



April 5, 2017

Ms. Stephanie Jennings  
NEPA Document Manager  
SSFL Area IV EIS  
U.S. Department of Energy  
4100 Guardian Street, Suite 160  
Simi Valley, CA 93063

*Re: Comments on Draft Environmental Impact Statement for  
Remediation of Area IV and the Northern Buffer Zone of the  
Santa Susana Field Laboratory*

Dear Ms. Jennings:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for remediation of Area IV and the Northern Buffer Zone (NBZ) of the Santa Susana Field Laboratory (SSFL) prepared by the U.S. Department of Energy (DOE). In this transmittal letter we summarize our concerns. A detailed treatment of these concerns is set forth in the attachment.

Background – A Highly Contaminated Site With Half a Million People Living Nearby

SSFL is one of the most contaminated sites in the state. Over the years it housed ten nuclear reactors, a plutonium fuel fabrication facility, a “hot lab” for disassembling highly irradiated nuclear fuel, and open-air “burn pits” where radioactively and chemically contaminated items were burned. One reactor had a partial meltdown; three others had accidents; there were radioactive fires at the hot lab; and decades of open burning of contaminated items. The poor environmental and safety practices of DOE and its predecessor agency, the Atomic Energy Commission, resulted in numerous releases and spills which contaminated soil, groundwater, and surface water, as well as numerous buildings, with radioactivity and toxic chemicals.

SSFL was established seventy years ago and was supposed to be a remote field lab for work too dangerous to conduct near populated areas. However, over the decades the population nearby mushroomed, so that there are now more than 150,000 people living within 5 miles of the site and more than half a million people living within 10 miles.

Federally funded studies found significant increases in death rates from key cancers among the SSFL workers associated with their work exposures, offsite migration of pollutants at levels in excess of U.S. Environmental Protection Agency (USEPA) levels of concerns, and a greater than 60% higher incidence of key cancers among people living near SSFL than those living further away. Because SSFL is located in hills overlooking the City of Los Angeles and other populated areas below, the contamination migrates downgradient, where neighboring communities can be exposed. Cleanup of the contamination source is therefore critical. However, DOE has had a history of resisting those cleanup obligations.

#### NRDC, City of Los Angeles, CBG v. DOE Lawsuit Blocked DOE's Prior Attempt to Walk Away from Cleaning Up Most of the Contamination

Fifteen years ago, DOE proposed cleanup standards for SSFL that would have left the great majority of the contamination not cleaned up. The City of Los Angeles, the Natural Resources Defense Council (NRDC), and the Committee to Bridge the Gap (CBG) filed a lawsuit in U.S. District Court, challenging the legality of DOE's actions under the National Environmental Policy Act (NEPA), 42 U.S.C. §4321, *et seq.* In 2007, in an Order highly critical of DOE, Federal District Judge Samuel Conti, granted summary judgment for the plaintiffs and against DOE.<sup>1</sup>

In 2010, DOE and the California Department of Toxic Substances Control (DTSC) executed an Administrative Order on Consent (AOC), a legally binding agreement requiring the cleanup of contaminated soil (including the buildings) in Area IV and the NBZ to local background levels, to be completed by 2017. *2017 has arrived and the promised cleanup not only has not been completed, it has not yet even begun.*

In 2012, DOE committed that any EIS would be limited, with the exception of the required No Action alternative, to cleanup alternatives that were compliant with the AOC's required cleanup to background. Any alternative would be about how, not whether, to comply with AOC requirements, as the agreement mandated.

#### The 2017 DEIS Breaches DOE's 2010 and 2012 Commitments

Despite the above commitments, all alternatives considered in the DEIS would violate the AOC. As DOE states on page S-12 in the DEIS: "DOE expects that, in order for the implementation of any alternative to be consistent with the 2010 AOC, changes to the AOC would be required."

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<sup>1</sup> Citations for all sources referenced in this letter are found in the Detailed Comments, attached.

The AOC bars consideration of any “leave in place” alternatives. Yet all four of the DEIS alternatives would leave in place hundreds of thousands of cubic yards of contaminated soil, not cleaned up. **Alternative 1 would leave in place 34-39% of the contamination; Alternative 2 would leave in place 86-91%; Alternative 3 would leave in place at least 90%, and perhaps as much as 95 or 99%; and Alternative 4 would leave 100%.** For the second and third alternative, 98 of 116 toxic chemicals contaminating the area would not be cleaned up at all.

In Alternative 1, DOE proposes to exempt approximately half a million cubic yards of contaminated soil from cleanup. None of the claimed reasons comports with the very narrowly constrained exceptions allowed in the AOC.

In Alternative 2, DOE proposes to leave in place as much as a million cubic yards of contaminated soil. It proposes to not comply at all with the AOC’s cleanup standard for toxic chemicals and to instead do no cleanup until contaminant concentrations are hundreds or thousands of times, and in some cases, millions of times, higher than the AOC’s required cleanup levels. DOE asserts that these are risk-based limits based on DTSC’s suburban residential Risk Based Screening Levels (RBSLs). However, in fact, the DOE proposed concentrations are hundreds and thousands of times higher than the DTSC-approved suburban residential RBSLs. DOE does this by leaving out the required backyard garden component of the residential RBSL. The risks to human health from these high contaminant concentrations is, thus, far greater than DOE asserts.

In Alternative 3, DOE proposes to leave even more contamination behind. This alternative incorporates the weak standards of Alternative 2, but additionally averages contamination over wide areas, so that if there is contamination in one place, it would not be cleaned up because it would be averaged with many acres of soil further away. Additionally, in this alternative, DOE proposes to allow radioactivity levels hundreds of thousands of times higher than the U.S. Environmental Protection Agency’s preliminary remediation goals. Radiation doses equivalent to many chest X-rays a year would be allowed.

In Alternative 4, DOE proposes to do no cleanup whatsoever.

It is important to keep in mind that whatever the final end use of SSFL, large numbers of California citizens live nearby, with backyard gardens, and a primary purpose of the cleanup must be to eliminate the contamination source that puts them at risk from migrating pollution.

While claiming that its proposals to abandon large portions of the contamination are designed to protect biological features, in fact it is its contamination of the environment and reversal of promises to remediate that damage that pose the real ecological risks. DTSC has established ecological RBSLs, and the cleanup levels DOE now proposes to employ instead of those promised in the AOC are hundreds, thousands, and tens of thousands times higher. The refusal to clean up this contamination poses a risk to California’s environment and to public health.

### DOE Lacks the Authority to Decide How Much Cleanup of its Contamination it Will Perform

An EIS is to be performed about *discretionary* federal agency actions. However, DOE has no discretion to ignore the requirements of the AOC. It is a legally binding set of obligations that DOE cannot unilaterally ignore.

Even were there no AOC, decisions as to how much of the chemical contamination to clean up are outside DOE's authority. Under the Resource Conservation and Recovery Act, those decisions are in the hands of DOE's regulator, DTSC. It is the regulator who decides how much cleanup is required, not the party that produced the contamination in the first place.

### The DEIS Fails to Consider Reasonable Transportation Alternatives

Much of the DEIS appears to be an attempt to inflate the impacts of cleaning up while trivializing the risks of abandoning in perpetuity significant amounts of radioactive and chemical contamination. DOE asserts that there is little to no risk from the toxic and radioactive pollution but much inconvenience from the trucks needed to transport the contaminated soil for disposal. As discussed above, it does this by using risk-based screening levels that are orders of magnitude higher than the actual ones approved by DTSC and U.S. EPA, dramatically downplaying the true risks. At the same time, the DEIS fails to evaluate reasonable alternative methods of conveyance and routes.

### Conclusion


DOE is obligated, having contaminated SSFL through its failure to follow proper environmental procedures, to clean the site up fully, as required by the AOC; to do so by the deadlines agreed to; and to mitigate impacts such as trucks hauling away contaminated material by a careful development of alternative transportation options in an EIS. Instead, DOE has dragged its feet for years since the AOC was issued, not only missing the deadline for completion of the cleanup, but not even beginning it. And now in a severely flawed DEIS, the federal agency flouts the authority of the California state agency charged with overseeing this important cleanup by proposing to breach the cleanup agreement it signed and instead leave the great majority of the contamination in place.

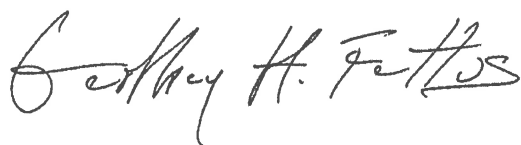
The public that resides in the area surrounding the site will be placed at continued and perpetual risk if DOE continues on this course. We call this day for extensive revision of the DEIS so that it is fully in compliance with the AOC and DOE's commitments for a complete cleanup of the contamination for which it is responsible.



Our detailed comments are attached. Supporting documentation is being sent separately on a CD.

Sincerely,

  
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Los Angeles City Attorney



GEOFFREY H. FETTUS  
Senior Attorney  
Natural Resources Defense Council



CATHERINE LINCOLN  
Executive Coordinator  
Committee to Bridge the Gap

Attachment:

Detailed Concerns Regarding the DOE Draft EIS on Cleanup of SSFL Area IV and the Northern Buffer Zone

cc:

Barbara A. Lee, Director, California Department of Toxic Substances Control, with Attachment  
Matthew Rodriguez, Secretary, California Environmental Protection Agency, with Attachment  
John Laird, Secretary, California Natural Resources Agency

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## Detailed Concerns Regarding the DOE Draft EIS on Cleanup of SSFL Area IV and the Northern Buffer Zone

### A. BACKGROUND

The history of the site provided in the Draft Environmental Impact Statement (DEIS) is inaccurate and minimizes the problems. We provide here a more complete picture.

#### 1. A History of Safety Considerations Subordinated to Other Concerns; Accidents, Spills and Releases

The Santa Susana Field Laboratory (SSFL) was established in the late 1940s for rocket testing and in the early 1950s commenced nuclear reactor work. In this initial incarnation, the site was supposed to be a remote field lab for work too dangerous to conduct near populated areas, and the original siting criteria stated that “care must be taken to select an area where prospects for population growth in the near future are not anticipated.”<sup>1</sup> However, over the decades the population nearby mushroomed, so that there are now more than 150,000 people living within 5 miles of the site and more than half a million people are within 10 miles.<sup>2</sup>

SSFL housed ten reactors, plutonium and uranium fuel fabrication facilities, numerous nuclear “critical facilities,” and a “hot lab” wherein highly irradiated nuclear fuel from around the nation was cut apart. The facility was operated for the Department of Energy (DOE) and its predecessor agency the Atomic Energy Commission (AEC), as part of the national nuclear complex from the years 1953 to 1998.

Safety considerations were “subordinated to other concerns from the outset.”<sup>3</sup> Despite being ranked 5<sup>th</sup> out of 6 candidate sites for the safety of meteorological conditions (in part because of nighttime migration of potentially contaminated air into the San Fernando Valley), the site was chosen as a nuclear testing site nonetheless, in large

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<sup>1</sup> NAA-SR-30, *General Reactor Site Survey of the Los Angeles Area*, U.S. Atomic Energy Commission, June 1, 1949, as cited in *Report of the Santa Susana Field Laboratory Advisory Panel*, October 2006 (hereafter SSFL Panel Report), p. 8. <http://www.ssflpanel.org/files/SSFLPanelReport.pdf> The SSFL Advisory Panel was established at the initiative of local legislators in the early 1990s to oversee independent health studies of SSFL and the surrounding areas. Under its auspices, federally-funded worker studies by the UCLA School of Public Health were conducted in the 1990s, and in the next decade a series of studies about potential offsite effects funded by the State Legislature were prepared. This summary of the siting and accident history is drawn in part from the Panel’s 2006 report; the reader is referred to the full report for more detail and supporting citations, which is incorporated herein by reference.

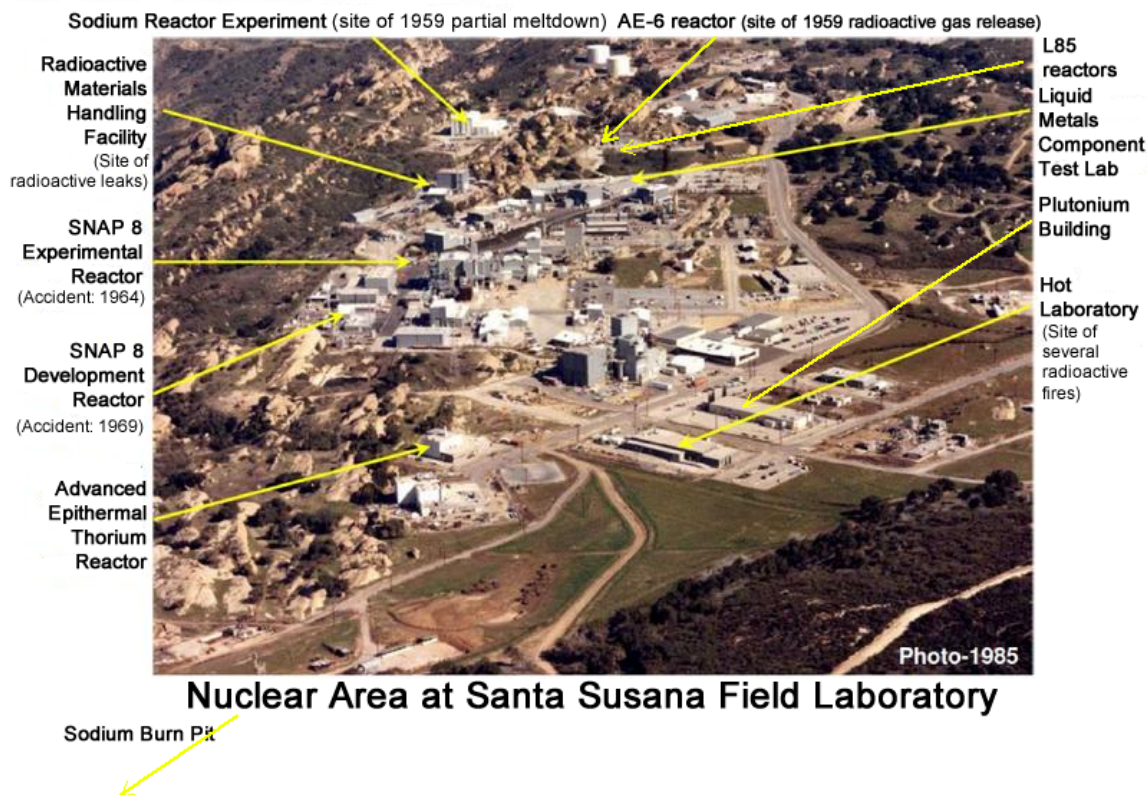
<sup>2</sup> SSFL Panel Report, pp. 8-9.

<sup>3</sup> *id.*, p. 8.

measure because of convenient drive times from nearby universities. To compensate for the poor site conditions, and because the reactors would have no containment structures, a reactor power limit was set to limit radioactive inventory. But a decade thereafter, the AEC chose to build the Sodium Reactor Experiment (SRE) with power twenty times the limit, despite people living much closer than the original rule recommended.<sup>4</sup>

Poor environmental and safety practices resulted in at least four of the reactors suffering significant accidents, including a partial nuclear meltdown.

