



Denise Duffield &lt;dduffield@psr-la.org&gt;

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**ATSDR at Santa Susana Field Lab Site**

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Vianu, Libby <Vianu.Libby@epa.gov>  
To: "dduffield@psr-la.org" <dduffield@psr-la.org>

Fri, Aug 21, 2015 at 1:50 PM

Denise Duffield  
Associate Director  
Physicians for Social Responsibility  
Coordinator, SSFL Work Group

I have worked with the ATSDR Petition Coordinator and our Office of General Counsel to address your request for a copy of the Santa Susana Petition and ATSDR response letter.

I have attached redacted versions of these letters. If you want a document that has gone through the FOIA process you can make a request through the Freedom of Information Act (FOIA) Requester Service Center. You can find all the information for completing the request at this web site: <http://www.cdc.gov/od/foia/>.

In order to encourage people to petition and not be worried about repercussions, ATSDR tries to protect the identity of all individual petitioners. If you want further information about the petition process please contact the ATSDR Petition Coordinator, Sven Rodenbeck.

Sven E. Rodenbeck, Sc.D., P.E., BCEE

Rear Admiral (retired), USPHS

ATSDR/DCHI - Mailstop F59

1600 Clifton Road, NE

Atlanta, GA 30329-4027

(770) 488-3660

If you need any additional assistance, please feel free to contact me.

Libby Vianu  
Regional Representative  
ATSDR Region IX  
75 Hawthorne Street  
Suite 100, HHS-100  
San Francisco, CA 94105  
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**3 attachments**

-  **SSFL Petition June 2014 Redacted.pdf**  
103K
-  **SSFL Refinement of Petition Nov 2014 Redacted.pdf**  
31K
-  **SSFL Petition Decision Letter March 2015 Redacted.pdf**  
109K

June 25, 2014

Mr. Sven Rodenbeck  
ATSDR  
Division of Community Health Investigations  
4770 Buford Highway, NE (MS-F59)  
Atlanta, GA 30341-3717  
Via email: svr1@cdc.gov

Dear Mr. Rodenbeck,

I am writing ATSDR to petition for a completion of a previous ATSDR health assessment for the Santa Susana Field Laboratory (SSFL) reported in 1999. I am writing on behalf of the SSFL Community Advisory Group (CAG) established a year ago by the California Department of Toxic Substances Control (DTSC). I am familiar with many of the technical issues involved with cleaning up the SSFL site. I am attaching a brief summary of my work experience by way of introduction. As will be explained later, the CAG is requesting that ATSDR conduct an expert panel review of previous studies related to SSFL health effects, so that the peer review can clarify and resolve public misconceptions about the current risk to their health from contamination at SSFL. I have just completed a review (attached) of all of the previous studies including, the ATSDR study. It formed the basis of my recommendation to the CAG to conduct a neutral public peer review to hopefully resolve the community differences.

After the extensive preliminary study and report, ATSDR later contracted with a UCLA team lead by Dr. Yoram Cohen to do a more thorough study which was reported out in 2006. Using essentially the same data, Dr. Cohen's conclusions were exactly the opposite to those of ATSDR. Although he acknowledged extreme conservatism in his assumptions, he provided no rationale for the difference in his conclusions. Boeing provided 50 pages of comments and Dr. Alan Warren also commented on the document, concluding that the use of extremely conservative assumptions throughout the study *"result not in a worst-case scenario but one that is highly improbable, if not impossible, and pertains to no single individual or group of individuals."* Dr. Cohen never responded to the comments/questions and, unfortunately, his report has been used to fan the fears of residents of neighboring communities. Studies by Dr. Morgenstern have been similarly misused, although he concluded *"There is no direct evidence from this investigation, however, that these observed associations reflect the effects of environmental exposures originating at SSFL."*

The idea for this peer review evolved from a recent public meeting held by the California Department of Toxic Substances Control (DTSC) on the same subject. Dr. Thomas Mack of the USC Keck School of

Medicine presented the results of his study of Cancer Registry data in the vicinity of SSFL together with a general tutorial on epidemiology. Afterwards, he was subject to ad hominem attacks, and DTSC was faulted for not having a presentation from Dr. Hal Morgenstern, who had performed similar studies in the past. Some community members believe Dr. Morgenstern reached conclusions different from Dr. Mack and his views should be heard. I was in the process of reviewing the past health-related studies and was under the impression that Drs. Mack and Morgenstern were in essential agreement. Conversations since with both have confirmed that this is indeed the case. Nevertheless, some community members believe that their health has been and continues to be placed at risk by SSFL, relying in part on the work of Dr. Morgenstern. From this, I conceived the idea of holding a public peer review of these health studies to resolve any misunderstandings.

The importance of the public perception of SSFL health effects cannot be overstated. Public acceptance is paramount in achieving an appropriate level of cleanup of the contamination that remains at SSFL. Everybody is in favor of a cleanup of SSFL; the only issue to be resolved is the determination of cleanup criteria that balance the purported benefits of the cleanup against its health and environmental consequences. One portion of the community favors a risk-based cleanup to Suburban Residential standards, using established procedures. Another portion of the community favors a soil cleanup 'to background or detect' using procedures that are unique to SSFL and never before been used at any cleanup in the US. The rationale for the latter is based on purported past and future health effects of SSFL contamination to offsite individuals. The cleanup debate has gone on for decades, and is very contentious with political overtones. One example of political interference with the SSFL cleanup occurred when SSFL was identified as meeting the criteria for listing as a superfund site, but this was declined by the then head of DTSC because a risk-based cleanup would not meet California's more stringent requirements. It is time to finally resolve the health issue so that the cleanup can proceed. A public peer review of past health-related studies would be one way to provide the public, the media and their elected officials with the collective expert views of the scientists and doctors who have studied the SSFL issues.

I have discussed the idea of a CAG-led peer review panel with DTSC, DOE, NASA, and Boeing. They were all supportive. In conversation with one of the prospective panel members, he suggested that the review would more acceptable to the public if it was conducted by an Independent Federal Agency and ATSDR immediately came to mind. I have mentioned this to DOE and they would be supportive of having a review conducted by ATSDR.

Several approaches for conducting the review are under consideration. I expect that we would develop some fundamental questions to be discussed prior to establishing a consensus position and there would be limited presentations of information from prior reports. One issue to be resolved should be past health risk as documented in the epidemiological studies and pathway studies. Since site operations ceased over 20 years ago and the site has been fully characterized, a second issue should be a high-level relative assessment of off-site health risk estimated from the current levels of contamination. ATSDR should be given the data in sufficient time to make their own preliminary evaluation. A brief presentation of the current data and the ATADR conclusions could be made to the panel and the

audience. I do not envision much new analysis, because the old data and reports exist and the experts are familiar with the site and the reports. It should be made clear that the future use of the site is generally agreed to be open space or parkland, and that the health concerns being voiced are not for on-site residents but for those at varying distances from the site. Additionally, I believe that the public meeting should be structured as educational and informative and not to receive public input. Public concerns are well known, and recent public meetings have been subject to advocacy, acrimony, and venting, all of which detract from the intended benefit of the meeting.

We were considering a November to early December time frame for the public panel review at a local venue to be determined. A list of the proposed panel members is appended to this letter. I have contacted all but one of them and only two were hesitant to express interest. I expect that that they would be willing if ATSDR conducted or sponsored the event. If ATSDR agrees to this petition, I assume ATSDR would provide additional experts. Schedule conflicts would likely reduce the number of panel participants, but I think that we would have sufficient expertise to accomplish our objectives.

I will be happy to supply you with additional information as needed. The CAG and I feel that it is most important to publically address the health concerns as soon as possible.

Sincerely,

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**Potential Panel Members**

**James Justin Beaumont, PhD**  
Professor Emeritus, Public Health Sciences, University of California Davis  
Davis, California  
jjbeaumont@ucdavis.edu

**Yoram Cohen, PhD**  
Professor, Chemical and Biological Engineering Department, UCLA  
Los Angeles, California  
yoram@ucla.edu

**Faith G. Davis, PhD**  
Professor and Director, Division of Epidemiology and Biostatistics,  
School of Public Health, University of Illinois,  
Chicago, Illinois  
fayed@uic.edu

**CAPT Robert B. Knowles, M.S., REHS**  
Regional Director, Agency for Toxic Substances & Disease Registry, Region 9  
San Francisco, California  
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**Thomas Mack, M.D., M.P.H.**  
Professor of Preventive Medicine and Pathology, Keck School of Medicine  
University of Southern California  
Los Angeles, California  
tmack@usc.edu

**Hal Morgenstern, Ph.D.**  
Professor, Epidemiology and Environmental Health Sciences  
School of Public Health, Department of Epidemiology, University of Michigan  
Ann Arbor, Michigan  
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**Michael Mumma**  
International Epidemiology Institute  
Rockville, Maryland  
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**Kiumarss Nasser, DVM, MPH, PhD**  
**Advances in Medicine**  
**Santa Barbara, California**  
**qnasser@cox.net**

**D. Alan Warren, M.P.H., Ph.D.**  
**Program Director, Environmental Health Science, University of South Carolina Beaufort**  
**Bluffton, South Carolina**  
**dwarren@uscb.edu**

November 11, 2014

### Refinement of ATSDR Petition Request

The ultimate goal of the petition to ATSDR regarding the cleanup of SSFL is to obtain an opinion from ATSDR about the present risk posed by contaminants at SSFL to future on-site residents and off-site residents, and thus inform a decision about the appropriate level of cleanup needed to be protective of public health and safety. By way of background, the site remediation is covered to by two consent orders. The 2007 order required all groundwater and the soil in the Boeing, DOE, and NASA areas to be remediated to suburban residential risk-based criteria. A subsequent order in 2010 (AOC) required only DOE and NASA to remediate their soil to background or detection limits, independent of risk. The difference in perceived need for a risk-based vs. a background/detect cleanup is the source of misunderstanding and polarization within the surrounding communities.

Those favoring the cleanup to background or detect option base their opinions primarily on two epidemiological and pathway studies prepared with ATSDR funding, but not under ATSDR technical direction or approval. The conclusions of these documents are at variance with conclusions reached previously by ATSDR and by numerous other epidemiological studies. The 1999, ATSDR stated ***“Although chemicals and radionuclides were released from the site, the likelihood of those releases resulting in human exposure is limited by a number of factors, including; 1) the distance from the release sources to the offsite residential areas that results in rapid dispersion and degradation of oxidants and solvents in air; 2) the predominant wind patterns that normally blow away from the nearest residential areas; 3) other meteorological conditions at the site such as the atmospheric mixing height; and 4) drawdowns in ground water levels that reduce the rates of contaminant migration. Considering these factors, it is unlikely that residents living near the site are, or were exposed to SSFL-related chemicals and radionuclides at levels that would result in adverse human health effects. Changes in site operations, such as reduced frequency of rocket engine testing, discontinuation of trichloroethylene use, and shut down of nuclear operations make it unlikely that future exposures to the offsite community will occur”.***

It is now 15 years later and the site operations have ceased. I request that ATSDR revisit this conclusion and restate it appropriately based on ATSDR assessment of the current levels of contamination, and their pathways to human receptors.

Those favoring a risk-based cleanup are concerned about the potential health-hazards from an extreme cleanup that would require digging and hauling of about 2.5 million cubic yards of soil. The soil in our area contains spores of San Joachin Valley Fever, and pollution from the trucks poses its own health risks, together with the risk from traffic accidents. I request that ATSDR provide a ROM evaluation of the risks to surrounding populations and those on truck routes and at the disposal sites from postulated numbers of trucks for the proposed cleanup scenarios.

The 2010 AOCs prohibit any leave-in-place disposal options, whether or not this poses a lesser risk to anybody when compared with the other cleanup alternatives. I request that ATSDR suggest and discuss cleanup alternatives for consideration that may be protective of health while minimizing negative effects of the remediation.

To allay community fears of past SSFL operations, I request that ATSDR evaluate the information and conclusions presented in prior epidemiological and pathway studies and present an ATSDR evaluation of those documents to the community in a readily understandable fashion.

Finally, I request that ATSDR use its prestige and wide experience with public concerns about their health risks from contaminated sites, to provide the communities around SSFL with a perspective of the real SSFL risk in relation to other sites around the country. Too many people believe that SSFL is one of the most highly contaminated sites in the country. The agencies that are responsible for the cleanup know otherwise and will never provide the funding that would be required to implement a 2010 AOC cleanup. Political forces are trying to circumvent a NEPA evaluation of robust cleanup alternatives, and only a better informed public can change this.

I look forward to working with you to help you answer these questions.



March 10, 2015

Dear :

Thank you for your June 25 and November 11, 2014, letters to the Agency for Toxic Substances and Disease Registry (ATSDR) describing the Community Advisory Group (CAG) concerns about the Santa Susana Field Laboratory (SSFL), Ventura County, California. Your letters indicate that the SSFL CAG is requesting that ATSDR:

- Revisit its conclusions and restate them appropriately based on ATSDR assessment of the current levels of contamination, and their pathways to human receptors.
- Evaluate the risks, including Valley Fever, to surrounding populations and those on truck routes and at the disposal sites from postulated numbers of trucks for one of the proposed cleanup scenarios.
- Suggest and discuss cleanup alternatives for consideration that may be protective of health while minimizing negative effects of the remediation.
- Evaluate the information and conclusions presented in prior epidemiological and pathway studies and present an ATSDR evaluation of those documents to the community in a readily understandable fashion.
- Provide the communities around SSFL with a perspective of the real SSFL risk in relation to other sites around the country.

This letter is to inform you that ATSDR has accepted your petition and how we are initially planning to address the CAG's concerns about SSFL.

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund), Congress provided ATSDR with the authority to conduct certain public health actions following a request from a community member. All requests are evaluated for relevance to ATSDR's mission, whether data are available for analysis, and public health priority. Actions taken on accepted petitions are designed to determine whether people have been, or are currently being, exposed to hazardous substances (primarily chemicals) released into the environment from a hazardous waste site or facility. ATSDR then evaluates whether the exposure is harmful, or potentially harmful, and whether the exposure should be stopped or reduced. These evaluations are based on the available environmental sampling data typically collected by the U.S. Environmental Protection Agency (EPA) or the local regulatory agencies.

While ATSDR's evaluations can assess whether or not an exposure increases the risk of disease or a medical condition, they are not able to determine the cause of a particular disease or medical condition experienced by an individual or a group of individuals in a community. Please note that ATSDR does not prioritize risk management/remediation options or review/evaluate environmental regulatory operational procedures of other organizations or agencies.

To assist the SSFL community in understanding the current SSFL-related public health concerns, ATSDR is planning to:

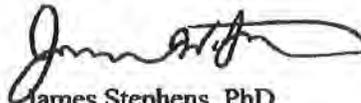
- Determine whether currently there are any completed pathways of human exposure to SSFL-related contaminants and what public health concerns may be associated with those exposures.
- Evaluate whether the proposed remedial options would be protective of human health.
- Provide the SSFL community with public friendly information and presentations of ATSDR's findings and the strengths and weaknesses of SSFL-related epidemiological studies.

Please be advised that ATSDR does not have the technical expertise to evaluate the potential Valley Fever health concerns associated with hauling large amounts of SSFL soil through local neighborhoods. So we will not be able to assist the SSFL community understand the risks associated with Valley Fever in the area.

In the near future, ATSDR will engage with the community near SSFL. This will include small group discussions and health education activities. We will coordinate our efforts with the SSFL CAG, other community groups, California Department of Public Health, California Department of Toxic Substances Control, the US Department of Energy, and the US National Aeronautics and Space Administration. Based upon the input received from these various stakeholders and our public health evaluation of the environmental investigations and data, ATSDR will provide its public health evaluations for public comment.

Thank you for forwarding your concerns to ATSDR. If you have any questions on ATSDR's future involvement at this site, please contact CAPT Robert Knowles, ATSDR Regional Director for Region 9. CAPT Knowles may be reached at (415) 947-4317 or via email at [Knowles.Robert@epa.gov](mailto:Knowles.Robert@epa.gov). If you have any questions on how your request was reviewed, please contact Dr. Sven Rodenbeck, ATSDR Petition Coordinator, at (770) 488-3660 or via email at [SRodenbeck@cdc.gov](mailto:SRodenbeck@cdc.gov).

Sincerely,



James Stephens, PhD  
Acting Director  
Division of Community Health Investigations  
Agency for Toxic Substances and Disease Registry

**Review of Studies of Health Effects Possibly Related to the  
Operation of the Santa Susana Field Laboratory (SSFL)**

**June 18, 2014**

**Abraham Weitzberg, Ph.D., Principal Author**

**Contributions from the SSFL Community Advisory Group**

**Reviewed and Approved by the SSFL Community Advisory Group**

## Executive Summary

Since 1990, in response to community concerns, there have been at least nine epidemiological cancer studies of residents of neighborhoods in the vicinity of the Santa Susana Field Laboratory (SSFL) and two studies of Rocketdyne workers. The studies were conducted by:

- California Department of Health Services (1990 and 1992),
- Tri-County Cancer Registry (1990, 1997 and 2006),
- University of California at Los Angeles (UCLA) School of Public Health (1997, 1999, 2001),
- International Epidemiological Institute (2005),
- Dr. Hal Morgenstern of the University of Michigan School of Public Health (2007), and most recently
- Dr. Thomas Mack of the University of Southern California Keck School of Medicine (2014).

The universal outcome of the studies is the inability to establish any statistically significant relationship between chemicals and/or radionuclides used at SSFL and any adverse health effects on either workers or nearby residents.

In 1999, the then-available studies were reviewed by California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) and the Agency for Toxic Substances and Disease Registry (ATSDR) of the U. S. Center for Disease Control (CDC). An additional review of the previous studies was conducted in 2014, by Dr. Thomas Mack. The reviewers confirmed both the results of the previous studies and their inherent limitations.

In his study, Dr. Mack concluded that while it is not possible to unequivocally rule out any offsite carcinogenic effects from SSFL, no evidence was found of measureable offsite cancer causation as a result of migration of carcinogenic substances from the SSFL. Dr. Morgenstern went further in his conclusions and expressed skepticism that *“any additional analyses or studies would be sufficient to determine whether operations and activities at Rocketdyne [SSFL] affected, or would affect, the risk of cancer in the surrounding neighborhoods.”*

Despite the consistent conclusions of the epidemiological studies of off-site effects, some community members continue to assert contrary conclusions and voice beliefs which contrast with the studies' findings. Similarly, they cite conclusions of the UCLA studies of worker health that are inconsistent with those of a more extensive Rocketdyne study, despite weakness in the UCLA studies which are identified in a review by ATSDR. The pattern is continued with regard to pathway studies, where an overly conservative UCLA study is used to support the claims of off-site health effects, despite substantial questions about the validity of the UCLA study.

The completely opposite conclusions of the UCLA researchers and the others exactly mirror the polarization within the community. Both views cannot be correct. It would be extremely beneficial to the resolution of the issues relating to purported health effects from SSFL operations, to have a public workshop where the various authors of these health studies can meet and discuss the reports and the comments and see if there is a technically sound commonality. The SSFL cleanup discussion needs to move beyond partisan advocacy into the realm of science-based decision-making.

The final recommendation of the 1999 Rocketdyne Inquiry [DTSC, 1999] was:

*“Consider the employment of a mediation/arbitration consultant to develop a common plan and understanding between the Rocketdyne Advisory Panel community members, and appropriate government agencies.”*

There has been no improvement in the past 15 years and the lack of common understanding continues to this day.

This paper was reviewed and approved by members of the Santa Susana Field Laboratory Community Advisory Group.

## Introduction

For over twenty years, some residents living in the vicinity of the Santa Susana Field Laboratory (SSFL) and their elected representatives have voiced concerns regarding the possibility that nuclear and rocket testing operations have increased the incidence of cancer and other illnesses in their neighborhoods. Concerns for the health and well being of former SSFL workers have also been expressed. To date, these concerns have resulted in at least eleven epidemiological cancer studies of workers and off-site residents. Additionally, two studies, called "pathway studies" have been made to evaluate the possibility that neighboring communities may have been exposed to harmful materials emanating from SSFL operations. This paper discusses these studies by taking the authors' information directly from their papers and augmenting with information from other sources. The information is divided into three sections:

1. Cancer Incidence in the Vicinity of the Santa Susana Field Laboratory,
2. Worker Health Studies, and
3. Pathway Studies.

References and links to the full papers are provided so that the reader can get a comprehensive picture of the issues, and review the source documents, if desired.

## Discussion

### **1. Cancer Incidence in the Vicinity of the Santa Susana Field Laboratory**

In 1990 and 1992, based on actual census tract cancer data, the California Department of Health Services Cancer Registry issued reports on the incidence of cancer in five Los Angeles County census tracts and Ventura County census tracts. In the 1990 study [[CDHS, 1990](#)], it was concluded:

*"Census tract age-adjusted incidence rates were found to be significantly higher than comparable county rates in three comparisons:*

1. tract 1352, all sites, 1978 to 1982;
2. tract 1132, bladder, 1983 to 1987; and
3. tract 1352, Acute Non-Lymphocytic Leukemia. (ANLL), 1983-1987.

