing the CVA letter to the county concerning the draft Well Ordinance, WMD states:

******

> The Association appears to be treating groundwater and surface water in the entire Carmel River Basin (watershed) as one connected basin, where water extraction by a well in (upland) fractured rock or other non-alluvial formation could have a direct measurable effect on the alluvial aquifer. Hydrogeologic data collected by MPWMD to date do not support this view. Except for the CVAA and alluvial deposits in its tributaries, most of the watershed appears to be characterized by non-alluvial fractured rock or other formations not directly connected to the river or its tributaries.

******

The CVA Water Committee sees the watershed as one large system within which various geological formations have created aquifers that may superficially appear to be isolated in which geologic formations can retain limited pools of groundwater. We understand that the inability to identify hydrogeologic continuity between these aquifers and the Carmel River at any one moment in time would tend to have one consider them to be hydrogeologically isolated. However, the fundamental principle of Conservation of Mass dictates that rain that falls anywhere in the watershed has but four ultimate destinations. It will leave the basin 1) via the river and its alluvial aquifer, 2) via groundwater flow to the sea other than the alluvial aquifer (if such a pathway exists), 3) via evapotranspiration, or 4) through consumptive uses.

Given sufficient rainfall, the many smaller aquifers in the watershed would fill and excess percolated groundwater would flow subsurface or via springs to lower aquifers or to the river and ultimately to the sea. The fact that some of the aquifers appear to be permanently isolated means that they are each fully exploited between evapotranspiration and consumptive use. Allowing more water to be taken from isolated aquifers will take water away from the existing users or from the natural vegetation.

SWRCB Order 95-10 has addressed the geology of the valley and legally defined the Carmel Valley Alluvial Aquifer (CVAA). The key language from Order 95-10 is excerpted from Section 3.1 and 3.2 of 95-10 follows highlighting added; the full text of these sections, along with Section 3.0 can be found in Appendix A:

****

3.1 Geologic Setting The principal hydrogeologic units (from oldest to youngest) along the Carmel River alluvial basin that are significant include: (1) pre-tertiary metamorphic and igneous rocks, (2) tertiary sedimentary rocks comprised primarily of sandstone beds (Paleocene and Miocene age) and Monterey shale (Miocene age), (3) older alluvium (Pleistocene age), and (4) younger alluvium (Holocene age). (SWRCB:19.)

Metamorphic (mainly schist and gneiss) and igneous (granitic) rocks form the basement complex which is extensively exposed along or near the river upstream from RM 10 at the downstream extremity of the river narrows. Tertiary sandstone units, which overlie, the basement rocks, are exposed primarily along the southern flank of the alluvial valley from about RM 1.5 to 3 and 5.5 to 12.5. The Monterey Shale formation overlies the sandstone. It is exposed extensively along the north side of the Carmel Valley alluvium from approximately RM 2 to 12 and surficially borders the southern side of the valley from about RM 3 to 5.5 (in the vicinity of Potrero Canyon) and RM 14.5 to'15.5 (in the community of Carmel Valley). The older alluvium, consisting mainly of gravel and sand, form remnant terraces which directly overlie the Monterey shale and/or basement complex rocks. These terraces are laterally discontinuous patches along the north side of the valley alluvium from RM 1 to 16 and along both sides from about RM 16.5 to 18. The basement complex and the shale formation are considered to be non-water bearing. The sandstone has no subsurface hydrologic significance and the older alluvium is found on terraces above the level of ground water. (SWRCB:19.)

The younger alluvium, which formed the valley floor, consists principally of boulders, cobbles, gravel, and sand (which contains silt and clay layers of limited horizontal and vertical extent downstream from the river narrows). This alluvium was deposited by river flows (along the lowermost 18 miles of the drainage basin) within a canyon that was incised (by earlier flows) into the shale formation, sandstone units, and basement complex rocks. Its thickness varies from less than a foot at RM 18 to approximately 200 feet in the vicinity of the river mouth. These deposits comprise the most important aquifer in Carmel Valley (MPWMD:105,3) because of their ability to transmit significant amounts of subsurface water to wells.