First, in March of 1959, the AE6 reactor released fission gases as a result of malfunction.. Then blockage of coolant precipitated a power excursion and partial meltdown of the SRE in July 1959. The SNAP8ER accident damaged 80% of its fuel in 1964. A similar accident in the SNAP8DR resulted in damage to a third of its fuel in 1969.<sup>5</sup> None of these reactors had a containment structure like modern reactors to prevent radiological releases into the environment.



*photo source: DOE; labels: SSFL Work Group<sup>6</sup>*

<sup>4</sup> *id.*, pp. 8-9.

<sup>5</sup> SSFL Panel Report, p. 10.

<sup>6</sup> <https://energy.gov/em/energy-technology-engineering-center>;  
<http://www.ssflworkgroup.org/about-ssfl/>

The events of June, 1959 at the SRE are emblematic of the problems caused by a troubled safety culture at SSFL.<sup>7</sup> On that date, a fuel rod at the SRE, coated with sodium, exploded when it was washed with water in a “wash cell.” The explosion lifted the shield plug out of the wash cell, and created “extremely high contamination levels within the entire building.”<sup>8</sup> A couple of weeks later, on July 13, the SRE experienced a power excursion—the reactor power suddenly began to increase exponentially, out of control, and the reactor barely was able to be shut down, or “scrammed.” Yet, inexplicably, the operators of the reactor, unable to figure out what had caused the incident, started it up again two hours later, and continued to operate it for another week and a half, in the face of rising radioactivity readings (off-scale) and numerous other signs of reactor in trouble. When it was finally shut down, it was determined that 13 of 43 fuel elements had experienced melting.



Figure IV-A-6. Bottom of Damaged Element in Channel 55

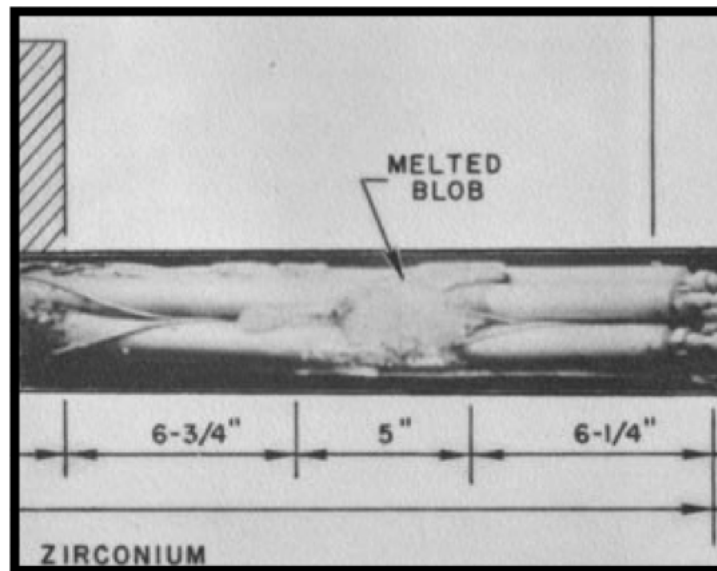
Figure IV-A-7. Midsection of Damaged Element in Channel 55

<sup>7</sup> See, e.g., the review of the SRE accident performed for DOE by Dr. Thomas Cochran of NRDC, *Sodium Reactor Experiment Partial Fuel Meltdown*, 29 August 2009.

<http://www.etec.energy.gov/Library/Main/Cochran%20SRE%20Presentation.pdf>

<sup>8</sup> See Committee to Bridge the Gap, *Past Accidents and Areas of Possible Present Concern Regarding Atomics International*, January 18, 1980, and the citations therein. (Atomics International was the name of the AEC contractor running the nuclear portion of SSFL at the time.)

*Photo of Damaged Fuel Element; source: AEC/Atoms International*



*SRE Fuel “Melted Blob” (label in original); source: AEC/Atoms International*

The accidents at the SRE, SNAP8ER and SNAP8DR all involved running the reactors for extensive periods of time while they were failing, despite clear indications of problems. As an AEC analysis<sup>9</sup> of the SRE partial meltdown concluded:

[S]o many difficulties were encountered that, at least in retrospect, it is quite clear that the reactor should have been shut down and the problems solved properly. Continuing to run in the face of a known Tetralin leak, repeated scrams, equipment failures, rising radioactivity releases, and unexplained transient effects is difficult to justify. Such emphasis on continued operation can and often does have serious effects on safety and can create an atmosphere leading to serious accidents. It is dangerous, as well as being false economy, to run a reactor that clearly is not functioning as it was designed to function.

Nonetheless, the same pattern of continuing to operate reactors for long periods despite evidence of failing cores subsequently resulted in significant fuel damage in two other reactors at the site.

The problem of cutting safety corners was compounded by a culture of secrecy and a lack of candor. The AEC said nothing publicly about the SRE partial meltdown for

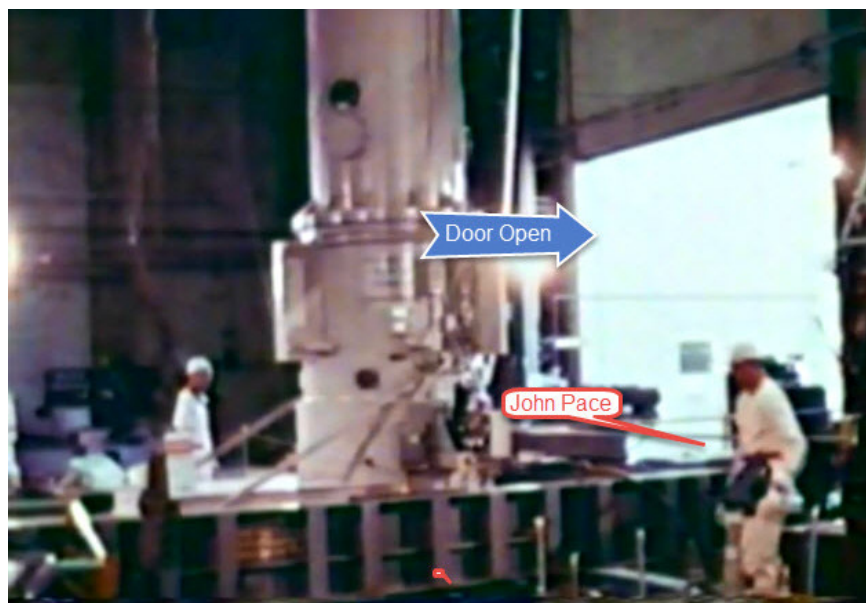
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<sup>9</sup> T. J. Thompson and J. G. Beckerley, *The Technology of Nuclear Reactor Safety*, prepared under the auspices of the US Atomic Energy Commission, 1964, p. 644



nearly five weeks. Finally, it issued a news release, embargoed for Saturday morning papers, saying that “a parted fuel element had been observed,” that there were no indications of unsafe operating conditions and no radioactive release. However, in fact, the fuel had experienced not just parting, but melting. A third of the core underwent partial melting, not just a single fuel element. It was a clear indication of unsafe operating conditions,, and radioactivity had been intentionally vented into the atmosphere for weeks.

Despite subsequent claims that only noble gases were released, independent experts have concluded that other radionuclides such as iodine-131 could have been vented into the atmosphere. One estimate is that over 260 times the I-131 released at the Three Mile Island accident could have been emitted by the SRE.<sup>10</sup> The reactor had no containment structure; because of the coolant blockage, the coolant vaporized, and volatile radionuclides like iodine, cesium and strontium could have been emitted into the core cover gas, which was deliberately vented from the reactor and into the environment. Furthermore, a report by an eyewitness, John Pace, indicates that the reactor room became so radioactive that the large equipment door had to be kept open to vent radioactivity from the room to the outdoors.<sup>11</sup>



<sup>10</sup> Declaration of Arjun Makhijani, Ph.D., President of the Institute for Energy and Environmental Research, in *Lawrence O'Connor et al. v. Boeing North American, et al.*, U.S. District Court for the Central District of California, February 12, 2004, p. 24.

<sup>11</sup> <http://data.nbcstations.com/national/KNBC/la-nuclear-secret/> The above photograph is from an AEC film about the accident, taken during the recovery operation. The labels have been added. Pace says the door had to be opened for extended periods during the accident itself because of high radiation readings.

By no means was the SRE partial meltdown the only problem at SSFL that led to releases. Much of the work at SSFL involved radioactively contaminated liquid sodium coolants for reactors, which burn if exposed to air and explode in the presence of water. There were radioactive fires at the hot lab and numerous other radioactive and chemical releases and spills. In addition, for decades, despite requirements to the contrary, radioactive and toxic chemical wastes were burned in open “burnpits.” The resulting clouds of airborne contamination fell out over wide areas, including beyond the SSFL boundaries.

These and many other activities resulted in widespread radioactive and chemical contamination of air, soil, groundwater and surface water. Contaminants have repeatedly migrated offsite. The Los Angeles Regional Water Quality Control Board has fined Boeing more than a million dollars for scores of violations of pollution discharge limits for surface water leaving the SSFL site.<sup>12</sup>

DOE reports in its DEIS that the majority of the contamination is from over a hundred toxic chemicals. It has not explained how it managed to produce so much chemical contamination in addition to the radioactive pollution, and should do so. Some of the widespread chemical contamination likely came from the decades of open-air burning of wastes with toxic chemicals in burnpits, with the toxic plume spreading widely and resulting in airborne deposition. Any other poor practices that led to the chemical pollution should be disclosed.

A federally-funded study by the UCLA School of Public Health found markedly increased rates of death from key cancers for workers associated with their exposures.<sup>13</sup> The most highly exposed workers had triple the deaths from those cancers as did less exposed SSFL workers.

A subsequent federally funded study by a team of researchers led by UCLA’s Professor Yoram Cohen found evidence of contaminants having migrated outside the site boundaries and exposing the public at levels in excess of EPA levels of concern.<sup>14</sup> A study by Dr. Hal Morgenstern of the University of Michigan, also federally funded, found

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<sup>12</sup> Summarized, with citations to Regional Board Orders, at <http://www.ssflworkgroup.org/files/Fines%20for%20Violations%20of%20Pollution%20Laws%20at%20SSFL.pdf>

<sup>13</sup> Morgenstern, Froines, Ritz and Young, *Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/Atomics International Workers from Exposure to Ionizing Radiation*, June 1997, at [http://www.ssflpanel.org/files/UCLA\\_rad.pdf](http://www.ssflpanel.org/files/UCLA_rad.pdf). See also *Santa Susana Field Laboratory Epidemiological Study: Report of the Oversight Committee*, September 1997, at [http://www.ssflpanel.org/files/panel\\_worker\\_radiation.pdf](http://www.ssflpanel.org/files/panel_worker_radiation.pdf)

<sup>14</sup> Yoram Cohen, et al., *Potential for Offsite Exposures Associated with the Santa Susana Field Laboratory*, February 2006, at <http://www.ssflworkgroup.org/potential-for-offsite-exposures-associated-with-ssfl/>



a greater than 60% increase in incidence of various cancers in people living near the site associated with their proximity to it.<sup>15</sup>

SSFL is located atop the Santa Susana mountains overlooking significant populations in the City of Los Angeles and elsewhere. The site is contaminated with a wide range of radioactive materials, such as plutonium-239, cesium-137, and strontium-90, and over a hundred hazardous chemicals, such as dioxins, PCBs, heavy metals, and volatile organic compounds. Contaminants at the site can migrate offsite and expose those communities. Thus, the cleanup of the source of pollution above these communities is critical to their health. The issue thus is not merely a question of exposure to people at the site in the future, but to the people who live nearby. As we shall show, the failure to recognize this is a fundamental failure of the DEIS.

## 2. DOE's History of Resisting Its Cleanup Obligations

Along with the history of weak environmental and safety controls at SSFL, the AEC – and its successor the DOE – have long resisted doing anything more than a minimal cleanup of the contamination for which it was responsible, at this or its other polluted facilities across the country.<sup>16</sup>

After incidents like the Rocky Flats fires in the 1970s, the Three Mile Island meltdown in Pennsylvania in the late 1970s, and the 1986 Chernobyl accident in the former Soviet Union raised concerns with the widespread environmental and safety problems throughout the DOE nuclear complex nationwide, tentative attempts at reform were undertaken. Reviews were undertaken of environmental problems at DOE sites; one performed by DOE contractor (and thereafter, NRDC engineer) James Werner found widespread chemical and radioactive contamination at SSFL.<sup>17</sup> Admiral James Watkins was brought in as Secretary of Energy to attempt to change the troubled “safety culture” at DOE. In 1991 an investigative “Tiger Team” team found significant problems in the safety and environmental program at SSFL.<sup>18</sup> In 1995, in an effort to bring DOE into the modern era of environmental regulation, it entered into a Joint Policy with the U.S. EPA

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<sup>15</sup> Hal Morgenstern, et al., *Cancer Incidence in the Community Surrounding the Rocketdyne Facility in Southern California*, March 2007, at <http://www.ssflworkgroup.org/files/UofM-Rocketdyne-Epidemiologic-Study-Feb-2007-release.pdf>. See also, Professor Hal Morgenstern letter to Senator Joe Simitian, then-Chair, California Senate Committee on Environmental Quality, April 5, 2007, summarizing his findings, at [http://www.ssflworkgroup.org/files/LettertoSen.Simitian\\_041507.pdf](http://www.ssflworkgroup.org/files/LettertoSen.Simitian_041507.pdf)

<sup>16</sup> See, e.g., National Governors Association, *Cleaning Up America's Nuclear Weapons Complex*: 2015 Update for Governors.

<sup>17</sup> Environmental Survey, Preliminary Report, DOE Activities at Santa Susana Field Laboratory, February 1989; DOE/eh/OEV-33-P.

<sup>18</sup> [http://www.etec.energy.gov/Library/Main/DOE-EH-0175\\_ES&H\\_Tiger\\_Team\\_Assessment\\_of\\_ETEC.pdf](http://www.etec.energy.gov/Library/Main/DOE-EH-0175_ES&H_Tiger_Team_Assessment_of_ETEC.pdf)

committing that all DOE nuclear sites in the country, irrespective of whether they were on the National Priority List, would be cleaned up consistent with EPA's CERCLA (Superfund) guidance.<sup>19</sup> However, significant elements within DOE continued to resist these efforts at reform.