*Three rates were found to be significantly lower. Given the large number of comparisons made (five census tracts, two time periods, eleven sites), these findings are consistent with random variation in cancer incidence rates."*

The 1992 study [[CDHS, 1992](#)] concluded:

*"These follow-up analyses suggest that people living near the SSFL are not at increased risk for developing cancers associated with radiation exposure. The findings are consistent with earlier DHS report that indicated an increase in the incidence of bladder cancer in people living in Los Angeles County near the SSFL, although this increase appears to be restricted to men in Los Angeles County only. There was also an increased proportion of lung cancer among Ventura men. Lack of an increase in the most strongly radiosensitive cancers suggests causes other than radiation. Because lung and bladder cancers tend to be cancers that are strongly associated with other risk factors (smoking and non-radiation occupational exposures), it is important to consider these alternative explanations when initiating the DOE-sponsored worker health study among Rocketdyne employees."*

In 1997, the Tri-County Regional Cancer Registry issued a report [[Tri-Counties Regional Cancer Registry, 1997](#)] on cancer incidence in Simi Valley. This study concluded that:

*"...residents of the study area seem to have cancer incidence risk which is similar to that of the*

*other residents of the Tri-Counties Region, except for leukemia in women which is significantly lower, and cancer of the lung and bronchus which is higher."*

In 1999, disagreements between some members of the Oversight Panel (SSFL Advisory Panel co-chaired by Dan Hirsch of Committee to Bridge the Gap) and DHS staff over distribution of information, led to a request by then-Assemblywoman Sheila Kuehl for an investigation of California Department of Health Services (DHS) practices. [DTSC, 1999] Governor Davis asked Cal/EPA to head the investigation. As part of that investigation, the Hazardous Materials Laboratory (HML) of the Department of Toxic Substances Control (DTSC) identified and reviewed the reported health studies, and convened an expert panel of epidemiologists to review these earlier studies. The panel [Petreas, Myrto, 1999] concluded:

*"Whereas there were some differences in the geographic areas, time periods, case definitions and level of significance used in these three studies, the combined evidence from all three does not indicate an increased rate of cancer incidence in the regions examined. The extremely modest cancer incidence increases associated with known radiosensitive tumors could be easily explained by uncontrolled confounding or imprecision in the data. The results do not support the presence of any major environmental hazard."*

Also in 1999, in response to a petition request, the Agency for Toxic Substances and Disease Registry (ATSDR) of the U. S. Center for Disease Control (CDC) performed a comprehensive study and released its "Draft Preliminary Site Evaluation Santa Susana Field Laboratory (SSFL)." [ATSDR, 1999] During its studies ATSDR reviewed the above 1990, 1992 and 1997 cancer registry data studies conducted in response to community concerns about cancer occurrence surrounding the SSFL. Its report stated:

*"The first of the community-based epidemiological investigations evaluated cancer incidence rates in five Los Angeles County census tracts within a five-mile radius of the SSFL. Ventura County was not included in this investigation because the cancer registry had not been established at that time...The report concluded that a significant increase was observed in bladder cancer during 1983-1987 for one census tract (tract 1132). This census tract adjoins the SSFL site, however it also extends more than five miles to the east, such the individual cases may not be close to the site.*

*"This study has several limitations; most of them inherent to this type of investigation. The accuracy of the population estimates at the census tract level is not known. Although standardized rates are useful as a summary measure, the rates are affected by random variation. Because multiple comparisons were made, the probability of finding a significant association by chance is increased even if there is no association at all. No information was available on actual exposures to contaminants from the SSFL sites. A five-mile radius within the SSFL site is a weak surrogate for exposures and no information is available regarding how long the residents lived in the area. No information was available on any other risk factors. This investigation serves the purpose of generating and refining questions on cancer incidence and cannot assess the cause and effect relationship of potential SSFL exposures.*

*"The second community health study was conducted as a follow-up in response to recommendations made in the 1990 investigation described above... Comparison groups were the rest of Los Angeles County residents for Los Angeles County and the rest of Ventura County residents for Ventura County. Cancer sites were grouped based on the evidence for radiogenic causes because of radiation exposure concerns. No increase was found in the "very radiosensitive" cancer group (cancers of the thyroid and bone, and all the leukemias except for chronic lymphocytic leukemia). The bladder cancer rate was elevated among Los Angeles men living near SSFL during 1983-1988.*

*The odds of having lung cancer among all cancers diagnosed was higher among Ventura men living near SSFL compared to that among the rest of Ventura men.*

*"The study methodology is generally sound, given the limited data and lack of exposure information. Most of the limitations of the 1990 study also apply to this study and they are acknowledged appropriately. The interpretation of the findings is reasonably cautious because lung and bladder cancers are "strongly associated with other risk factors (smoking and non-radiation occupational exposures), it is important to consider alternative explanations.*

*"The third community study was a follow-up to the 1990 and 1992 studies. It involved an analysis of the newly available cancer registry data for the years 1988-1995 for the Ventura census tracts that were included in the 1992 study. This study calculated Standard Incidence Ratios (SIRs) by using the 1990 census data. The Tri-Counties region population served as a comparison group. This preliminary analysis reported a significant decrease in the leukemia incidence in women. A significant increase in lung cancer was also reported for the combined group of men and women. However, this increase was small, and lung cancer was not significantly increased in men or women separately. The report acknowledged the lack of appropriate census tract level population estimates. If estimates of the base population are too low, the population-based number of expected cancer cases is also too low, which would lead to an overestimation of SIRs."*

In September 1999 and October 2006, the Tri County Cancer Surveillance Program, responding to calls from the same Bell Canyon resident expressing concern about the possible increase in cancer cases in their specific neighborhood, conducted cancer registry studies. [Tri-Counties Regional Cancer Registry, 1999 and 2006]. The first study stated:

*"During 1988 to 1996, a total of 129 newly diagnosed invasive cancer cases of all types were observed in census tract 75.03 in Ventura County that includes your neighborhood. For this same period, a total of 124 cases were expected. The difference between 129 and 124 is not significant and reflects normal variation in the occurrence of this type of biological phenomena...Based on this analysis, I am confident to state that residents of census tract 75.03 in Ventura county that includes your neighborhood, are not at higher risk of being diagnosed with cancer when compared to the rest of the population in the Tri-counties Region."*

The second study was made after the release of studies suggesting possible increase in cancer cases due to the meltdown of the reactor at the Santa Susana Field Laboratory in the 1959 (Study Says Lab Meltdown Caused Cancer, Los Angeles Times October 6, 2006). It concluded:

*"...occurrence of newly diagnosed invasive cancers in census tract 75.03 in Ventura County that includes your neighborhood does not show any unusual pattern and has actually decreased by 7.5 percent from 1988 through 2004."*

In March 2007, Dr. Hal Morgenstern of the University of Michigan (formerly of UCLA) issued the final report [Morgenstern, H., et.al., 2007] entitled "Cancer Incidence in the Community Surrounding the Rocketdyne Facility in Southern California." After he summarizes his numerical results, he states

*"It is important to recognize that associations observed between distance from SSFL and the incidence of specific cancers are based on small numbers of cases in the region closest to SSFL. Thus, these associations are estimated imprecisely and may represent chance findings. In addition, observed associations may have been biased by certain methodologic limitations—use of distance*

*from SSFL as a crude proxy measure for environmental exposures, mobility of the residential population before and during the follow-up period, and lack of information on other cancer risk factors, such as cigarette smoking and socioeconomic status, that might distort the observed associations...Despite the methodologic limitations of this study, the findings suggest there may be elevated incidence rates of certain cancers near SSFL that have been linked in previous studies with hazardous substances used at Rocketdyne, some of which have been observed or projected to exist offsite."*

In his summary, Dr. Morgenstern states:

*"The strongest and most consistent association observed in this study was for thyroid cancer, which was associated with distance from SSFL in both follow-up periods. This finding may have public-health significance because perchlorate, a component of rocket fuel used in large quantities at SSFL, is known to disrupt thyroid function, it has been shown to induce thyroid tumors in laboratory animals, and there is evidence from two other investigations that perchlorate migrated offsite to contaminate the groundwater in areas surrounding SSFL."*

His rationale is undermined by two facts. While perchlorate is a component of solid rocket *engine* fuel, it is not a component of liquid rocket engine fuel, which was used almost exclusively at SSFL. Some perchlorate was used, but the quantities were not large. Also, the DTSC Offsite Groundwater handout dated April 9, 2014 states that perchlorate was not detected in any of 71 off-site samples near SSFL, and that evaluation of surface and groundwater pathways of perchlorate offsite does not indicate a connection between the perchlorate detected in Simi Valley and perchlorate present in the soil and groundwater at SSFL. It should also be noted that perchlorate is produced naturally and has been used as a fertilizer and in many non-SSFL applications.

Dr. Morgenstern also concludes:

*"There is no direct evidence from this investigation, however, that these observed associations reflect the effects of environmental exposures originating at SSFL. Given these provocative findings and unanswered questions, it is tempting to recommend further analyses or future studies to address the health concerns of the community. Unfortunately, it is not clear at this time whether such additional analyses or studies will be sufficient to determine whether operations and activities at Rocketdyne affected, or will affect, the risk of cancer in the surrounding neighborhoods."*

Also in 2007, in response to a request by then-Senator Kuehl, the Cancer Surveillance Section reviewed the incidence of retinoblastoma in Los Angeles and Ventura Counties, with a focus on the area around the Santa Susana Field Laboratory (SSFL). There was a community concern that the risk of retinoblastoma (RB) was increased in children as a result of potential cancer-causing contaminants in the vicinity of SSFL. Senator Kuehl asked the Cancer Surveillance Section to update a 2005 analysis conducted by the University of Southern California (USC) Cancer Surveillance Program that included cases diagnosed through 2002 and showed no excess incidence of retinoblastoma in this area. The study [CCR, 2007] concluded:

*"incidence of retinoblastoma among children under age 5 residing in the area around the SSFL between 1988 and 2005 was slightly, although not statistically significantly, higher than expected based on incidence statewide. The relatively young age of the cases, and the high proportion of cases with bilateral disease, is suggestive of a genetic origin. This analysis is consistent with the 2005 report that showed no significant increased risk of retinoblastoma between 1972 and 2002."*

On April 8, 2014, Dr. Thomas Mack, epidemiologist and Professor of Preventative Medicine and Pathology at the USC Keck School of Medicine presented the results of his recent study, entitled “Cancer Occurrence in Offsite Neighborhoods near the Santa Susana Field Laboratory.” [Mack, 2014] His presentation included the reasons for skepticism about previous cancer registry studies:

- *Ambiguous and controversial exposure estimates*
- *Absence of concrete dose-based hypotheses*
- *Alternative explanations not seriously considered*
- *Hard to explain how a sufficient dose would occur*
- *Absence of historical precedents*
- *Lack of any clear risk found by previous searches*

*“Specifically, the 1990 study suffered from: multiple comparisons, weak associations, bias from being a response to cluster report, and confounded by race and social class. The 1992 study suffered from multiple comparisons, weak associations, aggregation obfuscates location, and confounded by social class. The 1997 study suffered from multiple comparisons, weak associations, aggregation obfuscates location, low statistical power, and confounded by social class. The Morgenstern study suffered from multiple comparisons, weak associations, aggregation obfuscates location, distance is not dose, and confounding by social class.”*

Before describing his study of the cancer registry data for census tracts in the vicinity of SSFL, he presented a tutorial on the general methodology of these studies based on census tract cancer registry data.

- *The characteristics of SSRL offsite tracts are that they are not characteristic of their respective Counties in terms of income and, doubtless, education and race/ethnicity.*
- *In the selection of malignancies*
  - *Every cancer has a unique set of causes and the rate of cancer at all sites is not informative.*
- *The cancers selected for assessment included thirteen different malignancies*
  - *Four most common cancers*
  - *Cancers thought caused by chemicals/radiation*

*“Cancers Selected for Study*

<b>Neoplasm</b>	<b>Major Causes</b>	<b>Descriptive Predictors</b>
Lung	Cigarette smoking	Blue collar occupation
Bladder	Cigarettes, aniline dyes (rare)	Race
Pancreas	Cigarette smoking	None strong
Oropharynx	Tobacco, Alcohol, Virus	None strong
Leukemia	Genes, benzene, ? virus	None strong
Breast	Genes, Hormones	Higher education
Colorectal	Genes, Diet, Activity	None strong
Prostate	Genes, Diet	Race, Age, Access to screening
Thyroid	Ionizing radiation (rare)	Access to screening
Brain	Ionizing Radiation (rare)	None strong
Liver	Hepatitis B, C viruses	National origin
NHL	Immune depletion	None strong
Melanoma	Sunlight, light skin	Race, Higher education

*"The screening covered:*

- *Separate assessment by gender*
- *Three time periods:*
  - *1988-95, 1996-2003, 2004-2010*
  - *Separate denominators from 3 censuses*
- *All census tracts within 5 miles of SSFL*
  - *1988-95: 22 VEN, 16 LA census tracts*
  - *1996-2003: 29 VEN, 17 LA census tracts*
  - *2004-2010: 29 VEN, 17 LA census tracts*
- *Number of comparisons:*
  - *130 period-tracts X 24 gender-cancers= 3120 searches, which would contain up to 78 (3 per gender-cancer) "significantly" high-risk tracts by chance*

*"Screening Criteria:*

- *Significantly higher rate than County mean*
  - *Outside the 95% confidence interval ( $p < 0.05$ )*
- *At least a 50% increase in risk ( $RR > 1.5$ )*
- *Histological (Causal) homogeneity*

*"To find a result consistent with local cancer causation by disbursed carcinogen, one requires:*

- *Consistent risk over calendar time*
- *High risk for both genders in the same area*
- *Higher risk proximate to SSRL*
- *Geographic clustering of high risk areas*
- *Pattern consistent with dispersion flow*
- *We screen by a relative risk (RR) of 1.5, but if RR is below 2.0, any observed case would likely have occurred anyway*
- *No plausible alternative explanation is available*

*"Reasons for Caution in Assessing Impact*

- *3 "Significant" excesses each are expected by chance*
- *No known clear evidence of personal exposure*
- *Waterborne and airborne dispersion imprecise*
- *Dosage is unknown*
- *Exposed workers are likely to reside together*
- *Census errors: rapid local growth may distort incidence estimates*
- *Evaluation is based on residential address at diagnosis*

**“Summary of Screening Findings**

<b>Neoplasm</b>	<b>“Significant” tract-periods</b>	<b>In Both genders</b>	<b>In Adjacent tracts</b>	<b>In 2 or more periods</b>
Lung	4 (6 exp)	0	0	1
Bladder	1 (6 exp)	---	---	---
Pancreas	0 (6 exp)	---	---	---
Oropharynx	0 (6 exp)	---	---	---
Leukemia	1 (6 exp)	---	---	---
Breast	26 (3 exp)	---	8	6
Colorectal	7 (6 exp)	2	0	0
Prostate	4 (3 exp)	---	0	0
Thyroid	3 (6 exp)	0	0	0
Brain	3 (6 exp)	0	0	0
Liver	0 (6 exp)	---	---	---
NHL	2 (6 exp)	0	0	0
Melanoma	23 (6 exp)	8	17	7

*“These cancer rubrics oversimplify causal heterogeneity:*

- *Brain: many reported cases are benign, slow-growing tumors with different causes*
- *Non-Hodgkin lymphoma includes at least five different malignancies known to have different causes*
- *Leukemia also is made up of three common and several uncommon varieties*
- *In this case, each of the apparently “high-risk” tracts were no more numerous than expected by chance, and included cases of diverse, most having no known environmental causation*

*“For the excess of bladder cancer in one tract in 2004-2010*

- *Extreme finding: RR >5*
  - *Case tumors had the same common histology*
  - *Most residences scattered, but several are within one mile*
  - *The most prevalent cause of bladder cancer is smoking*
  - *Environmental causes are industrial, waterborne arsenic*
  - *Diagnoses not clustered in time*
  - *The tract is more than 5 miles to the west of SSFL*
  - *Residential community: no known exposure, specifically no high arsenic in tap water, no local industry, no increase in kidney cancer (another arsenic outcome)*
  - *66% of the cases were >75 at diagnosis, and all but one of those were over 85*
  - *Census may have undercounted seniors*

<b>Neoplasm</b>	<b>"Significant" tract-periods</b>	<b>Observed/Expected number per tract</b>	<b>Interpretation</b>	<b>Estimated number of CA tracts with that many or more cases</b>
Non-Hodgkins Lymphoma	2 (3 exp. by chance)	8/2.5 12/5.3	No clustering of high-risk tracts No evidence of proximity to SSFL Mixture of cell types, no trend	50-100
Brain	3 (3 exp. by chance)	6/0.9 8/2.3 11/3.5	No clustering of high-risk tracts No consistent proximity to SSFL Mixture of cell types, no trend	10-50
Leukemia	1 (3 exp. by chance)	7/1.3	No clustering of high risk tracts No evidence of proximity to SSFL Mixture of cell types, no trend	10
Bladder	1 (3 exp. by chance)	11/2.5	No clustering of high risk tracts No evidence of proximity to SSFL No evidence of carcinogens Preponderance of elderly cases ? Smoking, census error	1-2

Dr. Mack concluded:

- *It is not possible to completely rule out any offsite carcinogenic effects from SSFL*
- *No evidence of measureable offsite cancer causation occurring as a result of emissions from the SSFL was found.*

In summary, not one of the SSFL-focused epidemiological studies using actual Cancer Registry data concluded that there was evidence of increased cancer rates in the vicinity of SSFL caused by contamination from the site. Additionally, as stated above, Dr. Morgenstern expressed skepticism that *"any additional analyses or studies would be sufficient to determine whether operations and activities at Rocketdyne affected, or would affect, the risk of cancer in the surrounding neighborhoods."*

## 2. Worker Health Studies

In June 1997, the University of California, Los Angeles (UCLA) released the first of two worker health studies, entitled "Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/ Atomics International Workers from Exposure to Ionizing Radiation." [Morgenstern, H., et.al., 1997] The study was in response to a 1990 request by the legislature for an investigation of SSFL Rocketdyne workers to be overseen by the CDHS Occupational Health Branch. The UCLA study included 4, 607 employees who worked at Rocketdyne between 1950 and 1993. This group had been monitored for radiation exposure and was enrolled in the company's Health Physics Radiation Monitoring Program. The researchers searched death certificates to find out which Rocketdyne workers have died and the causes of death. The study investigators found that among Rocketdyne workers who were monitored for external radiation, those who received higher doses (especially more than 200 mSv) had an increased risk of dying from cancers of the blood and lymph system (such as leukemia and lymphoma), and from lung cancer. As the dose of external radiation among Rocketdyne workers increased, the investigators also found an increased risk of dying from all cancers. They also found that among Rocketdyne workers who were monitored for internal radiation, those who received a relatively higher dose (especially more than 30 mSV) had an increased risk of dying from cancers of the blood and lymph system, and upper aerodigestive tract cancers (mouth, throat, esophagus and stomach).

In January 1999, an Addendum Report entitled "Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/Atomics International Workers from Exposure to Selected Chemicals" was released by UCLA. [Morgenstern, H., et.al., 1999] This final report for the second part of the DOE-

funded occupational study focused on the chemical exposure portion, and included a cohort based on presumed exposure to hydrazine (6,107 workers with 176,886 person-years) and a cohort with presumed exposure to asbestos (4,563 workers with 118,749 person-years). Employing an internal comparison method described in the 1997 report, this study reported the observed positive association between presumptive exposures to hydrazine and the rates of dying from cancers of the lung.

Also in 1999, in response to a petition request, the Agency for Toxic Substances and Disease Registry (ATSDR) of the U. S. Center for Disease Control (CDC) performed a comprehensive study and released its "Draft Preliminary Site Evaluation Santa Susana Field Laboratory (SSFL)." [ATSDR, 1999] During its studies ATSDR reviewed the above UCLA worker health studies. The ATSDR report states:

*"ATSDR reviewed two occupational studies of SSFL workers. The first of these was a retrospective cohort study to determine whether workers at the SSFL nuclear sites experienced excessive mortality from specific cancers, total cancers, or other causes as a result of their work-related exposures to radiation. The cohort consisted of the SSFL workers enrolled in the Health Physics Radiation Monitoring Program, for external (4,563 workers) and internal (2,289 workers) radiation exposures. The internally monitored group was mostly a subset of the externally monitored group. A fairly long follow-up period is included, extending from 1950 to 1993. The study estimated radiation effects by employing internal comparisons of monitored workers according to level of cumulative radiation doses. Conditional logistic regression was used to examine the dose-response relationships by controlling for potential confounders and effect modifiers. Variables controlled for were (1) the other type of radiation exposure, (2) age at risk, (3) time since first radiation monitoring, (4) pay type, and (5) exposures to asbestos and hydrazine. External comparisons were also conducted by using two external reference populations to describe the mortality experience of the study population. The study found that mortality rates of the study cohort were lower for all causes, all cancers, and heart disease compared to the rates of the general U.S. population. Compared with NIOSH cohort members of similar pay type, the monitored workers experienced lower mortality rates for all causes and heart disease, but similar rates for total cancers. Although none of the 95% confidence intervals exclude the null value, there appear to be some excess mortality from leukemias in the monitored workers compared with either reference population. In the dose-response analyses of monitored workers, external-radiation dose was positively associated with the mortality rate for hemato-lymphopoietic cancers and for lung cancer. For dose levels greater than 200 mSv, the mortality rates for both types were particularly elevated. Increasing trends in mortality rates were found with internal-radiation dose for upper aerodigestive tract cancers and for hemato-lymphopoietic cancers."*

*"This study is well designed and the data analysis is rigorous. The major strength of the study is the ability to examine the dose-response relationships by reconstructing internal and external doses received by the individual workers in the past. The choice of the study cohort and availability of the radiation monitoring records at the SSFL benefitted the study; however, they also pose some problems because of incomplete records. In particular, for internal radiation doses, uncertainty of the estimates appears to be high. The study measured cumulative SSFL exposures, however exposures received before employment at SSFL could not be accounted for because of inconsistency in the recording practice. Although the study attempted to control for the effect of other chemical exposures (i.e., hydrazine and asbestos), misclassification of the chemical exposures is highly likely. The use of the upper aerodigestive tract cancers group is somewhat unusual, although it is meant to take consideration the properties of internally deposited radionuclides. Another problem of the study is the small number of cancer deaths, particularly in the high dose group (e.g., >200 mSv). Most of these limitations are acknowledged appropriately in the report. Given the limitations, the most*

consistent and biologically plausible finding of the study is the hemato-lymphopoietic cancers. The observed positive relationship between external radiation and lung cancer mortality has not been reported consistently in other studies of nuclear workers.

*"The second occupational study is part of the 1997 study described above. This addendum report focused on the chemical exposure portion, and included a cohort based on presumed exposure to the hydrazine (6,107 workers with 176,886 person-years) and a cohort with presumed exposure to asbestos (4,563 workers with 118,749 person-years). Employing an internal comparison method described in the 1997 report, this study reported the observed positive association between presumptive exposures to hydrazine and the rates of dying from cancers of the lung.*

*"The weakness of this study mainly stems from the unavailability of adequate information on past exposures for individual workers. Even though the study was able to identify work locations with a high probability of exposure to hydrazine and asbestos at the SSFL site, information was not sufficient to link individual workers with job locations. As a result, the exposure classification was based on job titles. In addition to the possible exposure misclassification, bias may also have been introduced by confounding. Exposure information on other risk factors, such as exposure to other chemicals (e.g., trichloroethylene and nitrosamines) or personal characteristics is not available for the study. There is also a possibility that the radiation exposures are misclassified, hindering the ability to control for confounding by radiation exposures. Despite the limitations, the observed increase in the lung cancer risk associated with presumptive hydrazine exposure is noteworthy. The direction of the bias caused by the exposure misclassification may be toward the null value, because individual subject's exposure classification did not depend on the subject's disease status. This increase is observed after taking into account the effects of other potential confounding factors on which the relevant data were available. The increase is consistent across two hydrazine compounds. Given the uncertainties, the authors' recommendation that the worker group should be followed further is reasonable since the result shows a positive association, and health effects of exposure to these chemicals in humans are not well understood.*

In 2006, the Boeing Company released the July 13, 2005 "Rocketdyne Worker Health Study, IEI Executive Summary," produced by the International Epidemiology Institute. [\[IEI, 2005\]](#) It states:

*"A retrospective cohort mortality study was conducted of 46,970 Rocketdyne workers employed for at least 6 months in either nuclear technology development or in rocket engine testing since 1948 at the Santa Susana Field Laboratory (SSFL) and at nearby facilities, including Canoga Park and De Soto Avenue in California. The Rocketdyne workers were grouped into three populations: those monitored for radiation (Radiation Cohort), those who worked at SSFL (Chemical Cohort) and those who worked at all other facilities (Comparison Cohort). The Radiation Cohort consisted of 5,801 workers monitored for radiation of whom 2,232 were also monitored for internal radionuclide uptake. The Chemical Cohort consisted of 8,372 workers at SSFL of whom 1,651 were test stand mechanics assumed to have the greatest potential for exposure to chemicals such as hydrazines and trichloroethylene (TCE). The Comparison Cohort consisted of 32,979 workers employed at the other Rocketdyne facilities. There were 182 workers who during their career at Rocketdyne had been monitored for radiation and also had worked as test stand mechanics. These workers, 30 of whom were found to have died, are included in both the Radiation and the Chemical Cohorts.*

*"Overall, the 46,970 Rocketdyne workers (including both radiation and chemical cohorts together) accrued 1.3 million person-years of observation (average 27.6 years). Vital status was determined for 99.2% of the workers: 11,118 (23.7%) had died and only 368 (0.8%) were lost to follow-up. Cause*

of death was determined for all but 280 (2.5%) of those who had died. The overall mortality experience among all Rocketdyne workers was lower than that of the general population of California, i.e., the ratio of observed to expected numbers of deaths (the Standardized Mortality Ratio, or SMR) was less than 1.0 (SMR 0.87; 95% CI 0.85-0.88). Low overall mortality was seen among radiation workers (SMR 0.79; 95% CI 0.75-0.83; n=1,468 deaths), SSFL workers (SMR 0.83; 95% CI 0.80-0.86; n=2,251 deaths) and among the other Rocketdyne workers (SMR 0.90; 95% CI 0.88-0.92; n=7,429). The observed numbers of cancer deaths also were slightly below population expectation for all workers (SMR 0.93; 95% CI 0.89-0.96; n=3,189 deaths), radiation workers (SMR 0.90; 95% CI 0.82-0.99; n=456 deaths), SSFL workers (SMR 0.89; 95% CI 0.82-0.96; n=655) and the other Rocketdyne workers (SMR 0.94; 95% CI 0.90-0.98). The ratios of observed to expected deaths (SMRs) computed using United States rates were lower than those computed using California rates, whereas county rates (combined Los Angeles and Ventura Counties) were similar to those computed using California rates. No cause of death was significantly elevated. There were no notable increases in cancer deaths over time since first hire, or by duration of employment at SSFL or at the other Rocketdyne facilities.

