October 30, 2025

Steven Becker, Julie Lincoln, and Jamie Slaughter
California Department of Toxic Substances Control
8800 Cal Center Drive, Sacramento, CA 95826

Submitted via email to: DTSC_SSFLPublicComments@dtsc.ca.gov; Steven.Becker@dtsc.ca.gov; Julie.Lincoln@dtsc.ca.gov; Jamie.Slaughter@dtsc.ca.gov

Re: *Public Comment on Boeing's Draft Resource Conservation and Recovery Act Limited Corrective Measures Study Report, Surficial Media Operable Unit, Boeing RFI Subareas and DTSC's Draft Statement of Basis for the Surficial Media Operable Unit Proposed Remedy Selection in the Boeing Areas of Responsibility at SSFL*

Overview of Comments

Unless major action is taken now to intervene, Boeing's *Draft Resource Conservation and Recovery Act Limited Corrective Measures Study Report, Surficial Media Operable Unit* (CMS) and DTSC's *Draft Statement of Basis for the Surficial Media Operable Unit (SMOU) Proposed Remedy Selection in the Boeing Areas of Responsibility* (SB) are the final nails in the coffin of a meaningful cleanup of the Santa Susana Field Lab (SSFL) once promised, and now betrayed, by DTSC and Boeing. The CMS and SB are the culmination of a years-long effort by Boeing to abandon the full SSFL cleanup to which it committed in 2007.

At the core of Boeing's Corrective Measures Study Report, Surficial Media Operable Unit, Boeing RFI Subareas ("CMS Report") is a betrayal of the original cleanup agreement, the 2007 Consent Order. Behind all the technical jargon in the CMS Report lies a stark reality: Boeing and the Department of Toxic Substances Control ("DTSC") completely abandoned the 2007 cleanup agreement, hard-won by community members and elected officials, in favor of a wholly inadequate cleanup that puts ecological and human health at risk.

The Agreement represents the culmination of Boeing's years-long campaign to evade its cleanup obligations by systematically weakening the Risk-Based Screening Levels (RBSLs). The Agreement also effectively erodes the most stringent cleanup standard mandated by the 2007

Consent Order and reflects DTSC's capitulation from the more protective standards and limits it had previously established.

These comments draw in part on prior submissions by CBG. For a comprehensive discussion of the historical background and issues addressed herein, please refer to CBG's earlier comments, which are incorporated by this reference.

Setting aside Boeing's efforts, the record is clear with respect to DTSC's intentions as well: DTSC is proposing to reverse its own established criteria. DTSC once required cleanup to agricultural standards, yet that land-use scenario will now be excluded entirely. DTSC will also effectively dismantle its prior "resident with garden" standard. As detailed below, DTSC's current position contradicts its earlier commitments and undermines its credibility as the agency charged with protecting Californians and the environment from toxic substances.

Scope and Structure of These Comments

The following comments examine how DTSC's decisions, culminating in the 2022 Settlement Agreement with Boeing, have systematically weakened cleanup standards at the Boeing portions of the SSFL property.Among other substantive points of feedback, these comments address (1) DTSC's dismantling of its own residential and agricultural cleanup criteria through repeated revisions to the SRAM; (2) Boeing's selective, and DTSC-approved, application of these new standards within its CMS and DTSC's Statement of Basis; (3) the flawed pollutant-selection and averaging methodologies that obscure the true extent of contamination at the Boeing site; and (4) the misuse of cultural and biological exemptions as a cynical pretext for inaction.Together, the evidence presented in these comments reveals a cleanup framework that prioritizes Boeing's preferences over scientific integrity, regulatory consistency, and – most importantly – the health and safety of surrounding communities.

Boeing's Corrective Measures Study and DTSC's Statement of Basis: A Betrayal of the Promised Full Cleanup of the SSFL

Unless major action is taken now to intervene, Boeing's *Draft Resource Conservation and Recovery Act Limited Corrective Measures Study Report, Surficial Media Operable Unit* (CMS) and DTSC's *Draft Statement of Basis for the Surficial Media Operable Unit (SMOU) Proposed Remedy Selection in the Boeing Areas of Responsibility* (SB) are the final nails in the coffin of the full cleanup of the Santa Susana Field Lab (SSFL) once promised, and now betrayed, by DTSC and Boeing. The CMS and SB are the culmination of a years-long effort by Boeing to abandon the full SSFL cleanup to which it committed in 2007. We summarize below the key moments in that timeline, drawing extensively from our prior publications, which we incorporate herein by reference and to which we direct readers interested in further detail and citation.