A clear example of this resistance can be found in the cleanup standards for the site. To wit, despite these critical findings and despite the Joint Policy entered into with EPA to carry out environmental remediation pursuant to EPA's CERCLA guidance, in the late 1990s, DOE and its contractor Boeing put forward cleanup standards for SSFL that were orders of magnitude more lax than the EPA CERCLA guidance and which would have left virtually all of the contamination not cleaned up.<sup>20</sup> In January 2002, DOE issued a Draft Environmental Assessment, and in 2003 a final Environmental Assessment and Finding of No Significant Impact approving those standards and its plan to leave substantially more than 90% of the radioactive contamination unremediated.<sup>21</sup>

Concerned about the plan to not clean up the great majority of the contamination and the failure to examine the environmental impacts of the harms associated with such weak cleanup choices, the City of Los Angeles, the Natural Resources Defense Council (NRDC), and the Committee to Bridge the Gap (CBG) filed a lawsuit in U.S. District Court, challenging the legality of DOE's actions under the National Environmental Policy Act (NEPA), 42 U.S.C. §4321, et seq. In 2007, in an Order highly critical of DOE, Judge Samuel Conti, granted summary judgment for the plaintiffs and against DOE.<sup>22</sup>

In 2007, Judge Conti ruled against DOE. He noted, "Area IV is known to be radiologically contaminated and, in fact, was the location of at least one well-known nuclear meltdown....It is located only miles away from one of the largest population centers in the world....Among the primary purposes of NEPA, and the EIS process more specifically, is assuring the public is informed and aware of the potential environmental impacts of government actions....It is difficult to imagine a situation where the need for such an assurance could be greater." He therefore permanently enjoined DOE from "transferring ownership or possession, or otherwise relinquishing control over, any portion of Area IV until it completed an EIS and issued a Record of Decision pursuant to NEPA." The Court retained jurisdiction over the matter until it is satisfied that the DOE has met its legal obligations related to the remediation.

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<sup>19</sup> DOE & EPA, Policy on Decommissioning Department of Energy Facilities Under CERCLA, May 22, 1995, hereafter DOE-EPA 1995 Joint Policy.

<sup>20</sup> Approved Sitewide Release Criteria for Remediation of Radiological Facilities at the SSFL, December 12, 1998.

<sup>21</sup> The EA was restricted to issues related to cleanup of radioactivity, recognizing that the cleanup of the chemicals was subject to the Resource Conservation and Recovery Act (RCRA) and those cleanup decisions were in the hands of the California Department of Toxic Substances Control.

<sup>22</sup> 2007 WL 1302498 (N.D. Cal).

Shortly thereafter, DOE issued a Notice of Intent to prepare an EIS. However, DOE dragged its feet for a decade and only now has issued the DEIS for comment.

### 3. The 2007 and 2010 Cleanup Agreements

#### a. The 2007 Consent Order

In 2007, the California Department of Toxic Substances Control (DTSC), which regulates toxic chemicals in California pursuant to federal delegation under the Resource Conservation and Recovery Act (RCRA), entered into a Consent Order with DOE and the other SSFL Responsible Parties (Boeing and NASA) in which the Responsible Parties were obligated to complete cleanup of soil and installation of the permanent groundwater remedy by mid-2017.<sup>23</sup> Contrary to the DEIS's claim at p. 1-4, that Consent Order does not mandate a cleanup to suburban residential standards but instead requires cleanup to normal DTSC procedures.<sup>24</sup> Those procedures, as shall be discussed shortly, rely on current County zoning and General Plan land use designations, which in the case of SSFL, allows a wide range of agricultural and residential (with garden) uses and would result in the most protective cleanup standards being employed, comparable, DTSC has written, to a cleanup to background.<sup>25</sup>

#### b. The 2010 Administrative Order on Consent (AOC)

In 2010, in the face of mounting frustration by DTSC, the California Environmental Protection Agency (CalEPA), and state and federal legislators with what appeared to be continued foot-dragging by DOE mid-level personnel, Dr. Steven Chu, the Nobel-Prize winning physicist who was then the Secretary of Energy, and Dr. Ines Triay, the DOE Assistant Secretary for Environmental Management, proposed to the state that they enter into an agreement whereby the site would be cleaned up to local background; i.e., remove all the detectible contamination and return it to the condition it was in before DOE contaminated it. Over that year, there were numerous negotiating sessions with DOE and the state, with participation from some of the parties to the successful 2007 NEPA lawsuit, to hammer out the written agreement, first an Agreement in Principle (AIP) and then the full Administrative Order on Consent (AOC), which incorporated the AIP. After two rounds of opportunity for public comment, in which more than 3000 comments were received, of which all but a handful were strongly in favor, DTSC and DOE executed the AOC in December, 2010. The AOC resolved the primary concerns that had resulted in the filing of the action before Judge Conti in the first place.

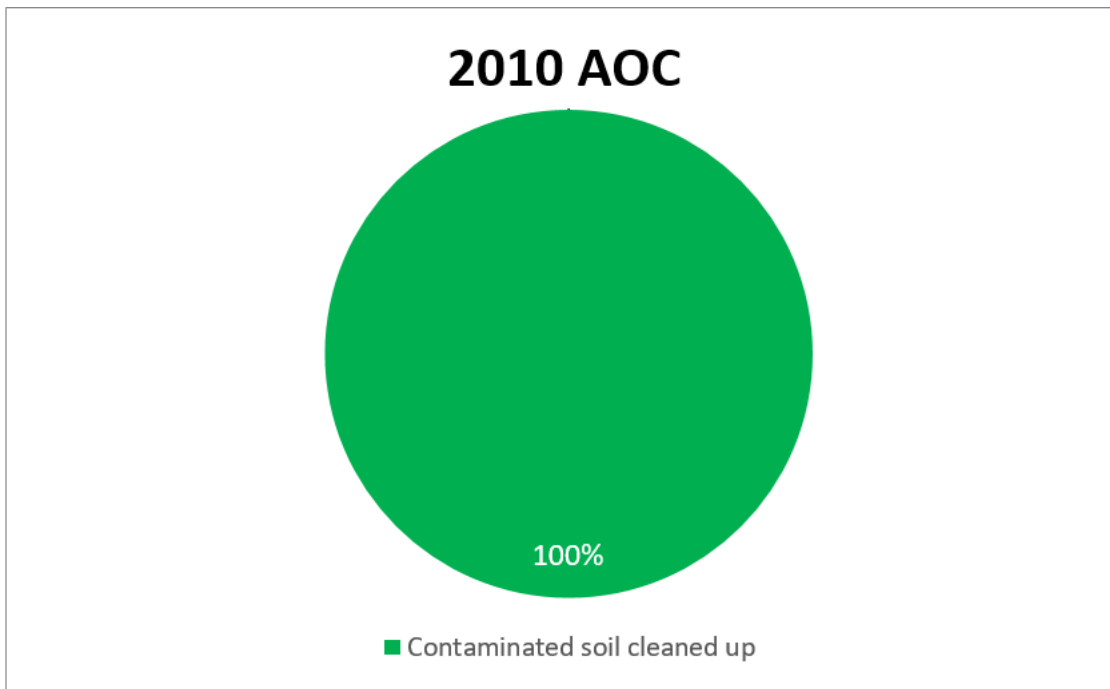
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<sup>23</sup> Consent Order, p. 20.

<sup>24</sup> The word "residential" appears in the Order only to describe the existence of residential areas near the facility, and never to specify a cleanup standard for SSFL.

<sup>25</sup> DTSC, Response to Comments, Agreements in Principle, State of California and the Department of Energy, of California and the National Aeronautics and Space Administration, (hereafter DTSC Response to Comments on Agreements in Principle), October 26, 2010, Volume I, pp. 11-12, 14-7, 21.

There are several key components of the AOC. (1) It is legally binding; DOE cannot unilaterally choose not to comply with any part of it. (2) Cleanup of soil shall be to local background. (3) For the purposes of the AOC, soil is defined to include structures, debris, and other anthropogenic materials. (4) There is to be no averaging; any contamination above background is to be cleaned up. (5) The deadline for full soil cleanup was 2017. (6) All waste with radioactivity above background must be disposed of in licensed or authorized low-level radioactive waste disposal facilities. (7) No risk assessment would be required, as the cleanup was to background. And (8) critically, no “leave in place alternatives will be considered.”



Drs. Chu and Triay subsequently left DOE; the personnel who had frustrated past efforts at cleanup resumed their efforts; and *the deadline for completion of cleanup of soil and installation of the final groundwater remedy passed without either even starting*. In January 2017, DOE issued its DEIS. And in it, DOE broke its commitments in the AOC and its past promises about any EIS. Every alternative DOE presents in the DEIS would abandon in place large amounts of contamination, despite explicit prohibition against such a decision in the AOC. **Alternative 1 would leave in place 34-39% of the contamination; Alternative 2 would leave in place 86-91%; Alternative 3 would leave in place at least 90%, and perhaps as much as 95 or 99%; and Alternative 4 would leave 100%.** Furthermore, DOE also has broken its prior commitments that any EIS would be limited to different technologies that would conform to its obligations under the AOC to clean up all the detectible contamination, i.e., to local background, not whether to do so.

## B. DOE VIOLATES PAST COMMITMENTS ABOUT EIS SCOPE, PURPOSE AND NEED

### 1. Scope of EIS Was to Be How to Meet the AOC, Not Whether to Comply

In 2011, NASA proposed an EIS that would have included numerous alternatives that would have violated the AOC. DTSC wrote to NASA that this was inconsistent with the AOC and demanded that it reverse course.<sup>26</sup>

The matter was of such concern that Senator Boxer arranged a high-level meeting in Washington, D.C. with herself, the NASA Director, the Chair of the White House Council on Environmental Quality (CEQ), and the DTSC and CalEPA heads.<sup>27</sup> NASA asserted that the National Environmental Policy Act required it to evaluate alternatives that would breach the AOC.<sup>28</sup> The others disputed that notion, and it was agreed that CEQ, as the federal authority on NEPA, would issue an opinion.

CEQ issued that conclusion on June 19, 2012, finding that NEPA does not require the consideration of infeasible alternatives, and since NASA must comply with the AOC, alternatives that breach it need not be considered.<sup>29</sup> As the Chair of CEQ wrote, “there is no requirement that NASA consider alternatives that cleanup to other standards that differ from the agreement NASA signed with the State.” CEQ continued, “In view of NASA’s administrative cleanup resolution with the State of California, which turns upon NASA’s commitment to clean the site to local background levels, CEQ’s view is that – under this rule of reason – NASA is not compelled to consider less comprehensive measures as alternatives.” She noted further that “The Supreme Court has long recognized that CEQ’s interpretation of NEPA and its regulations is entitled to substantial deference.” NASA subsequently agreed to restrict its EIS accordingly.<sup>30</sup>

In its efforts to get NASA to comply with the AOC in any environmental review, DTSC noted that DOE was preparing an EIS whose scope was consistent, looking at

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<sup>26</sup> Letter from Debbie Raphael, DTSC Director, to Allen Elliott, SSFL Project Manager, NASA, September 19, 2011. See also letter from DTSC Director Raphael to NASA Administrator Bolden, May 22, 2012, demanding that “NASA modify the scope of its NEPA process to align itself with the project that NASA is actually undertaking – a cleanup to background levels of contaminants in compliance with the AOC – and not an evaluation of alternative cleanup standards that are not related to the project....”

<sup>27</sup> See letters of March 29 and 30, 2012, from Senator Boxer to NASA Administrator Bolden, and DTSC public announcement of March 30, 2012.

<sup>28</sup> See also letter of Allen Elliott to Debbie Raphael of August 9, 2011.

<sup>29</sup> Letter from CEQ Chair Nancy Sutley to Senator Barbara Boxer, June 19, 2012.

<sup>30</sup> See Allen Elliot, Program Director, SSFL, NASA, *Update on NASA’s National Environmental Policy Act Compliance for Santa Susana Field Laboratory*, July 19, 2012; and James Wright, NASA Associate Administrator, to DTSC Director Raphael, July 10, 2012.

various ways to achieve the required cleanup to background, not whether to fulfill the requirements of the AOC. Citing DOE's April 2012 fact sheet for its DEIS process, DTSC noted that DOE had made it clear "that it is defining its project as a cleanup to background levels, as required by its AOC. DOE has been careful not to identify potential alternatives that do not meet its AOC cleanup objective."<sup>31</sup>

Indeed, in May 2012, DOE issued a notice "Public Participation in the Development of Alternatives to be considered in the Santa Susana Field Laboratory Area IV Environmental Impact Statement." In it DOE acknowledged that DTSC was the regulator and had the regulatory authority over the cleanup, that DOE was obligated to carry out the AOC requirement to clean up to background, and that the EIS would be limited to alternative ways to achieve that cleanup standard:

What is the cleanup standard (how clean must Area IV be upon completion of cleanup)?

DOE has signed two agreements with the California Department of Toxic Substances Control: the 2007 Consent Order for Corrective Action and 2010 Administrative Order on Consent for SSFL Area IV. Those agreements stipulate cleanup standards – how clean the site must be before cleanup can be declared completed. DOE is committed to full compliance with both the 2007 and the 2010 orders. However, neither Order dictates how DOE should accomplish the cleanup standards. For that reason, the EIS will explore if there are reasonable alternatives for accomplishing the cleanup levels that are stipulated in the Orders.

DOE went on to say "DOE agrees that the AOC committed DOE to clean up to background," and that the EIS would therefore be restricted to how to do that. DOE stated that the "2007 and 2010 orders dictate how clean the site must be before the cleanup can be declared complete" but don't dictate how to achieve that level of cleanup. "[T]here may be more than one way to accomplish cleanup to background; DOE believes that it would be prudent to evaluate if there might be more than one way to accomplish the AOC's requirement of cleanup to background." In short, any EIS would be limited to analysis on how to achieve a cleanup to background, not whether to do so in the first instance.

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<sup>31</sup> Raphael May 22, 2012 letter, *supra*.

However, the DEIS that DOE just issued breaks those (previously) clearly articulated commitments. Indeed, every option examined would breach the AOC.<sup>32</sup> DOE concedes this in the DEIS saying that the AOC

requires soil cleanup to the AOC LUT [Lookup Table] values, which are based on soil background levels or method/minimum detection limits. *DOE expects that, in order for the implementation of any alternative to be consistent with the 2010 AOC, changes to the AOC would be required.*

(emphasis added)<sup>33</sup>

2. The DEIS Has Shifted from Matters that Were Arguably within DOE's Discretion (How to Meet the Cleanup Requirements) to Decisions That Are Not Its to Make (Whether to Meet the Cleanup Requirements) and Ignores State Authority Over the Cleanup

NEPA is triggered by *discretionary* federal agency actions. It is to inform federal agency decisions. In 2012, DOE fully recognized that DTSC was the regulator and decision-maker about how much contamination DOE must clean up. As it wrote then in its April 2012 notice:

Who is the regulator for cleanup of Area IV at SSFL?

The California Department of Toxic Substances Control (DTSC) has the regulatory authority to direct the cleanup at SSFL.

In the DEIS as issued, however, DTSC is barely mentioned. As it is currently written, the DEIS suggests the decisions as to how much of DOE's contamination DOE must clean up are DOE decisions, not ones that it will reach under the purview of its regulator for the cleanup of chemical contamination. There is an occasional reference in the text (e.g., at p. S-12) that to undertake any of the alternatives DOE proposes, the AOC would be breached, but no real acknowledgment that that is not DOE's decision to make. The AOC is an enforceable contract between DOE and its hazardous waste regulator the DTSC, and DOE has no discretion to ignore its obligations under the AOC. And in that

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<sup>32</sup> In so doing, DOE now makes the same arguments NASA had originally made and which CEQ had rejected.

<sup>33</sup> DEIS, p. S-12. The DEIS identifies a total of four soil cleanup alternatives, one of which is characterized as a cleanup to AOC lookup tables, but with roughly half a million cubic yards of contaminated soil excluded from the cleanup to those requirements. All four alternatives are inconsistent the AOC, as conceded here in the DEIS.