3.2 Physical (Hydrologic) Characteristics of the Carmel Valley Aquifer

Carmel River surface flow is generally within the well-defined 20 to 150-foot wide channel over the alluvial deposits that form the valley floor. These deposits are the younger alluviums that comprise the Carmel Valley aquifer.

On behalf of the District, Thomas M. Stetson reviewed District Exhibit 108 and SWRCB Exhibits 19, 24, 27, and 29 in connection with his evaluation of the physical aspects of the subsurface water in Carmel Valley.' Mr. Stetson also reviewed hydrographs of Carmel Valley aquifer water levels obtained at numerous wells. (MPWMD:107.) In addition, he reviewed Carmel River streamflow hydrographs for the USGS Robles Del Rio and Carmel gaging stations. By superimposing surface and subsurface water level hydrographs, Mr. Stetson established that there is a direct relationship between recovery of seasonally lowered subsurface water levels at wells and recurrent river flow increases during ensuing wet periods. On this basis, Mr. Stetson concluded that surface flow recharges river underflow and, consequently, causes a rise in Carmel Valley aquifer water levels. (MPWMD,107,4.)

Mr. Stetson provided written testimony that such underflow is only through the younger alluvium within a known and definite channel along the entire length of Carmel Valley. (MPWMD:107,4.) Mr. Stetson supported his testimony utilizing the following information: (1) essentially non-water-bearing rocks (described in Section 3.1) border and underlie the younger alluvium or Carmel Valley aquifer and (2) the average hydraulic conductivity of the younger alluvium is about 60 feet per day (ft/day), as compared to the hydraulic conductivity of the rocks which is in the order of 0.1 to 0.0001 ft/day or less. (MPWMD:107,6.) Mr. Stetson concluded that the hydraulic conductivity difference is substantial and renders the aquifer a "pipeline" for subsurface flow. (MPWMD:107,6.)

The key conclusions that became the technical underpinnings of Order 95-10 and have informed the opinions of WMD as to the hydrogeology of the Carmel Valley as we understand them, are presented below in italics, along with the CVA comments:

1) *There is only one geological formation in the lower 18 miles of the valley that is capable of conducting groundwater and that is the younger alluvium deposit that stretches the 18 mile length of the lower valley. That formation is between one foot and two hundred feet thick. The width of the surface flows of the river is described in the text, but not the width of the younger alluvium, which is defined graphically on Figure 2 of Order 95-10. The width of the younger alluvium can be estimated to be between generally between one quarter mile and one mile wide, averaging approximately one half mile wide. The younger alluvium constituted a "pipeline" for the subsurface flows of the river. See Appendix B, C and D; Figures 2, 3 and 4 from Order 95-10.*

We do not challenge the observation that the younger alluvium is the primary conduit for the transmission of groundwater in the lower valley. However, the implication that the half mile wide and up to 200 feet thick formation behaves like a pipeline carrying only river underflow of such a small and seasonally dry river is a conclusion that is not supported by any evidence presented and is easily refuted by a simple observation of the chemical profile of the water being pumped by CalAm. In addition to the distinctly different chemical profile of the ground and surface waters, there is no other identified aquifer to accommodate groundwater flows originating from the extensive slopes of the lower valley and that portion of the valley floor that does not overlie the CVAA. In short, if the tributary aquifers of the perimeter of the CVAA are not connected to the CVAA (aka. younger alluvium) where does the water go?

Since the adoption of Order 95-10, three very substantial property developments (Tehama, The Preserve and September Ranch) have been approved drawing well water from the perimeter aquifers. Two of the developments include new golf courses and landscaping irrigated by well water. The current Monterey County well policy prohibits new wells in the CVAA for the time being, but has allowed wells upstream and in the periphery of the CVAA. Current policy also provides that wells in the CVAA can be approved as soon as CalAm finds an alternative source of water. This means that the County has committed to a water policy that will squander the water relinquished by the customers of CalAm at great expense and environmental impact to new consumptive uses. This policy has been misguided by the fallacies embedded in Order 95-10 that have to be brought to light, quantified and corrected. The well ordinance is currently being revised, so this is the time to get the facts and develop a wise, sufficiently protective policy.