"Among the 5,801 radiation workers, the mean dose from external radiation was 13.6 mSv (maximum 1,000 mSv); the mean lung dose from external and internal radiation combined was 19.1 mSv (maximum 3,600 mSv). Only 69 workers had career doses from external radiation greater than 200 mSv, and only 111 workers had lung doses greater than 200 mSv when internal doses were considered. Deaths from all cancers taken together (SMR 0.90; 95% CI 0.82-0.99, n = 456), all leukemia excluding chronic lymphocytic leukemia (CLL) (SMR 1.16; 95% CI 0.69-1.84; n = 18), and lung cancer (SMR = 0.89; 95% CI 0.76-1.05; n = 151) were not significantly elevated. Internal cohort dose-response analyses revealed no significant trends over categories of increasing radiation dose for all cancers taken together, leukemia, lung cancer or any other cancer. There were no significant associations found among the 2,232 workers who were monitored for internal radionuclide intakes. For all cancers excluding leukemia, the RR at 100 mSv was estimated as 1.04 (95% CI 0.86-1.26) and for all leukemia excluding CLL it was 1.32 (95% CI 0.71-2.45).

"Overall, 1,651 test stand mechanics were identified and assumed to have the greatest potential exposure to chemicals associated with the testing of rocket engines. Compared with the general population of California, test stand mechanics had a lower risk of dying overall (SMR 0.90; 95% CI 0.82-0.98) and a similar risk of dying from cancer (SMR 1.03; 95% CI 0.88-1.20). The mortality experience of the other male hourly workers at SSFL was similar to that of the test stand mechanics for all causes (SMR 0.97; 95% CI 0.91-1.03), all cancers (SMR 0.93; 95% CI 0.82-1.06), and all specific cancers. No cancer of a priori interest among test stand mechanics was significantly increased: lung (SMR 1.07; 95% CI 0.8-1.4), esophagus (SMR 1.03; 95% CI 0.3-2.4), kidney (SMR 1.78; 95% CI 0.8-3.5), bladder (SMR 0.98; 95% CI 0.3-2.5), liver (SMR 0.97; 95% CI 0.3-2.5), and non-Hodgkin's lymphoma (SMR 0.80; 95% CI 0.3-1.9). Among the 315 male test stand mechanics with likely exposure to hydrazines, there were no significant increases for any cancer and, based on internal cohort analyses, no evidence of a dose response over years of potential exposure for all causes of death (SMR 0.89, n=101), all cancers taken together (SMR 1.09, n= 33), lung cancer mortality (SMR 1.45, n= 15), or any specific cancer. Among the 1,114 workers potentially exposed to TCE, there were no significant increases for all causes of death (SMR 0.87; 95% CI 0.78-0.96), all cancers taken together (SMR 1.00; 95% CI 0.83-1.19) or any specific cancer. Based on internal cohort analyses, there was no significant dose response over years of potential exposure to TCE for all cancers combined, lung cancer or any other cancer. Cancer of the kidney was elevated based on 7 deaths (SMR 2.22; 95% CI 0.89-4.57) and there was a suggestion of a dose response over years of potential TCE exposure, although the trend was not significant. For the three malignancies most frequently

*found to be elevated in studies of TCE exposure (i.e., cancers of the kidney and liver and non-Hodgkins lymphoma), the combined SMR based on 12 deaths was not significantly increased (SMR 1.09; 95% CI 0.56, 1.90).*

*“A questionnaire survey of 139 workers indicated that hourly workers (n=66) were significantly more likely than salaried workers (n=71) to have smoked cigarettes (61 % vs 41 %; p=0.02). The smoking prevalence of hourly workers who responded to this survey were also greater than smoking prevalence in the general population of California, and indicate the need for caution when interpreting comparisons with the general population for these subgroups because of the likely differences in tobacco use. All test stand mechanics were hourly workers. National surveys also indicate that blue collar workers smoke cigarettes to a greater extent than both white collar workers and people in the general population.*

*“The Rocketdyne workforce overall, including those monitored for radiation, those employed at SSFL and test stand mechanics potentially exposed to hydrazines or TCE, did not experience a statistically significant increased mortality for any cancer, including lung cancer, that could be linked to radiation dose, years of employment at SSFL, years of employment as a test stand mechanic, or years of potential exposure to hydrazines or TCE. No statistically significant internal cohort dose-response relationship was seen for leukemia, lymphoma, or cancers of the esophagus, liver, bladder, kidney or any other cancer over categories of radiation dose or years of potential chemical exposure. We conclude that radiation exposure has not caused a detectable increase in cancer deaths in this population and that work at the SSFL rocket engine test facility or as a test stand mechanic is not associated with a statistically significant increase in cancer mortality overall or for any specific cancer. A slight non-significant increase in leukemia (excluding CLL) was seen among radiation workers, although a similar non-significant increase in CLL (a malignancy not associated with radiation) was also observed. A slight non-significant increase in kidney cancer and a slight non-significant decrease in bladder cancer was also seen among radiation workers. Additional follow-up would be needed to clarify the inconsistent finding with regard to radiation and kidney cancer (a cancer not generally found increased in radiation exposed populations) as well as the non-significant association observed for kidney cancer and potential TCE exposure. Additional follow-up might also clarify the non-significant elevated risk of lung cancer among workers potentially exposed to hydrazines when compared with the general population. “*

In summary, the IEI study when compared with the UCLA studies, covered more workers over a longer period of time and estimated radiation doses from biokinetic models for 16 organs or tissues and combined external and internal dose measurements in their analyses of specific cancers. They also included radiation doses received before and after employment at Rocketdyne; using other databases, and to estimate radiation effects, they compared radiation-monitored workers with unmonitored workers assumed to be unexposed. While the less rigorous UCLA studies showed some possible health effects from worker chemical and radiation exposures, the IEI studies showed none, with the exceptions of cancer of the kidney (SMR 2.22) which was based on only 7 deaths. The importance of these findings is that the lack of statistically significant health effects among workers would translate to essentially no health effects among the off-site population who would have received much lower exposures, if they were exposed at all by releases from the site. This is consistent with the findings presented for the off-site cancer studies discussed in the first section, above.

### 3. Pathway Studies

In 1999, in response to a petition request, the Agency for Toxic Substances and Disease Registry (ATSDR) of the U. S. Center for Disease Control (CDC) performed a comprehensive study and released its "Draft Preliminary Site Evaluation Santa Susana Field Laboratory (SSFL)." [ATSDR, 1999] The Executive Summary states:

*"Process operations and activities at the Santa Susana site have resulted in the release of chemicals and radionuclides to the environment. The release of hazardous substances does not necessarily result in harm to humans. There must be human contact with these substances at levels of health concern before there is a potential for exposure-related health effects. Human contact of hazardous substances may occur through the air, soil, water, or food chain. ATSDR has evaluated these pathways relative to chemical and radioactive releases from the Santa Susana Field Laboratory.*

*"This is a preliminary evaluation of the potential exposure pathways and associated health studies which ATSDR has reviewed for the Santa Susana site. Based on currently available data:*

- *The preliminary results of the exposure pathway analyses for air, ground water and surface water, and soil and sediment indicate that it is unlikely that people living in communities near the site have been exposed to substances from the site at levels that would have resulted in adverse health effects.*
- *Although chemicals and radionuclides were released from the site, the likelihood of those releases resulting in human exposure is limited by a number of factors, including;*
  - 1) *the distance from the release sources to the offsite residential areas that results in rapid dispersion and degradation of oxidants and solvents in air;*
  - 2) *the predominant wind patterns that normally blow away from the nearest residential areas;*
  - 3) *other meteorological conditions at the site such as the atmospheric mixing height; and*
  - 4) *drawdowns in ground water levels that reduce the rates of contaminant migration.*

*Considering these factors, it is unlikely that residents living near the site are, or were exposed to SSFL-related chemicals and radionuclides at levels that would result in adverse human health effects. Changes in site operations, such as reduced frequency of rocket engine testing, discontinuation of trichloroethylene use, and shut down of nuclear operations make it unlikely that future exposures to the offsite community will occur.*

- *A more in-depth evaluation of exposure pathways that addresses past, current, and future exposure to chemicals and radionuclides from the SSFL should be conducted to improve the assessment of potential offsite exposures and public health implications associated with this site. Such an assessment must be facilitated through community outreach and participation and must include health education activities. We further recommend that this assessment address the following related issues:*
- *More in-depth evaluation of airborne chemical releases from SSFL operations, including air dispersion modeling of past accidents and disposal activities, and compilation and use of a consistent, site-specific meteorological data set to improve the assessment of past exposures to these substances.*
  - *Development of a regional hydrogeological flow model and additional monitoring at down-gradient springs or seeps in Simi Valley and Santa Susana Knolls to evaluate the potential for deep fracture flow and potential future exposure. Also, even though it may not be related to SSFL, additional source characterization of the perchlorate detection in Simi Valley should be conducted.*
  - *Additional radiological characterization of Area IV with more sensitive instrumentation and appropriate grid spacing to assure a lower detection limit.*

- *A re-analysis of the cancer registry data including additional years of newly available cancer data and updated demographic information should be conducted to see if the apparent increase in the incidence rates of bladder and lung cancers persist. A more in-depth evaluation of cancer data should be conducted that addresses environmental exposures from the SSFL, possible confounding exposures from other nearby contaminant release sources, and residential histories."*

In 2006, February 2, 2006 - UCLA's Center for Environmental Risk Reduction released the final report entitled, "The Potential for Offsite Exposures Associated with Santa Susana Field Laboratory, Ventura County, California." [UCLA, 2006] This report, led by Professor Yoram Cohen, was funded by ATSDR with the intent of providing more in-depth evaluations in accord with the ATSDR 1999 recommendations. The study's pathway conclusions were:

*"Migration pathways from SSFL to offsite areas include (but cannot be limited to):*

- *Surface water runoff (controlled and natural) to the north, south and east.*
- *Groundwater migration to the northeast and northwest.*
- *Air dispersion and deposition.*
- *In general, the contribution of soil to offsite exposure was found to be low compared to that of other pathways.*

*"Past community exposures of concern include (but cannot be limited to):*

- *Potential chronic exposures to TCE and hydrazine resulting from emissions associated with rocket engine testing and open-pit burning between 1953 and early 1980s. Potential residential receptor locations of inhalation exposure include West Hills, Bell Canyon, Dayton Canyon, Simi Valley, Canoga Park, Chatsworth, Woodland Hills, and Hidden Hills.*
- *Chronic exposure to TCE and associated degradation products in groundwater from 1953 to the late 1970s via use of private wells east and north of SSFL. Potential receptors include residents using private wells and residents who habitually ingested area-grown crops or livestock.*

*"There is potential for chronic exposures, in areas within ~1-2 miles of SSFL, which include, but are not limited to:*

- *TCE, vinyl chloride, and 1, 1-DCE in the northeast quadrant off site of SSFL through use of private groundwater wells or from habitual home-grown crop ingestion.*
- *Arsenic (source unknown) via habitual home-grown crop ingestion in Bell Canyon, Brandeis-Bardin, and potentially all areas north and east of SSFL, including Simi Valley, Dayton Canyon, and West Hills.*
- *Lead (source unknown) via incidental soil ingestion/inhalation or from habitual home-grown crop ingestion in Bell Canyon and potentially areas east of the facility; as well as extended use of private water wells or habitual home-grown crop ingestion.*

*"Removal of the large amount of TCE that is estimated to reside in the soil subsurface and groundwater at SSFL is beyond the capabilities of current remediation technologies. Therefore, there is potential for long-term exposure to TCE if contaminated groundwater if it comes in contact with human and ecological receptors and also due to volatilization from the soil subsurface.*

*"Areas of exposure concern (AEC) include...the upper northeast (offsite) quadrant and Bell Canyon, West Hills, and Dayton, Woolsey, Meier, Runkle, and Black Canyons."*

Late in 2006, The Boeing Company provided detailed comments to Professor Cohen on the UCLA report. [Boeing, 2006] The Boeing general comments included the following:

*"...Boeing has a number of general concerns and comments regarding the overall approach taken in preparing the report, which is set forth below. Taken as a whole, these concerns seriously question the validity of the report's conclusions..."*

*"First, Boeing has numerous concerns related to the methodology and use of data in the report. The report includes many worst-case assumptions and conservative toxicity factors, which result in overly inflated dose ratios. Multiple conservative assumptions, when compounded, result not in a worst-case scenario but one that is highly improbable, if not impossible, and which does not represent potential risk for any single individual or group of individuals. Such overly inflated dose ratios may cause the reader to incorrectly conclude that the SSFL poses an unacceptably high risk, when in reality the actual risk is much lower and in many cases may be at or near zero. Thus, the result is a study that will be prone to misinterpretation and constitute a disservice to the reader.*

*"Second, the report fails to acknowledge numerous conclusions that state and federal agencies have made concerning SSFL and the surrounding communities...The UCLA report utilized essentially the same environmental data base used by the ATSDR study, yet it reached very different conclusions without explaining the basis for such a departure.*

*"Third, the report bases its analysis on the maximum values of a small number of environmental positive detects for soil and water and ignores the totality of the environmental database that is comprised of mostly non-detects, thereby providing inaccurate and misleading portrayals of potential exposure issues. For example, Figure 4-3 of the report presents a map of morgenstern contaminants detected above health-based standards. The map shows the concentration of carbon tetrachloride at nine times the California Maximum Concentration Level. However, this representation is misleading because it fails to indicate that of the 895 offsite analyses conducted for this chemical, there were only 2 off-site detections. Identifying two detections, while failing to mention 893 non-detections, is not a fair and accurate portrayal of the groundwater data. The use of maximum detects to calculate dose ratios is a poor surrogate for estimating community exposures using the entire body of relevant data.*

*"Fourth, the report also ignores crucial facts concerning the question of past exposures. For example, the study suggests that historical exposure to TCE emissions from rocket engine testing/degreasing is a potential concern for many lifelong residents living in eleven "receptor locales." Modeling results show that TCE concentrations rapidly decline with distance from the site (to approximately 2 µg/m<sup>3</sup> at just 1 mile). Approximately 89% of TCE emissions from rocket engine testing/degreasing occurred before 1967. Before 1967, less than twenty residents resided in the census tract encompassing most of the 1-mile area surrounding SSFL. Yet, the study inexplicably lists elevated dose ratios at eleven "receptor locales," some of which are located 5 to 10 miles from SSFL. The report also incorrectly uses the large exhaust rates for large LOX-kerosene engines to estimate emissions from the much smaller hydrazine engines. This has resulted in an over-estimate of hydrazine emissions by at least 100-fold.*

*"Fifth, the report ignores the fact that background levels of some chemicals and radionuclides are found in all soils. The report fails to subtract background from off-site measurements prior to comparing to health based standards. Consequently, off-site measurements of background*

*chemicals and radionuclides are incorrectly identified as contamination from SSFL.*

*"Sixth, the report does not adequately establish exposure pathways. Transport of specific contaminants should be traced from an identified SSFL source, through an air or water transport medium to a receptor (local resident). Specific effects on the food chain, if any, should be identified. Exposure modes should be established (e.g. inhalation, ingestion, dermal contact, etc.). Temporal changes in populated areas should be assessed. Finally, the likelihood of occurrence of the postulated exposure pathways needs to be quantified. Only, then can a realistic risk assessment be performed.*

*"Seventh, the report repeatedly claims that assessing health risk impacts was not possible and beyond the scope of the study. Yet the report presents dose ratios based on overly conservative estimates of exposures, and then draws conclusions about public health significance.*

*"Extensive environmental investigations have been ongoing for many years with regulatory agency review and approval. Until this report, the data have shown that neighboring communities have not been adversely impacted by SSFL operations. We have an extensive network of groundwater wells both on and offsite and have been monitoring these wells for 20 years. Based on our testing of known domestic wells in the vicinity of SSFL, we believe offsite receptors are not being exposed to contaminants in drinking water resulting from SSFL operations. Groundwater quality monitoring data show a few sporadic detections, all of which are either below health-based primary drinking water standards, are attributed to well owner activity, are naturally occurring, or are inconclusive as to source of contaminant."*

Boeing provides over 50 pages of specific comments. One very important comment addresses the fact that the study ignored plume rise in evaluating air pathways. In Appendix I of the UCLA report, it is stated that sources modeled as point sources used the following parameters:

- "Stack Height: 0 m
- Stack Temperature: 273 K
- Stack diameter: 1 m
- Stack exit velocity: 0 m/s"

Boeing correctly states

*"The parameters used do not correctly represent the type of emissions release. Using a stack temperature of 273K (32°F) is too low. Rocket engine testing is a turbulent activity and will cause a plume of pollutants. Depending on the size of the rocket, this plume can reach several hundred feet into the air resulting in significantly more dispersion in the atmosphere than modeled in the report. The exhaust from the engine is also at a significantly higher temperature than 273K. The higher exhaust temperature will also result in more dispersion in the atmosphere."*

Boeing also notes *"Stripping towers use an aeration technique. This also results in emissions being released with some vertical velocity resulting in more dispersion in the atmosphere."*

Other documents have noted the presence of temperature inversions as a frequent weather pattern in the vicinity of SSFL. During inversions, with any SSFL airborne emissions being above the inversion, there would be no way for any contaminants to reach the valley floor and the human receptors.

There are numerous factual errors in the UCLA report, such as stating that the cobalt-60 half-life is 5.3 days rather than the correct 5.3 years. It is a long-lived radionuclide, not short-lived. The lack of rigor in

the study and the documentation is particularly troublesome because of the very alarming conclusions reached by UCLA. It should be noted that Professor Cohen never responded to the comments or corrected his document.

Also in 2006, Dr. Alan Warren, Program Director, Environmental Health Science, University of South Carolina Beaufort, was retained by The Boeing Company to comment on the above UCLA study. His comments, which are taken as direct quotations, provide a thorough and thoughtful assessment. [Warren, 2006]

*"...First, I wish to acknowledge the study's authors who expended considerable effort to conduct "A more in-depth evaluation of exposure pathways...", as recommended in ATSDR's Draft Preliminary Site Evaluation released in 1999. ATSDR's evaluation failed to identify a public health hazard to the communities surrounding SSFL and stated that exposures via all pathways (i.e., air, water and soil) were likely of insufficient magnitude to result in adverse human health effects. It further indicated future exposures of any health consequence were unlikely. The following statements were excerpted from the ATSDR evaluation:*

*"Air Pathway: Based on the distance from the onsite release sources to offsite residential areas, the predominant wind directions, the meteorological conditions at the site, and the rapid dispersion and degradation of oxidants in air, it is unlikely that offsite residents have been, or currently are being exposed to chemicals and radionuclides at concentrations that would result in adverse human health effects.*

*"Ground and Surface Water Pathway: Based on our preliminary review of the available data, there is no indication that residents living near the SSFL have been exposed, or are currently being exposed to chemicals or radionuclides in ground water or surface water at levels that would result in adverse human health effects. Based on the discontinuation of TCE use and the effectiveness of the ground water treatment system, it is unlikely that future exposure to chemicals or radionuclides will occur.*

*"Soil and Sediment Pathway: Based on our preliminary review of the available data, ATSDR has no indication that persons in the community surrounding the SSFL have been, or are currently being exposed to chemicals or radionuclides in soil or sediment from the SSFL at levels that would result in adverse human health effects.*

*"Conclusions: In this preliminary evaluation of available data and information, ATSDR has not identified an apparent public health hazard to the surrounding communities because people have not been, and are currently not being exposed to chemicals and radionuclides from the site at levels that are likely to result in adverse health effects.*

*"Changes in site operations, such as reduced frequency of rocket engine testing, discontinuation of trichloroethylene use, and shut down of nuclear operations make it unlikely that future exposures to the offsite community will occur.*

*"Because the conduct of the present study was a recommendation of ATSDR's evaluation, it is noteworthy that it leaves the reader with quite the opposite impression – that completed exposure pathways exist for numerous chemical and radiological contaminants found offsite in sufficient concentrations to pose an unacceptable health risk. Regardless of the study's intent, this is the message it conveys. Unfortunately, no effort is made in the present study to reconcile*

it with that published by ATSDR just 6 years earlier. This raises an obvious question – what data have been collected or modeled to invalidate the above excerpted statements made by a government agency that consistently applies the precautionary principle and whose self-described mission is to “...serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances”? In this regard, it is noteworthy that the overwhelming majority of monitoring data compiled and evaluated in the present study was collected prior to 1999 and was thus available to ATSDR when formulating its conclusions. Seemingly, the authors of the present study would be obliged to discuss their study in the context of that of ATSDR, especially considering that it was conducted in response to recommendations made in ATSDR’s preliminary evaluation and is an ATSDR-funded initiative.

“Due to insufficient data, neither ATSDR’s evaluation nor the present study conducted quantitative, site-specific exposure and risk assessments for offsite receptors. In the case of the present study, however, the absence of data does not justify giving credence to an array of potential exposure scenarios regardless of their probability of occurrence, or in the event they did occur, how insignificant the added health risks might be. In fact, the study does so despite what amounts to a lack of empirical evidence for any fully completed exposure pathway for any of the numerous “chemicals of concern.” Nonetheless, dose ratios (DRs) were calculated in what can only be described as a screening-level risk assessment apt to mislead those not technically astute enough to differentiate hypothetical from real risk or recognize the study represents the application of the precautionary principle run amuck. Indeed, much of the problem stems from the numerous worst-case assumptions freely integrated into dosage calculations that when examined relative to inherently conservative toxicity factors, result in grossly inflated DRs. Such DRs create the false impression that a particular exposure scenario may pose an unacceptably high risk, when in reality, the actual risk is much lower and in many cases at or near zero. In other words, multiple conservative assumptions, when compounded, result not in a worst-case scenario but one that is highly improbable, if not impossible, and pertains to no single individual or group of individuals. Therefore, the implementation of a worst-case strategy has resulted in a study that can be likened to “throwing stuff at a wall to see what sticks,” rather than an attempt to determine those exposure pathways that are complete and the real risk, if any, associated with them. We are thus left with a study prone to misinterpretation that will be cited in support of the argument that chemicals and/or radionuclides emanating from SSFL are a plausible explanation for every past, present and future illness and untimely death of unknown etiology.