AOC, DOE consents (and indeed, has no recourse to do otherwise) to DTSC regulatory authority over all aspects of the chemical and radioactive cleanup.

Bluntly, even absent the AOC, under RCRA, DOE lacks the authority to unilaterally decide how much of its chemical contamination to clean up, unless the State of California expressly cedes its authority to the federal agency entirely, which it has not done so, here or anywhere else. RCRA contains a waiver of federal immunity, so DOE must comply with it like everyone else; and RCRA authority has been delegated in California to DTSC. It is for that reason that DOE's 2003 Environmental Assessment did not even attempt to cover chemical cleanup decisions, acknowledging that that matter is within DTSC's authority. But in the DEIS, DOE says *it* will make a decision—issue a Record of Decision—about what cleanup option *it* chooses for its toxic chemical pollution. This is not a matter it gets to choose. DOE is the polluter, the regulated entity; the decision about how much of its pollution it must address rests with the regulator, DTSC, not the polluter.

A remarkable fact about the DEIS is its virtual silence about either the legally binding nature of the AOC or the existence of DTSC and its duly entitled state authority over the cleanup. In the DEIS, DOE essentially pretends it is the “decider,” free to choose to ignore the AOC at will and free to decide to leave as much of its pollution not cleaned up as it wishes. Neither is true.

For example, the AOC is not even explicitly mentioned in the Introduction Section 1.0 as one of the requirements DOE must meet, nor in the Purpose and Need for Agency Action (Section 1.1) on p. 1-1. In Chapter 9, identifying the requirements that DOE must follow, the AOC is relegated to a short reference under “Waste Management.” p. 8-3, 8-20. The AOC, of course, controls far more than waste management; it governs the entire cleanup.

Similarly, the DEIS simply ignores the fact that DOE can't choose to walk away from the AOC, that it is a contract with DTSC, and that in the AOC, DOE concedes to DTSC the power over the cleanup decisions. Additionally, DTSC's authority over the chemical cleanup pursuant to RCRA, even absent the AOC, is essentially ignored. DOE has drafted a DEIS as though the binding nature of the AOC and the authority of its regulator DTSC under the AOC and under RCRA don't exist.

A central failing of the DEIS is that it has morphed into a decision document for the central matters about how much it will cleanup, which is not DOE's to decide in the first place and something that is already done, per the AOC. The DEIS is essentially an assault on the state's authority under RCRA and pursuant to the AOC. DOE does not get to decide the very issues it has chosen to prepare the DEIS for, making it invalid.

Furthermore, even were there no AOC—and there is—and no DTSC regulatory authority over DOE—and there is—DOE would still be required to follow EPA CERCLA guidance for the cleanup of the radioactive and chemical contamination, pursuant to the 1995 DOE-EPA Joint Policy. All of the options DOE has put forward are



at variance with that EPA guidance, in addition to breaching both the AOC and DTSC's RCRA authority.

### 3. Erroneous "Purpose and Need for Action" Statement in the DEIS

In 2012, DOE, noting that "NEPA requires a statement of the purpose and need for action in every NEPA document," defined the purpose and need as follows:<sup>34</sup>

DOE needs to complete cleanup of Area IV and the Northern Buffer Zone in compliance with regulations, orders and agreements, *including the 2007 Consent Order (groundwater) and the 2010 Administrative Order on Consent (soil)*. The purpose of the project is to remove the remaining structures of Area IV of the SSFL and cleanup the affected environment in a manner that is protective of the environment and the health and safety of the public and Area IV workers.

(emphasis added)

However, the DEIS as issued has changed the "purpose and need for agency action" statement to now read:

DOE needs to complete remediation of SSFL Area IV and the NBZ to comply with applicable requirements for cleanup of radiological and hazardous substances. These requirements include regulations, orders, and agreements. To this end, DOE needs to remove the remaining DOE structures in Area IV of SSFL and clean up the affected environment in Area IV and the NBZ in a manner that is protective of the environment and the health and safety of the public and workers.<sup>35</sup>

The explicit purpose and need to comply with the 2007 Consent Order for cleaning up groundwater and with the 2010 AOC for cleaning up soil has been dropped. This is no mere oversight, as indeed, all alternatives presented in the DEIS abrogate the AOC requirement of cleanup to background. The 2012 commitments have been breached, and the DEIS, rather than analyzing how to carry out the AOC cleanup to background, now merely presents four alternatives to breach it. The purpose and need statement must return to the 2012 promise, and any new iteration of the DEIS must comply with both the 2012 commitments and the AOC.

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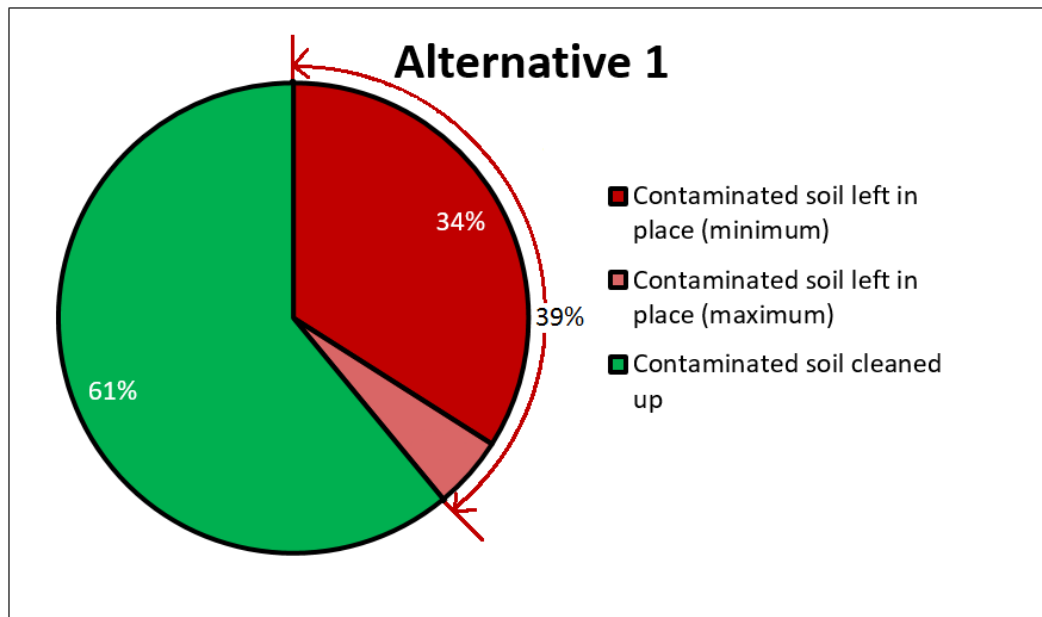
<sup>34</sup> DOE, Public Participation in the Development of Alternatives to be Considered in the Santa Susana Field Laboratory Area IV Environmental Impact Statement, May 2012.

<sup>35</sup> pp. S-2, 1-1.

C. All Soil Cleanup Alternatives Violate the AOC, DTSC RCRA Authority, and the 1995 DOE-EPA Joint Policy

We discuss each soil cleanup alternative below.

1. Alternative I – Which Leaves in Place 34-39% of the Contaminated Soil



While acknowledging in the DEIS that all alternatives breach the AOC, at other times DOE misleadingly suggests this first alternative is compliant with the AOC. It labels this option as cleanup to AOC Lookup Table (LUT) values. Yet DOE proposes to leave in place at least 480,000 cubic yards of the 1,413,000 cubic yards of soil contaminated above those limits, or 34%.<sup>36</sup> Because the DEIS says DOE also intends to assert an additional exception of up to 5% of total soil volume and leave that also in place, but hasn't included that leave-in-place volume in the totals,<sup>37</sup> this option, like all the others, can be an additional 5% higher, for a total of 39%, or 550,000 cubic yards, of the contaminated soil being left in place. As is repeatedly the case in the DEIS, there is no acknowledgment that DOE doesn't get to make that decision, that any such exceptions must comply with the AOC and must be approved by DTSC.

The AOC contains some very tightly delimited exceptions to the requirement to clean up all contamination to background.<sup>38</sup> Because DOE in the DEIS misrepresents them as it implies they allow it to leave in place more than half a million cubic yards of contaminated soil, reprinting the exceptions from the AOC here may be helpful:

<sup>36</sup> DEIS Summary, p. S-19.

<sup>37</sup> DEIS Summary, p. S-21.

<sup>38</sup> AOC, Appendix B, pp. 1-2.

**SUMMARY: The end state of the site (the whole of Area IV and the Northern Buffer Zone) after cleanup will be background** (i.e., at the completion of the cleanup, no contaminants will remain in the soil above local background levels), subject to any special considerations specified below.

- Clean up radioactive contaminants to local background concentrations.

Possible exceptions (*where unavoidable by other means*):

- The framework acknowledges that, where appropriate, DOE will engage in an Endangered Species Act (ESA) Section 7(a)(2) consultation with the U.S. Fish and Wildlife Service (FWS) over any species or critical habitat that may be affected by a federal action proposed to be undertaken herein on a portion of the site. Impacts to species or habitat protected under the Endangered Species Act may be considered as possible exceptions from the cleanup standard specified herein only to extent that the federal Fish and Wildlife Service, in response to a request by DOE for consultation, issues a Biological Opinion with a determination that implementation of the cleanup action would violate Section 7(a)(2) or Section 9 of the ESA, and no reasonable and prudent measures or reasonable and prudent alternatives exist that would allow for the use of the specified cleanup standard in that portion of the site.

- The acceptance and exercise of any of the following exceptions is subject to DTSC's oversight and approval, and the resulting cleanup is to be as close to local background as practicable:

- Detection limits for specific contaminants exceed the local background concentration, in which case the cleanup goal shall be the detection limits for those specific contaminants.

- Native American artifacts that are formally recognized as Cultural Resources.

- Other unforeseen circumstances but only to the extent that the cleanup cannot be achieved through technologically feasible measures. Under no circumstances shall exceptions for unforeseen circumstances be proposed in excess of five percent of the total soil cleanup volume.

(italics and underlining added<sup>39</sup>)

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<sup>39</sup> AOC, Appendix B, p. 1; there are identical exemptions for chemical contaminants on p. 2.

Thus, the only biological exception in the AOC to the requirement to clean up to background is if U.S. Fish and Wildlife Service issues a Section 7 Biological Opinion with a determination that implementation of the cleanup action would violate Section 7(a)(2) or Section 9 of the ESA, and no reasonable and prudent measures or reasonable and prudent alternatives exist that would allow for the use of the specified cleanup standard in that portion of the site. The only cultural exemption is for formally recognized Native American artifacts, and DTSC must approve the exception. And the up to 5% “unforeseen circumstances” exemption also requires DTSC approval and exists only to the extent that the cleanup cannot be achieved through technologically feasible measures. Furthermore, no exception can be applied unless it is demonstrated to be unavoidable by other means and the resulting cleanup is as close to background as practicable. As shall be discussed below, none of the conditions necessary to trigger an exception has been met. In apparent recognition of this, DOE admits that this option, like all the others, is not in compliance with the AOC and for it to go forward, the AOC’s requirements would have to be altered.<sup>40</sup>

a. Proposal to Leave in Place 150,000 cubic yards of soil contaminated with TPHs and PAHs

DOE states that for all alternatives, it will leave in place 150,000 cubic yards of soil contaminated with Total Petroleum Hydrocarbons (TPHs) and Poly Aromatic Hydrocarbons (PAHs).<sup>41</sup> It argues that these will be left in place to “naturally attenuate.” However, the AOC bars consideration of any leave in place alternative.<sup>42</sup> The AOC expressly states, “No ‘leave in place’ alternatives will be considered.” Note that not only are leave in place alternatives prohibited from being employed, they are barred from even being considered.

DOE says natural attenuation could take up to 70 more years, whereas the AOC required cleanup in just a few years. If DOE did what it proposes, those contaminants would be left in place, available for offsite migration, for a lifetime. Given that the contamination was created as much as seventy years ago, it would thus have been not cleaned up for nearly a century and a half if DOE was able to breach the AOC this way.

But in fact the time period appears far longer. The source DOE cites for the 70 year estimate<sup>43</sup> merely refers to another source<sup>44</sup> for the number and correctly points out

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<sup>40</sup> DEIS p. S-12.

<sup>41</sup> DEIS p. S-21.

<sup>42</sup> See p. 3, Appendix B, AOC. DOE tries to conflate the prohibition on “leave in place” alternatives with the prohibition on “onsite burial or landfilling of contaminated soil,” but these are separate prohibitions. DOE also appears to try to claim leaving it in place is on-site treatment, but it is of course just the opposite—no treatment at all, just leaving it there.

<sup>43</sup> CDM Smith 2015b.

<sup>44</sup> Nelson, et al. 2014.

that this was based merely on a “Phase I literature search.” In truth, the study relied upon (Nelson, et al. 2014) says the amount of time could be far longer, because the rates of attenuation slow dramatically after the easiest material degrades, which has already long ago occurred, and because site specific conditions of weathering also would tend to prevent degradation. The initial estimates were based on first-order approximations from the literature, but the report said site-specific studies were needed to determine likely attenuation rates at SSFL. As the Nelson, et al. study stated about the first-order estimate of ~70 years:

An important assumption in the above calculations was that the same first-order rate constant would be valid throughout the remediation period. As stated above, there are a couple of reasons this may not be a valid assumption: 1) The more easily biodegraded fractions of the hydrocarbon mixture will biodegrade first, leaving the more recalcitrant compounds towards the end, and 2) some fraction of the hydrocarbons will likely remain sequestered in the soil matrix and unavailable for biodegradation. For these reasons, longer remediation times than those calculated ... may be required at SSFL.

Nelson et al. concluded in that study, “It would be helpful to run microcosm experiments under conditions mimicking those at SSFL to get a better idea of potential biodegradation rates at SSFL.”

Nelson and his team (their studies were performed under contract to DOE) followed up that Phase I literature search with actual tests for SSFL-specific conditions. Those measurements under SSFL actual soil conditions resulted in “essentially no change” in concentrations for any of the unamended samples tested.<sup>45</sup> Thus, the actual studies prepared for DOE do not support the claim that the TPHs at SSFL can be left to naturally attenuate. But even were the claim of 70-year attenuation periods correct—and they aren’t—leaving the contamination in place for an additional 70 years would violate the AOC and pose continuing risks.

It is important to keep in mind that the DOE-funded Nelson studies were not aimed at natural attenuation but at identifying soil treatment options. The former is barred by the AOC but the latter, if it works effectively and quickly, is allowed. The Nelson studies concluded that natural attenuation wouldn’t work but that more research should be conducted on possible methods of treatment. One of the failures of the DEIS is the failure to adequately address possible treatment methodologies.

The refusal to clean up these 150,000 cubic yards of contaminated soil but rather leave them in place thus violates the AOC’s requirement that “no ‘leave in place’ alternatives will be considered, and they thus should not be considered.