2) *The Monterey Shale deposits together with the Santa Lucia granitic formations line both sides of the valley and constitute the impervious basement formations. Categorically, Monterey Shale formations have very low hydraulic conductivity.*

The hydraulic conductivity of the basement formation is undoubtedly very low. However, we question the extension of that assumption to the shallow Monterey Shale formations that line the valley and underlie much of that portion of the valley floor that is not located directly over the CVAA. Observations made on the northeast side of the lower valley indicate that the shallow shale is highly conductive. These shallow shales can percolate and conduct rainwater quite readily, which then becomes groundwater eventually flowing to the younger alluvium.

3) *There is a direct linkage between the river flows and the groundwater elevation. Surface waters recharge the groundwater and cause a rise in the CVAA water levels.*

This phenomenon has been observed and can be generally confirmed. However, the hydraulic balance has never been quantified to confirm the volume relationship between water taken and replacement river water. We suspect that more water is being pumped from the wells than is being replaced by river water and the balancing flows are comprised in part of groundwaters that are not river water or underflow.

2) All of the water being pumped by CalAm is not river underflow

Mr. Stetson concluded that there was an impermeable bed, bank and gradient to the Carmel River and that between the top of the bed and the bottom of the river there was an underflow that was the source of all of the water that CalAm was pumping. That finding was accepted by SWRCB and forms the technical basis for the conclusion that SWRCB surface water rights control the entire permissible volume of water CalAm is allowed to take.

Based on these conclusions, WMD seems to be of the opinion that the only groundwater contained within the CVAA is river underflow. And, that all of the upstream and perimeter aquifers are, therefore isolated from each other, from the CVAA and from the sea. These conclusions are not supported clearly observable facts.

What was completely ignored was the chemical profile of the pumped water when compared to the river water. The average iron concentration in the well water from the production wells shown in Table 1 is almost 2000 micrograms per liter (not taking into consideration the different flow rates of the various production wells). At that level, the water must be treated for iron removal. The river water contains almost no iron. The well water iron concentration deviates substantially from that of the river in ways that cannot be explained by changes that might happen during a brief passage through the younger alluvium of the CVAA. Further testing of the CVAA will be needed to determine the percentage of the water pumped that is from sources other than the river.

Well	Date Sampled	Iron level	Production Status
BEGONIA WELL 02	10/16/13	200	Standby, use only during high flows
BERWICK WELL 08	10/16/13	100	Production well
LAS LAURELES WELL 06	2/21/13	200	Standby, use only during high flows
LOS LAURELES WELL 05	2/21/13	100	Standby, use only during high flows
MANOR 02 -	10/16/13	4,760	Standby, not used
PEARCE WELL	12/17/13	190	Production well
ROBLES WELL 03	2/12/13	170	Standby, not used
RUSSELL WELL 02	2/24/11	100	Standby, not used
RUSSELL WELL 04	2/24/11	240	Standby, not used
SCARLETT WELL 08	2/17/10	0.06	Standby, not used
PANETTA WELL 01	11/19/13	250	Standby, not used
PANETTA WELL 02	2/12/13	4,380	Standby, not used
GARZAS 03	2/13/13	100	Standby, not used
GARZAS 04	2/13/13	< 100	Standby, not used
SCHULTE WELL 02	10/16/13	3,730	Production well
SAN CARLOS WELL 02	10/14/13	2,080	Can use only when river dry, 400' up and downstream.
RANCHO CANADA WELL 02	10/16/13	3,340	Production well
CYPRESS WELL 02	10/17/13	3,850	Production well
BERWICK WELL 09	10/16/13	280	Production well

Table 1
CalAm Well Data Showing Iron Concentration and Production Status

The Origin of Iron in Groundwater
To understand the significance of the distinction between the mineral content of the river water and the groundwater one must understand the way iron becomes dissolved in groundwater. The process is called weathering and it results from chemical interactions between the groundwater and the rocks and minerals that

fill the basin. As detailed in Order 95-10, the geological formations in the lower valley are mainly fractured, shallow shale beds overlying deeper beds of Monterey shale and granitic basement rocks. The younger alluvium is comprised of deposits of sands, granitic cobbles and gravels and organic material. Some of the organic matter was deposited with the sediments that filled the valley and some dissolved organic matter is added with each rainfall as percolating water picks up the byproducts of biodegradation as it passes through topsoil and forest duff.

