

On the Air

Van Mullem Appointed New District Director

In August the District Board appointed Louis David Van Mullem, Jr. as the new District Director and Air Pollution Control Officer. Former Director Terry Dressler officially retired in late June and returned to serve as Interim Director until a new Director could be appointed.

Van Mullem has a rich background in business and environmental management, and a comprehensive understanding of air quality issues from several vantage points, including from the perspective of facilities that are regulated by the District. He noted, "I've experienced the agency from the outside looking in. I look forward to readjusting my perspective to be on the inside looking out."

After graduating from college, Van Mullem was a pilot in the U.S. Air Force, and then was



Dave Van Mullem

assigned to Vandenberg Air Force Base in 1991 to manage the air quality program. Achieving the rank of Colonel, Van Mullem became Director of Environmental Management at Vandenberg, leading the conservation, planning, compliance, pollution prevention, and

restoration programs. He remarked, "It was such an opportunity to be a proper steward for 100,000 acres of coastal land with thirteen endangered species at that time."

He had a wide range of duties. He oversaw Vandenberg's

compliance with permits, including its permits with the District. He also managed special projects such as one that involved raising and releasing peregrine falcons, considered endangered at that time. Fledglings were brought to a hatchery on the Base from nests in the Golden Gate Bridge in San Francisco, where their chances of survival were low. At the hatchery, with help from the Point Reyes Bird Observatory staff, the birds were protected from owls and coyotes and raised to maturity, then released. He remembered: "We had a very good success rate. I often wonder where all those little guys ended up."

Van Mullem left Vandenberg in 1998 to lead the Santa Maria office of AECOM, an international consulting firm with expertise in a range of environmental areas, including air quality regulatory analysis

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Shipping Pollution Update: Reducing Ship Speed

Marine vessel speed reduction is gaining momentum as a strategy with the potential to cut air pollution and at the same time reduce the number of ship strikes on whales.

Large ships traveling off the coast of Santa Barbara County emit thousands of tons of smog-forming pollutants, diesel particulate, air toxics, and greenhouse gases every year. Ship engines have not been regulated in the past, and they use a particularly dirty fuel known as bunker oil.

Internationally designated shipping lanes go through the Santa Barbara Channel, and prevailing winds there can blow ship emissions onshore.

The District has no direct authority over these ships, and cannot mandate air pollution controls or speed reduction. However, we have been working for decades to raise awareness of the issue and to call for regulation of this large source of emissions. State, federal, and international measures are now in place that will reduce this pollution over

the long term by requiring use of cleaner fuels and improved engines. A mandate for speed reduction could bring substantial benefits in the near term.

In July of 2009 a new state rule went into effect requiring ships traveling up to 24 nautical miles off the California coast to use lower-sulfur fuel. Since then, some ships have been traveling outside the Channel to avoid the requirement. After safety concerns were expressed because there are no officially designated shipping lanes outside

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New District Director (cont'd)

and compliance. The office grew quickly and has done well, and in 2010 achieved certification as a green business by the Green Business Program of Santa Barbara County. Van Mullem noted, "I feel I can leave at this point, since I am leaving the office in a good place."

He joined the District's five-member (volunteer) Hearing Board in 2002 as an at-large member. The Board hears appeals of District permit decisions, and reviews applications for variances from District regulations and petitions for abatement orders from the District Director. He explained his decision: "When I left the Air Force I felt I needed to do something to serve my community. The District Hearing Board is made up of a diverse

group of people with various areas of knowledge—medical, legal, and engineering. I felt I could bring my experience in air quality to help the Board understand the finer points—especially on the technical side." He added, "While I was at Vandenberg we worked with the Hearing Board, and I always appreciated the way it worked with the regulated community."

While he has experienced the District's regulations from the regulated business side, he commented, "I want to put people to ease that I am in tune with environmental goals. I am not here as a business man, I am here to support the team and our mission. The one thing I do bring with me is the Air Force value system: integrity first, service

before self, and excellence in all we do. Those values are very applicable here."