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<sup>45</sup> See Nelson, et al. reports to DOE, DEIS references 296-300.

b. DOE Also Intends To Avail Itself of An Additional Asserted Exception For 5%, or 70,650 Cubic Yards, of The Contaminated Soil Volume, Again Violating the AOC's Very Limited Exceptions

The AOC exception is limited to “unforeseen circumstances but only to the extent the cleanup cannot be achieved through technologically feasible measures” and requires DTSC approval. Remarkably, DOE is asserting now that it *foresees* claiming such *unforeseen* circumstances. DOE argues that deciding not to clean up contamination that is deeper than 5 feet below the surface would be among the requested unforeseen circumstances exception, even though there is nothing unforeseen about contamination being below 5 feet and that exception is limited to matters where cleanup cannot be achieved through technologically feasible measures, so it clearly doesn't apply.

Similarly, DOE's other example of not cleaning up in remote locations doesn't fit the exception, as it is neither an unforeseen circumstance nor is the cleanup not achievable by technologically feasible measures. And there is no showing that the application of the purported exception is unavoidable by other means. Finally, the AOC requires that even if an exception were granted by DTSC, the soil would still have to be cleaned up to as close to background as practicable. Instead, DOE just wants to walk away from cleaning up most or all of it. The DOE claim for “leaving in place” an additional 5% of the 1,413,000 cubic yards of contaminated soil thus violates the AOC in multiple ways.<sup>46</sup>

c. DOE's Biological Features Exemption Claim Violates the AOC

DOE states that also for all alternatives, it will leave in place an additional 330,000 cubic yards of contaminated soil pursuant to what it implies are AOC exceptions for biological factors and cultural features.<sup>47</sup> However, the biological exception only occurs if the United States Fish and Wildlife Service (USFWS) issues a Biological Opinion that finds that the particular cleanup in a particular SSFL location would violate Section 7(a)(2) or Section 9 of the Endangered Species Act and no reasonable and prudent measures or reasonable and prudent alternatives exist that would allow for the use of the specified cleanup standard in that portion of the site, and the exception is unavoidable by other means.

*No such USFWS Biological Opinion has been issued.* The AOC exception does not apply.

And we note that the agency did issue a Biological Opinion a few years ago for EPA's intrusive radiation survey work that involved cutting back much of the vegetation

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<sup>46</sup> The DEIS does not clearly spell out whether DOE intends to apply the 5% carve-out just for this alternative or for all. In the absence of DOE ruling it out, we here assume the 5% additional leave-in-place volume as part of the upper limit for all the DEIS cleanup alternatives.

<sup>47</sup> DEIS, p. S-21.

in the area.<sup>48</sup> USFWS approved, indicating in part that the activity would actually be helpful to the natural species by making possible cleanup of the environmental contaminants. The Biological Opinion further indicated that soil disturbance often helps the Braunton milkvetch, a federally listed species, but in any case measures such as tagging and avoiding plants or storing seeds and reseeded thereafter could be undertaken. The Biological Opinion concluded, further, that even were there a loss of a great majority of the Braunton milkvetch at Area IV and the NBZ, “adverse effects caused by this project will not occur throughout a significant portion of the range of the species (only plants in approximately 2 percent of the range of Braunton’s milkvetch would be affected by the project).” But in any case, mitigation measures can be undertaken.

DOE is attempting to get out of remediating the damage to the environment it has caused by decades of pollution by saying it now wants to protect biological features by not cleaning up the radioactive and toxic chemicals with which it contaminated them.

Further, the DEIS asserts that the contamination is concentrated around certain facilities.<sup>49</sup> But the biological features were long ago scraped away by DOE to construct those facilities; it is not pristine land, even leaving aside the contamination. Somehow, after decades damaging the SSFL land with radioactivity, toxic chemicals, and intensive industrial activity, suddenly DOE now claims that it shouldn’t have to live up to its commitments to remediate the damage it has done to those very biological resources.

Perhaps in recognition that the AOC’s narrow exception has not been met, DOE has tried to confuse the issue by speaking in the DEIS in broad terms about “conserving biological resources.” But that, of course, is not the actual AOC exception.

The DEIS lists nine federally and state-listed plant species, but then goes on to admit only two of them are known to exist in Area IV and the NBZ. DEIS p. 3-63. And DOE in the DEIS has tried to conflate the AOC exception, which is limited to a USFWS Biological Opinion barring a specific aspect of the cleanup as violating ESA, into a misleading effort to get the California Department of Fish and Wildlife (CDFW) to support DOE’s efforts to avoid complying with the AOC cleanup requirements.

On September 12, 2016, DOE wrote to CDFW misleadingly asserting that the AOC had a generic exemption for protection of biological resources and “to employ an exemption, DOE requires the opinion of the California Department of Fish and Wildlife that an exemption to the AOC soil cleanup is critical for protection of the species.”<sup>50</sup>

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<sup>48</sup> Biological Opinion for the Santa Susana Field Laboratory Area IV Radiological Study Project, Ventura County, California [EPA Contract # EP-S7-05-05] (8-8-10-F-12), May 25, 2010.

<sup>49</sup> DEIS, p. S-1.

<sup>50</sup> Letter from DOE’s John Jones to CDFW’s Mary Meyer, September 12, 2016, including Attachment A, “Supporting Analysis, Effects of Soil Remediation on Santa Susana Tarplant (*Deinandra minthornii*) in SSFL Area IV, August 25, 2016.

DOE attached a very misleading document, purporting to show that there is no health risk whatsoever from not cleaning up the site and supposed extreme risk to the tarplant if it is. (The tarplant is not a federally listed species at all, and is not listed by the state as endangered or threatened, but is identified as rare.) Note that CDFW would have no way of knowing that the AOC exception is restricted to a specified narrow finding in a Biological Opinion by the *U.S.* Fish and Wildlife Service, not the CDFW, and that the standard DOE suggests is also far broader than that contained in the AOC.

Intriguingly, the DOE submission to CDFW indicates that the tarplant has thrived in formerly developed areas at SSFL where facilities were removed followed by interim restoration. It is conceded that the tarplant grows in previously disturbed areas (“including cracks in paved areas”) and that “Boeing has had success at getting Santa Susana tarplant to reestablish at sites where soil has been removed as part of remediation.” Area IV and the NBZ contain about 850 plants total, or about 2 per acre; it estimates an average of only about 13 plants per acre it proposes as exemption areas in Area IV. Clearly one could simply work around those few plants if one wished.

The core of the DOE assertions to CDFW is the claim that “With exceptions, these exceedances of LUT values are at a low level and do not warrant cleanup when human health and ecological receptor Risk Based Screening Levels (RBSLs) are used to determine where potential soil cleanup may occur.” This statement, as will be shown in detail later, is false. DOE used human health RBSLs that are orders of magnitude higher (less protective) than the true RBSLs, and if it left the contamination in place as it proposes, the risks would far exceed human health RBSLs. And nowhere in the DEIS is there an analysis of the contamination compared to the ecological RBSLs. In fact, the cleanup standards DOE now proposes are also orders of magnitude higher than the ecological RBSLs.

In other words, in the guise of trying to protect biological features, DOE proposes to walk away from its obligation to clean up the radioactive and chemically toxic pollution with which it contaminated those features, and leave behind concentrations far above the established Risk Based Screening Levels for ecological receptors, let alone for human health.

None of this was explained to CDFW by DOE. On the day DOE issued the DEIS, DTSC’s Director Barbara Lee wrote to DOE Assistant Secretary Regalbuto expressing significant dismay about DOE’s misleading approach to CDFW, asserting that it was essentially violating the AOC.<sup>51</sup> DTSC stated,

We are concerned that DOE is proposing cleanup actions inconsistent with the Administrative Order on Consent (AOC) between DOE and the Department of Toxic Substances Control (DTSC), and is basing these proposals on assumptions unsupported by needed data and analysis.

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<sup>51</sup> January 6, 2017, DTSC letter “Initial DOE Assessments Related to the Santa Susana Field Lab Cleanup.”



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First, and most importantly, we note that it appears DOE is proposing cleanup approaches that fail to fully recognize the AOC provisions that apply to sensitive plant and animal species located at SSFL. These provisions allow limited exceptions to cleanup activities to safeguard protected species. As you know, DTSC is committed to implementing and enforcing the AOC. DTSC requests DOE to discontinue early consultation until we can discuss with DOE and CDFW how the requirements of the AOC apply to this process.

Second, DTSC is concerned that DOE may not have supported its initial assessments of key issues with sufficient data and analysis.

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Further, it does not appear that DOE has analyzed individual, location-specific approaches to minimizing and mitigating potential impacts to the Tar Plant and other sensitive habitat and resources consistent with the AOC.

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We are also concerned that this consultation has been initiated without sufficient discussion with DTSC.

In sum, DOE is attempting to claim a biological exception for which it does not qualify. That exception is only triggered by a USFWS Section Biological Opinion finding a proposed cleanup action on part of the property to violate specified sections of the ESA, with no reasonable and prudent measures or reasonable and prudent alternatives that would allow for the use of the specified cleanup standard in that portion of the site. No such USFWS Biological Opinion exists. No such showing of the unavailability of mitigation measures has been made by DOE. Cleaning up the radioactive and toxic damage DOE did to the SSFL environment would help biological features in the long run, not harm them.

The proposed exemption areas in the DEIS include some of the most contaminated areas on the property—for example, the SRE, site of the partial meltdown, and the burnpit.<sup>52</sup> These areas are the opposite of pristine natural areas, and it is troubling that DOE would attempt to claim a biological exception for which it does not qualify under the AOC as a way of avoiding cleaning up among its biggest toxic impacts.

#### d. Cultural Features Exemption Claim

Additionally, the DEIS asserts an exemption that it describes as for cultural features, but the AOC exception is limited to Native American *artifacts* that have been

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<sup>52</sup> DEIS, p. 2-23.

formally recognized. *The DEIS discloses in an appendix, however, that there are no formally recognized Native American artifacts in Area IV or the NBZ.*<sup>53</sup> Like its attempt to expand the narrow exception for a USFWS Biological Opinion to a shotgun set of claims about biological features generally, DOE similarly tries to inflate the narrow exception for formally recognized Native American *artifacts* to cover far broader claims not allowed under the AOC. Furthermore, this exemption is not in DOE's purview to declare; according to the AOC, DTSC must decide whether it is to be used. Again, DOE leaves out the fact that these decisions are not its to make.

A study performed by DOE for site cleanup found three small rockshelters and one bedrock mortar in Area IV, ineligible for formal recognition:

*Due to their failure to satisfy the criteria of inclusion, these four sites have been determined not eligible to the National Register of Historic Places. Based on this determination, the proposed closure and remediation program is determined to have no effect.*<sup>54</sup>

A subsequent cultural features survey performed for the USEPA radiation survey identified some additional rockshelters and similar features and isolated small artifacts such as the mano stone, a few inches across, pictured below. These were flagged and either avoided during the survey or carefully collected and then returned to their original location, which could be done as well during the cleanup.<sup>55</sup>



*mano stone, source: DOE DEIS Ref. 465 (Corbett 2012)*

What artifacts have been found – although none is formally recognized—have generally been quite small and isolated, whereby one can readily work around them or, as was done in the EPA survey, carefully collect and then return them. There is no basis, as

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<sup>53</sup> Appendix F, F-16.

<sup>54</sup> W&S Consultants, *Class III Inventory/Phase I Archaeological Survey of the Santa Susana Field Laboratory, Area 4, Ventura County, California*, September 24, 2001. This reference is cited in the DEIS (reference 502) but the DOE link to it takes one to a statement that DOE is not making it available. We found it elsewhere.

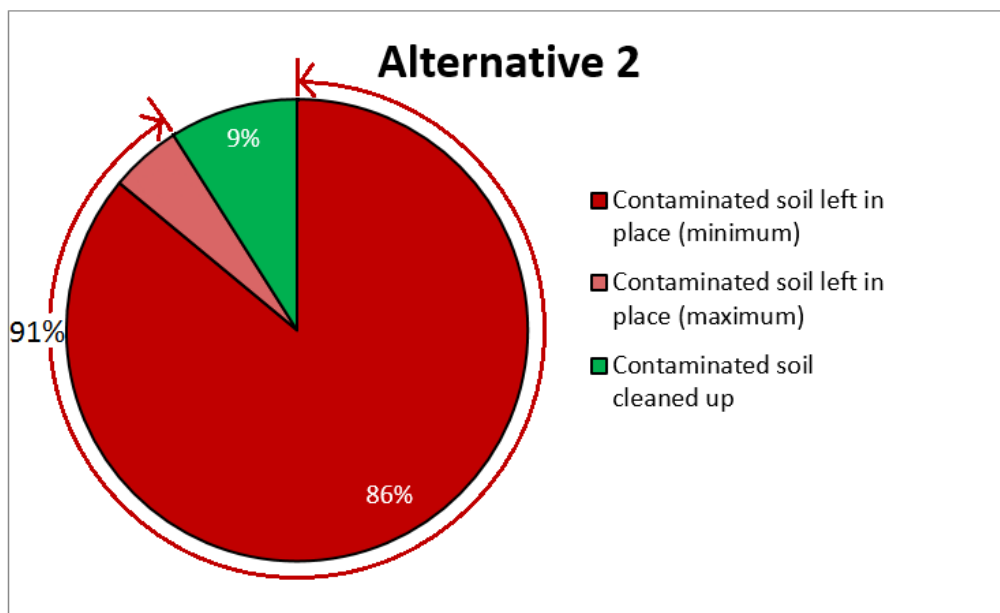
<sup>55</sup> DOE DEIS Ref. 465 Corbett 2012.

DOE has done, to propose exempting a vast amount of the contamination from cleanup because of isolated small artifacts, which can be fully protected while also allowing the site to be returned to its natural state before DOE polluted it.

DOE states it will include a USFWS Biological Opinion, if issued, and information on cultural exemptions in the final EIS. Similarly, DOE suggests post-DEIS cultural feature efforts to declare exceptions based on future cultural feature considerations. But that of course prevents public review and comment in the NEPA process, amounting to a game of hide the ball. DOE has had years, indeed decades, to have obtained the Biological Opinion and any necessary Native American artifacts consideration, and its delay in doing so impermissibly shields from NEPA review the basis for cleanup exemption claims. One notes that EPA was able to timely obtain its USFWS Biological Opinion and its cultural features review for its activities at Area IV and the NBZ, and that neither Opinion indicated that the activity would cause an unacceptable impact and could be readily conducted in a way that was acceptable. DOE's efforts to exempt 330,000 cubic yards of contaminated soil from cleanup for purported biological and cultural reasons violates the narrow AOC exceptions and is unsupportable upon careful examination.

Thus, Alternative 1 breaches the AOC and would, despite the prohibition on "leaving in place," leave in place 34-39% of the contamination. None of the exceptions that DOE cites are currently met.

## 2. Alternative 2 – Leave in Place 86-91% of the Soil Contamination



DOE characterizes this alternative as using alternative Lookup Table (LUT) values, alternative to those required by the AOC. As such, it is a direct violation of the AOC. The AOC requires cleanup to LUT values established by DTSC based on

background and detection limits. It is not up to DOE to set these values; it is solely DTSC's authority, pursuant to the AOC. Once again, DOE in its DEIS is usurping the authority of its regulator, DTSC, about a matter not in DOE's purview, and attempting to adopt cleanup values that violate the AOC.