In addition to the iron-containing rocks and minerals, three reactive agents of concern are organic matter, carbon dioxide (CO_2) and oxygen (O_2). Other substances including compounds of sulfur and nitrogen can be of interest for a full understanding of iron geochemistry, but do not impact the essential question that this section is addressing.

- The important fact about the organic matter is that microorganisms, primarily bacteria, feed on it and deplete the oxygen in the groundwater while increasing the CO_2 content.
- The important fact about CO_2 is that it forms a weak acid (carbonic acid) when dissolved in rainwater. The percolating water can pick up more CO_2 as it passes through the soil and becomes groundwater. That acid slowly dissolves the minerals that occupy the groundwater basin, thereby increasing the dissolved solids of the groundwater with elements such as calcium, magnesium, and, if there is no oxygen in the water, it will dissolve iron.
- The important fact about iron is that it can only dissolve in water that is devoid of oxygen. This is because this element forms highly insoluble compounds in the presence of oxygen. Oxygen, usually with the aid of bacteria, will turn Fe^{+2}, which is quite soluble, into Fe^{+3}, which becomes a very insoluble rust-like iron oxide, which remains within the soil matrix and is not carried away by the groundwater. So, if there is dissolved iron in the water, this means that the water had its oxygen removed and soaked for enough time in sediments that included iron-containing minerals to dissolve away some of the rock.

This dissolution process is known as weathering and it is responsible for the fact that natural fresh water supplies contain dissolved minerals as measured by the Total Dissolved Solids (TDS) test. It is a slow process and typically, runoff from steep upland watersheds such as the upper Carmel River will contain much lower TDS than groundwater that has soaked for a long time in the shales and granitic sedimentary deposits such as the lower Carmel Valley.

Iron, dissolved from sedimentary deposits, is a common contaminant of groundwater. Along with other minerals such as calcium, magnesium and manganese they are known as hardness. Dissolved iron is a reliable tracer of the groundwater as it cannot form quickly and will not form in oxygen-rich river water. Therefore the well water that contains substantial quantities of iron, contains substantial quantities of groundwater that is not river underflow.

In 2010, when it was pointed out to staff of both WMD and CalAm that the surface water law should not have applied to all of the water being pumped, as evidenced by its chemical profile, it was pointed out by WMD groundwater hydrologists Joe Oliver and Darby Fuerst, that water chemistry had never been a subject of discussion. It was clear that the scientific consideration of the weathering process and its meaning relative to the provenance of the water had not played a part in the SWRB 95-10 proceedings.

3) A detailed watershed study that can reliably determine the safe, sustainable yield of the watershed is needed

The move to impose restrictions on the municipal water supply was driven by a need to protect endangered and threatened species in the Carmel River. That need still exists, perhaps more now than ever. The actual safe yield of the watershed has never been quantified and the hydrologic parameters of the river needed to protect red-legged frogs and steelhead have never been scientifically determined. It is not known if the CalAm cutbacks are too much, or too little.

If the CalAm cutbacks do not protect the endangered and threatened species, the valley will plunge back into more water turmoil raising more public mistrust and distain for all of the responsible agencies involved, as well as their elected leaders. If the cutbacks are too much, unnecessary expense coupled with unnecessary consumption of natural resources, energy and production of greenhouse gas emissions will result. In 1995, resorting to a simple water rights proceeding against the largest valley pumper, on the presumption that that would probably provide adequate environmental protection, might have seemed like a convenient expedient. But, it was never the correct way to address the problem and the possible unintended consequences clearly were not thought through.

4) WMD and County policy should be revised on the basis of the findings of the scientifically defensible analysis

A careful study is needed to set protective guidelines for the wildlife and to determine the safe yield of the watershed. Further well permits for anything other than replacement wells should be prohibited until a study makes it clear that water that is surplus to the needs of the environment and the rights of senior extractors is available.

The opinions presented in this report are based on sound scientific principles, but a limited amount of defensible data. Considerable additional data, coupled with analysis and conclusions of credentialed experts is needed. For that reason, we encourage WMD to undertake the needed technical work. We recognize the experience, expertise and responsibilities that WMD has and would like the opportunity to discuss this matter with you in depth.