He also brings a teamwork approach: "In the Air Force you're thrown into a team and you try to make it as cohesive as possible. And that's me in a nutshell. I think about how I can make a team stronger, how I can help it."

He added, "I look forward to working with District staff. The great thing about this organization is that there's a lot of talent here, and a lot of passion. These ingredients are the basis for an outstanding team."

Van Mullem has a B.S. in Business Statistics from Bowling Green State University in Ohio, an

M.S. in Systems Management from the University of Southern California, and an M.S. in Environmental Management from West Coast University. He lives in Orcutt with his wife, and has family in Goleta, Santa Barbara, and San Diego. His hobbies include free diving, scuba diving, golf, gardening, and bird watching.

He remarked, "I haven't worked on the regulatory side before, so I come with a fresh look. I feel the vision and the mission of the District are spot on. The vision is clean air, and the mission is to protect the people and the environment of Santa Barbara County from the harmful effects of air pollution. That defines the agency. How can it be any more clear than that?"

Reducing Ship Speed (cont'd)

the Channel, and considering the fact that the U.S. Navy conducts missile tests in the Point Mugu Sea Range located in that area, the U.S. Coast Guard initiated a Port Access Route Study to evaluate options for ship routing. The California Air Resources Board has now proposed extending its fuel rule to apply 24 nautical miles from the outer coast of the Channel Islands.

The District submitted a comment letter to the Coast Guard on the route study last year calling for a thorough investigation of air quality impacts of ship routing, and suggesting marine vessel speed reduction as a strategy to reduce emissions. Ship engines use fuel much more efficiently at slower speeds, and the District estimates that air emissions could be cut significantly—possibly by as

much as 50 percent—if ships traveling through the Channel were required to travel at 12 knots or less.

Vessel speed reduction has also been suggested as a strategy to reduce ship strikes on whales. In the past, the National Oceanic and Atmospheric Administration (NOAA), working with the Coast Guard, has called on ship captains to reduce speeds voluntarily when in seasonally designated Whale Advisory Zones, or when the Coast Guard broadcasts a local alert to ships traveling through the Santa Barbara Channel, announcing that whales are present. In a May 2011 comment letter to the Coast Guard, NOAA noted that data show that ships have not reduced speeds in response to these requests for voluntary action.

In June of 2011, the Center for Biological Diversity, Friends of the Earth, Environmental Defense Center, and Pacific Environment petitioned the Secretary of Commerce, through NOAA, the National Ocean Service, and Office of National Marine Sanctuaries, to establish a 10-knot speed limit for large

commercial vessels within the national marine sanctuaries off the California coast (including the Channel Islands National Marine Sanctuary). NOAA is currently reviewing the petition.

For more information, see www.OurAir.org/itg/shipemissions.htm.



Large container ships emit thousands of tons of air pollutants off the coast of Santa Barbara County every year.

NASA Technology Helps Find Wildfire Hot Spots

APCD Board Roundup

Following are the highlights of the June and August Board meetings.

June

- Received and filed the summary of notices of violation issued and penalty revenue received in May 2011.
- Approved \$200,000 in additional funding allocation for the Marine Diesel Engine Repower Program, and \$700,000 in additional funding allocation for the Lower Emission School Bus Program for school bus replacement and retrofit grants.
- Held a public hearing and adopted the budget for Fiscal Year 2011-12.
- Adopted a Resolution of Appreciation for Terry Dressler upon the occasion of his retirement. Appointed Dressler Interim Director until the position could be filled.
- In report from Closed Session, announced the Board voted to appoint Louis D. Van Mullem, Jr. as Director/Air Pollution Control Officer subject to a contract signing and approval at the August Board meeting.

August

- Received and filed the summary of notices of violation issued and penalty revenue received during the months of June and July, 2011.
- Approved \$500,000 in additional funding allocation for the Off-Road Equipment Replacement Program.
- Reappointed Robert J. Saperstein to the District Hearing Board for a three-year term.
- Appointed Louis David Van Mullem, Jr. to the position of Air Pollution Control Officer and approved an employment contract with Mr. Van Mullem.