The cleanup standards DOE now puts forward in this alternative violate the AOC, the 1995 Joint Policy with EPA, and longstanding DTSC and EPA guidance.<sup>56</sup> DOE estimates under this option, only 192,000 of the 1,413,000 cubic yards of contaminated soil would be cleaned up (leaving 86% in place). With the additional 5% exemption they are improperly assuming, but not including in the total, that means up to 91% could avoid cleanup.<sup>57</sup>

The alternative LUT cleanup levels DOE proposes are orders of magnitude more lax than the AOC LUT values, as can be seen by comparing the AOC LUT values and the DOE proposed alternative RBSLs in Table D-3 of the EIS.<sup>58</sup> The thyroid disrupter perchlorate, for example, is supposed to be cleaned up to levels of 1.63 micrograms per kilogram. That is what DOE promised to do. Now it wants to leave concentrations as high as 53,300 micrograms/kg. That is 32,700 times higher. Dioxins, an extraordinarily toxic group of chemicals (2,3,7,8-TCDD TEQ) have a LUT value of 0.912 picograms/gram under the AOC. DOE instead wants to not have to clean the dioxins up until they reach a level of 4800 — more than 5000 times higher. Acenaphthene has an AOC LUT cleanup value of 2.5 microgram/kg; DOE wants to not clean it up until the level reaches 3,230,000, more than a million times higher.

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<sup>56</sup> See, e.g., Land Use in the CERCLA Remedy Selection Process, EPA OSWER Directive 9355.7-04, and DTSC Response to Comments on Agreements in Principle, p. 11-12.

<sup>57</sup> As indicated above, the DEIS is not clear about whether DOE proposes to use the 5% purported "unforeseen circumstances" additional exemption for all three alternatives. This should be clarified.

<sup>58</sup> DEIS Table D-3, pp. D-8-11.

Here are a few more examples:

DOE Proposed Cleanup Level in EIS VS. AOC levels

Chemical	DOE Proposed Cleanup, Supposed Suburban Residential RBSL (mg/kg)	AOC Levels (mg/kg)	How much more of each chemical does DOE propose to leave? (Compared to AOC)
Bis(2-ethylhexyl)phthalate	173	0.061	2,836 times more
Naphthalene	14.6	0.0036	4,055 times more
2-Methylnaphthalene	162	0.0025	64,800 times more
Methylmercury	7.61	0.00005	152,200 times more
Pyrene	1650	0.0056	294,643 times more
Flouranthene	2,200	0.0052	423,076 times more
Benzo(g,h,i)perylene	1,650	0.0025	660,000 times more
Phenanthrene	16,400	0.0039	4,205,128 times more
Anthracene	16,400	0.0025	6,560,000 times more

A complete comparison of AOC LUT cleanup values for the more than one hundred toxic chemicals found to be elevated at SSFL Area IV and NBZ versus the levels DOE proposes to be permitted to leave behind is attached hereto.

DOE claims that under this alternative, it would clean up the chemical contaminants to what it purports is a risk-based standard. The standard it says it would use are Risk Based Screening Levels that it says are specified in the DTSC-approved Standardized Risk Assessment Methodology (SRAM). DOE in the DEIS claims the SRAM mandates the use of a suburban residential standard and that that is what DOE proposes to use in this alternative. Both assertions are incorrect. The SRAM does not mandate the use of the suburban residential standard as opposed to a more conservative rural residential standard. Furthermore, the RBSLs that DOE says it wants to use even for the suburban residential scenario are thousands of times less protective than the suburban residential RBSL in the SRAM.

The SRAM includes RBSLs for several scenarios, including not just the suburban but also the rural residential one. Generally, the latter would be the most protective standard, as it includes the greatest exposure. Under EPA and DTSC practice, one is to clean up to the exposure scenario that produces the greatest risk and which is allowed under current County zoning and General Plan designations.<sup>59</sup> As DTSC described the process<sup>60</sup>:

<sup>59</sup> See, e.g., Land Use in the CERCLA Remedy Selection Process, EPA OSWER Directive 9355.7-04, and DTSC Response to Comments on Agreements in Principle, p. 11-12.

One of the primary assumptions that these calculations rely upon is the land use. The Superfund process requires the assumption to be based upon the reasonably anticipated land use. *The local government General Plan land designations and local zoning designations are the most reliable expressions of prospective land use.* OSWER Directive No. 9355.7-04 .“Land Use in the CERCLA Remedy Selection Process,” May 25, 1995, p. 2, 4-5. *DTSC and U.S.EPA, in implementing the Superfund process, defer to local governments’ land use plans and zoning decisions, and base their cleanup level calculations on the assumption that the land will be used as the land use requirements would allow, irrespective of its current use.*

(emphasis added)

As DTSC said in 2010, its normal practice, even if there were no AOC or site-specific law, would be to require SSFL to be cleaned up to the rural residential/agricultural standard because that is what the site is zoned for and allowed under the General Plan:

Even absent SB 990 [an SSFL-specific statute], *DTSC, in implementing its cleanup authorities, would defer to local governments’ land use plans and zoning decisions. In this instance, the Ventura County zoning maps specify that the site and much of the surrounding area are currently zoned as rural agricultural.* Carrying out the cleanup specified in the Agreements in Principle is consistent with both SB 990 and with local land use decisions.

(emphasis added)<sup>61</sup>

DTSC after analyzing various contaminants at SSFL, stated that such a cleanup using its standards for all sites in the state, i.e., relying on local land use designations, would result in a cleanup at SSFL essentially equal to a cleanup to background.<sup>62</sup> Thus, a genuine risk-based cleanup would be the same as the AOC, whereas what DOE puts forward would leave on the order of 90% not cleaned up.

Ventura County in 2015 confirmed for DTSC that its land use designations for the property allow a wide range of residential (e.g., with gardens) and agricultural (rural residential) uses.<sup>63</sup> Thus, were there no AOC, any risk-based cleanup would have to be to the most protective of those exposure scenarios.

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<sup>60</sup> DTSC Response to Comments, *supra*.

<sup>61</sup> *id.*, p. 21.

<sup>62</sup> *id.* pp. 14-17.

<sup>63</sup> Letter of July 20, 2015 from Kimberly L. Prillhart, Director, Ventura County Planning Division, to Mark Malinowski, DTSC.



*Cow on SSFL Area IV*      *source: William Preston Bowling*



*Cows grazing near Area IV<sup>64</sup>*      *source: William Preston Bowling*

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<sup>64</sup> The agricultural cleanup standards are designed to assure that, for example, cows are not grazing on grass growing in contaminated soil, so that those who drink the milk and eat the meat are not put at risk.



Throughout the DEIS, DOE claims it is using the suburban residential RBSLs from the DTSC-approved SRAM. However, buried in a footnote, DOE concedes it isn't using even the suburban residential standard, but only one aspect of a standard, not the standard *in totem*. Specifically, DOE, for its own purposes that are not identified, avails itself of only the direct contact aspect of the standard (e.g., getting some soil on your hand), and does not include the part of the suburban residential standard that is associated with exposure from consumption from backyard fruit trees or vegetable garden.<sup>65</sup> The backyard garden part of the suburban residential scenario is required to be included, barring some extraordinary situation (e.g., where soil conditions prevent anything growing).<sup>66</sup> DOE claims it is using only the direct contact part of the suburban residential scenario and excluding the backyard garden part per the SRAM. But the SRAM doesn't say that. In fact, it requires calculation of the backyard garden part of the risk and provides RBSLs for that component of the suburban residential standard.<sup>67</sup> Indeed, DTSC has recently directed Boeing that the backyard garden part of the suburban residential exposure pathway must be incorporated.<sup>68</sup>

The significance of DOE claiming it is using a suburban residential standard but in fact using a standard that excludes the key component of that standard is that the RBSLs it purports are the suburban residential RBSLs are, for many chemicals, hundreds or thousands of times less protective than the actual suburban residential RBSL from the DTSC-approved SRAM. Here are a few examples (a complete comparison table is attached hereto).

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<sup>65</sup> See fn 32, p. S-21. (Note that it misrepresents the backyard garden scenario as requiring 100% of one's fruits and vegetables from the garden.)

<sup>66</sup> See, e.g., EPA's Preliminary Remediation Goals for radionuclides, <https://epa-prgs.ornl.gov/radionuclides/>

<sup>67</sup> Final SRAM, Rev. 2 Addendum, August 2014, , pdf pp. 1071- 1074 It also provides RBSLs for rural residential/agricultural exposures.

<sup>68</sup> Letter of August 23, 2016, from DTSC's Roger Paulson to Michael Bower of Boeing p. 3.



**DOE Proposed Cleanup Level in EIS, Supposed Suburban Residential RBSL VS. True Suburban Residential RBSL with Garden**

<b>Chemical</b>	<b>DOE Proposed Cleanup Level in EIS, Supposed Suburban Residential RBSL (mg/kg)</b>	<b>True Suburban Residential RBSL with Garden (mg/kg)</b>	<b>How much more of each chemical does DOE propose to leave? (Compared to Suburban Residential RBSL with Garden )</b>
Mercury	16.8	0.0504	333 times more
Methyl Mercury	7.61	0.00131	5809 times more
Cadmium	4.6	0.00165	2787.9 times more
Perchlorate	53.3	0.0158	3373.4 times more
Acenaphthene	3230	18.7	172.7 times more
Antimony	26.4	0.139	189.9 times more

Because a RBSL is defined as the concentration that will produce a cancer risk of one in a million or a hazard index of 1 for non-cancer risks, the right-most column above also tells one how many times above the risk goal DOE's desired standards are. In other words, DOE promised that its cleanup alternatives would leave behind a one in a million cancer risk and an acceptable risk from other health effects, but in fact its proposed standards would result in risks hundreds or thousands of times higher.

In addition to trying to adopt cleanup standards orders of magnitude higher than the promised AOC LUT values or even true suburban residential risk-based levels, DOE has used these grossly inflated RBSLs to eliminate completely from any cleanup 98 of the 116 toxic chemicals found contaminating its property – without explicitly disclosing so. Table D-3 of the DEIS gives LUT and purported RBSL values for 116 toxic chemicals, but in Table D-4, DOE shrinks the list of contaminants of concern for which there are cleanup levels under its alternative 2, “alternative LUT values,” to 18. The source from which Table D-3 is taken, CDM Smith 2017, identifies more than a hundred hazardous chemicals detected in Area IV and the NBZ at levels in excess of LUT values, i.e., contamination above background. Yet what DOE has quietly done is thrown out all chemicals that exceed LUT values but are below its purported RBSL values, which, as we have seen, are hundreds or thousands of times higher than true suburban residential RBSL values. In short, in alternative 2, DOE proposes to clean up only 18 of 116 contaminating chemicals, and for those that will be considered for cleanup, do so only if they reach levels orders of magnitude higher than the promised AOC LUT values or true suburban residential RBSLs, which includes a garden.<sup>69</sup>

<sup>69</sup> We note that DOE is not even clear that it will clean up contamination that reaches the astronomical levels it purports are suburban residential RBSLs. Instead, it merely says a “cleanup decision” would be made if contamination is found over those levels.

DOE has no logical reason for the hidden exclusion of the backyard garden portion of the risk-based screening level, nor for excluding the agricultural/rural residential standards. For this alternative DOE states it would use the AOC LUT values for radionuclides but not for chemicals, with no rationale.<sup>70</sup> For chemicals, DOE proposes far less protective cleanup standards than required by the AOC LUT values. DOE states that for chemicals it will assume suburban residential exposures, but then excludes the garden component of the suburban residential standard. In support for this arbitrary exclusion, DOE states that Boeing wants to use the suburban residential standard without a garden for other portions of the site, citing to a letter in response to a letter by LA Supervisor Kuehl, LA City Councilmember Englander, and then-Senator Pavley to DTSC Director Lee (DOE includes the Boeing letter but not the electeds' letter to which it purportedly responds).<sup>71</sup> But it is DTSC that decides Boeing's cleanup levels, not Boeing, and DTSC has told Boeing it cannot exclude the backyard garden part of the suburban residential standard but must include it in the total risk.<sup>72</sup> And further, DTSC has said that in the establishing of cleanup levels it defers to local zoning and General Plan designations, which allow both suburban residential with a garden and agricultural/rural residential uses, as discussed above. There is thus no basis, even were it not bound by the AOC, for DOE to propose cleanup that wouldn't meet the agricultural/rural residential standard, nor the suburban residential standard with garden.

DOE, a Responsible Party (RP) under DTSC regulation, is relying on another Responsible Party's cleanup wish, when it is up to neither RP, but to the regulator. And the regulator's requirements are cleanup based on land use designations by the County, which allows agricultural/rural residential uses and also suburban residential with a garden.

DOE claims Boeing has stated that its desire is to place restrictions on the property [in perpetuity?] so it cannot be used for residences, backyard gardens, etc., but rather for open space. But DTSC and EPA procedures don't allow the Responsible Parties to avoid of cleanup obligations by declaring the property too contaminated for unrestricted use. If that were allowed, every polluter would simply do so and walk away from their obligation for cleanup. It is local land use authorities that determine what uses are allowable and thus, under regulator procedures, what cleanup standards apply.

Furthermore, DOE states in the DEIS that, despite Boeing's stated desire for the land to be open space, that couldn't be counted on, and for that reason, DOE would assume residential uses could occur and would set RBSLs accordingly. It is thus completely contradictory to assume a residential exposure scenario and then exclude a backyard garden on the grounds that Boeing says it intends to place restrictions so that it can't be used for residences or gardens. The Responsible Parties here don't get to have it both ways.

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<sup>70</sup> DEIS, p. S-30.

<sup>71</sup> *id.*, p. 2-13, *citing letter* dated December 15, 2015.

<sup>72</sup> Aug 23, 2016 ltr., *supra*.

Further, it is important to recall that a main reason for cleaning up SSFL is to protect the people who live or engage in agriculture nearby. Many of the homes have gardens; and cows graze now on contaminated grass next to and on the site. Someone drinks that milk, eats that meat. Even were SSFL restricted in its future use to non-residential or non-agricultural activity, the people living near it and subject to exposure to the migrating contamination are not.<sup>73</sup>

Therefore, using cleanup standards based on suburban residential use with no garden, standards hundreds or thousands of times less protective than the true RBSLs for suburban residential with garden, puts at risk people who live nearby and who do have gardens, and all the agricultural uses. Even were there never a residence on SSFL, leaving contamination thousands of times the true suburban residential RBSL could mean that migration, even with possible reduction of concentrations,<sup>74</sup> could result in unacceptable exposures to the people nearby.

DOE's Alternative 2, which could leave in excess of 90% of the contamination in place, obviously violates the AOC. But even in the absence of an AOC, it also violates DTSC's procedures for risk-based cleanups, which are to rely on local government's land use designations.

Additionally, Alternative 2 violates the DOE-EPA 1995 Joint Policy requiring cleanup of all DOE sites, whether they are on the National Priority List or not, to EPA's CERCLA guidance. The relevant guidance similarly relies on local government land use designations.<sup>75</sup> Interestingly, the stated intentions of the Responsible Parties (i.e. the polluters) for how they would want to restrict the land to avoid more protective cleanup obligations is not one of the factors identified in EPA guidance to be considered.