What is the impact of these observations on the CalAm water supply?
While this report is provided to help correct a misguided groundwater policy that threatens the current well water users as well as the ecology of the valley, finding that some of the SWRCB 95-10 technical conclusions are incorrect could be seen as a threat to the Peninsula water project because California surface water rights rules might not apply to the entire volume of water being pumped. However, it is expected that a desalination project of the general scale of the current CalAm project is needed in any event. The study can proceed as the CalAm project makes its way through the planning phase. If the study finds that changes in the capacity of the supply project are in order, there should be an opportunity to make the changes without any substantial change in direction.

Very truly yours,

Roger J. Dolan P.E.
Chair; Carmel Valley Water Committee

CC: SWRCB; attention Katherine Mrowka, Inland Streams Unit
Monterey County: attention Carl Holm; by email

Bibliography:

1) Precipitation and Dissolution of Iron and Manganese Oxides; Scot T. Martin, Harvard University, Cambridge, MA 02138; Sept. 2003

2) Some Aspects of Chemical Equilibrium in Ground Water; J.D. Hem http://info.ngwa.org/gwol/pdf/631600589.PDF

3) Illinois Department of Public Health Fact Sheet, Iron in Drinking Water http://www.idph.state.il.us/envhealth/factsheets/ironFS.htm

Appendix A

Excerpted from Order 95-10; the text that was reproduced earlier in the report is highlighted in yellow.

3.0 DESCRIPTION OF THE WATERSHED

The Carmel River drains a 255-square mile watershed tributary to the Pacific Ocean. Its headwaters originate in the Santa Lucia Mountains at 4,500 to 5,000-foot elevations, descend and merge with seven major stream tributaries along a 36-mile river course, and discharge into Carmel Bay about 5 miles south of the City of Monterey. Above the confluence of Tularcitos Creek, the Carmel River constitutes about 65 percent of the watershed. Downstream from RM 15, the river has a 40 feet per mile gradient where the river flows to the bay are over and within an alluvium-filled Carmel Valley floor.

Carmel River flow is in a well-defined channel. The channel in the lower 15 river miles ranges from 20 to 150 feet wide. (SWRCB:.19.) The channel changes progressively from cobble to gravel between RM 15 and RM 7, from gravel to sand between RM 7 and RM 2.5 and consists entirely of sand from RM 2.5 to Carmel Bay. (DFG:4,2.)

Downstream from RM 15, alluvial deposits comprise a groundwater basin which underlies the river flow in the Carmel Valley portion of the watershed. The legal classification of the groundwater basin is discussed in Section 3.2 infra. Local ground water levels within the aquifer are influenced by pumping or production at supply wells, evapotranspiration by riparian vegetation, seasonal river flow infiltration and subsurface inflow and outflow.

During the dry season, pumping of wells has caused significant declines in the ground water levels. The Carmel River surface flow decreases due to pump-induced infiltration, which recharges the seasonally depleted ground water basin. During normal water years, surface flow in the lower Carmel Valley is known to become discontinuous or non-existent. Downstream from RM 3.2, there was no river runoff between April 1987 and March 1991. (MPWMD:287, 2-8.)

3.1 Geologic Setting

The principal hydrogeologic units (from oldest to youngest) along the Carmel River alluvial basin that are significant include: (1) pre-tertiary metamorphic and igneous rocks, (2) tertiary sedimentary rocks comprised primarily of sandstone beds (Paleocene and Miocene age) and Monterey shale (Miocene age), (3) older alluvium (Pleistocene age), and (4) younger alluvium (Holocene age). (SWRCB:19.)

Metamorphic (mainly schist and gneiss) and igneous (granitic) rocks form the basement complex which is extensively exposed along or near the river upstream from RM 10 at the downstream extremity of the river narrows. Tertiary sandstone units, which overlie, the basement rocks, are exposed primarily along the southern flank of the alluvial valley from about RM 1.5 to 3 and 5.5 to 12.5. The Monterey Shale formation overlies the sandstone. It is exposed extensively along the north side of the Carmel Valley alluvium from approximately RM 2 to 12 and surficially borders the southern side of the valley from about RM 3 to 5.5 (in the vicinity of Potrero Canyon) and RM 14.5 to 15.5 (in the community of Carmel Valley). The older alluvium, consisting mainly of gravel and sand, form remnant terraces which directly overlie the Monterey shale and/or basement complex rocks. These terraces are laterally discontinuous patches along the north side of the valley alluvium from RM 1 to 16 and along both sides from about RM 16.5 to 18. The basement complex and the shale formation are considered to be non-water bearing. The sandstone has no subsurface hydrologic significance and the older alluvium is found on terraces above the level of ground water. (SWRCB:19.)