“The present study makes no attempt to hide its extreme conservatism, though in this case admitting to the problem is not the first step in its solution. What is done is done and the best approach now is to minimize the potential for the report to misrepresent the risk posed by SSFL before its finalization. To this end, an additional section should be drafted and added to Chapter 8.0 that fully discusses the conservatism that pervades the study and the implications that compounded conservatism has on the relevance of the report for any one individual or group of individuals. The study should also consider the possibility that overly inflated DRs are an ill-conceived means of providing a relative ranking of potential doses for various receptor locations of concern. In this regard, it is important that the study acknowledge the likelihood of health effects occurring with a DR greater than one depends in large part on the margin of safety inherent in the toxicity constant used in its derivation. This necessitates that great care be taken in ranking or prioritizing based on DR comparisons since differences may stem from varying degrees of certainty with which a toxicity constant can be accurately derived rather than

*any real difference in the inherent toxicity of the chemicals being compared. This is one reason why one can not necessarily equate the extent to which a DR exceeds one with the level of risk the chemical might pose. This point is particularly relevant given that DRs were derived with an upper-bound as high as 21,000 (i.e., inhalation route for TCE in groundwater), a DR which might be alarming less one realizes the unlikelihood of the exposure scenario and the many unvalidated assumptions on which it is based. Such problems can be avoided in the future if similar studies are treated less like academic exercises and more as a means of allaying the fears of those least likely to incur unusually high risks and focusing concern on those who warrant it.*

*“With these goals in mind, the study should have attempted to characterize the full distribution of exposure levels in the population as accurately as possible, rather than defaulting to the worst case. Doing so would admittedly have been more difficult, but also more informative. For example, the study suggests that historical exposure to TCE emissions from rocket engine testing/degreasing is a potential concern for many lifelong residents living in eleven “receptor locales.” However, 89% of TCE emissions from rocket engine testing/degreasing occurred pre-1967 at a time when less than twenty residents resided in the census tract encompassing most of the 1 mile area surrounding SSFL. Given the precipitous decline in modeled TCE air concentrations with increasing distance from SSFL (concentrations were  $\sim 2 \mu\text{g}/\text{m}^3$  just 1 mile from the site), chronic exposure to TCE emissions would not theoretically result in even one excess cancer based on population estimates and California’s TCE inhalation unit risk factor of  $2\text{E-}6 (\mu\text{g}/\text{m}^3)^{-1}$ . Nonetheless, the study lists an average DR associated with TCE emissions from rocket engine testing/degreasing of 308 (range: 30 to 1942) for the eleven “receptor locales,” some of which are located 5 to 10 miles from SSFL. As such, the study is likely to be unnecessarily alarmist to residents of those “receptor locales” for which a worst-case scenario suggests elevated risks. Another example of the study’s bent to portraying exposure issues in a bad light is found in Figure 4-3, which presents a map of groundwater contaminants detected above health-based standards. The map reports that the concentration of carbon tetrachloride was nine times the California MCL, but fails to indicate that of the 895 offsite analyses conducted for the chemical, there were only 2 offsite detections (see Table 7 of ATSDR’s 1999 evaluation).*

*“In addition to the suggestion that a section devoted solely to the study’s conservatism be added, it would be helpful if the theoretical risks inferred by numerous DRs well in excess of one were discussed in a broader context using a comparative risk analysis approach whenever possible. For example, a slide was presented at a February 2006 SSFL Workgroup Meeting showing annual average SSFL emissions (1955-2000) relative to those of Los Angeles and Ventura counties in 1990-1993. The slide indicated that with the exception of hydrazine, SSFL was responsible for a miniscule fraction of the hazardous air pollutants emitted (< 5% in the case of TCE). Therefore, any association between air emissions from SSFL and disease rates would be confounded by other sources impacting the “receptor locales” surrounding the site. Such information would suggest that SSFL emissions are at best, a minimal contributor to one’s overall risk, thereby allowing the study’s results to be placed into proper perspective. This is important given the pending release of a report [Morgenstern, H., et.al., 2007] on cancer incidence surrounding SSFL. Given its worst-case approach, the present study is incapable of providing realistic exposure data to explain differences in cancer incidence rates. The absence of such data explains the epidemiological study’s reliance on residential distance from SSFL as a surrogate measure of exposure. The use of such a surrogate will result in almost certain exposure misclassification that can lead to a substantial overestimation or underestimation of the association of the exposure with the cancers under study. As such, it is alone sufficient to cast doubt upon the study as a reliable indicator as to whether SSFL has posed a cancer risk to*

nearby residents. If the February 2006 presentation on cancer incidence near SSFL is indicative of the soon-to-be-released epidemiological study, findings suggest historical exposures from SSFL have not posed a considerable cancer risk. Based on the February presentation, very few of the 36 risk ratios (RRs) graphically presented appeared significantly elevated. Furthermore, only three of the 36 reported RRs were in excess of two and all three occurred among Hispanics, very few of whom lived near SSFL when emissions were at their highest. Thus, it appears as though the results of the soon-to-be-released epidemiological study will be largely consistent with the conclusions of ATSDR's preliminary evaluation and fail to support the level of concern for past exposures conveyed by the present study."

Also in 2006, the Groundwater Advisory Panel (Panel) provided the following comments based on a preliminary review of the UCLA Pathway Report, primarily Chapter 7 entitled "TCE Contamination." [Groundwater Advisory Panel, 2006] The report describes in Section 7.2 "A Simplified Conceptual Model of TCE Distribution in SSFL Groundwater." There are both conceptual and factual errors in this section which result in erroneous inferences and conclusions.

- 1) **UCLA: "This means that the infiltrating TCE penetrated to depths below the water table and continued to sink until the resistances posed by friction against the fracture walls and buoyancy forces halted its progress".**

Panel: "Friction is force that acts only when there is motion. It affects the rate of DNAPL motion, but has no influence on when DNAPL ceases to move. Buoyancy is a driving force always acting to promote downward migration; it can never act to halt the progress of downward migration of DNAPL. Downward motion of DNAPL ceases only when all driving forces are balanced."

- 2) **UCLA: "At SSFL, where fractured flow dominates, DNAPL dissolution is expected to be slow and most of the DNAPL that reaches groundwater may still be harbored in fractures".**

Panel: "Thousands of measurements of TCE mass present in cores provide overwhelming evidence that no significant DNAPL is now present in the SSFL groundwater. The conclusions drawn from these data are supported by widely accepted calculations of the time required for DNAPL in fractures to dissolve into contiguous waters."

- 3) **UCLA: "Thus, the MW model's estimates of diffusive penetration into sandstone are much higher than would be suggested by the team's estimate of the diffusion coefficient of TCE".**

Panel: "This statement in Section 7.3.1 summarizes an inference made at several places that Boeing and its consultants have overestimated the effect of diffusive mass transfer of TCE into the sandstone matrix because sorption may be greater than used by Boeing. However, it is a well known fact that sorption, as characterized by the retardation factor, actually increases the rate of mass transfer from the fracture to the matrix, instead of decreasing it as claimed in the subject report. The reasoning and mathematical support for this fact are described in detail in Chapter 12, "Dense Chlorinated Solvents and Other DNAPLs in Groundwater, Pankow and Cherry, editors. This chapter references and summarizes several papers that are relevant to this issue. Also, it is shown in this chapter that the dependence of mass transfer from fracture to matrix upon tortuosity is not nearly as strong as implied by the authors. In fact, if one uses the values for retardation and tortuosity presented in Section 7.3.1, it is concluded that more TCE has transferred to the matrix than is calculated using typical parameters for SSFL."

### Conclusions

From the epidemiological studies of cancer incidence in the vicinity of the Santa Susana Field Laboratory (SSFL) using cancer registry data, it is clear that there is no evidence of elevated off-site cancer rates resulting from operations at SSFL. The most pessimistic results, cited by Dr. Morgenstern, are within the

range of expected statistical variation and he has acknowledged the methodological limitations of his study.

Dr. Morgenstern also led two health studies of Rocketdyne workers. The first study identified an increased risk of dying from cancers of the blood and lymph system (such as leukemia and lymphoma), lung cancer, and upper aero-digestive tract cancers (mouth, throat, esophagus and stomach). The second study reported the observed positive association between presumptive exposures to hydrazine and the rates of dying from cancers of the lung.

The Agency for Toxic Substances and Disease Registry (ATSDR) of the U. S. Center for Disease Control (CDC) reviewed the above UCLA worker health studies and concluded that the studies were well designed and the data analysis was rigorous, but that the studies had some weaknesses. These included high uncertainty in internal radiation doses, and lack of knowledge of exposures received before employment at SSFL. Although the study attempted to control for the effect of other chemical exposures (i.e., hydrazine and asbestos), misclassification of the chemical exposures is highly likely. The use of the upper aerodigestive tract cancers group is somewhat unusual, although it is meant to take consideration the properties of internally deposited radionuclides. Another problem of the study is the small number of cancer deaths, particularly in the high dose group (e.g., >200 mSv). Most of these limitations are acknowledged appropriately in the report. Given the limitations, the most consistent and biologically plausible finding of the study is the hemato-lymphopoietic cancers. The observed positive relationship between external radiation and lung cancer mortality has not been reported consistently in other studies of nuclear workers.

Boeing sponsored a worker health study conducted by the International Epidemiological Institute which, when compared with the UCLA studies, covered many more workers over a longer period of time and estimated radiation doses from biokinetic models for 16 organs or tissues and combined external and internal dose measurements in their analyses of specific cancers. They also included radiation doses received before and after employment at Rocketdyne; using other databases, and to estimate radiation effects, they compared radiation-monitored workers with unmonitored workers assumed to be unexposed. While the less rigorous UCLA studies showed some possible health effects from worker chemical and radiation exposures, the IEI studies showed none, with the exceptions of cancer of the kidney (SMR 2.22) which was based on only 7 deaths.

The 1999 ATSDR pathway study concluded that it is unlikely that people living in communities near the site have been exposed to substances from the site at levels that would have resulted in adverse health effects, and although chemicals and radionuclides were released from the site, the likelihood of those releases resulting in human exposure is limited by a number of factors, including: the distance from the release sources to the offsite residential areas that results in rapid dispersion and degradation of oxidants and solvents in air; the predominant wind patterns that normally blow away from the nearest residential areas; other meteorological conditions at the site such as the atmospheric mixing height; and drawdown in ground water levels that reduce the rates of contaminant migration. ATSDR stated that considering these factors, it is unlikely that residents living near the site are, or were exposed to SSFL-related chemicals and radionuclides at levels that would result in adverse human health effects. Changes in site operations, such as reduced frequency of rocket engine testing, discontinuation of trichloroethylene use, and shut down of nuclear operations make it unlikely that future exposures to the offsite community will occur.

Professor Yoram Cohen of UCLA led a pathway study that used essentially the same data as ATSDR, yet reached the opposite conclusion that residents in many areas adjacent to SSFL were at substantial risk

from contamination resulting from SSFL operations. Both Boeing and Dr. Alan Warren provided extensive comments to Professor Cohen, but despite the acknowledged extreme conservatism of the assumptions and analyses of his study, he failed to respond to the comments. The comments document the reasons why Professor Cohen's conclusions lack sufficient technical basis.

It is interesting to note that Dr. Morgenstern and Professor Cohen were both members of the UCLA Santa Susana Field Laboratory (SSFL) Public Health Initiative and their work was sponsored and directed by the Santa Susana Advisory Panel, led by Dan Hirsch, and publicized by the SSFL Workgroup, also led by Dan Hirsch. The publicized conclusions of the UCLA investigators seem to be at variance with those of all of the other epidemiologists and toxicologists, whether in public or private service. It is disingenuous to claim that the UCLA investigators are more credible because they were independent, while the others were not. Dan Hirsch is an avowed antinuclear activist who has litigated against Boeing, DOE, and DTSC, and is certainly not independent. The close relationship between Professor Cohen and Dan Hirsch can be seen from the following excerpt from the UCLA Newsroom [UCLA, 2008]:

*"The Rosenfield Prize recognizes innovative collaborations between faculty and regional nonprofits aimed at addressing critical issues affecting the community. This year's honorees have focused on issues involving the environment, health care, teen suicide prevention and theater. Each partnership will receive a \$25,000 award.*

*"Yoram Cohen / Committee to Bridge the Gap  
Cohen, a professor of chemical and biomolecular engineering, and the Committee to Bridge the Gap, a nuclear policy organization focused on nuclear safety, waste disposal, proliferation issues and disarmament, joined to help Simi Valley and its surrounding communities deal with environmental issues associated with the Santa Susana Field Laboratory, a site used until 1959 for the development of nuclear reactors and currently owned by Boeing. The partnership educated the public about the adverse environmental and health impacts associated with the release of chemical contaminants and radionuclides from various operations at the site and conducted a study that found that hazardous chemicals from the site had reached off-site locations. This four-year scientific and community effort contributed to the development and passage of a bill, authored by state Sen. Sheila Kuehl, to ensure the proper cleanup of the site and its designation as a state park when Boeing vacates the area."*

The completely opposite conclusions of the UCLA researchers and the others exactly mirror the polarization within the community. Both views cannot be correct. It would be extremely beneficial to the resolution of the issues relating to purported health effects from SSFL operations, to have a public workshop where the various authors of these health studies can meet and discuss the reports and the comments and see if there is a technically sound commonality. The SSFL cleanup discussion needs to move beyond partisan advocacy into the realm of science-based decision-making.

## Table of Acronyms

<u>Acronym/Abbreviation</u>	<u>Definition</u>
1,1-DCE	Dichloroethene/Dichloroethylene
AEC	Areas of exposure concern
ANLL	Acute Non-Lymphocytic Leukemia
ATSDR	Agency for Toxic Substances and Disease Registry
CalEPA/DTSC	California Environmental Protection Agency/Department of Toxic Substances
CBG	Committee to Bridge the Gap
CDC	Centers for Disease Control
CDHS	California Department of Health Services
CI	Confidence Interval
CLL	Chronic lymphocytic leukemia
DHS	Department of Health Services
DNAPL	Dense non-aqueous phase liquid
DOE	Department of Energy
DRs	Dose Ratios
DTSC	Department of Toxic Substances Control
F	Fahrenheit
HML	Hazardous Materials Laboratory; part of the DTSC
IEI	International Epidemiology Institute
K	Kelvin
LA	Los Angeles
MCL	Maximum Concentration Level
mSv	milliSievert
n	number
NIOSH	National Institute for Occupational Safety and Health
p	probability
RB	retinoblastoma
RR	Relative risk
SIR	Standard Incidence Ratio
SMR	Standard Mortality Ratio
SSFL	Santa Susana Field Laboratory
TCE	Trichloroethylene/Trichloroethene
TCSP	Tri-Counties Cancer Surveillance Program
TRCR	Tri-County Regional Cancer Registry
UCLA	University of California at Los Angeles
VEN	Ventura
$\mu\text{g}/\text{m}^3$	microgram/cubic meter

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**From:** "Alec Uzemeck" <[alecmu@aol.com](mailto:alecmu@aol.com)>  
**To:** "bonnie1 @dslextreme.com" <[bonnie1@dslextreme.com](mailto:bonnie1@dslextreme.com)>  
**Cc:** "Marcia Rubin" <[Marcia.Rubin@dtsc.ca.gov](mailto:Marcia.Rubin@dtsc.ca.gov)>, "Ronald Ziman" <[rbziman@gmail.com](mailto:rbziman@gmail.com)>, "Abe Weitzberg" <[aweitzberg@att.net](mailto:aweitzberg@att.net)>  
**Sent:** Monday, August 31, 2015 11:28:23 AM  
**Subject:** Re: Request

As I mentioned in several of our previous meetings, Abe Weitzberg communicated with the ATSDR on his own and developed their interest and commitment to do a SSFL health study, and although the CAG strongly supports Abe's independent actions, he deserves the credit for this arrangement. Under the DTSC CAG Handbook (Rules), each member may act independently but may not representing the CAG. No CAG vote was required or proposed but the CAG members loudly applaud his actions.

I mentioned Abe's actions in our meeting but it was not noted in the minutes. The CAG operates under Robert's Rules which state that meeting minutes do not have to record each and every discussion but must report on every action taken and the ATSDR was not an CAG action. I announced that DTSC would include the ATSDR in their upcoming meeting however it is Abe's initiative that brought the ARSDR to our community and to this meeting.

Elizabeth's resignation email contains her private information and if you want a copy, I suggest that you communicate with her since I will not release that email.

Alec Uzemeck  
[alecmu@aol.com](mailto:alecmu@aol.com)

On Aug 31, 2015, at 9:46 AM, bonnie1 [dslextreme.com](mailto:dslextreme.com) <[bonnie1@dslextreme.com](mailto:bonnie1@dslextreme.com)> wrote:

Alec, I am requesting a copy of the letter sent to ATSDR and their response.

A copy of the agenda and minutes where this was voted on and discussed by the CAG.

A copy of Elizabeth Harris resignation letter.

## **Parks, Linda**

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**From:** Robert Dodge <robertfdodge@gmail.com>  
**Sent:** Thursday, September 03, 2015 11:19 PM  
**To:** Parks, Linda; Wing, Damon  
**Subject:** Santa Susana Field Lab cleanup - followup

Dear Supervisor Parks and Damon, I want to thank you for taking the time out of your schedules to speak with me on the important public health cleanup threat at the Santa Susana Field Lab. This latest effort to delay and obfuscate the legally mandated cleanup to background only serves to continue the exposure risk to the surrounding community. The science is clear and the risks are clear. It is now time to move forward with the cleanup work.

The bogus "citizens petition" by a former engineering employee of the lab who has openly spoken out against the cleanup effort must be called out.

ATSDR is looking for a way to justify and make credible their latest efforts. They would love nothing more than to offer the appearances of a "partnership" with Ventura County officials. We can not allow this to happen. It would be great if you felt inclined to write a letter to ATSDR and DTSC to "stand down" and move forward with the cleanup process asap.

We have letters from the leadership of PSR-LA, PSR national, the authors of the ATSDR-funded studies, the co-chairs of the independent epidemiological panel, and community groups that will all be sending letters, plus we have had discussions with Boxer's top staff about her weighing in.

I am happy to provide any additional details or information that you might need. I would also be happy to help draft a letter for your staff if that would be useful.

Thank you again for your concern and good work.

Sincerely,

Robert Dodge, M.D.

P.S. I remind you that I will have a piece on this situation in this Sunday's Star. RD



## CORE Advocacy for Nuclear & Aerospace Workers

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The U.S. Department of Health and Human Services  
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Washington, D.C. 20201

Tom Frieden, MD, MPH  
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Pat Breyse, PhD  
Director, National Center for Environmental Health and  
Agency for Toxic Substances and Disease Registry  
4770 Buford Hwy, NE  
Atlanta, GA 30341-3717

September 8, 2015

### **Re: Recent "Citizen's Petition" for ATSDR Review of Santa Susana Field Laboratory**

Dear Secretary Burwell and Directors Frieden and Breyse:

CORE Advocacy for Nuclear & Aerospace Workers was recently made aware that the Agency for Toxic Substances and Disease Registry (ATSDR) has approved a "Citizen's Petition" to reevaluate past epidemiological worker health studies related to toxic chemicals and radioactive substances used at Santa Susana Field Laboratory (SSFL), a former nuclear and rocket engine research facility. It should be stated that the term, "Citizen's Petition" refers to a single letter of dubious origins, drafted by a single individual. The letter is neither a 'petition' by standard definition, nor is it representative of the community at large.

As advocates for former SSFL personnel under the Energy Employee Occupational Illness Compensation Program (EEOICPA or, "the Act"), we are deeply troubled by ATSDR's decision to "critique" existing, peer-reviewed epidemiological worker-health studies previously conducted by qualified, revered, and independent researchers. ATSDR's action is an affront to hundreds-of-thousands of sick workers across the nation's nuclear complex, many of whom served the United States nuclear and space programs at SSFL.

EEOICPA is a federal allocation program enacted by Congress at approximately 300 Department of Energy (DOE) facilities nationwide. Its purpose is to compensate employees whose occupational exposures to radiation and toxic chemicals resulted in cancer and other illnesses. Based on SSFL's involvement in Cold War-era DOE projects and the known health hazards presented to workers exposed to toxic chemicals and radiation in the performance of job duties, Area IV of SSFL has been

determined a DOE facility under 42 U.S.C. § 73841(12), and included in EEOICPA. SSFL Areas I, II & III fulfill legislative criteria under the Act, and await induction to EEOICPA in accordance with documented site history.

CORE Advocacy has extensively researched SSFL site history and regularly presents to the Presidential Advisory Board on Radiation & Worker Health (ABRWH) on topics related to DOE and its predecessor agencies' operational history and proprietary interests in Areas I-IV of SSFL, and the implementation of EEOICPA for SSFL personnel. Our research relies upon thorough review of worker records and historical facility documents authored by DOE and its predecessor agencies; the National Aeronautics and Space Administration (NASA); the Department of Defense (DOD); site contractors (North American Aviation's Atomics International & Rocketdyne Divisions, Rockwell International, Energy Systems Group, Energy Technology Engineering Center, and The Boeing Company); in addition to state and federal regulatory agencies such as the California Department of Toxic Substances Control (DTSC) and the Federal Environmental Protection Agency (EPA). In addition, we belong to a nationwide network of nuclear worker advocates, the Alliance of Nuclear Worker Advocacy Groups (ANWAG), and are part of the Division of Energy Employee Occupational Illness Compensation Interim Advisory Board (DIAB), which reports to the President, Congress, and the media on certain issues related to EEOICPA's implementation.

It has been determined that throughout SSFL's operational history, the toxic chemicals and radioactive substances used at the site are consistent with those used at approximately 300 DOE facilities across the nuclear complex, to which causal links to cancer and other illnesses have been firmly established in numerous peer-reviewed epidemiological studies. CORE Advocacy firmly opposes the allocation of federal funds to "reinterpret" reputable, established, peer-reviewed scientific studies that have not only been accepted by the global scientific community, but which have consistently identified significant health risks associated with exposure.

It has been established that regulatory standards governing the use and disposal of toxic chemicals and radioactive substances used at SSFL were relaxed; a result of the political climate of the era, SSFL's "experimental" classification, and the need for unfettered research involving radionuclides and toxic chemicals commonly used across the nuclear complex. Worker exposures have been documented; subsequent illness of employees has been acknowledged by Congress under EEOICPA; environmental damage has been determined by both state and federal regulatory agencies. In addition, while the growth of surrounding communities has effectively closed the gap between facility property lines and residential areas, state and federal regulatory agencies have further determined that contaminant migration across facility property lines has occurred as a matter of course. However, these facts provide no explanation for ATSDR's intent to "restate conclusions" of existing, peer-reviewed, epidemiological studies geared to identify risks to SSFL workers, which are consistent with documented worker exposure risks identified at nearly 300 other DOE facilities across the nation.