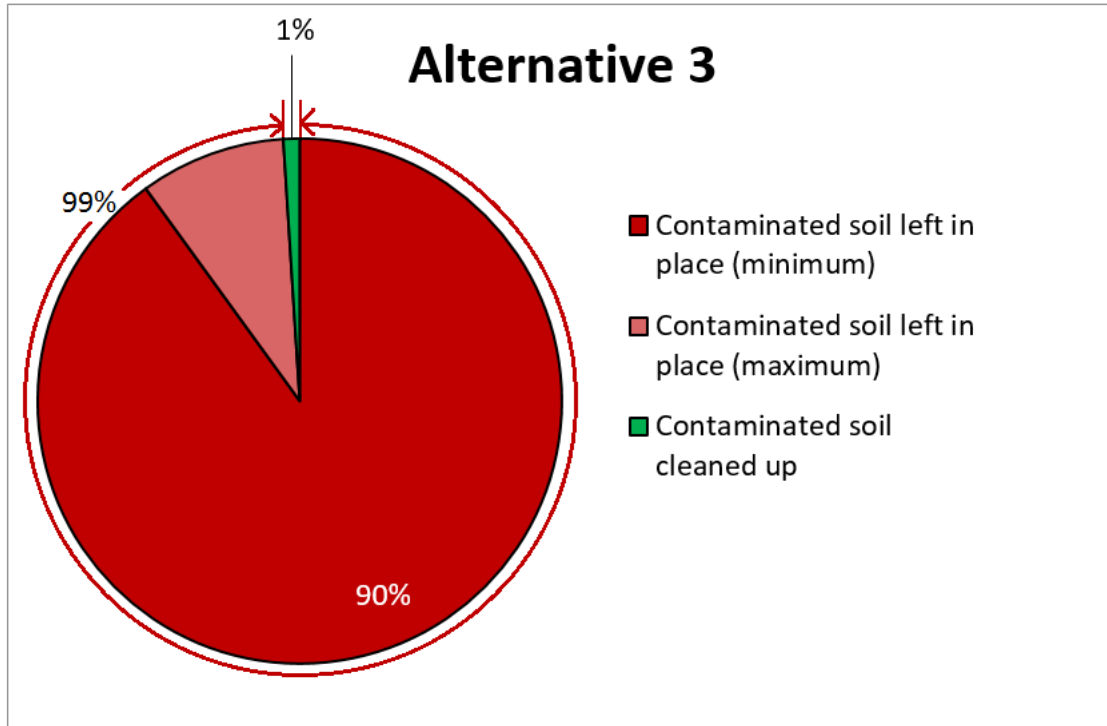
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<sup>73</sup> Furthermore, institutional controls cannot be relied upon when institutions can be counted on to exist for only a fraction of the time over which the toxic materials are dangerous. See, e.g., Hirsch, *50 Years of Power, 500,000 Years of Waste*, December 20, 2013, in U.S. Nuclear Regulatory Commission docket for Waste Confidence Rule and Generic EIS, NRC-2012-0246.

<sup>74</sup> For example, a ten-fold dilution factor would still result in hundreds of times the risk based level for residences. And there is nothing to guarantee that contaminants wouldn't concentrate offsite; e.g., where they tend to accumulate in sediments.

<sup>75</sup> "Land Use in the CERCLA Remedy Selection Process," EPA OSWER Directive 9355.7-04.

3. Alternative 3 – 25 Millirem/yr for Radiation, and Averaging Chemical and Radioactive Contamination Over Wide Areas, Leaving in Place 90-99% of the Contaminated Soil, Not Cleaned Up



This alternative, which would leave from 90% to as much as 99% of the contamination not cleaned up, is cynically referred to by DOE as the *Conservation of Natural Resources* alternative.<sup>76</sup> After polluting those natural resources for sixty years,

<sup>76</sup> DOE estimates in the DEIS (p. S-33, S-39) that this alternative involves cleaning up 148,000 cubic yards of soil, out of the 1,413,000 cubic yards it estimates are contaminated, thus leaving about 90% not cleaned up. The DEIS, however, indicates that this option involves the As Low As Reasonably Achievable (ALARA) principle, in which DOE will decide whether to clean up 44,000 cubic yards of soil contaminated above AOC LUT limits. It is not clear from the DEIS whether the 148,000 cubic yard estimate presumes cleanup of all, or none of the 44,000 cubic yards (i.e., whether the baseline is 104,000 cubic yards with up to 44,000 cubic yards of additional soil perhaps cleaned up pursuant to ALARA). Further complicating the matter is that DOE has included the same 44,000 cubic yard figure in two different places in the table in question, on p. S-39, making it uncertain which group of contaminated soil it is identifying for prospective ALARA analysis. In practice, ALARA rarely results in additional cleanup. If the correct estimate is 148,000 cubic yards, that represents an alternative in which 90% is not cleaned up. (Because of the unclear language in the DEIS regarding the ALARA matter, we have assumed the minimum cleaned up is the figure the DEIS reports of 148,000 cubic yards). If the 5% “unforeseen circumstances” exceptions DOE claims for Alternative 1 is also claimed for Alternative 3, that would

DOE purports to “protect” them by not remediating the toxic and radioactive damage it has done.

This alternative would violate the AOC, DTSC requirements, and the 1995 EPA-DOE Joint Policy. It involves cleaning up the radioactivity to a supposed dose of 25 millirem per year. That is the equivalent of a dozen unnecessary chest X-rays per year, or one a month from the moment of conception to the moment of death. EPA has long declared that dose to be “non-protective” and bars its use under its CERCLA guidance.<sup>77</sup>

But this proposed DOE standard is even worse than it sounds at first. Because DOE in the DEIS calculates the dose based on suburban residential *without* a garden, and since the garden produces hundreds to thousands of times higher risk than the suburban residential without a garden, the true dose for the standard required suburban residential exposure scenario would be thousands of chest X-rays annually.

EPA has a Dose Compliance Calculator by which one can calculate the dose received by a member of the public in a suburban residential exposure scenario. DOE has proposed for this alternative allowing, for example, an astronomical 1200 pico-curies of strontium-90 per gram of soil (1200 pCi/g). EPA’s actual risk-based Preliminary Remediation Goal for Sr-90 is 0.0036 pCi/g, 330,000 times lower (more protective). According to the EPA Dose Compliance Calculator, the cleanup level of strontium-90 DOE is proposing for a suburban resident would produce a dose, not of 25 millirem/year, but an astounding 1540 millirem per year. That is the equivalent of 770 chest X-rays a year, about two a day from conception on, for decades. We urge that DOE not suggest this is a reasonable exposure for the public.

The situation is even worse for other radionuclides. The plutonium-239 cleanup level DOE proposes for this alternative, 640 pico-curies per gram, is 104,065 times higher than EPA’s PRG for Pu-239, which is 0.00615. EPA’s Dose Compliance Calculator estimates a dose of 4,220 millirem/year from the DOE proposed cleanup level, the equivalent of 2,110 chest X-rays per year, nearly six a day, for decades.

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leave 95% not cleaned up. And if the 44,000 cubic yard figure for ALARA is the one from the furthest right column in the table on S-39, then as much as 98 or 99% of the contamination would be left in place, taking into account uncertainties of measurements and estimates. Even if Alternative 3 resulted in “only” 90% not cleaned up, that would still be an extraordinary breach of the AOC and of the necessity to protect the public health and ecological features.

<sup>77</sup> EPA, “Radiation Risk Assessment at CERCLA Sites: Q&A,” OSWER 9285.6-20, June 13, 2014; see p. 28. Dose is not to be used at CERCLA sites as a cleanup standard unless there is an Applicable or Relevant and Appropriate Requirement (ARAR) that is at a substantially lower dose; if there is no such ARAR (and only Maine has one), one is to not use dose and to use CERCLA’s process of aiming for a one in a million risk, which is roughly equivalent to a few hundredths of a millirem per year.

### Radiation Dose from DOE SSFL Clean-up Levels

source: EPA Dose Conversion Calculator

Radionuclide	EPA estimated dose for DOE proposed cleanup level (mrem/year)	How many CHEST X-RAYS would DOE levels be per year?
Nickel -59	5,290	2,645
Strontium-90	1,540	770
Americium -241	2,180	1,090
Plutonium -239	4,220	2,110
Thorium -232	3,330	1,665

Comparing DOE's Alternative 3 proposed cleanup levels for radioactivity for a supposed suburban residential standard against EPA's preliminary remediation goals (PRGs) for suburban residential exposure shows the extraordinary increases DOE proposes. As indicated above, DOE's strontium-90 proposed cleanup level is more than 330,000 times higher than EPA's PRG for suburban residential exposure; for plutonium-239, they are proposing a cleanup level more than 100,000 times higher than the EPA PRG.

### DOE SSFL Clean-up Levels vs. EPA Preliminary Remediation Goals (PRGs)

Radionuclide	Department of Energy (DOE) Levels (pCi/g)	Environmental Protection Agency (EPA) Levels (pCi/g)	How much higher is DOE than EPA?	What's the cancer risk?
Strontium-90	1,200	0.0036	332,410	28%
Plutonium -238	700	0.00178	393,258	33%
Plutonium -239	640	0.00615	104,065	10%
Uranium -238	240	0.00176	136,364	13%

Using EPA's PRG calculator set to estimate cancer risk at the concentrations DOE proposes, the estimated risk for strontium-90 is 28% -- a bit more than every fourth person on average would get a cancer from the radiation exposure. That is in addition to their regular cancer risk. For plutonium-238, the additional risk is every third person getting cancer from the exposure.

EPA aims for a one in a million risk, and DOE says in the DEIS that that is what its proposed cleanup levels would produce. But that clearly is not the case. The risks associated with their proposed cleanup levels are hundreds of thousands of times higher than the promised risk level, and far outside EPA's and DTSC's acceptable risk range.

Further, (and indeed, plaintiffs find this wearying), this proposed alternative is even worse than just described. EPA guidance provides that one should not average contamination across areas for exposure scenarios such as residential where the exposure is non-random, for the obvious reason that someone can be exposed to high levels of contamination in one place even though another place is lower.<sup>78</sup> Yet DOE states for this alternative it will average the contamination across areas, resulting in high levels of contamination in one place not getting cleaned up.<sup>79</sup> So, if contamination existed in one location at the immense concentrations DOE is proposing for its cleanup standard, it still wouldn't get cleaned up, because DOE proposes averaging the contaminated soil with less contaminated soil elsewhere. This also violates the 1995 Joint Policy, as well as the AOC, which bars averaging.

DOE claims that the excess cancer risk from any of the alternatives would be trivial, one in a million ( $10^{-6}$ ).<sup>80</sup> The true risk would be greatly higher, because DOE is uses RBSLs that are a thousand times weaker than true suburban or rural residential RBSLs, leaves out the garden or the rural residential standard entirely, and then weakens them further by averaging elevated concentrations in one location with lower concentrations elsewhere.

To show how extraordinarily high the risks would be, note that Boeing did risk assessments for parts of Area III, which borders DOE's Area IV, and concluded that risks

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<sup>78</sup> EPA, Radiation Risk Assessment at CERCLA Sites: Q&A, June 13, 2014, OSWER 9285.6-20.

<sup>79</sup> The DEIS indicates that this averaging would be over the entire NBZ, or over subareas in Area IV, which are tens of acres. See. p. 2-33, 3-108 - 3-111. The NBZ itself is 182 acres and Area IV is 290 acres. *Final Radiological Characterization of Soils Area IV and the Northern Buffer Zone Area IV, Radiological Study, Santa Susana Field Laboratory, Ventura County, California*, prepared by HGL for USEPA, December 12, 2012, p. 1-1.

<sup>80</sup> Elsewhere in the DEIS, DOE suggests it wouldn't clean up to its proposed RBSLs, but merely use them for making cleanup decisions, indicating it might then leave contaminants behind at up to several hundred times the RBSL. Further it indicates that when multiple contaminants are present, it would leave them not cleaned up, instead of using the "sum of the fractions" rule normally applied when there are multiple contaminants. These matters are of concern and should be clarified.

for the suburban residential scenario would be as high as 96 cancers produced per 100 people exposed, essentially a million times higher than DOE is claiming just on the other side of the boundary, by using its various improper weakening factors.<sup>81</sup> Even after cleaning up to the standard DOE is proposing for Alternatives 2 and 3, suburban residential without garden, Boeing estimates remaining risks a thousand times higher than the one-in-a-million level claimed by DOE, which is far outside EPA's risk range that DOE is supposed to be following.<sup>82</sup>

DOE attempts to characterize Alternative 3, which involves taking no steps to clean up the great majority of environmental damage it caused at SSFL, as "Conservation of Natural Resources." What is remarkable is that the DEIS nowhere actually compares its proposed cleanup standards to the actual Ecological Receptor Risk Based Screening Levels (EcoRBSLs), established by DTSC in the SRAM. When one does so, the results are stark: the cleanup levels proposed by DOE exceed the EcoRBSLs by orders of magnitude. In other words, in the guise of protecting natural resources, DOE proposes to leave behind, uncleaned up, toxic materials at levels far in excess of the levels considered a risk to biological species.

Here are a few examples (the more detailed analysis is in the attached spreadsheet).

DOE Proposed Cleanup Level in EIS, Supposed Suburban Residential RBSL VS. ECO RBSL

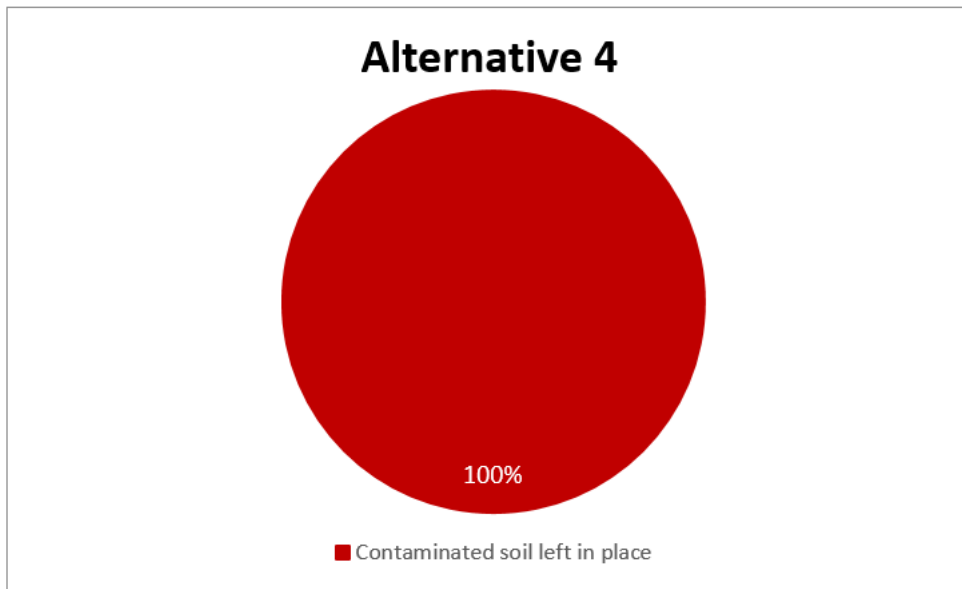
Chemical	DOE Proposed Cleanup Level in EIS, Supposed Suburban Residential RBSL (mg/kg)	ECO RBSL (mg/kg)	How much more of each chemical does DOE propose to leave? (Compared to ECO RBSL)
Mercury	16.8	0.1	168 times more
Bis(2-ethylhexyl)phthalate	173	0.32	540.6 times more
Silver	230	.99	232 times more
Perchlorate	53.3	0.5	106.6 times more
Pyrene	1,650	1.2	1375 times more
Acenaphthene	3,230	1.1	2,936 times more

<sup>81</sup> See December 2015 letter by Supervisor Kuehl, Councilmember Englander, and then-Senator Pavley to DTSC Director Lee.