The younger alluvium, which formed the valley floor, consists principally of boulders, cobbles, gravel, and sand (which contains silt and clay layers of limited horizontal and vertical extent downstream from the river narrows). This alluvium was deposited by river flows (along the lowermost 18 miles of the drainage basin) within a canyon that was incised (by earlier flows) into the shale formation, sandstone units, and basement complex rocks. Its thickness varies from less than a foot at RM 18 to approximately 200 feet in the vicinity of the river mouth. These deposits comprise the most important aquifer in Carmel Valley (MPWMD:105,3) because of their ability to transmit significant amounts of subsurface water to wells.

3.2 Physical (Hydrologic) Characteristics of the Carmel Valley Aquifer

Carmel River surface flow is generally within the well-defined 20 to 150-foot wide channel over the alluvial deposits that form the valley floor. These deposits are the younger alluviums that comprise the Carmel Valley aquifer.

On behalf of the District, Thomas M. Stetson reviewed District Exhibit 108 and SWRCB Exhibits 19, 24, 27, and 29 in connection with his evaluation of the physical aspects of the subsurface water in Carmel Valley.' Mr. Stetson also reviewed hydrographs of Carmel Valley aquifer water levels obtained at numerous wells. (MPWMD:107.) In addition, he reviewed Carmel River streamflow hydrographs for the USGS Robles Del Rio and Carmel gaging stations. By superimposing surface and subsurface water level hydrographs, Mr. Stetson established that there is a direct relationship between recovery of seasonally-lowered subsurface water levels at wells and recurrent river flow increases during ensuing wet periods. On this basis, Mr. Stetson concluded that surface flow recharges river underflow and, consequently, causes a rise in Carmel Valley aquifer water levels. (MPWMD,107,4.)

Mr. Stetson provided written testimony that such underflow is only through the younger alluvium within a known and definite channel along the entire length of Carmel Valley. (MPWMD:107,4.) Mr. Stetson supported his testimony utilizing the following information: (1) essentially non-water-bearing rocks (described in Section 3.1) border and underlie the younger alluvium or Carmel Valley aquifer and (2) the average hydraulic conductivity of the younger alluvium is about 60 feet per day (ft/day), as compared to the hydraulic conductivity of the rocks which is in the order of 0.1 to 0.0001 ft/day or less. (MPWMD:107,6.) Mr. Stetson concluded that the hydraulic conductivity difference is substantial and renders the aquifer a "pipeline" for subsurface flow. (MPWMD:107,6.)

Mr. Stetson's testimony is consistent with the findings of SWRCB staff. Ms. Laudon submitted testimony and evidence that the relatively impermeable granitic and sedimentary rocks form the bed and banks of a known and definite channel, which restricts the flow of subsurface water to the alluvium. (SWRCB:7&8.,) This information is further supported by evidence regarding the subsurface occurrence of granitic or sedimentary rocks beneath the Carmel Valley aquifer at all well installations throughout the valley.

Except where water levels have been influenced by drawdown due to pumping, the general down valley or westerly subsurface flow direction within the aquifer is the same as that of the Carmel River flow. The subsurface flow has a pattern that demonstrates that it is within a known and definite channel rather than that of a diffused body of percolating ground water. (MPWMD:107,6.)

Cal-Am and other parties did not contest the testimony and evidence that describes the subsurface flow of the Carmel River as a subterranean stream flowing through a known and definite channel. Nor did Cal-Am or other parties offer evidence that the ground water in the alluvial basin should be classified as percolating ground water not within the SWRCB's permitting jurisdiction. Accordingly, we find that downstream of RM 15 the aquifer underlying and closely paralleling the surface watercourse of the Carmel River is water flowing in a subterranean stream and subject to the jurisdiction of the SWRCB.