A thermal-infrared wildfire scanner developed by the National Aeronautics and Space Administration (NASA) was recently used to image active hot spots in the Eagle Fire in Santa Diego County in late July, and may be used to help identify hot spots in California wildfires this fall.

The Autonomous Modular Sensor, or AMS, was used in 2007-2009 to image several wildfires in the U.S., including wildfires affecting Santa Barbara County. The AMS is currently mounted in a NASA Beechcraft B200 King Air twin-turboprop plane based at the Dryden Flight Research Center at Edwards Air Force Base. The AMS operates like a digital camera with special filters to detect light energy at visible, infrared and thermal wavelengths. The device imaged active hot spots while the aircraft flew over the Eagle Fire in San Diego County July 22 during a check flight of the scanner.



The thermal-infrared wildfire scanner is mounted in a NASA Beechcraft B200 King Air twin-turboprop plane. Photos courtesy of NASA, Lori Losey, and Mark Pestana.



From an altitude of 23,000 feet, the AMS imaged the fire in the visible through thermal infrared range. The data were generated in near-real time on the sensor and downloaded via satellite to a web server at NASA's Ames Research Center at Moffett Field where the AMS was developed. The U.S. Forest Service then provided the data to the Eagle Fire command team.

NASA will conduct wildfire observation missions over California in September and October with the AMS sensor aboard the B200 when requested by and in partnership with CAL FIRE and the Forest Service.

New on www.OurAir.org



Air quality issues of importance for seniors:
www.OurAir.org/edu/seniors.htm



Information on smoke and our health, open burning, and more: www.OurAir.org/sbc/openburning.htm



Information on federal requirements for reciprocating internal combustion engines:
www.OurAir.org/eng/rice/rice.htm



Information about large sources of air pollution in our county that are required to have federal permits known as Title V or Part 70 permits:
www.OurAir.org/eng/titlev/titlev.htm

CASH for Cleaner Engines



Funds to repower or retrofit engines in: off-road mobile equipment, farm equipment, fishing boats, school buses, and more.

Contact Al Ronyecz at 961-8877 or axr@sbcapcd.org.

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APCD Board Calendar

Board of Directors

- Supervisor Salud Carbajal
*First District
Santa Barbara County*
- Supervisor Janet Wolf
*Second District
Santa Barbara County*
- Supervisor Doreen Farr
*Third District
Santa Barbara County*
- Supervisor Joni Gray
*Fourth District
Santa Barbara County*
- Supervisor Steve Lavagnino
*Vice Chair
Fifth District
Santa Barbara County*
- Mayor Pro Tem Holly Sierra
City of Buellton
- Councilmember
Kathleen Reddington, Chair
City of Carpinteria
- Mayor Lupe Alvarez
City of Guadalupe
- Councilmember Cecilia Martner
City of Lompoc
- Mayor Helene Schneider
City of Santa Barbara
- Mayor Larry Lavagnino
City of Santa Maria
- Mayor Jim Richardson
City of Solvang
- Councilmember Roger Aceves
City of Goleta

All meetings start at 1:30 p.m.
For final meeting agendas, call
Sara Brumit at 961-8853 or see
www.OurAir.org/apcd/agenda.htm

October 20
Board of Supervisors'
Hearing Room
105 East Anapamu Street
Santa Barbara, California 93101

December 15
Board of Supervisors'
Hearing Room
105 East Anapamu Street
Santa Barbara, California 93101

*The 2012 Calendar will be set at the
December Board meeting.*

Community Advisory Council

The APCD Community Advisory Council meets monthly at the Days Motor Inn in Buellton. The public is welcome. For more information, call Sara Brumit, 961-8853.