It is unlikely that ATSDR is prepared to conduct the degree of investigation required to provide a reliable determination of specific pathways, or to evaluate proposed remedial options. ATSDR currently lacks the capability to provide comprehensive radiological surveys and, to date, no such survey of Areas I, II or III (approximately 2,500 acres of SSFL) has been conducted despite documentation of DOE operation and proprietary interests throughout those areas. Consequently, it is unlikely that ATSDR could provide the public with comprehensive, complete, reliable or authoritative findings for the purposes described. Additionally, unless ATSDR is prepared to thoroughly investigate the full

scope of DOE operations in *all areas of the SSFL*, and to provide a radiological survey to rule out potential contamination of Areas I, II and III with radioactive constituents, it is likely that 'public friendly' information provided as a result of ATSDR's involvement would be incomplete and lead only to disinformation among the general public.

The individual requested ATSDR provide communities near SSFL with a perspective of, "the real SSFL risk," in relation to other sites around the country. It is unwise for ATSDR to accept an invitation to apply false equivalence to SSFL by comparing it to larger sites (like Hanford, or Rocky Flats) where it is assumed larger amounts of the same toxic chemicals and radioactive substances used at SSFL were similarly used and discarded. The existing, peer-reviewed, and highly revered epidemiological studies provide valuable information about the risk of exposure to the specific toxic chemicals and radioactive substances used at SSFL and across the nuclear complex. Further, exposure risks are not determined by the size of a particular facility. To the contrary, for example, an inhaled particle of plutonium poses equal risk to an exposed individual regardless of where the exposure occurred.

ATSDR's intent to restate conclusions provided in peer-reviewed epidemiological studies on SSFL workers violates ATSDR's longstanding agreement with elected officials, wherein it has been understood for 25+ years that studies involving potential health consequences resulting from federal activities at SSFL are to be performed by objective and independent researchers and scientists, to rule out conflicting interests. Additionally, ATSDR's reinterpretation of epidemiological data could compromise accessibility and implementation of existing worker legislation currently in effect at SSFL.

CORE Advocacy strongly opposes ATSDR's acceptance of a "Citizen's Petition" of rather dubious origins that invites the agency to reinterpret peer-reviewed epidemiological worker health studies; potentially weakens obligations of Responsible Parties to uphold signed agreements with state regulatory agencies; potentially lessens the accountability of polluters toward providing a thorough and responsible environmental cleanup based on full disclosure; possibly disrupts SSFL workers' access to a federal worker benefits program (EEOICPA), and potentially misleads the public by downplaying risks associated with toxic chemical and radiation exposure.

Sincerely,

D'Lanie Blaze

CORE Advocacy for Nuclear & Aerospace Workers

cc:

Senator Barbara Boxer

Senator Dianne Feinstein

Congresswoman Julia Brownley

Congressman Brad Sherman

State Senator Fran Pavley

Assemblymember Jacqui Irwin

DTSC Director, Barbara Lee

James W. Stephens, Ph.D.

Robert Knowles

September 8, 2015

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Dear Drs. Frieden and Breyse:

We are co-authors of studies, funded by ATSDR, on potential offsite health impacts from radioactive and chemical materials at the Santa Susana Field Laboratory (SSFL), near Los Angeles. We write to express concern about a decision ATSDR made based on a petition it received and urge that the decision be reconsidered.

Elected officials representing the SSFL area have long worked to avoid the potential conflicts of interest were the federal government to be involved in evaluating whether government activities at SSFL harmed public health. For that reason, for a quarter of a century, there has been an understanding that federal agencies would refrain from involvement in such SSFL studies other than to provide funding and instead they would be performed by independent entities.

California legislators established an independent SSFL Epidemiological Oversight Panel in the 1990s. The Oversight Panel selected a team from the UCLA School of Public Health to conduct a study of the site workers. The Department of Energy provided funds for but had no say in the selection of the researchers or the conduct of their work. One of us (Hal Morgenstern) was the principal investigator for that study.

The study of the nuclear workers found that being exposed to external forms of radiation at SSFL was associated with increased risk of dying from cancers of the blood and lymph system, from lung cancer, and from all cancers combined. Internal radiation exposures were linked with deaths from cancers of the blood and lymph system and the upper aerodigestive tract (oral cavity, pharynx, esophagus and stomach). For the rocket workers, significant increases in death rates from cancers of the lung, blood and lymph system, and bladder and kidney were associated with the estimated relative exposures.

After the worker study results were released, the SSFL Epidemiological Oversight Panel recommended independent follow-up studies of the nearby community. Elected officials requested federal funding for these independent studies, and after performing an initial

evaluation as to whether such studies were feasible, ATSDR contracted with the Eastern Research Group (ERG) to select research teams to carry out the work, independent of ATSDR.

ERG selected a team at the University of Michigan (led by Morgenstern, who had relocated from UCLA) to analyze cancer incidence data in the community, to see if incidence rates for cancers associated with the types of contaminants at SSFL increased with proximity to the site. ERG selected a second team, based at UCLA's Center for Environmental Risk Reduction, of which one of us (Yoram Cohen) was the principal investigator, and another of us (Adrienne Katner, now at the Louisiana State University Health Sciences Center), a co-investigator. That study examined decades of environmental monitoring data and performed air dispersion modeling and batch sorption experiments to evaluate potential migration of radioactive and toxic materials offsite and potential levels of exposure.

The studies were comprehensive, multi-year efforts. Under the terms of our contracts, although funded by ATSDR, our work was to be independent of it. By contract, however, drafts of our reports were to be provided to ATSDR for review and comment prior to publication or dissemination.

Dr. Morgenstern's team at the University of Michigan found that the incidence rate was more than 60% greater among residents living within 2 miles of SSFL than among residents living more than 5 miles from SSFL for the following types of cancer: thyroid, upper aerodigestive tract, bladder, and blood and lymph tissue (leukemias, lymphomas, and multiple myelomas). The investigators made clear that while the increased cancer incidence the closer one lived to SSFL was suggestive of a connection and consistent with findings from the worker studies, the study was not direct evidence that environmental exposures originating at SSFL increased cancer incidence in the nearby communities. Nonetheless, findings from this epidemiologic study must be considered together with results from the UCLA environmental study (below), which documented offsite exposures concentrations that were likely to be higher within two miles of the site than further away.

Dr. Cohen's team at UCLA identified evidence of offsite contamination for an array of radioactive and chemically toxic substances from SSFL, including but not limited to cesium-137, TCE and its association degradation products, hydrazine-byproducts, perchlorate, chromium, vinyl chloride, beryllium, chloromethane, carbon tetrachloride, and PCBs. The study concluded that there was a potential for chronic public exposures through air inhalation, well water and crop ingestion. Estimates of doses based on default occupational and residential exposure assumptions, and maximum offsite contaminant concentrations, exceeded acceptable lifetime daily doses (ALADDs) by substantial margins.

The reports, pursuant to our contract, were provided to ATSDR in draft for review and comment. The study findings were presented in public meetings. The reports were released in final form in 2006 and 2007.

#### The Current Petition to ATSDR

In June of last year, ATSDR received a letter from an individual, which questioned results of past studies, including ours, and criticized the cleanup agreements entered into by DOE, NASA,

and DTSC in 2010 as supposedly requiring too much protection of public health. Representations made in the petition about our research and positions were misleading and disingenuous.

The June letter asked ATSDR to attend a panel discussion with two of us (which we had not agreed to attend) that the writer wished to convene to discuss the various health studies. In addition, the petitioner specifically requested that the proposed “public meeting” be structured so as not to receive public input.

In November, the request was “refined” with additional criticism of the legally binding cleanup agreements, asking ATSDR to urge that the cleanup agreements be set aside and lesser, alternative requirements adopted that would allow much of the site contamination to remain in place. The petition also asked ATSDR to re-review the prior studies. Additionally, it asked that ATSDR revisit its conclusion from its 1999 preliminary evaluation. (This last request is puzzling, to say the least, as the requester says he supports the conclusion, as he characterizes it, and no subsequent evidence with which he agrees is presented to challenge it.)

In March, ATSDR apparently granted the petition, without contacting us, nor, we understand, the SSFL Epidemiological Oversight Panel or any of the longstanding community groups that have been concerned about contamination at the site and worked for its full cleanup.

We have been informed that Physicians for Social Responsibility-Los Angeles (PSR-LA) requested that ATSDR provide a copy of the petition, and that ATSDR refused to reveal the identity of the requestor or make available the attachments to the petition. This is perplexing for a public agency. Nonetheless, PSR-LA has obtained elsewhere and provided to us an email from the “SSFL Community Advisory Group” (CAG) on whose behalf the individual said he was submitting the petition, which both identifies the individual and disavows the claim that he was authorized to submit it on their behalf.

ATSDR has described the request it granted as a “citizen’s petition” for a community health assessment. PSR-LA, however, says the petitioner is not a community member concerned about potential contamination risks but rather a former SSFL official and longtime DOE contractor who has been working in concert with some of the Responsible Parties in efforts to have the cleanup agreements overturned and cleanup obligations markedly relaxed. His petition, which is to ask ATSDR to repudiate past studies showing potential harm and weigh in against existing cleanup agreements that require full remediation, appears questionable at best, given ATSDR’s mission.

We must also inform you that if indeed the petitioner is the individual in question, he has in the last several years harassed each of us, at times quite aggressively. ATSDR’s role should be to protect researchers who undertake work for it from such harassment, not facilitate it.

We are concerned about what seems to be a potential conflict with the agreements by which we undertook our research funded by ATSDR. As indicated above, those contracts were written expressly to guarantee our independence. This was done in order to avoid the appearance of government conflicts of interest and to win public trust. ATSDR was given the right to review and comment on our draft reports before their issuance, a period which has long since passed. Undertaking now the action requested by this individual could cast a shadow over ATSDR’s

credibility and potentially have a chilling effect on other scientists asked to perform future work funded by ATSDR.

In summary, we believe acceptance of this petition would be at odds with ATSDR's mission "to prevent exposure and adverse human health effects and diminished quality of life associated with exposures to hazardous substances from waste sites unplanned releases, and other sources of pollution present in the environment." This petitioner does not hide his true intention very well, which is to discredit past research and relax current cleanup agreements. In addition, the petitioner's conflicts of interest appear questionable. We respectfully urge ATSDR to reverse its decision.

Sincerely,

Hal Morgenstern, PhD  
University of Michigan  
halm@umich.edu

Yoram Cohen, PhD  
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Adrienne Katner, PhD  
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akatn1@lsuhsc.edu

cc: Senator Barbara Boxer  
Senator Dianne Feinstein  
Congresswoman Julia Brownley  
Congressman Brad Sherman  
State Senator Fran Pavley  
Assemblymember Jacqui Irwin  
DTSC Director Barbara Lee  
James W. Stephens, PhD, ATSDR  
Robert Knowles, ATSDR

*The physician and health advocate voice for a world free from nuclear threats  
and a safe, healthy environment for all communities.*



Physicians for Social Responsibility  
Los Angeles

September 8, 2015

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Dear Secretary Burwell and Directors Frieden and Breyse:

Physicians for Social Responsibility-Los Angeles (PSR-LA) has been involved in efforts to clean up the nuclear and chemical contamination at the Santa Susana Field Laboratory (SSFL) for over 30 years. We write today to express deep alarm over the Agency for Toxic Substances and Disease Registry's (ATSDR's) recent action to insert itself into the SSFL site in a deeply inappropriate fashion that can have negative consequences for public health, and to urge you to personally intervene to reverse the decision.

ATSDR claims to have acted in response to what it describes as a "citizen's petition," a petition that asked ATSDR to repudiate past studies paid for by ATSDR and to press for abrogating the legally binding cleanup agreements entered into by the Department of Energy (DOE), NASA, and the California Department of Toxic Substances Control (DTSC). These are illegitimate purposes for ATSDR, and the petition itself appears illegitimate. It is not from community members concerned about their health but is in fact from a former official of SSFL who has been working in close alignment with the Responsible Parties to push for them being freed of most of their cleanup obligations. It was not authorized by, as claimed in the petition and the ATSDR granting it, the group named therein. The petition mischaracterizes previous health studies, claims that SSFL poses no health risks, states that the cleanup agreements are unnecessary and should be breached, and asks ATSDR to make the same claims.

ATSDR's acceptance of such a petition would be in violation of its own regulations and mission and highly inappropriate. It would further violate a 25-year understanding with the area's elected officials that health studies of whether federal activities at SSFL harmed people must be conducted by researchers who are independent of the federal government, because of the obvious conflict of interest involved. We ask that ATSDR's decision to now insert itself in the SSFL cleanup be reconsidered.

### **SSFL Background**

SSFL is a former nuclear reactor and rocket testing facility located in the hills between the San Fernando and Simi valleys in Southern California. One of its nuclear reactors experienced a partial nuclear meltdown in 1959, and two other reactors experienced accidents with significant amounts of fuel damage as well. Over 30,000 rocket engine tests took place at SSFL, with numerous toxic spills and releases occurring over the facility's more than fifty years of operation. These activities left the site highly polluted with radioactive and chemical contaminants. Contaminants of concern include radionuclides such as cesium-137, strontium-90, and plutonium-239 and chemicals trichloroethylene, perchlorate, heavy metals, dioxins, PCBs, and more. Contamination migrates from the site and has been found in numerous offsite locations. The parties responsible for cleaning up SSFL are DOE, NASA, and the Boeing Company.

Given concerns about conflict of interest were the federal government involved in assessing whether or not its own environmental misdeeds caused harm, community members and their elected officials long insisted that health studies be conducted by researchers independent of the federal government. In the early 1990s, the SSFL Epidemiological Oversight Panel was established by legislators to oversee independent studies of the workers. One of the two original co-chairs of the Panel was Dr. David Michaels, then of CUNY, now Director of OSHA; he co-authored, PSR's study of the conflict-of-interest problems with federal studies of DOE nuclear sites, *Dead Reckoning*. Dr. Michaels was followed as co-chair by Dr. H. Jack Geiger, a founder and past President of PSR, a member of the Institute of Medicine and the National Academy of Sciences, and also a *Dead Reckoning* co-author.

The Epidemiological Oversight Panel chose a team from the UCLA School of Public Health to perform the SSFL worker studies (Drs. Morgenstern, Ritz, and Froines). The study was funded by DOE, but DOE had no say in the selection of the researchers or the content of their research. These studies showed significantly increases in death rates from key cancers were associated with the workers' radioactive and chemical exposures.

The Oversight Panel then formally recommended the commencement of the next phase: evaluation of the feasibility of performing community health studies. The understanding had always been to perform the worker study first, and if harm from site activities were demonstrated for them, to then attempt to study potential impacts on the offsite population, with the same insistence on independence.

The state legislators and members of the California Congressional delegation then pushed DOE to fund the Panel to commence the offsite studies. DOE declined, and so the electeds then pressed HHS to provide the funding for independent studies of potential health impacts on the nearby communities. After a meeting with staff of Senator Feinstein and then-Congressman Gallegly in August 1999, ATSDR agreed to send a team to the area to "determine if a community health study is feasible,"

according to the legislators' press release at the time.<sup>1</sup> That preliminary evaluation concluded such studies were feasible, and ATSDR subsequently agreed to fund an independent contractor, Eastern Research Group, to select and oversee independent researchers to perform the studies. This was in keeping with the longstanding agreement all such studies must be performed independently of the federal government.

Eastern Research Group selected two teams to perform two different studies. One consisted of researchers from UCLA, UC Merced, and elsewhere; the principal investigator was Professor Yoram Cohen. The second was a team from the University of Michigan led by Professor Hal Morgenstern, who had by now relocated from UCLA.

These studies, and others by the independent Epidemiological Oversight Panel, found significant evidence of potential offsite harm.

In 2010, legally binding cleanup agreements were entered into by NASA and DOE with DTSC that required all of the detectible radioactive and chemical contamination at their SSFL operations to be cleaned up (i.e., cleanup to background). The Boeing Company refused to sign the agreements. However, DTSC in 2010 declared that under its longstanding cleanup requirements for all sites in the state, cleanup is based on current zoning and County General Plan land use designations, which for SSFL would require cleanup to the most protective standards, equivalent also to a cleanup to background. Boeing and its surrogates, including the petitioner, have been aggressively pushing for the AOCs and other cleanup obligations to be breached.

### **Validity of ATSDR SSFL Petition and Violation of ATSDR Regulations**

Given our long history of efforts to secure independent health studies and to ensure that SSFL contamination is cleaned up, PSR-LA was shocked to learn a few weeks ago that ATSDR had approved, in March, a "citizen's petition" to do "new work" on SSFL, including reviewing former studies and weighing in on whether the "proposed cleanup options will protect human health." [Please see the attached letters to ATSDR and ATSDR response. They were expurgated by ATSDR.] This decision is disturbing for many reasons and violates ATSDR's regulations and mission.

#### **1. ATSDR's refusal to release the full petition or the identity of the petitioner suggests ATSDR recognizes that the petition is illegitimate.**

ATSDR regulations for the petitioned health risk assessment process (42 CFR Part 90.12), state that "any records, reports, or information obtained from any person under this section shall be available to the public" unless there are issues of trade secrets.

Yet when we asked ATSDR for a copy of the petition and ATSDR's response, we were told we would have to submit a FOIA request. When we protested, we were given a redacted copy and told that ATSDR refused to identify the identity of the petitioner or provide the attachments. This failure to be transparent created an impression that ATSDR was aware that the petition was illegitimate and was trying to hide the fact.

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<sup>1</sup> ATSDR created some considerable anger on the part of the legislators by its subsequent characterization of their request as asking ATSDR itself to perform health studies, rather than determine feasibility and then fund independent studies. In the end, ATSDR backed down and the studies were performed independently.

This was a futile attempt. Upon review, it was clear that Abe Weitzberg submitted the petition. Written in the first person, the petitioner refers to authoring a report reviewing and supposedly refuting the health studies from SSFL, a paper that was written and indeed publicized by Weitzberg. His identity as the requester has been subsequently confirmed by the DTSC-approved, Boeing-supported Community Advisory Group (CAG) on whose behalf he claimed to have submitted the petition. ATSDR's efforts to keep this secret are troubling for a public agency.

2. The petition is not, as ATSDR characterizes it, a "citizen's petition" but rather from someone with ties to the Responsible Parties.

Rather than being a community member concerned about potential health impacts from SSFL, which is what ATSDR is supposed to respond to, Weitzberg is in fact a former official of SSFL who thereafter spent many years working under contract for the Department of Energy, one of the SSFL Responsible Parties.

This is in direct contradiction of ATSDR's mission, which is supposed to be to respond to genuine community concerns that there might be a health impact that needs to be redressed, not to be a pawn of Responsible Parties and their allies who claim there is no significant health risk and want cleanup obligations eliminated.

Weitzberg's curriculum vitae (attached to his request to ATSDR but which ATSDR refused to make public even though Weitzberg has submitted it in other public proceedings) asserts he was the manager of the safety research program for SNAP reactors at SSFL (then called Atomics International), including work on the SNAP8 reactors. One of the SNAP8 reactors, the SNAP8ER, was operated unsafely for many months during this period, resulting in 80% of the fuel being damaged, one of the most serious reactor accidents at SSFL. Weitzberg has recently dedicated himself to aggressively helping Boeing push to evade cleaning up most of the contamination at SSFL, efforts that include denying SSFL health impacts and harassing authors of past SSFL studies funded by ATSDR.

3. Weitzberg and ATSDR falsely claimed the petition was submitted on behalf of the SSFL CAG, but they did not in fact authorize it.

Weitzberg asserted in his petition that he was submitting it on behalf of a group called the SSFL CAG. ATSDR, in granting the petition, asserts it was responding to a petition from the CAG that had requested ATSDR take the proposed actions. However, ATSDR, in deciding to accept the supposed CAG petition, apparently undertook no due diligence to confirm that the request was indeed on behalf of and authorized by that group. A simple check on the group's website of minutes for the periods around Weitzberg's original letter and his supplement would have shown ATSDR that Weitzberg did not in fact have the CAG's authorization to submit the petition.

Indeed, CAG member Alec Uzemeck (himself a former official of the company that ran the site) recently confirmed in writing not only that the petition was submitted by Weitzberg, but that Weitzberg was not, in fact, acting on behalf of the CAG when he sent the petition and that the CAG had not approved any such request being made to ATSDR on its behalf. (See attached email dated August 31, 2015). Weitzberg acted alone, falsely claiming to be representing a group. *ATSDR's grant of a petition it claimed was from this group is null and void, as the group in fact did not authorize it.*

(Any effort to get a *post hoc* authorization from the CAG now, half a year after ATSDR granted the petition based on a false representation, would be patently untenable. The grant of the petition was illegitimate.)

We note that even had the petition been approved and authorized by the CAG, it would still be inappropriate to ATSDR's mission. The SSFL CAG is a group that openly lobbies for the abrogation of the SSFL cleanup agreements and is widely viewed as a Boeing front group. (See <http://www.consumerwatchdog.org/resources/InsideJob.pdf>.)

Thus the petition that ATSDR received is not a true citizens' petition from community members concerned about health risks from the site, but is from a single former official of and contractor to the Responsible Parties whose stated goal is to block the required cleanup. ATSDR's (futile) attempt to protect his identity suggests the agency may be aware of this breach and the controversy it would be sure to engender. Furthermore, it now turns out that ATSDR approved a petition that it claimed came from an organization that in fact had not authorized it. No patina of legitimacy remains to ATSDR's action, and the decision should be revoked.

#### 4. The petition violates ATSDR regulations for the content of such petitions.

ATSDR's regulations (42 CFR Part 90.4) state that a petition is to include "A statement providing information that individuals have been exposed to a hazardous substance and that the probable source is a release, or sufficient information to allow the Administrator to make such a finding."

Yet Weitzberg's petition does just the opposite, alleging there have been no significant exposures or releases and providing no information to allow ATSDR to make such a finding. Instead, Weitzberg asks that ATSDR disavow past studies that showed potential harm, including two that ATSDR paid for and reviewed at the time. His petition is precisely the opposite of that required by ATSDR's regulations and its mission. Petitions are supposed to come from community members or state or local officials alleging harm from releases at the site, identifying information to support that concern, and asking ATSDR to come in to help protect the public from the contaminants. They are not supposed to come from people with ties to the Responsible Parties, alleging no risk and asking that ATSDR come in to help those parties get out of cleanup obligations.

ATSDR regulations (42 CFR Part 90.5), state that ATSDR will base its decision upon factors that include "(1) Whether individuals have been exposed to a hazardous substance, for which the probable source of such exposure is a release; (2) The location, concentration, and toxicity of the hazardous substances; (3) The potential for further human exposure; (4) The recommendations of other governmental agencies; and (5) The ATSDR resources available and other ATSDR priorities, such as its responsibilities to conduct other health assessments and health effects studies."

Yet ATSDR has already funded independent studies that confirm SSFL contamination and potential risk of exposure. Being asked to repudiate these past studies, as requested by the polluter-allied petition, is wholly inappropriate.

Additionally, ATSDR did not consult with the primary local elected officials involved in the SSFL issue prior to accepting the petition, nor with any of the longstanding community groups involved concerned about risks from the site, nor with the independent Epidemiological Oversight Panel. This blind rush to accept a petition that is the antithesis of what ATSDR is generally supposed to consider

is unseemly. And while we are not in a position to evaluate ATSDR resources, we question the wisdom of spending taxpayer money to review such an extensively studied site - especially at the request of an individual whose stated goal is to refute those studies and help the responsible parties evade cleanup.