End of excerpt from of 95-10

Appendix B

SWRCB Order 95-10;
See pages 7 to 10 for maps
http://www.mpwmd.dst.ca.us/order9510/Wro95-10.pdf

Association of California Water Agencies
Since 1910
ACWA
Leadership • Advocacy • Information • Service

RECEIVED
FEB 25 2014
MPWMD

February 21, 2014

Mr. David Stoldt
Monterey Peninsula Water Management District
PO Box 85
Monterey, CA 93942

Re: ACWA's Drought Action Group

Dear David:

Thank you for agreeing to serve on ACWA's Drought Action Group. As news regarding California's epic drought continues to reverberate around the nation and millions of Californians are cut off from their usual water supply, this group of experts represents a critical opportunity to recommend specific actions to combat severe drought conditions, now and in the future.

As politicians call for "new direction" in state water policy and putting an end to the rancor that has pitted agricultural against urban, and north against south for scarce water resources, your group has been tasked with preparing and delivering a report to the Brown Administration and our Board of Directors that will provide a basis for ACWA's advocacy to the state and federal governments for actions that could be undertaken to reduce the impacts of this and future droughts. It would be a shame if we are not able to set the stage to offer real solutions to address the problems of today, and more importantly, make certain to minimize future drought impacts to our state and economy.

Recognizing that many of your agencies are in the midst of implementing mandatory conservation measures and the added burdens that come with such an undertaking, now more than ever we appreciate your commitment to this endeavor and look forward to working alongside you.

Should you have any questions, please feel free to contact me at (510) 590-0238.

Sincerely,

John A. Coleman
President
ACWA Board of Directors

JA:cc

David- Thank you for your assistance on this important issue.

Association of California Water Agencies 910 K Street, Suite 100, Sacramento, California 95814-3577 **916/441-4545** FAX 916/325-4849
Hall of the States 400 N. Capitol St., N.W., Suite 357 South, Washington, D.C. 20001-1512 **202/434-4760** FAX 202/434-4763
www.acwa.com

CITY OF MONTEREY

Colton Hall, California Constitution Hall 1849

RECEIVED
FEB 28 2014
MPWMD

February 26, 2014

Mr. David Stoldt
General Manager
Monterey Peninsula Water Management District
P.O. Box 85
Monterey, CA 93942

Subject: 484 Washington Street – Santa Lucia Café – Water Variance

Dear Mr. Stoldt,

I am writing you to request your support for an existing restaurant located in the City of Monterey and its owner – Santa Lucia Café and Uwe Grobecker.

On February 13, 2014, the MPWMD Board of Directors considered an appeal of a decision to require a water permit for a change of use from a deli (Group II) to a restaurant (Group III) for the Santa Lucia Café. I understand that the Board continued the item to March 17, 2014.

As you know, the City of Monterey supports the District's efforts to conserve our valuable, but limited water resources. The City's support of Mr. Grobecker's appeal is not in conflict with our past and continuing efforts. Mr. Grobecker has informed City staff that based upon Cal Am records, for the past three (3) years, the entire site uses less than 50 percent of the amount of water available for consumption based upon water use factor calculations. The consumption numbers are reflective of the European-style restaurant use for the Santa Lucia Café, which is effectively a hybrid between a deli and a full-service restaurant. This use has operated for many years in its current format.

City staff met with Mr. Grobecker earlier this week. Mr. Grobecker represented that the underlying property owner (Anthony Davi, Sr.) agreed to maintain water consumption below allowable as calculated by applying District use factors. This would allow the restaurant to continue to provide a European-style dining experience, while not consuming more water than is allocated for a Group II use. This will also benefit the community by not requiring the use of disposable tableware which will end up in our landfill.

Thank you for your consideration of this appeal, the City believes that this is a unique situation that should be supported by staff and the Board.

Sincerely,

Chuck Della Sala
Mayor

e: Michael McCarthy, Interim City Manager
Hans Uslar, Interim Assistant City Manager
Chip Rerig, Chief of Planning, Engineering, and Environmental Compliance
Kimberly Cole, Managing Principal Planner