CARE for our EARTH at our Schools

Programs for Teachers

Teacher Grants Program Returns for 2011-2012

The Care for Our Earth teacher grants program is back for its third year. Developed by the District and the Santa Barbara County Education Office, with support from Southern California Gas Company, the program provides \$200 grants to county 4th-12th grade teachers for projects with their students to either save energy costs or cut traffic and pollution at school sites. A new partner, Pacific Gas & Electric Company, will be joining the program this year. The deadline for this year's applications is November 18.

According to the California Energy Commission, most schools spend more on energy than on school supplies, and can employ simple conservation strategies to cut energy costs by 20 percent or more. Reducing vehicle traffic at schools not only reduces air pollution at the site, it can help reduce the number of accidents near schools, and make it safer for students to walk or bike to school.

Last year, Care for Our Earth grants were provided to twenty-two teachers in nine county school districts. Projects ranged from teaching seventh graders how to use Google SketchUp to redesign the school parking lot, to helping students track school energy use and set up a school energy-conservation program. At Maple High School in Lompoc, several teachers designed a cross-curricular school project in which students learned about energy, then traveled to the site of a proposed solar energy installation.

For more information, see www.OurAir.org/teachers.htm



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Terravant Pioneers Winery Pollution Controls System First of Its Kind

Terravant Wine Center in Buellton has pioneered a state-of-the-art pollution-control system that captures more than 90 percent of the emissions of ethanol in the facility. Ethanol is a volatile organic compound, a smog-forming pollutant.

Said Mike Goldman, District Engineering and Compliance Division Manager, "As far as I know this control system is the first of its kind in the world; it represents the first time this emission-control technology has ever been effectively used in a winery."

Terravant provides "grape to bottle" services to wineries. The 40,000 square foot facility makes wine for some thirty wineries under an "Alternating Proprietor" arrangement. They also provide "Custom Crush" contract services for fifteen additional wineries and private label services to retailers and restaurateurs.

This is the way Terravant General Manager Randy Pace likes it: "We get to focus on just making the wine—we don't have to worry about inventory or sales." Before joining Terravant, Pace was Chief Operating Officer at Stag's Leap Wine Cellars in Napa for twenty years, and then General Manager at Bridlewood Winery in Santa Ynez for three years. He has also been making small lots of wines under his own label since 2006.

Pace expects Terravant will process 3000 tons of grapes in 2011, up from 2200 tons in 2010, 1800 tons in 2009, and 820 tons



Tanks at the facility hold up to twenty tons of wine (for the red wines).

in 2008, its first year of operation. Total cost for the facility and all the equipment was \$22 million; the emission-control system cost \$600,000. "We are breaking even now, and expect to make a profit next year. This is considered quite good for a winery operation," he said. He expects production to continue to increase, and eventually to reach the Center's 4500-ton capacity.

Pace had originally envisioned a somewhat smaller facility with a lower-tonnage capacity. When he realized he would need to make adjustments to accommodate pollution controls, he decided to redesign the facility and increase the capacity so the system would accommodate expansion.

As he considered how to reduce emissions to meet District regulations, he realized he was in uncharted territory. He remarked, "We didn't have a real-world example to go by.



Randy Pace in front of the scrubber.

We looked at ethanol plants, but they are so different—they have a significantly higher concentration of ethanol in emissions." Working with the District, and with an environmental consultant, he evaluated several different technologies, including control methods involving catalytic oxidation, condensation, and carbon adsorption. He finally settled on a scrubber system, and noted, "We're using equipment commonly used to control emissions from coal plants—but in a completely different application with completely different chemistry."

He explained how the process works. A powerful fan continuously sucks air inside the facility into ducts, removing all the indoor air in only 45 minutes. As air is removed, more air comes in from the outside; the building is constantly under negative pressure so that indoor air does not escape to the outside.

The air is blown through the ducts into the scrubber, where water rains down and liquefies the ethanol vapors. The liquid (now approximately .004% ethanol) is then pumped through a Venturi chamber, where hydrogen peroxide is added, and an ultraviolet light provides the energy for the hydrogen peroxide to break down the ethanol—leaving only water and carbon dioxide. The ultraviolet light used is so powerful that if it were used to purify water, it could purify one million gallons of water in a day. Recent testing indicates the system is effective in removing more than 90 percent of the ethanol emissions.