**SSFL cleanup agreements established by other agencies are outside the limits of ATSDR expertise and jurisdiction**

At the core of Weitzberg's petition is a plea that ATSDR insert itself into and press for the abrogation of the legally binding cleanup agreements executed by DOE, NASA, and DTSC. He goes on to misrepresent the SSFL cleanup, stating that some in the community prefer risk-based and others a cleanup to background, as if there were not already in place legally binding agreements to clean up to background.

It is far outside ATSDR's purview or authority to involve itself in advocating against the existing, legally binding SSFL cleanup agreements signed by DOE, NASA and DTSC. This is not a valid petition request and decidedly not the purpose of an ATSDR health assessment.

ATSDR has neither the expertise nor regulatory authority to make an assessment of the SSFL cleanup agreements. In its response to Weitzberg's petition, ATSDR states, "Please note that ATSDR does not prioritize risk management/remediation options or review/evaluate environmental regulatory operational procedures of other organizations or agencies." Yet, astonishingly, shortly thereafter it agrees to do precisely that, agreeing to evaluate "the proposed remedial options." proposed remedial options would be protective of human health."

This statement is problematic and belies ATSDR's credibility. There are no proposed remedial "options", in the plural; there is only one, which is to clean up all the contamination that can be detected (i.e., to background) as required by legally binding cleanup agreements between DOE, NASA, and DTSC, the regulator of the cleanup. And this is not "proposed." The binding agreements were executed in 2010. Coming in now to attack other agencies' cleanup rules and agreements is far outside ATSDR's expertise and jurisdiction and deeply inappropriate.

[Community comments were overwhelmingly (98%) in support of these agreements. This is undoubtedly why Weitzberg's petition directs ATSDR "not to receive public input" at the meeting he asked the agency to participate in.]

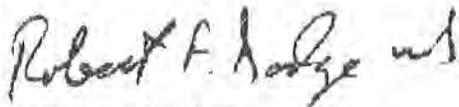
As indicated earlier, DTSC also stated in 2010 that under its longstanding requirements, based on County zoning and land use designations, Boeing would have to clean up to essentially the same standards. The Boeing Company has employed every trick in the book to try to get out of its cleanup obligations, including spreading misinformation similar to what Weitzberg's petition espouses.

What Weitzberg's petition asks for is for ATSDR to urge the breaching of these binding agreements entered into by other agencies and the requirements established by the site's regulatory bodies, and to replace them with far less protective cleanup standards that would allow the great majority of the contamination to not be cleaned up. But ATSDR is supposed to stay out of these cleanup orders and regulations that are the purview of other agencies. And most assuredly, ATSDR is not supposed to be an agent of polluters attempting to evade cleanup requirements established by their regulators.

ATSDR is supposed to “prevent harmful exposures and diseases related to toxic substances.” But, if ATSDR allows itself to become an agent of the Responsible Parties at SSFL and their surrogates in their effort to breach the cleanup obligations, it will instead increase risk to nearby communities who will continue to be exposed to SSFL contamination that is not cleaned up.

We urge you to personally act to have ATSDR reverse course. Given the concerns outlined above, we believe any resulting ASTDR study would lack credibility and could only serve to harm – not help – communities living near SSFL.

Sincerely,



Robert Dodge, MD  
Board Member, PSR-LA



Denise Duffield  
PSR-LA Associate Director and  
PSR-LA Program Director for SSFL Cleanup

cc:

Senator Barbara Boxer  
Senator Dianne Feinstein  
Congresswoman Julia Brownley  
Congressman Brad Sherman  
State Senator Fran Pavley  
Assemblymember Jacqui Irwin  
DTC Director Barbara Lee  
James W. Stephens, Ph.D.  
Robert Knowles

Attachments:

ATSDR SSFL Petition and Decision Letter  
Alec Uzemeck email re Weitzberg ATSDR petition

# Santa Susana Field Laboratory Epidemiological Oversight Panel

8 September 2015

Tom Frieden, MD, MPH  
Director, Centers for Disease Control and Prevention  
Administrator, Agency for Toxic Substances and Disease Registry  
1600 Clifton Road  
Atlanta, GA 30329-4027 USA

Pat Breyse, PhD  
Director, National Center for Environmental Health and  
Agency for Toxic Substances and Disease Registry  
4770 Buford Hwy, NE  
Atlanta, GA 30341-3717

Dear Dr. Frieden and Dr. Breyse:

We write to request your personal attention to a disturbing action by ATSDR and that you take prompt steps to reverse it.

ATSDR recently announced it had accepted what it describes as a "citizen's petition" to undertake certain activities related to the Santa Susana Field Laboratory (SSFL), a contaminated reactor and rocket testing facility in Southern California. The petition requests that ATSDR repudiate past studies that found evidence of potential health impacts from the site, including two paid for by ATSDR itself. And it asks ATSDR to recommend that the cleanup agreements entered into by the Department of Energy, NASA, and the California Department of Toxic Substances Control be breached. Those agreements require full cleanup, and the petitioner asks ATSDR's help in getting the requirements relaxed so that much of the contamination would not be required to be cleaned up at all.

You will no doubt recognize that this is quite unlike the petitioned activities ATSDR's rules contemplate, which are designed to respond to community concerns that there may be significant health risks and help reduce or eliminate them. And indeed, as others have, we understand, pointed out to you, the petitioner turns out to be not a community member concerned for his or her health but a former SSFL official who has been lobbying hard for the Responsible Parties to be relieved of most of their cleanup

obligations. This, of course, is not a legitimate basis for ATSDR action and we join others who have called for reconsideration.

The initial grant of the petition seems to have been conducted with a significant degree of ignorance of the history of health studies related to this site, which we wish to bring to your attention. Perhaps the current controversy could have been avoided had there been greater effort at researching that history before responding to the request. We are surprised, for example, that no effort was made to contact the SSFL Epidemiological Panel, or the UCLA and University of Michigan researchers who had performed the studies funded by ATSDR, or the community groups that have been involved for 25-35 years.

As you doubtless know, the history of studies conducted by the federal government of health impacts from its own activities has been a troubled one. Going back to the era of above-ground atmospheric nuclear testing, federal assertions that minimized potential health consequences have frequently been found to be of poor scientific quality. On the other hand, studies that identified risks were at times suppressed, or authors ordered not to present findings that conflicted with governmental assurances of safety. One need only think about the strontium-90 controversy during the fallout era, the Gofman/Tamplin matter at Livermore that led Congress to order the first NAS study on the Biological Effects of Ionizing Radiation, the Mancuso affair at Hanford, or the effort to suppress the Wilkinson findings about brain cancer at Rocky Flats. This history is well-known due to congressional hearings and the report of the Secretarial Panel on Energy-Related Epidemiologic Research Activities.

These problems were exacerbated by the long-secret nature of activities at the Department of Energy nuclear complex nationwide. In the late 1980s, when massive environmental problems at those facilities became public, DOE promised to reform itself. It would take itself out of the business of studying if its activities had caused harm, and it would open its facilities to outside review.

The Santa Susana Field Laboratory became an important test case of this new openness. State legislators and members of the Congressional delegation pushed very hard to assure that health studies were conducted independently of the federal government, because of the inherent conflict of interest and the troubled history summarized above. The SSFL Epidemiological Oversight Panel was established at their initiative to oversee such studies. It has included a number of distinguished epidemiologists, including the late Dr. Alice Stewart, author of the seminal Oxford Childhood Cancer Survey on in-utero radiation exposure and numerous other major advances in the field. The legislators also appointed several community representatives.

The legislators obtained from DOE approximately \$1.5 million for a worker study, to be overseen by the Panel, with DOE having no say about the choice of investigators or the content of their work. This was a remarkable new model for conducting epidemiologic studies, with the federal government funding but staying out of the research, which instead was conducted by outside researchers with strong measures to assure their independence.

Our Panel reviewed proposals and selected a team from the UCLA School of Public Health (Drs. Hal Morgenstern, Beate Ritz, and John Froines) to conduct the worker study. The commitment that had been made to the elected officials and the community was that if the worker study found evidence of health impacts, similarly independent studies would be conducted of the neighboring communities, if feasible.

The worker studies were released in two parts – in 1997, the study of the nuclear workers, and in 1999, a study of the rocket workers. Both found evidence that cancer death rates were related to workers' exposures.

After the release of the worker studies, the Panel recommended that the feasibility of community studies be examined. Members of the California Legislature and Senators Feinstein and Boxer and other members of the Congressional delegation requested that DOE free up remaining funds from the original grant to have the Panel now proceed on this second phase. DOE declined. So the legislators asked HHS to provide the Panel with the funding needed for the community part of the research. After a series of increasingly frustrated interventions by the Congressional delegation with HHS, and a meeting with their staffs, ATSDR finally agreed to send a team to the area to examine the feasibility of a community study. That preliminary feasibility evaluation concluded more comprehensive research was possible, and ATSDR eventually agreed to fund an independent contractor, who in turn would select and manage independent researchers to do that work. Teams from UCLA and the University of Michigan were selected by the contractor and over several years did research which was eventually released in 2006.

In parallel, the California legislators obtained an appropriation from the State Legislature for the Epidemiological Oversight Panel to continue its work by addressing the offsite exposure potential. The Panel contracted with a series of independent researchers who issued their reports during the same time period. The ATSDR-funded independent studies and those done for the Oversight Panel identified an array of evidence of potential offsite risks from site activities.

The point of this historical narrative is that there has been, since the early 1990s, an important principle at work regarding SSFL health studies – that they would be conducted independently of the federal government because of the troubled history of studies of DOE facilities and the inherent conflict of interest in having the federal government study whether people were hurt by its own activities.

The petition in question here would have ATSDR breach that quarter-century understanding. Furthermore, the petition quite inappropriately asks ATSDR to repudiate carefully conducted research paid for by ATSDR a decade ago and which ATSDR reviewed at the time. The request also asks ATSDR to urge the breaking of cleanup agreements entered into by other agencies and cleanup requirements issued by the site's regulator, far outside ATSDR's scope of proper involvement. And lastly, the request isn't a genuine request from community members concerned about their health, but comes from an individual associated with the Responsible Parties active in efforts to relieve them of their cleanup obligations. These simply are inappropriate roles for ATSDR.

We respectfully urge you to reverse the decision.

Sincerely,

Steve Wing, Co-Chair  
SSFL Epidemiological Oversight Panel  
and Associate Professor of  
Epidemiology  
School of Public Health  
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SSFL Epidemiological Oversight Panel  
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cc: Senator Barbara Boxer  
Senator Dianne Feinstein  
Congresswoman Julia Brownley  
Congressman Brad Sherman  
State Senator Fran Pavley  
Assemblymember Jacqui Irwin  
DTSC Director Barbara Lee  
James W. Stephens, PhD, ATSDR  
Robert Knowles, ATSDR



# ROCKETDYNE CLEANUP COALITION

Since 1989

September 8, 2015

Sylvia Mathews Burwell  
Secretary of Health and Human Services  
The U.S. Department of Health and Human Services  
200 Independence Avenue, S.W.  
Washington, D.C. 20201

Tom Frieden, MD, MPH  
Director, Centers for Disease Control and Prevention  
Administrator, Agency for Toxic Substances and Disease Registry  
1600 Clifton Road  
Atlanta, GA 30329-4027 USA

Pat Breyse, PhD  
Director, National Center for Environmental Health and  
Agency for Toxic Substances and Disease Registry  
4770 Buford Hwy, NE  
Atlanta, GA 30341-3717

Dear Secretary Burwell and Directors Frieden and Breyse:

We are writing to express our outrage over and demand the reversal of ATSDR's decision to approve a request from a former SSFL official, who has been representing himself as a regular community member, which asked ATSDR to repudiate past health studies related to the Santa Susana Field Laboratory (SSFL) and urge breach of its existing cleanup agreements. ATSDR is supposed to respond to genuine community petitions concerned about potential toxic exposures and act to assure the public is protected – not to refute previous health findings and cleanup agreements that are already in place, at the request of an ally of the polluter. We urge you to intervene immediately to prevent ATSDR from harming our community.

The Rocketdyne Cleanup Coalition (RCC) is a group of local residents that was founded in 1989 to ensure that all the SSFL contamination was cleaned up, so that our neighborhoods would be fully protected. We fought for years for independent health studies and for a full cleanup, and we will not allow our efforts to be destroyed by ATSDR, whether it is through negligence, complicity, or willful collusion with the polluters.

Knowing that neither Boeing nor the federal government could be trusted to do accurate, unbiased health studies related to SSFL, we pushed for the SSFL Epidemiological Oversight

Panel to be established in the 1990s to oversee independent studies of SSFL workers. A team from UCLA School of Public Health was selected, which found increased cancer death rates for workers associated with SSFL contaminants. We then fought, with the support of Senators Feinstein and Boxer and others, for independent offsite studies that would be funded but not performed by ATSDR or other federal agencies. A team from UCLA found that SSFL contamination had migrated offsite in levels above EPA standards and a team from the University of Michigan found increased cancer rates associated with proximity to SSFL. The studies reinforced the longstanding community concerns.

A quick review of the site's history reveals why it is capable of causing such harm. It was the site of 10 nuclear reactors, one of which had a partial meltdown and at least three others had accidents, plus a hot lab for processing irradiated fuel from across the country. Tens of thousands of rocket engine tests took place, which also polluted the soil, air, groundwater and surface water. Open-air burning of toxic materials, radioactive fires, and other sloppy handling of materials occurred at the site - *for decades*. Toxic radionuclides and chemicals have migrated offsite into nearby Sage Ranch, Runkle Canyon, Dayton Canyon, the Brandeis-Bardin property, and tributaries to the Los Angeles River, which has its headwaters at SSFL. A 2012 EPA radiological survey found over 500 hundred soil samples that were over background for dangerous radionuclides, as much as a thousand times so.

Finally, after years of stops and starts, in 2010, both NASA and DOE entered into Administrative Orders on Consent (AOCs) with the California Department of Toxic Substances Control (DTSC) to clean up their portions of the property to background levels of contamination. This meant that they would cleanup all the contamination that they could detect. These agreements had tremendous community support, with over 3,700 comments submitted in favor and only a handful opposed.

The Boeing Company refused to sign the agreements and has been instead lobbying for a very weak cleanup that would leave the great majority of the contamination on site. Its lobbying efforts include working with former employees and others allied with the Responsible Parties who have repurposed themselves as community members opposed to the cleanup. It is one of these individuals who submitted the petition to ATSDR asking it to refute previous health studies and help block the cleanup agreements. It was highly inappropriate for ATSDR to have accepted such a petition.

### **An Inaccurate, Misleading, and Inappropriate ATSDR Petition**

ATSDR states that it has received a "citizen's petition" to assess health impacts related to SSFL, yet refuses to identify the petitioner, presumably because it knows it isn't legitimate and hopes that fact can remain secret if the name remains secret. But in fact the petition is now known to be from Abe Weitzberg, a former SSFL official who subsequently long worked as a contractor for DOE, one of the main SSFL Responsible Parties. Not only did Weitzberg work at SSFL, he claims to have managed the safety research program for the SNAP reactors. One of the SNAP reactors, the SNAP 8 ER, had an accident during this period due to poor safety practices that resulted in 80% of its fuel being damaged. He has

multiple interests in denying SSFL health impacts and the need for cleanup. He has also published a paper attacking previous health studies (referred to in his petition) and has harassed the authors of previous health studies.

Weitzberg states in his June 2014 letter to ATSDR that he was submitting his request to ATSDR on behalf of the SSFL Community Advisory Group (CAG), and ATSDR in turn wrote that it was accepting the petition from the CAG. But this turns out to be false. In an August 31, 2015 email, CAG co-chair Alec Uzameck states, "Abe Weitzberg communicated with the ATSDR on his own and developed their interest and commitment to do a SSFL health study." Uzameck also states that under the CAG rules, "each member may act independently but may not representing [sic] the CAG...the ATSDR was not a CAG action." Thus Weitzberg misrepresented himself to ATSDR as he was not acting on the CAG's behalf, and ATSDR should now dismiss the petition it initially accepted on false pretenses.

Furthermore, even had the CAG authorized the petition, it is important for ATSDR to know that it is largely a creation of and dominated by people with ties to Boeing, owner of most of SSFL. Boeing had long pushed for a CAG that could serve as its community mouthpiece and replace the SSFL Work Group that had served the community for over twenty-five years. The CAG formation was opposed by hundreds of community members (see <http://www.petitions.moveon.org/sign/bring-back-the-santa>). As predicted, the CAG, which includes a number of former staff of the parties responsible for the SSFL pollution, now openly oppose the cleanup agreements that the Department of Toxic Substances Control itself signed. Boeing's role in the formation of and domination of the CAG is well documented (see <http://www.consumerwatchdog.org/resources/InsideJob.pdf>.)

Weitzberg's petition misrepresents previous health studies, highlighting a presentation made by Dr. Thomas Mack, another controversial figure. Mack, who has never done an epidemiological study of SSFL, is the industry go-to guy for denying health impacts related to toxic sites. For example, he has claimed there is only one place in the entire country where environmental pollution has been shown to cause health problems, and that a person is more likely to get cancer from a car stereo than a controversial oil drilling site, while having failed to disclose his work on behalf of one of the oil companies that had been sued over that site. Weitzberg cherry-picks quotes from other studies in order to paint a picture that SSFL has never hurt anyone.

This tactic of misrepresenting health studies is taken right out of Boeing's playbook. In 2007, University of Michigan epidemiologist Hal Morgenstern responded to Boeing's mischaracterization of his study in a letter to Senator Joe Simitian, stating:

"I would like to make it clear to your Committee that Boeing's claim made about the conclusion of our study is false. We did not conclude that there was no excess cancer in the communities surrounding SSFL. Furthermore, Boeing's quotes from our report were taken out of context, and they failed to report our specific findings that contradicted their claim.

In the main analyses of our study, we compared the incidence rate of specific cancers in adult residents living within 2 miles and 2-5 miles from SSFL with adult residents living

more than 5 miles from SSFL in both Ventura and Los Angeles Counties. For the period 1988 through 1995, we found that the incidence rate was more than 60% greater among residents living within 2 miles of SSFL than among residents living more than 5 miles from SSFL for the following types of cancer: thyroid, upper aerodigestive tract (oral and nasal cavities, pharynx, larynx, and esophagus), bladder, and blood and lymph tissue (leukemias, lymphomas, and multiple myelomas).

For the period 1996 through 2002, we found that the incidence rate of thyroid cancer was more than 60% greater among residents living within 2 miles of SSFL than for residents living more than 5 miles from SSFL. The magnitude and consistency of the thyroid finding for both periods is especially provocative because of evidence from other studies linking thyroid cancer with environmental exposures originating at SSFL and found in the surrounding communities."

Weitzberg is aware that any initiative by the CAG or responsible parties will lack credibility with the community. His petition states, "I have discussed the idea of a CAG-led peer review panel with DTSC, DOE, NASA, and Boeing. They were all supportive. In conversation with one of the prospective panel members, he suggested that the review would more acceptable to the public if it was conducted by an independent federal agency and ATSDR immediately came to mind. I have mentioned this to DOE and they would be supportive of having a review conducted by ATSDR." Weitzberg is also aware that an ATSDR review would be controversial; hence he requests that ATSDR's meeting not allow public comment.

Weitzberg's petition mischaracterizes the community as being divided between those favoring a risk-based cleanup and those favoring a cleanup to background. He neglects to inform ATSDR that NASA and DOE cleanup agreements to clean up to background are not considerations yet to be made – they are already signed and in place. He also does not reveal that in 2010, DTSC stated that Boeing would be required to cleanup to the most protective standard for which it is zoned – agricultural. Weitzberg advocates for what he calls a suburban residential standard, but fails to mention that Boeing version of "suburban residential" is in fact so weak it is hundreds or thousands of times more lax than the EPA suburban residential standard and would allow most of the contamination to never be cleaned up.

Later, in his November 2014 letter "refining" his request to ATSDR, Weitzberg complains that the AOCs prohibit leave-in-place disposal options, tipping his hand about what he and Boeing truly want. Leaving contamination on site would save Boeing a lot of money. But the community would pay with our health. This is outrageous and unacceptable and ATSDR should have no part of it.

### **ATSDR's Response to Weitzberg Petition**

ATSDR's acceptance of Weitzberg's petition is disgraceful. If his resume didn't raise concerns in the agency, his request should have. But ATSDR clearly understood what it was being asked to do, refute earlier findings by independent researchers funded by ATSDR itself. ATSDR also understands Weitzberg wants it to "suggest and discuss

cleanup alternatives for consideration that may be protective of health while minimizing negative effects of the remediation." In other words, advocate for a weaker cleanup. Finally, ATSDR says it understands that Weitzberg wants it to "provide the communities around SSFL with a perspective of the real SSFL risk in relation to other sites around the country." In other words, tell the community not to worry, SSFL isn't so bad.

After restating Weitzberg's wish list, ATSDR states that the petition has been accepted. It says that while it doesn't review remediation plans for other agencies, it will in fact "evaluate whether the proposed remedial options would be protective of human health." But there are no "proposed" remedial "options," and the cleanup agreements are not "proposed". DOE and NASA have signed agreements to cleanup to background and per longstanding DTSC policy the Boeing Company is to clean up to comparable levels.

ATSDR is supposed to act in the interest of public health, not in the interest of polluters and government agencies that are influenced by them. We know ATSDR has a troubled history with health assessments and protecting communities. A 2009 report by the Congressional Subcommittee on Investigations and Oversight entitled "The Agency for Toxic Substances and Disease Registry (ATSDR): Problems in the Past, Potential in the Future?" found that ATSDR's practice is to "deny, delay, minimize, trivialize or ignore legitimate concerns and health considerations of local communities and well respected scientists and medical professionals." (See [http://www.theinvestigativefund.org/files/managed/ATSDR Staff Report 03 10 09.pdf](http://www.theinvestigativefund.org/files/managed/ATSDR%20Staff%20Report%2003%2010%2009.pdf).)

At the March 2009 hearing, the subcommittee chairman Congressman Brad Miller, said that ATSDR had a tendency to "please industries and government agencies" and referred to ATSDR's reports as "jackleg assessments saying 'not to worry.'" We urge ATSDR to not continue this health-harming behavior by intervening in our community.

ATSDR's interference in SSFL will not help us. It will only hurt. SSFL contamination must be cleaned up so that current and future generations are protected. We have already experienced decades of denials and delays. We have health studies; we have a cleanup agreement. The petition was illegitimate and ATSDR's grant of it was illegitimate. The petition was a patent attempt by someone with ties to the Responsible Parties to help them avoid their cleanup obligations. ATSDR should reverse its decision to accept the petition, and should stay out of our community.