<sup>82</sup> See Boeing risk assessments for Subarea 5/9 South, at [http://www.dtsc.ca.gov/SiteCleanup/Santa\\_Susana\\_Field\\_Lab/ssfl\\_document\\_library.cfm](http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab/ssfl_document_library.cfm)



#### 4. Alternative 4 – the “No Action Alternative”



This is an alternative for analysis purposes required in NEPA. However, in this case, it is little different than Alternatives 2 and 3, which would take no action for cleanup of the great majority of the contamination.

#### D. Groundwater

The 2007 Consent Order requires cleanup of the chemically contaminated groundwater, with the permanent remedy in place by 2017. The 2010 AOC included radioactive contamination in groundwater to be also remediated, via the 2007 Consent Order, by the same deadline. We are now in 2017 and no permanent remedy is in place. Instead, in the DEIS, DOE now says it is considering just leaving in place the contamination and hoping for natural attenuation over time. Furthermore, the plume from SSFL has already migrated offsite. The groundwater must be cleaned up, and there is no plan put forward in the DEIS to do so.

#### E. Building Demolition and Disposal

The AOC covers cleanup of all soil at SSFL to local background and defines soil as including structures, debris, and anthropogenic materials.<sup>83</sup> All buildings and the debris from dismantling them are therefore covered. The cleanup to background is to a

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<sup>83</sup> AOC, p.p. 4-5.

“not to exceed standard,” with averaging prohibited.<sup>84</sup> And all waste above background must be disposed of in a licensed low level radioactive waste (LLRW) disposal site or authorized LLRW disposal facility at a DOE site.<sup>85</sup>

The DEIS is unclear as to whether DOE intends to comply fully with these requirements. At p. 2-46 of the DEIS, DOE asserts that “materials from buildings with a radiological history would be managed as radioactive waste for disposal purposes unless they can be suitable for free release. Free-released debris and free-released hazardous debris do not exhibit radioactivity above background levels.” However, DOE is silent on whether it would average contamination, either within a part of a building or over part of the debris, or would comply with the prohibition on averaging and the requirement for treating as contaminated any samples that exceed background. DOE is also silent as to how background for buildings will be determined. Will the values be taken from other buildings at SSFL, which could also be contaminated? Furthermore, the AOC requires EPA to set the background values.<sup>86</sup>

Additionally, DOE states in the DEIS that it will declare as non-radioactive, and dispose of as such, all wastes from any structure that it does not know to have a “radioactive history.”<sup>87</sup> However, such process knowledge extending over half a century or more is quite imperfect and unreliable. Furthermore, even if buildings weren’t explicitly used for radioactive work, they were located in areas where there is radioactive contamination. Contamination clearly wasn’t limited to the interior of buildings where radioactive work was done; there were extensive releases, which is why so much soil is contaminated. There is no basis to assume that either the outsides or insides of these buildings are clean; they should be thoroughly surveyed, and only to the extent that no radioactivity above background is found, should they be allowed to be disposed of as other than LLRW.

Finally, DOE elsewhere in the DEIS (p. D-1) appears to contradict the claim at p. 2-46 that buildings will be considered “free released” only if they are free of radioactivity above background. At p. D-1, however, DOE says “For a building to be free released, it must meet the conditions of DOE Order 458.1, *Radiation Protection of the Public and Environment*, which limits doses to the public from DOE activities to either 25 millirem per year (or as low as reasonably achievable) or requires the surface contamination levels to meet the default limits expressed in DOE Order 5400.5 (same title as DOE Order

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<sup>84</sup> “Residual concentrations “not to exceed” local background concentrations i.e., if during site survey efforts or during confirmatory sampling the levels of an constituent detected in a soil sample is above local background levels, step-outs will be taken to delineate the contamination and removed; soil above background will not be averaged with any other soil.” AOC Attachment B p. 3, ; see also Attachment C, “Confirmation Protocol ‘Not to Exceed’ Background Cleanup Standard.”

<sup>85</sup> AOC Attachment B p. 3.

<sup>86</sup> id., p. 2.

<sup>87</sup> DEIS, p. 2-46.

458.1 and superseded by that Order) and U.S. Nuclear Commission [sic] Regulatory Guide 1.86, *Termination of Operating Licenses for Nuclear Reactors*.”

This statement raises a number of concerns. It would appear to contradict the commitment at p. 2-46 that only buildings and debris that exhibit no radioactivity above background will be released, as set forth in the AOC. As indicated in the discussion of Alternative 3 above, 25 millirem per year, about a dozen chest X-rays annually, has long been declared by EPA to be non-protective and not allowed by EPA guidance, which DOE has committed in the 1995 Joint Policy to follow. Similarly, under both the AOC and the Joint Policy, other agency guidance such as Reg. Guide 1.86 (which would allow release far above background and outside the EPA risk range), is also not to be employed.<sup>88</sup> Risks from the Reg. Guide 1.86 levels are orders of magnitude higher than the one-in-a-million risk goal and above the upper end of EPA’s acceptable risk range, according to the EPA’s Building PRG calculator.<sup>89</sup> Furthermore, Reg. Guide 1.86 is more than four decades old, was issued by the AEC (which no longer even exists), was not designed to be based on health protection but rather on what hand-held detectors in the 1960s could readily detect, and has been withdrawn by the NRC as outmoded.<sup>90</sup>

However, the central issue is that to not clean up buildings to local background and to dispose of waste above background in other than LLRW<sup>91</sup> sites would violate the AOC. In one part of the DEIS, DOE appears to promise to comply with those requirements, but elsewhere questions are raised about that commitment. This should be clarified, making fully clear that the AOC requirements (cleanup to background, no averaging, disposal of everything above background in an LLRW site) will be strictly followed.

Finally, the DEIS only addresses radioactively contaminated buildings in Area IV that are owned by DOE and is silent about the demolition and disposal of radioactive buildings in the area that are owned by Boeing. Efforts to dismantle those radioactive buildings and send radioactive debris from them to non-LLRW sites resulted in a preliminary injunction still in effect.<sup>92</sup> The AOC covers all soil in Area IV and the NBZ.<sup>93</sup> Soil is, as indicated above, defined as including buildings and debris. DOE thus

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<sup>88</sup> See EPA Radiation Risk Q&A, *supra*.

<sup>89</sup> [https://epa-bprg.ornl.gov/cgi-bin/bprg\\_search](https://epa-bprg.ornl.gov/cgi-bin/bprg_search)

<sup>90</sup> *Release of Solid Materials at Licensed Facilities: Issues Paper, Scoping Process for Environmental Issues, and Notice of Public Meetings*; *Federal Register* / Vol. 64, No. 125 / Wednesday, June 30, 1999; see also 83 FR 53507, August 12, 2016, “Regulatory Guide Withdrawal.”

<sup>91</sup> We note that the DEIS, rather than using the term of art and the term used in the AOC, LLRW, refers instead to LLW. See e.g., DEIS p. 1-12. The proper term, LLRW, should be used throughout.

<sup>92</sup> Sacramento Superior Court, *Order After Hearing, Granting Preliminary Injunction*, Physicians for Social Responsibility et al. v. California Department of Toxic Substances Control et al., the Boeing Company real party in interest, December 11, 2013.

<sup>93</sup> AOC p.1, 5.

agreed to clean up all soil, as defined, in Area IV and NBZ, irrespective of who owned it or who contaminated it. Indeed, all of the contaminated land is owned by Boeing, but DOE is nonetheless responsible for its cleanup. Therefore there is no basis for the DEIS to exclude the cleanup to background of Area IV buildings and disposal of resulting debris above background at LLRW sites, no matter who might own the buildings.

#### F. Failure to Consider Transportation Options

DOE has worked energetically to inflate soil volume estimates and thus the estimated number of truck trips to try to scare people near the site into supporting DOE's efforts to get out of having to clean up the contamination it created.<sup>94</sup> The fact that for decades vast numbers of trucks hauled immensely more dangerous material to and from the site while it operated (e.g., high level radioactive waste/highly irradiated nuclear fuel/plutonium) is ignored.

DOE arbitrarily declined to consider transportation options such as the nearby rail line, the use of conveyor systems, or the use and potential upgrade of alternative vehicular routes that would pass few houses. It did so claiming to consider such options would delay the project, because it would require study and otherwise take time.<sup>95</sup> But DOE has had at least fifteen years, since it first did its Environmental Assessment, to address ways of avoiding truck impacts on neighborhoods if it wished to, and its refusal over all those years to take any step to consider alternatives is not defensible.

There are numerous routes off the site that would involve passing few if any homes.<sup>96</sup> None is considered in the DEIS. There are other methods of conveyance besides trucks, e.g., a conveyor system to a nearby rail line; DOE has refused to consider it.<sup>97</sup> There are rail lines within a mile or so of the site that could be reached without passing a single home<sup>98</sup>; DOE refuses to consider it, and instead, its only rail option is to truck the material 60 miles to Puente Hills to a rail depot that isn't even open yet.<sup>99</sup>

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<sup>94</sup> See the analysis by the Southern California Federation of Scientists (SCFS) of how the volumes estimates were inflated, submitted by SCFS March 21, 2014, during the scoping proceeding. With the exception of the soil fluffing matter, all of the concerns SCFS raised continue to be a problem with the soil volume (and thus truck trip) estimates.

<sup>95</sup> DEIS pp. 2-11,12.

<sup>96</sup> See, e.g., SSFL Transportation Options Taskforce, Preliminary Overview of Alternative Transportation Options for Santa Susana Field Laboratory Cleanup, August 7, 2014.

<sup>97</sup> *id.*

<sup>98</sup> *id.*

<sup>99</sup> DEIS p. H-10.



*railroad near SSFL*



*covered conveyor system*





*conveyor*

#### G. DOE Attack on the AOC It Executed

DOE raises several spurious issues in its attack on the agreement it signed. The first is that it is supposedly difficult to find clean fill that meets the LUT levels. But the data in the DEIS shows the Gillibrand fill meets all the requirements except with a minor exception for two constituents, which DOE itself says pose no risk, and where the measurements are identified as “J,” meaning there is no confidence in the concentration estimated. But in any case, as DOE concedes, the AOC says if there is any difficulty getting replacement soil that meets the LUT, DTSC and DOE will discuss it and DTSC will decide on the best fill available (which would appear readily to be the Gillibrand soil.) So that is a non-issue that doesn’t call into question the AOC, but in fact shows it has reasonable provisions that work.

Secondly, DOE disagrees with the LUT value for Total Petroleum Hydrocarbons (TPHs), saying it is hard to reliably detect TPHs at the LUT levels. But that is a decision for DTSC, which the AOC grants to DTSC, and DTSC has determined that labs can readily detect TPHs at the LUT value. If DOE can demonstrate that not to be the case, then DTSC can decide to change the LUT. DOE also asserts that some of the TPH detections may have been related to organic material not associated with SSFL pollution. But the report they cite actually indicates the organic contribution is just a few percent of the total measurement.<sup>100</sup> Again, that is a matter for their regulator, DTSC, not DOE. In any case, the TPH issue does not call into question the AOC. DOE estimates that of the 1.4 million cubic yards of contaminated soil, a total of 150,000 cubic yards has only TPHs, only PAHs, or TPHs and PAHs. Thus the soil contaminated with just TPH can’t explain 90% or more of the soil contamination at SSFL, which has other contaminants in it and must be cleaned up, irrespective of any question about TPHs.

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<sup>100</sup> Nelson, DEIS reference 300; the naturally occurring material is estimated at only 5-8% of the total reading.

Lastly, DOE asserts it may be difficult to demonstrate compliance with the LUT values because of the potential for some false readings as above background when they aren't. But DTSC, at EPA recommendation, set LUT values based on background that were very inflated, using a rare statistical test called Upper Simultaneous Limit (USL) that produces an extremely high confidence that a reading is indeed above background. It errs, unfortunately in many people's eyes, by guaranteeing soil that isn't above background isn't cleaned up, instead of erring by guaranteeing that soil that is contaminated is cleaned up. This issue was raised during the EPA radiation survey. EPA dismissed it as a non-issue and indeed it turned out to be when the data came in. Although measurements were made for scores of radionuclides, EPA found contamination for the radionuclides as expected, and didn't find false positives to be a problem. Again, this is a matter not in DOE's jurisdiction; it agreed in the AOC that DTSC would set the LUT values. And it is not timely, since the LUT values were established by DTSC years ago and DOE had every opportunity to comment then, and didn't.

In short, DOE in 2010 proposed and committed to the cleanup to background; nothing has changed technically. All that has changed is that the top leadership of the agency has changed, and the DEIS shows DOE is now trying to avoid complying with the legally binding AOC.

#### H. Flawed Risk Assessment and Cost-Benefit Analysis

Because DOE used Risk Based Screening Levels that are thousands of times higher (less protective) than the true RBSLs approved by DTSC in the SRAM and by EPA in its PRG calculator, all risk estimates and the entire cost-benefit analysis are completely erroneous. By improperly averaging, leaving out nearly 90% of the toxic chemicals found at the site, failing to even analyze for the ecological RBSLs, and using the wrong human health RBSLs, all of the conclusions are without basis. Accurately performed risk estimates and cost-benefit analyses would show that the promised AOC cleanup is essential. But in any case, the risk assessment and cost-benefit analyses are irrelevant, because DOE is bound by the AOC requirement to clean up to background.

#### Conclusion

DOE has a clear obligation, having contaminated SSFL through its failure to follow proper environmental procedures, to clean the site up fully, as required by the AOCs; to do so by the deadlines agreed to; and to mitigate impacts such as trucks hauling away contaminated material by a careful development of alternative transportation options in an EIS. Instead, DOE has dragged its feet for years since the AOCs were issued, not only missing the deadline for completion of the cleanup, but not even beginning it. And now in a severely flawed DEIS, the federal agency flouts the authority of the California state agency charged with overseeing this important cleanup by proposing to breach the cleanup agreement it signed and instead leave the great majority of the contamination in place.

The public that resides in the area surrounding the site will be placed at continued and perpetual risk if DOE continues on this course. We call this day for extensive revision of the DEIS so that it is fully in compliance with the AOC and DOE's commitments for a complete cleanup of the contamination for which it is responsible.<sup>101</sup>

*for contact: LANRDCCBGcomments@gmail.com*

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<sup>101</sup> In so doing, we call attention to the resolutions passed by the Los Angeles County Board of Supervisors, the Ventura County Board of Supervisors, and the Los Angeles City Council all similarly calling on DOE to alter the DEIS so that it is fully in compliance with the AOC requirements. Copies are enclosed.

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