"This works because we designed everything from the ground up," noted Pace. His innovations were not limited to the emission-control system. As he made design decisions for emission control he also designed for energy and space efficiency. Once he decided to raise the ceiling of the facility by six feet to accommodate the duct system, he took advantage of the opportunity to use taller tanks. For red wines, Terravant

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Winery Pollution Controls (cont'd)

uses double tanks stacked one on top of the other, each with a twenty-ton capacity. Tank operation is fully automated, and tanks are self-emptying, saving energy and improving worker safety. The building is well insulated, and lighting is controlled by sensors. Small, strategically placed skylights provide so much natural light (especially with reflection off the stainless steel tanks and equipment) that there is seldom a need for additional lighting during the day. Said Pace, "The skylights represent only about two percent of the surface area of the roof, but it's amazing how well they work."

The Center also includes advanced equipment that uses less energy, saves costs and time, and improves the quality of the wine. Cold stabilization, a process required for white wines, typically involves refrigeration of the wine over an extended period until the potassium tartrate precipitates out



The combination of small skylights and reflection off the stainless steel equipment reduces the need for additional lighting. Also visible in the photo is the duct system.

of the wine and can be removed. Instead, at Terravant, the wine is passed through a column with material that attracts the potassium ion, and removes it. "Instead of needing to cool the wine for two to three weeks, you can cold-stabilize an entire tank of wine in one day. There are gigantic energy savings, and the wine is better too," said Pace.

He also uses cutting-edge equipment to de-alcoholize wine, replacing a process that risks affecting the wine's taste by heating and exposing the wine to air. Instead, he uses a membrane filter process that requires much less energy, is much more gentle to the wine, and allows for more precision in fine-tuning the alcohol content.

In 2009 Terravant opened Avant, a tapas and wine bar, where visitors can pour tastes, half glasses or glasses of wine themselves using a special dispenser. They can choose tastes from 32 different vacuum-sealed bottles of wines made at Terravant, including wines from highly respected wineries such as Alma Rosa, Ken Brown Wines and others.

Overall, Pace has enjoyed the opportunity to combine his passion for wine making with the use of innovative technologies and systems. He remarked, "What it really comes down to is making a quality product. That's what we're about."

For more information on permitting and wineries, see: www.OurAir.org/eng/winery/winery.htm. For more information on Terravant Wine Center, see: <http://www.terravant.com>.

Asbestos

The District enforces the federal laws controlling work practices for the demolition and renovation of institutional, commercial, or industrial structures in which asbestos may be present. (Single-family private residences and apartment buildings with no more than four dwelling units are excluded.) Depending upon the amount and type of asbestos and the type of project, advance notification to the District may be required before asbestos is disturbed and/or removed. Notification is always

required for demolition projects, and requirements may also include notifying local residents and occupants of buildings where asbestos abatement is being done.

Asbestos is a term used to describe several types of naturally-occurring fibrous minerals found in many parts of California. Asbestos fibers are lightweight, fire-resistant and not easily destroyed by natural processes. Because of these characteristics, asbestos was regularly used in construction

and thermal insulation in the past, and is even used in some building materials today. When broken or crushed, asbestos can become airborne and may stay in the air for long periods of time. If inhaled, asbestos fibers can permanently lodge in body tissues and pose a serious health threat.

Exposure to asbestos has been shown to cause cancer and asbestosis, a chronic disease of the lungs with symptoms similar to emphysema. Since there is no known safe level of exposure,

all asbestos exposure should be avoided. This is particularly important when removing asbestos insulation.

It is also important to remember that fire will not destroy microscopic asbestos particles. If older homes or buildings are burned, particular care should be taken sifting through rubble and cleaning the site.

For more information, see www.OurAir.org/biz/asbestos.htm.