Sincerely,

Holly Huff  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

Marie Mason  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

Jeanne Londe  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

Dorri Raskin  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

William Preston Bowling  
Founder, Aerospace  
Contamination Museum of Education  
Involved in SSFL cleanup for 13 years

Reverend John Southwick  
Radiation Rangers  
Involved in SSFL Cleanup for 9 years

Davis Gortner  
Teens Against Toxins  
Involved in SSFL cleanup for 6 years

Isaac Levy  
Community member,  
Involved in SSFL cleanup for 2 years

CC: Senator Barbara Boxer  
Senator Dianne Feinstein  
Congresswoman Julia Brownley  
Congressman Brad Sherman  
State Senator Fran Pavley

Barbara Johnson  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

Dawn Kowalski  
Rocketdyne Cleanup Coalition  
Founding Member  
Involved in SSFL cleanup for 26 years

George and Eleanor Rembaum  
Rocketdyne Cleanup Coalition  
Founding Members  
Involved in SSFL cleanup for 26 years

Bonnie Klea  
Former SSFL worker and worker advocate  
Involved in SSFL cleanup for 20 years

Marge Brown  
Community member  
Involved in SSFL cleanup for 9 years

Cindi Gortner  
Community member  
Involved in SSFL cleanup for 6 years

De Anna Goldberg  
Community Member  
Involved in SSFL for over 5 years

RL Miller, Chair, California Democratic  
Party's environmental caucus  
Involved in SSFL cleanup for 2 years

Assemblymember Jacqui Irwin  
DTSC Director Barbara Lee  
James W. Stephens, Ph.D.  
Robert Knowles

September 11, 2015

VC Star Editor:

I am responding to the recent letter from Robert Dodge about the Santa Susana Field Laboratory (SSFL). I am the petitioner that ATSDR was trying to protect from such personal attacks. I have no connection to SSFL except for the fact that I worked there for three years, over 50 years ago. While I continue to consult part time for the Nuclear Regulatory Commission and the Department of Energy, all of my work is unrelated to SSFL.

Dr. Dodge's letter presents misinformation with the sole purpose of trying to prevent an independent look at the health risk posed by the contamination now known to exist at SSFL. He starts with the obligatory reference to the 1959 SRE accident, which is truly irrelevant to the current cleanup issue. The SRE facility was removed long ago and excavated to bedrock. EPA found very little radiological contamination and none that could be traced to the SRE accident.

He refers to the so-called "independent" SSFL Advisory panel and studies they directed. These studies included epidemiological studies of workers and a small area in the vicinity of SSFL. These studies are irrelevant to the cleanup because the operational activities at the site have ceased and the only future workers will be those doing cleanup. Additionally, Dr. Morgenstern concluded his off-site study with the words "There is no direct evidence from this investigation, however, that these observed associations reflect the effects of environmental exposures originating at SSFL." The pathway study by Yoram Cohen was acknowledged to be extremely conservative, and many questions were asked of Professor Cohen but none were answered. However, it also is irrelevant to the cleanup because the pathways from site operations no longer exist.

Dr. Dodge does not mention that all of these studies including those he cited relating to SRE were directed by Dan Hirsch, using researchers that he selected. Dan Hirsch is a well known anti-nuclear activist and anyone who has seen him in action can attest to the fact that he is neither unbiased nor independent.

In contrast, there are numerous other health studies that provide conclusions that differ from those of Drs. Morgenstern and Cohen. After studying all of the reports and seeing the differences, as can be seen in my petition, I attempted to create a panel discussion where all of the authors would come together in public and reach consensus. In discussion with Dr. Cohen, the idea of petitioning ATSDR was born. It did not arise from some collusion between me and the responsible parties.

Before you accept Dr. Dodge's view of ATSDR, I suggest you look at the 1999 ATSDR report on SSFL. It can be found at: [http://www.atsdr.cdc.gov/HAC/pha/PHA.asp?docid=78&pg=1#\\_1\\_20](http://www.atsdr.cdc.gov/HAC/pha/PHA.asp?docid=78&pg=1#_1_20). It is very detailed and concludes "In this preliminary evaluation of available data and information, *ATSDR has not identified an apparent public health hazard to the surrounding communities because people have not been, and are currently not being exposed to chemicals and radionuclides from the site at levels that are likely to result in adverse health effects.*" Additionally, DTSC has repeated many times that there is no off-site risk from SSFL.

My summary report can be found at:

[http://ssflcag.net/resources/Cancer\\_Studies/Studies%20of%20Health%20Effects%20Possibly%20Related%20to%20the%20Operation%20of%20the%20Santa%20Susana%20Field%20Laboratory%20\(SSFL\)%20V1\\_1.pdf](http://ssflcag.net/resources/Cancer_Studies/Studies%20of%20Health%20Effects%20Possibly%20Related%20to%20the%20Operation%20of%20the%20Santa%20Susana%20Field%20Laboratory%20(SSFL)%20V1_1.pdf) . It contains links to all of the previous health and pathways studies, and it is readily apparent that the only studies even suggesting the possibility of off-site health risk are those directed by Dan Hirsch. It is therefore not surprising that those who support Dan Hirsch do not want ATSDR to perform another study based on the current non-operational state with known concentrations of contaminants.

Thank you,

Abraham Weitzberg, PhD  
5711 Como Circle  
Woodland Hills, CA 91367  
phone: 818-347-5068  
email: [aweitzberg@att.net](mailto:aweitzberg@att.net)

Editor please note: Dr. Dodge's letter was 630 words and I have limited my letter to that size.

## Parks, Linda

---

**From:** Rocketdyne Cleanup Coalition <info@rocketdynecleanupcoalition.org>  
**Sent:** Sunday, September 13, 2015 8:25 PM  
**To:** Rocketdyne Cleanup Coalition  
**Subject:** SSFL Community Says NO to ATSDR  
**Attachments:** RCC letter to ATSDR 9-8-15.pdf

## Community says NO to ATSDR



Protests at DTSC and ATSDR community meeting Sept. 8. ATSDR official Libby Vianu, center foreground

The controversial federal Agency for Toxic Substances Disease Registry (ATSDR) recently announced that it had accepted a "citizen's petition" regarding the Santa Susana Field Laboratory (SSFL).

The petition, it turns out, was in fact from a former SSFL official and DOE contractor who specifically asks ATSDR to refute previous studies that found evidence of public health harm from SSFL, and to push for abrogation of the legally binding cleanup agreements.

ATSDR held a community meeting a few days ago, which was met with protests and demands that they reverse the decision.

**Attached please find a letter sent by the Rocketdyne Cleanup Coalition earlier that day asking ATSDR to reconsider. We urge you to weigh in with a similar request.**

Over the years, community members and local elected officials have worked very hard to make sure that studies about the health impacts of SSFL contamination were done independently, by qualified and highly regarded epidemiologists. We did not trust the federal government to essentially evaluate itself. The ATSDR (Agency for Toxic Substances Disease Registry) is a federal agency and so are NASA and the DOE, two of the parties responsible for contamination at SSFL.

The Agency for Toxic Substances Disease Registry (ATSDR) has a bad reputation. A 2009 report by the Congressional Subcommittee on Investigations and Oversight found that ATSDR's practice is to "deny, delay, minimize, trivialize or ignore legitimate concerns and health considerations of local communities and well respected scientists and medical professionals." This is a little like the tobacco company studying smoking and concluding it has no health risks.



Protesters at September 8 DTSC and ATSDR meeting.

The ATSDR action violates a quarter-century-long understanding with elected officials and the community that all SSFL studies would be independent of the federal government, because of the inherent conflict of interest in the feds studying whether their environmental misdeeds had harmed people.

Pursuant to this understanding, several independent studies were conducted. These studies showed evidence that radioactive and chemical contamination from SSFL had impacted health in both workers and the offsite population.

Studies from the UCLA School of Public Health showed significant increases in death rates from key cancers were associated with the workers' radioactive and chemical exposures, and that contamination had migrated from SSFL in excess of EPA levels. A study from the University of Michigan showed a 60% increase in certain cancers associated with proximity to SSFL.

ATSDR should not have accepted the petition. ATSDR is supposed to respond to genuine community petitions concerned about potential toxic exposures and act to assure the public is protected – not to refute previous health findings and cleanup agreements that are already in place, at the request of an ally of the polluter.



Protesters at September 8 DTSC and ATSDR meeting.

ATSDR does not have the expertise or authority to weigh in on cleanups. It admits that it doesn't review remediation plans for other agencies, but says it will in fact "evaluate whether the proposed remedial options would be protective of human health."

But there are no "proposed" remedial "options," and the cleanup agreements were signed six years ago. DOE and NASA have signed agreements to cleanup to background and per longstanding DTSC policy the Boeing Company is to clean up to comparable levels.

ATSDR has long been criticized for being too eager to please industry and for poorly conducted health assessments geared toward telling communities not to worry. Tuesday night, community members made their views quite clear at a public meeting with ATSDR: we don't trust you, you shouldn't have accepted this petition from a former SSFL official, and you should reverse course.

We have quality health studies from respected scientists, studies the independence of which electeds going back 25 years fought hard to assure. We have a cleanup agreement. ATSDR should reverse its decision to accept the petition from the polluters' ally and should stay out of our community. We ask your help to communicate that to ATSDR.

Sincerely,

Rocketdyne Cleanup Coalition

## Parks, Linda

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**From:**  
**Sent:** Sunday, September 13, 2015 10:13 PM  
**To:** Parks, Linda; Wing, Damon  
**Subject:** News coverage of ATSDR SSFL controversy from local resident

Hello Councilmember Parks and Mr. Wing,  
I hope you both are doing well. I'm a mother of three living close to the contaminated SSFL site. I'm writing to make sure that you have seen the news coverage which includes both TV coverage and print below. There is great community concern about a proposed ATSDR study which we local residents believe is intended to help the polluter get out of paying for a protective cleanup. It's a huge waste of taxpayers' dollars in my opinion. Also, I was very pleased with the letter from Ventura County to DTSC on the zoning issue.

All the best to you,

Below is a recent article by Dr. Robert Dodge, a link to a Channel 2 news report, and a couple of letters to the editor about the controversy surrounding the acceptance by the Agency for Toxic Substances Control (ATSDR) of a "citizen's petition" that turns out in fact to be from a former official of the Santa Susana Field Lab asking ATSDR to repudiate past health studies showing health impacts from the contaminated meltdown site and to push to have the cleanup agreements abrogated.

- *Channel 2 News Segment - Contamination Concerns*
- *Simi Acom - Feds are trying to break promise*
- *Thousand Oaks Acom - Field lab cleanup should continue*



The Santa Susana Field Lab, as seen from Sage Ranch Park.

# The shell game at Santa Susana Field Laboratory

The effects of the arms race and nuclear developments have been felt hard, including here in Ventura County. The testing of rockets such as the MX nuclear missile and an array of military and civil reactors at the Santa Susana Field Laboratory extensively contaminated the site with radioactive and chemically toxic materials, some of which have migrated off-site.

**ROBERT DODGE**

GUEST COLUMNIST

One of the uncontained reactors suffered a partial meltdown in July 1959, an event which has been estimated as releasing hundreds of times the radiation released from the 1979 nuclear meltdown at Three Mile Island.

The aftereffects of this contamination provide a potential time bomb due to the ongoing environmental exposure to radioisotopes and chemically toxic substances and the latency period from the time of exposure to the development of cancer and other health problems.

In 2010, cleanup agreements were entered into that required all of the radioactive and chemical contamination at the Santa Susana Field Laboratory (SSFL) to be cleaned

up. These commitments have been strongly and repeatedly supported by the Ventura County Board of Supervisors. Now there are efforts to break out of these obligations and leave the vast majority of the contamination not cleaned up.

The Agency for Toxic Substances and Disease Registry (ATSDR) recently announced that back in March it accepted a "citizen's petition" to conduct a review of SSFL. ATSDR, however, refuses to release the name of the petitioner, suggesting they are aware it is not a legitimate citizen's petition.

Indeed, it is now known that the supposed citizen's petition was actually submitted by a former employee and contractor of the parties responsible for the contamination at SSFL who has been working closely with them to try to reverse the cleanup requirements and let them avoid cleaning up most of their pollution.

ATSDR has a troubled history, viewed as doing quick and dirty reviews to claim that the federal government has not injured anybody by environmental pollution at its facilities. It has a major conflict of interest, as honest findings of environmental harm would open the federal government to lawsuits and expensive cleanup mandates.

Because of this, elected officials from the SSFL area long ago brokered an arrangement that health studies of SSFL would be conducted by independent scientists, with the federal government staying at arm's length. Former legislators Elton Gallegly, Cathie Wright, Sheila Kuehl and others pushed for the creation of the SSFL Epidemiological Oversight Panel, which selected a team from the UCLA School of Public Health to study the workers.

The UCLA studies found significantly increased death rates from key cancers associated with the workers' exposures, so Phase II commenced to examine the potential risks to the nearby communities. The elected officials worked to obtain funding for these independent studies, and eventually ATSDR, after performing a quick review to determine such community studies were feasible, agreed to fund an independent contractor to hire independent scientists to conduct detailed off-site studies.

The ATSDR-funded studies were conducted by an independent team from UCLA led by Professor Yoram Cohen and another by University of Michigan Professor Hal Morgenstern. These 2006 studies, and the others by the independent panel, found significant evidence of potential off-site harm, including a 60 percent greater incidence of various cancers associated with how close to SSFL one lived.

The petition to ATSDR requested that it repudiate the Morgenstern and Cohen independent studies ATSDR itself paid for a decade ago, and push for the abrogation of the legally binding cleanup agreements for the site. This is wholly inappropriate.

ATSDR is supposed to respond to genuine petitions from community members concerned about potential health risks, not from people working in alignment with the polluters trying to get out of cleaning up the great majority of the contamination. ATSDR should reverse course and go home.

Dr. Robert Dodge, a family physician in Ventura, serves on the boards of Physicians for Social Responsibility and the Nuclear Age Peace Foundation.



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## Parks, Linda

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**From:** Denise Duffield <dduffield@psr-la.org>  
**Sent:** Monday, September 14, 2015 8:40 AM  
**To:** Parks, Linda; Wing, Damon  
**Subject:** Request support re: ATSDR interference in SSFL cleanup  
**Attachments:** Researchers-PSR-LA-WorkersAdvocacy-letters to ATSDR.pdf

Dear Supervisor Parks:

Attached please find 4 letters asking that the Agency for Toxic Substances and Disease Registry (ATSDR) reconsider its decision to accept a "citizen's petition"--which turns out in fact to be from a former official of the Santa Susana Field Laboratory (SSFL)--that asked ATSDR to repudiate past studies indicating health impacts and to press for the breaching of the legally binding cleanup agreements for the site contamination. These letters are from:

- Professors Morgenstern, Cohen, and Kattner, the researchers who did the original community health studies on SSFL, which were funded by ATSDR
- the SSFL Epidemiological Oversight Panel, established by state legislators to oversee the independent studies of the workers and other offsite studies
- Physicians for Social Responsibility-LA, the affiliate of the international physicians group that won the Nobel Prize for work on the nuclear threat
- CORE Advocacy for Nuclear and Aerospace Workers, which advocates for exposed workers

The community and its elected representative fought hard over 25 years for independent epidemiological studies by highly regarded research teams who would have no conflict of interest in examining the health impacts of SSFL contamination. We now have these studies, multi-year studies by teams from the UCLA School of Public Health and the University of Michigan, among others, that show significant evidence of harm for both workers and the offsite population. What we need now is for the contamination to be fully cleaned up, as promised, so communities are no longer at risk.

ATSDR has long been criticized for being friendly to industry and doing quick, poorly conducted studies designed to tell communities not to worry. The negative experiences of many communities were the subject of a scathing 2009 congressional report (see <http://www.theinvestigativefund.org/files/managed/ATSDR%20Staff%20Report%2003%2010%2009.pdf>- you need only read the introduction to see why we don't want ATSDR at SSFL.) See also the New York Times article about the troubled, conflicted nature of ATSDR and the poor quality of its work, at <http://www.nytimes.com/2009/11/30/science/earth/30agency.html>

Further, the supposed "citizen's petition" is actually from a former SSFL official and Department of Energy contractor, Abe Weitzberg, who is allied with the parties responsible for the SSFL contamination and who has written his own inaccurate, incomplete, and misleading claims denying health impacts from the site. He makes his views and wishes very clear in his petition, complaining even that the current cleanup agreement bars "on-site disposal" (not cleaning up.) Weitzberg attacks the previous independent studies funded by ATSDR that found evidence of potential exposures and harm, and asks that they be repudiated. And he asks ATSDR's help in getting the binding cleanup agreements broken and in their stead allowing most of the contamination to not be cleaned up.

The express purpose of Weitzberg's petition, which ATSDR understands, is for ATSDR to attack previous studies, deny SSFL health risks, and recommend that the cleanup agreements be broken. This would mean that local residents would continue to be exposed to SSFL contamination that migrates from the site.

For a quarter of a century, there was an understanding between the area's elected officials and the federal government that the latter would stay out of health studies whether federal activities at SSFL harmed people, because of the obvious conflict of interest, and restrict its role to funding studies that were otherwise wholly independent of federal control. The recent action by ATSDR breaks that longstanding understanding.

The community made it's outrage known at a DTSC meeting on Tuesday. At that meeting, an ATSDR representative read a statement from the new ATSDR Director director that he was now aware of the concerns and would be coming to the area to meet with local officials and stakeholders. We hope he is considering reversing this decision, and ask for your support in the matter.

All of us have waited too long for SSFL to be cleaned up. Every day that the site remains polluted is another day local communities are at risk. ATSDR should revisit its decision, and the games being played to prevent cleanup finally end.

It would be very helpful if your office would let ATSDR know that it should reverse course.

Sincerely,

Denise Duffield  
Associate Director  
Physicians for Social Responsibility-Los Angeles  
617 S. Olive Street, Suite 200  
Los Angeles, CA 90014  
213-689-9170 ext. 104  
310-339-9676 cell  
[www.psr-la.org](http://www.psr-la.org)

## **Parks, Linda**

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**From:** Vianu, Libby <Vianu.Libby@epa.gov>  
**Sent:** Friday, September 25, 2015 5:33 PM  
**To:** Parks, Linda  
**Subject:** FW: ATSDR meeting for Santa Susana Field Lab

Supervisor Linda Parks  
Phone: (805) 214-2510  
Linda.Parks@ventura.org  
625 West Hillcrest Drive  
Thousand Oaks, CA 91360

Attn: Damon Wing

I am contacting Supervisor Linda Parks on behalf of Dr. Patrick Breysse, Director of the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR has recently accepted a citizen's petition to conduct activities at the Santa Susana Field Lab Site. Dr. Breysse is planning a trip to Ventura and Los Angeles County in early October to meet with community members who are concerned about the Santa Susana Field Lab site. He would also like to meet with the County Board of Supervisors.

Please let me know if you or the Supervisor would be able to meet in Chatsworth at the DTSC office on October 8<sup>th</sup>. Dr. Breysse is also available to meet with the Supervisors and staff by teleconference at a different date.

Please contact me at your convenience to discuss.

Libby Vianu  
Regional Representative  
ATSDR Region IX  
75 Hawthorne Street  
Suite 100, HHS-100  
San Francisco, CA 94105  
Office Phone (415) 947-4319  
Cell Phone (415) 203-2238



Agency for Toxic Substances  
and Disease Registry  
Atlanta, GA 30333

September 25, 2015

Dr. Steve Wing, Co-Chair  
Santa Susana Field Laboratory Epidemiological Oversight Panel  
and Associate Professor of Epidemiology  
School of Public Health  
University of North Carolina  
Chapel Hill, NC 27599-7400

Mr. Daniel Hirsch, Co-Chair  
Santa Susana Field Laboratory Epidemiological Oversight Panel  
and Lecturer, College Ten  
University of California  
Santa Cruz, CA 95064

Dear Dr. Wing and Mr. Hirsch:

Thank you for your letter to Dr. Thomas Frieden and me regarding the Agency for Toxic Substances and Disease Registry's (ATSDR) planned activities at the Santa Susana Field Laboratory (SSFL). Dr. Frieden has asked me to respond on his behalf. As you are aware, a local resident and member of the SSFL Community Advisory Group (CAG) submitted a petition to ATSDR to evaluate the health risks associated with the SSFL site. ATSDR reviewed the petition and in response proposed the following three activities to address the concerns raised in the petition:

1. Determine whether currently there are any completed pathways of human exposure to SSFL-related contaminants and what public health concerns may be associated with those exposures.
2. Evaluate whether the proposed remedial options would be protective of human health.
3. Provide the SSFL community with public friendly information and presentations of ATSDR's findings and the strengths and weaknesses of SSFL-related epidemiological studies.

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund), Congress provided ATSDR with the authority to conduct

Page 2 – Dr. Wing and Mr. Hirsch

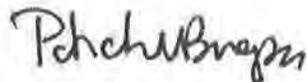
certain public health actions following a request from a community member. All requests are evaluated for their relevance to ATSDR's mission, availability of data and information for an evaluation, and whether an evaluation will provide a meaningful response to the question. ATSDR's evaluations are designed to determine whether people have been or are currently being exposed to hazardous substances (primarily chemicals) released into the environment from a hazardous waste site or facility. We then evaluate whether the exposure is harmful (or potentially harmful) and whether the exposure should be stopped or reduced. These assessments are based on the available environmental sampling data typically collected by the U.S. Environmental Protection Agency (EPA) or state and local regulatory agencies. Please note that ATSDR does not prioritize risk management/remediation options or evaluate the environmental regulatory operational procedures of other organizations or agencies.

We are concerned that there is a misunderstanding of what these proposed activities will accomplish. We believe the findings of these activities will have no implications for the proposed plan for cleaning up the SSFL site and believe the clean-up should move forward.

ATSDR has not initiated any of these proposed activities, and additional information is being gathered to ensure any action will be appropriate and effective. ATSDR will finalize and implement action plans after it has gathered the necessary information. Accordingly, we are meeting with state and county officials, their subject matter experts, and other community stakeholders to review our plans to date and to determine whether they are in conflict with state, county, and local efforts.

If you have additional questions, you may reach out to our ATSDR Regional Representative Libby Vianu at (415) 947-4318 or via email at [LVianu@cdc.gov](mailto:LVianu@cdc.gov).

Sincerely,



Patrick N. Breysse, Ph.D., CIH  
Director, National Center for Environmental Health  
and Agency for Toxic Substances and Disease Registry  
Centers for Disease Control and Prevention

cc:

Senator Barbara Boxer  
Senator Dianne Feinstein

Congresswoman Julia Brownley  
Congressman Brad Sherman  
State Senator Fran Pavley  
Assemblymember Jacqui Irwin  
DTSC Director, Barbara Lee  
James W. Stephens, Ph.D., ATSDR  
Robert Knowles, ATSDR

## Parks, Linda

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**From:** Robert Dodge <robertfdodge@gmail.com>  
**Sent:** Monday, September 28, 2015 8:42 PM  
**To:** Parks, Linda; Bennett, Steve; jason.barnes@mail.house.gov; William.Craven@sen.ca.gov; Elizabeth.Fenton@sen.ca.gov; dusty.russell@sen.ca.gov; kyoung@bos.lacounty.gov; tlippman@bos.lacounty.gov; Levin, Robert  
**Subject:** Fwd: notes re draft to Levin  
**Attachments:** LtrToATSDR9-8-2015.pdf; ATSDR-SSFL\_ltr\_09082015.pdf; RCC letter to ATSDR 9-8-15.pdf; PSR-LA letter to ATSDR re SSFL.pdf; Alec Uzemec email re Weitzberg ATSDR petition.pdf; ATSDR SSFL Petition and Decision Letter.pdf

Hello Supervisor Parks, Supervisor Bennett, Rep. Brownley, Senator Pavely, Supervisor Kuehl, Dr Levin, I am writing to you collectively to enlist your help and support in the ongoing Santa Susana Field Lab cleanup efforts.

You know of the concern generated by the approval by the Agency for Toxic Substances and Disease Registry (ATSDR) of a petition by a former SSFL official and current Department of Energy contractor. The petition asked ATSDR to in essence repudiate past studies (previously paid for and approved by ATSDR) that showed potential health impacts from SSFL and to push for the abrogation of the SSFL cleanup agreements.

This would be contrary to a 25-year understanding between the elected officials representing the area and the federal government that the latter would stay out of health studies of whether its environmental misdeeds at SSFL had caused harm, because of the obvious conflicts of interest. ATSDR insertion of itself into that matter, and into the cleanup commitments, is thus very disturbing.

I have attached letters to ATSDR, urging them to reconsider, from Professors Morgenstern, Cohen, and Katner, who had performed the independent offsite studies that ATSDR paid for; from the SSFL Epidemiological Oversight Panel, established by local legislators to oversee independent studies; by Physicians for Social Responsibility-LA; and by the Rocketdyne Cleanup Coalition.

I understand that the ATSDR Director is coming here October 8 and 9 and will meet with elected officials and their staffs. I hope you or staff will be in that meeting and able to urge ATSDR to reconsider and not insert itself in the SSFL matter.

I am hoping you work together to arrange a joint statement from yourselves, and hopefully get other colleagues to sign on, urging ATSDR reverse course, that could be presented to ATSDR in the upcoming meeting? I am

concerned that absent that, ATSDR will meet, and walk away claiming they got no opposition, and thus legitimize them coming in and taking actions that would be detrimental to your longstanding support for the cleanup agreements.

I am happy to address any questions or concerns that you might have.

Sincerely,

Robert Dodge, M.D.

**Parks, Linda**

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**From:**  
**Sent:** Wednesday, September 30, 2015 1:50 PM  
**To:**  
**Subject:** Please push DTSC to reject the Boeing's proposed cleanup plan

I'm a mother of three who lives in your district near the contaminated Santa Susana Field Lab. I am writing to ask you to do everything you possibly can to ensure that the site is cleaned up fully. The DTSC currently is reviewing documents from Boeing that would allow them to leave almost all of the contamination on the site. Boeing says they are cleaning up to a "residential standard" but it actually is not a real residential standard since their standard does not include a backyard garden. PLEASE TELL THE DTSC TO NOT APPROVE THESE DOCUMENTS. Boeing has been devious in promoting their "residential" or "suburban" standard as safe enough to live on when it is hundreds or maybe even thousands of times less protective than a true suburban residential standard since it does not allow grow food on the soil to be eaten.

I am in in favor of the current cleanup agreements which the DTSC has with NASA and DOE. Please ask the DTSC to continue to support these outstanding and protective agreements. These agreements are known as the AOCs and took two years to write and were authored by EPA scientist and the Nobel Prize winning physicist Dr. Steven Chu who was at the time the head of the DOE.

I am further opposed to the proposed ATSDR study. Did you receive the letter from Boeing in favor of the study? I hope that just the fact that Boeing is in favor of the study speaks to the motivation behind the recent petition by a former SSFL official for this review of health studies.

Please let me know if you have any questions. The recent NBC4 investigation into the contamination at SSFL and the Boeing lobbyists employed to get out of a costly cleanup have really got the community concerned. If you haven't had a chance to see the NBC piece here it is. <http://data.nbcstations.com/national/KNBC/la-nuclear-secret/>

I appreciate your time on this matter. Have a great day.



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## Parks, Linda

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**From:** Wing, Damon  
**Sent:** Friday, October 02, 2015 12:32 PM  
**To:** Parks, Linda  
**Subject:** FW: questions on Santa Susana review

----- Forwarded Message -----

**Subject:** RE: questions on Santa Susana review

**Date:** Fri, 25 Sep 2015 03:58:44 +0000

**From:** Burden, Bernadette (CDC/OD/OADC) <[btb8@cdc.gov](mailto:btb8@cdc.gov)>

**To:** Suzanne Yohannan <[suzanne.yohannan@iwpnews.com](mailto:suzanne.yohannan@iwpnews.com)>

HI Suzanne,

I tried a separate email earlier but continued to get bounce backs. So I decided to piggy back onto what you sent earlier in the week. Sorry for the delay.

Q1. Is it true that ATSDR is now going back and revisiting studies funded by ATSDR and DOE at Santa Susana that it previously approved, and that these are long-time studies approved several years ago?

Response: ATSDR has not agreed to and does not plan to reevaluate health studies already conducted at the Santa Susana Field Laboratory(SSFL). In response to a petition for a health assessment, ATSDR identified the following three activities to address the concerns raised in the petition:

1. Determine whether currently there are any completed pathways of human exposure to SSFL-related contaminants and what public health concerns may be associated with those exposures.
2. Evaluate whether the proposed remedial options would be protective of human health.
3. Provide the SSFL community with public friendly information and presentations of ATSDR's findings and the strengths and weaknesses of SSFL-related epidemiological studies.

In addition, We are concerned that there is a misunderstanding of what these proposed activities will accomplish. Therefore, we are providing some additional information and clarification of the proposed activities:

\* ATSDR will only be conducting an evaluation of current exposures posed to people living near the SSFL Site. ATSDR will not be evaluating the hazards posed from past exposures at the site or exposures posed to people within the site boundary. Therefore, the findings of this evaluation will have no implications for the proposed plan for cleaning up the SSFL site; this clean up should move forward. We will specifically be looking to see if there are any current exposures to contaminants that may have migrated off the site (for example, sediments in drainage areas and windblown dust). We will identify if those exposures could pose a risk to health, and if so, will identify additional steps that can be taken to protect health.

\* ATSDR will provide technical support to California Department of Toxic Substances and Control (DTSC) as they oversee the clean-up plans for the SSFL. We are aware of community concerns regarding exposures to dust that might be generated during the remediation activities. We will follow-up to see how our expertise can help ensure that human health risks are minimized during the remediation process.

\* ATSDR will not be reanalyzing the epidemiological studies conducted by the independent contractors. ATSDR has heard that members of the community were not provided with understandable, clear information about the findings of these reports. We would like to bring together the authors of the many studies who have conducted work at the SSFL to discuss their findings with the community members. ATSDR has not initiated any of these proposed activities. Additional information is being gathered to ensure any action will be appropriate and effective. ATSDR will finalize and implement action plans after it has gathered the necessary information.

Q2. Citizens groups around Santa Susana claim that the petition that ATSDR is acting on does not meet the criteria under ATSDR's regulations. Specifically, Physicians for Social Responsibility say: ATSDR's regulations (42 CFR Part 90.4) state that a petition is to include "A statement providing information that individuals have been exposed to a hazardous substance and that the probable source is a release, or sufficient information to allow the Administrator to make such a finding." But they say the petitioner's (Abe Weitzberg's) "petition does just the opposite, alleging there have been no significant exposures or releases and providing no information to allow ATSDR to make such a finding."

My question is: can you explain how the petition meets ATSDR's regulations (cited above)?

Response: All petitions received by ATSDR are evaluated for their relevance to ATSDR's mission, the availability of data and information to conduct an evaluation, and whether an evaluation will provide a meaningful response to the question. We decided to accept the petition for the SSFL site since these criteria were met.

Q3. Citizens groups also say that by granting the petition and revisiting past studies, ATSDR is violating a long-time understanding with elected officials and the community that all Santa Susana studies would be independent of federal agency interference. Can you respond?

Response: As mentioned in the response to question one, ATSDR has not agreed to and does not plan to reevaluate health studies already conducted at the SSFL. We are concerned that there is a misunderstanding of what these proposed activities will accomplish and we will be reaching out to talk more about our planned work at SSFL. ATSDR has a long history of evaluating public health impacts at federal facilities/sites and at many of these sites we have recommended actions to protect the health of people who live or work nearby.

Q4. In ATSDR's March 10 response to the petitioner, ATSDR says it "does not prioritize risk management/remediation options or review/evaluate environmental regulatory operational procedures of other organizations or agencies." But at the same time, it says it plans to "evaluate whether the proposed remedial options would be protective of human health." Citizen groups say ATSDR lacks the regulatory authority to assess the SSFL cleanup agreements (executed in 2010) between DOE, NASA and the state. They therefore question ATSDR's plan to evaluate remedial options. Can you respond to that?

Response: Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund Act, Congress provided ATSDR with the authority to conduct certain public health actions following a request from a community member. Actions taken on accepted petitions are designed to determine whether people have been, or are currently being, exposed to hazardous substances released into the environment from a hazardous waste site or facility. ATSDR does not prioritize risk management/remediation options or review/evaluate environmental regulatory operational procedures of other organizations or agencies.

Q5. Citizen groups also point out that the 2010 cleanup agreements are not "proposed," but final. What "proposed" cleanup remedial options is ATSDR reviewing?

Response: ATSDR does not have the authority to decide or prioritize risk management/remedial options. That is done by the regulatory agencies. ATSDR can provide an opinion as to whether the options being considered would protect the health of the

community which does not entail deciding which option is best for the situation. ATSDR will provide technical support to California Department of Toxic Substances and Control as it oversees the clean-up plans for the SSFL. We are aware of community concerns regarding exposures to dust that might be generated during the remediation activities.

Q6. Citizen groups are comparing ATSDR's decision to grant the petition to review studies at Santa Susana with the decision in July 2014 to reject a petition concerned about chemical and radioactive exposures at George Air Force Base, CA. In the George AFB case, ATSDR said it reviewed the additional evidence presented by the petitioner and saw no reason to change 1988 assessment conclusions, but at SSFL, citizen groups say the SSFL petition was accepted without new supporting evidence. Were different criteria used for deciding whether to dismiss or grant the George and Santa Susana petitions?

Q. 6 pt (2) After ATSDR receives a petition, it is reviewed by a petitions committee to determine whether the petition will be accepted. If a petition is accepted, the committee will recommend an appropriate course of action.

Response: The SSFL petition was accepted because data have become available that has not been previously reviewed by ATSDR. These data were collected after the 1999 release of ATSDR's Draft Preliminary Site Evaluation report and are the result of numerous environmental investigations conducted by California Department of Toxic Substance Control, Boeing, US Department of Energy, NASA, and US Environmental Protection Agency.

Q7. The co-authors of independent studies funded by ATSDR at Santa Susana are also questioning ATSDR's granting of the petition, arguing it conflicts with agreements previously undertaken by ATSDR with the researchers regarding the independence of their research. They say in a Sept. 8 letter to ATSDR that "Undertaking now the action requested by this individual could cast a shadow over ATSDR's credibility and potentially have a chilling effect on other scientists asked to perform future work funded by ATSDR. In summary, we believe acceptance of this petition would be at odds with ATSDR's mission." Can you respond to this criticism?

Response: ATSDR has a long history of evaluating the public health implications of United States Government sites/facilities. At many federally-owned sites we have determined that public health actions were needed to protect the community's health. We do not allow federal or private sector partners to direct our work or interpret our results.

ATSDR will continue to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.

Q8. I understand the head of ATSDR, Dr. Breyse, is expected to go to Santa Susana and speak to the community about their concerns over the petition. Can you expound on this? What is on the agenda, and when is he expected?

Response: Dr. Patrick Breyse, the director of ATSDR, will meet with county officials, their subject matter experts, and other community stakeholders to review our plans to date and to determine whether they are in conflict with state, county and local plans.

Regards

Bernadette Burden  
Senior Press Officer  
News Media Branch  
Division of Public Affairs  
CDC/ATSDR  
(404) 639-3286

-----Original Message-----

From: Suzanne Yohannan [mailto:suzanne.yohannan@iwpnews.com]  
Sent: Tuesday, September 22, 2015 12:03 PM  
To: Burden, Bernadette (CDC/OD/OADC) <btb8@cdc.gov>  
Subject: questions on Santa Susana review

Bernadette,

Per our conversation regarding Santa Susana Field Lab, here are my questions that relate to the petition granted on March 10. As I mentioned, my deadline is noon Thursday (Sept. 24).

1. Is it true that ATSDR is now going back and revisiting studies funded by ATSDR and DOE at Santa Susana that it previously approved, and that these are long-time studies approved several years ago?

2. Citizens groups around Santa Susana claim that the petition that ATSDR is acting on does not meet the criteria under ATSDR's regulations. Specifically, Physicians for Social Responsibility say: ATSDR's regulations (42 CFR Part 90.4) state that a petition is to include "A statement providing information that individuals have been exposed to a hazardous substance and that the probable source is a release, or sufficient information to allow the Administrator to make such a finding." But they say the petitioner's (Abe Weitzberg's) "petition does just the opposite, alleging there have been no significant exposures or releases and providing no information to allow ATSDR to make such a finding."

My question is: can you explain how the petition meets ATSDR's regulations (cited above)?

3. Citizens groups also say that by granting the petition and revisiting past studies, ATSDR is violating a long-time understanding with elected officials and the community that all Santa Susana studies would be independent of federal agency interference. Can you respond?

4. In ATSDR's March 10 response to the petitioner, ATSDR says it "does not prioritize risk management/remediation options or review/evaluate environmental regulatory operational procedures of other organizations or agencies." But at the same time, it says it plans to "evaluate whether the proposed remedial options would be protective of human health." Citizen groups say ATSDR lacks the regulatory authority to assess the SSFL cleanup agreements (executed in 2010) between DOE, NASA and the state. They therefore question ATSDR's plan to evaluate remedial options. Can you respond to that?

5. Citizen groups also point out that the 2010 cleanup agreements are not "proposed," but final. What "proposed" cleanup remedial options is ATSDR reviewing?

6. Citizen groups are comparing ATSDR's decision to grant the petition to review studies at Santa Susana with the decision in July 2014 to reject a petition concerned about chemical and radioactive exposures at George Air Force Base, CA. In the George AFB case, ATSDR said it reviewed the additional evidence presented by the petitioner and saw no reason to change 1988 assessment conclusions, but at SSFL, citizen groups say the SSFL petition was accepted without new supporting evidence. Were different criteria used for deciding whether to dismiss or grant the George and Santa Susana petitions?

7. The co-authors of independent studies funded by ATSDR at Santa Susana are also questioning ATSDR's granting of the petition, arguing it conflicts with agreements previously undertaken by ATSDR with the researchers regarding the independence of their research. They say in a Sept. 8 letter to ATSDR that "Undertaking now the action requested by this individual could cast a shadow over ATSDR's credibility and potentially have a chilling effect on other scientists asked to perform future work funded by ATSDR."

In summary, we believe acceptance of this petition would be at odds with ATSDR's mission." Can you respond to this criticism?

8. I understand the head of ATSDR, Dr. Breysse, is expected to go to Santa Susana and speak to the community about their concerns over the petition. Can you expound on this? What is on the agenda, and when is he expected?

Thanks very much.

Sincerely,  
Suzanne Yohannan  
Inside Washington Publishers  
Inside EPA's Superfund Report  
703-562-8759  
[suzanne@iwpnews.com](mailto:suzanne@iwpnews.com)

## Parks, Linda

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**From:** Daniel O Hirsch <dhirsch1@cruzio.com>  
**Sent:** Sunday, October 04, 2015 9:01 PM  
**To:** Parks, Linda  
**Cc:** Wing, Damon  
**Subject:** Cohen & Morgenstern OpEd on ATSDR

Hi Linda,

Damon asked me to send you this when it ran (which was today, Sunday) in the Ventura County Star. It is an Opinion article by Professors Morgenstern and Cohen calling on ATSDR to reverse course and not insert itself into the SSFL matter. Professor Morgenstern was the lead investigator for the study of the offsite population that found cancer rates increased with proximity to SSFL. Professor Cohen was the lead investigator for the companion study that found evidence of significant potential offsite exposures from SSFL. Both studies had been funded by, but were otherwise independent of, ATSDR. Weitzberg's petition to ATSDR was, in part, to have it repudiate those past studies and to push for not cleaning up most of the contamination.

Thanks for what you are doing, and have so long done, on the SSFL matter.

Best wishes,

Dan

Ran today in the Ventura County Star. Here is a link: <http://venturacountystar.ca.newsmemory.com/publink.php?shareid=2158a6ed9#.VhF4eJy683Q>

and attached is a scan of it as it looks in the paper.



Re: Yoram Cohen and Hal Morgenstern's October 4 guest column, "Face truth on Santa Susana Lab,"

Editor:

Professors Cohen and Morgenstern fail to address the two most important issues. First is the relevance of their prior work to off-site risk from the current condition after the cessation of operations and the full site characterization of contamination. Second is the fact that the widely publicized portions of the results of their prior work differ significantly from all similar studies. Moreover, their attempt to separate themselves from Dan Hirsch does not bear scrutiny. Hirsch ran the advisory panel that oversaw their work and Hirsch and Professor Cohen shared a \$25,000 prize for their work together.

In June 2014, I issued the report "Review of Studies of Health Effects Possibly Related to the Operation of the Santa Susana Field Laboratory (SSFL)" which thoroughly reviewed 18 documents. My summary identified the need for public dialog between Cohen and Morgenstern and the other authors to reconcile their differences. Cohen used the same data as ATSDR, yet reached completely opposite conclusions. Morgenstern was the only epidemiologist to claim significant cancer clustering in the vicinity of SSFL.

By reading my original petition to ATSDR, one can see that I was requesting their assistance in setting up a review panel. Morgenstern totally refused to participate and Cohen refused, but said he might if the panel was sponsored by a Federal or State Agency. After Cohen's refusal, I contacted Dr. Adrienne Katner, who was the second author of his report. She declined because of the political fighting, but wrote that their exposures and risks were no longer valid.

The time has come to stop the fighting and arrive at a consensus on the off-site risk from SSFL. The participation of ATSDR and possibly a public panel discussion of the risks by the health study authors appear to me to be positive steps forward.

## Parks, Linda

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**From:** Marie Mason <mariejmason@roadrunner.com>  
**Sent:** Tuesday, October 06, 2015 3:39 PM  
**To:** Bennett, Steve; Parks, Linda; Long, Kathy; Zaragoza, John  
**Subject:** ATSDR Letter



Susana Knolls

Homeowners Association

1409 Kuehner Dr. #5  
Simi Valley, CA 93063

Ventura County Board of Supervisors

October 6, 2015

Dear Supervisors

Thank you for your support today regarding your letter to ATSDR. Our community appreciates your continued involvement with the SSFL site cleanup issue.

Best regards,

Marie Mason  
Vice President, Susana Knolls Homeowners Association

## Parks, Linda

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**From:** ClerkoftheBoard, ClerkoftheBoard  
**Sent:** Wednesday, October 07, 2015 4:37 PM  
**To:** Aidukas, James; Allen, Gia; Allen, Yvette; Atin, Shawn; Ball, Chad; Barshaw, Caitlin; Benitez, Cruz; Bennett, Steve; Bianchi-Klemann, Lauren; Bravo, Robert; Burgh, Jeff; Cattle, Cindy; Carroll, Matt; Chow, Frank; Delarosa, Maria; Delgadillo, Wendy; Dembowski, Jim; Derse, Paul; Feliciano, Gabriela; Fitzgerald, Kelli; Gaines, Lori; Gallaher, Bill; Gallaher, Tracy; Gonzalez, Rosa; Gonzalez, Veronica; Han, Maggie; Harrison, Sally; Hernandez, Martin; Ho, Jennifer; Humes, Ashley; Long, Kathy; Mand, Kaye; Martin, Susan; Martinez, Yvonne; Miller, Brian; Offerman, Steve; Osterhaven, Jan; Palmer, Brian; Parks, Linda; Powers, Michael; Powers, Scott; Pratt, Jeff; Rigo Landeros; Rodriguez, Catherine; Smith, Leroy; Solorzano, Lourdes; Tellez, Alejandra; Terry, Vanise; Walker, Michael; Wing, Damon; Yanez, Terri; Zaragoza, John  
**Subject:** FW: correspondence agenda item October 6, 2015 Agenda Item 23  
**Attachments:** VCStar letter 10-4-15.docx; 9-11 vcstar response.docx

Dear Board Members

The email below was received by the Clerk of the Board's Office on your behalf.

Brian Palmer, MLIS  
Deputy Executive Officer  
Chief Deputy Clerk of the Board  
(805) 654-3398

**From:** Abe Weitzberg [mailto:aweitzberg@att.net]  
**Sent:** Wednesday, October 07, 2015 4:16 PM  
**To:** ClerkoftheBoard, ClerkoftheBoard <ClerkoftheBoard@ventura.org>  
**Cc:** 'Vianu, Libby' <Vianu.Libby@epa.gov>; rknowles@cdc.gov  
**Subject:** correspondence agenda item October 6, 2015 Agenda Item 23

To Ventura County Supervisors,

I am the individual who petitioned ATSDR. Your agenda discussion information and your letter to ATSDR contain erroneous information about me and the petition. Your reliance on biased information and failure to properly evaluate the information you received does a great disservice to your constituents and only serves to help a single antinuclear activist and his supporters. You obviously did not read my petition or the ATSDR response that described what they intended to do. I attach two letters that I wrote to the VCStar and ask that they be added to the correspondence agenda.

Gratuitous reference to my work history is only used as a distraction from the substantive issues that should be discussed. After 9 years at MIT, I worked at SSFL from 1962 to 1965. That does not make me an SSFL official in any sense of the word. My work experience in the nuclear industry only serves to enhance my knowledge of the technical issues involved in the site operations and the cleanup. If you are implying that I have a conflict of interest, you have no basis. I have never performed any work related to SSFL after I left in 1965.

Site operations ceased years ago and we now have full characterization of the site contamination, at significant expense to the Federal Government and Boeing. The old Cohen and Morgenstern reports are irrelevant to health risk from the site today, whether or not their old conclusions were ever valid. It is a moot question.

Rather than try to stop a needed study by ATSDR, you should support your constituents who want to know what are their health risks from SSFL as it exists today, no more no less.

Thank you,  
Abraham Weitzberg, PhD

5711 Como Circle  
Woodland Hills, CA 91367  
phone: 818-347-5068  
mobile: 301-254-9601

## Parks, Linda

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**From:** Abe Weitzberg <aweitzberg@att.net>  
**Sent:** Friday, October 09, 2015 8:01 AM  
**To:** Bennett, Steve; Parks, Linda  
**Cc:** Smith, Leroy  
**Subject:** Public Records Act Request  
**Attachments:** RE: Additional correspondence agenda item October 6, 2015 Agenda Item 23;  
correspondence agenda item October 6, 2015 Agenda Item 23

Supervisors,

In the attached letters, I addressed the gross inaccuracies in your presentations during the October 6, 2015 BOS meeting, Agenda Item 23. It is likely that you did not do your own research upon which to base your statements, and that the bulk of your information was supplied to you by members of the public. The alternative would be that you are incompetent and do not understand what you read. Any such information received from the public is already in the public domain and should therefore be made available to me under the California Public Records Act.

Accordingly, I am requesting all information that you received from public sources in regards to said Agenda Item 23, including but not limited to:

- Documents, whether hand delivered, delivered by USPS or other service, or contained in emails,
- Power Point presentations,
- Draft briefing material,
- Written comments on briefing materials.

Thank you,  
Abraham Weitzberg, Ph.D.

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Abe Weitzberg phone: 818-347-5068  
5711 Como Circle mobile: 301-254-9601  
Woodland Hills, CA 91367