SSFL Background

As the City of Los Angeles, Natural Resources Defence Council (NRDC), and Committee to Bridge the Gap (CBG) wrote in 2017,

> "SSFL is one of the most contaminated sites in the state.[1] Over the years, the site maintained 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. The poor environmental and safety practices of the Responsible Parties [the Department of Energy (DOE), NASA, and Boeing] and their predecessors resulted in numerous releases and spills on the site which subsequently contaminated soil, groundwater, and surface water with radioactivity and toxic chemicals, as well as numerous buildings. Examples of poor practices and negligence included a partial meltdown in one reactor; three others had accidents; radioactive fires occurred in the hot lab, and decades of open burning of contaminated items.[2] Tens of thousands of rocket tests and associated activities further contributed to widespread contamination with highly toxic substances such as polychlorinated biphenyls (PCBs), dioxins and furans, metals, perchlorate, and volatile and semi-volatile organic compounds.[3]
>
> SSFL was established 70 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 nearby population 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 previous SSFL workers associated with occupational exposures(s).[4] Additionally, studies have measured offsite migration of pollutants at concentrations in excess of U.S. Environmental Protection Agency (USEPA) levels of concerns, with a greater than 60 percent higher incidence of key cancers among people living near SSFL than those living further away.[5] Because SSFL is

[1] The 2017 Draft PEIR (p. 2-1) indicates that the cleanup of SSFL is in part pursuant to State Superfund law, which is for the most contaminated sites in the state.
[2] HydroGeoLogic, Final Historical Site Assessment, Santa Susana Field Laboratory Site, Area IV Radiological Study, October 2012, prepared for US EPA
[3] Draft Programmatic Environmental Impact Report §2.2.2, Figure 3-5
[4] Morgenstern, Froines, Ritz, & Young, UCLA School of Public Health, *Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/Atomics International Workers from Exposure to Ionizing Radiation June 1997; and, same authors, Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/Atomics International Workers from Exposure to Selected Chemicals*, January 1999
[5] Yoram Cohen et al., Center for Environmental Risk Reduction, UCLA, *The Potential for Offsite Exposures Associated with Santa Susana Field Laboratory, Ventura County, California*, February 2, 2006; and Hal Morgenstern

> 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, the Responsible Parties have had a history of resisting those cleanup obligations."[6]

NRDC and CBG have described Boeing's legal obligation to clean up its pollution at SSFL as follows:

> "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.[7] Contrary to the claim in the PEIR, that Consent Order does not mandate a cleanup to standards less than the 2010 AOC requirements, but instead requires cleanup to normal DTSC procedures. Those procedures, as DTSC reiterated in 2010, 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.[8]"[9]

---

et al., *Cancer Incidence in the Community Surrounding the Rocketdyne Facility in Southern California*, February 2007; both prepared under contract to the federal Agency for Toxic Substances and Disease Registry

[6] City of Los Angeles, NRDC, CBG, Letter to California Environmental Protection Agency and DTSC on the Draft Program Environmental Impact Report and Draft Program Management Plan for the Santa Susana Field Laboratory ("Joint Comment Letter"), December 7, 2017, pdf pp. 1-2. (https://www.committeetobridgethegap.org/wp-content/uploads/2024/07/Final-Joint-Comment-Letter-on-Draft-PEIR-171207.pdf)

[7] Consent Order for Correction Action, 2007, pdf p. 10 (https://www.dtsc-ssfl.com/files/lib_doe_area_iv/RMHF_Complex_Demo/DOE_Supporting_Documents/69377_2007_Consent_Order_for_Corrective_Action.pdf)

[8] DTSC, Response to Comments, Agreements in Principle, State of California and the Department of Energy, of California and the National Aeronautics and Space Administration, October 26, 2010, Volume I, pp. 11-12, 14-17, 21. (https://dtsc-ssfl.com/files/lib_correspond/agreements/64765_AIP_Response_to_Comments_Volume_I.pdf)

[9] Supplemental Detailed Comments Regarding the Department of Toxic Substances Control Draft Program Environmental Impact Report on Cleanup of the Santa Susana Field Laboratory, by the Committee to Bridge the Gap and the Natural Resource Defense Council (hereafter "Supplemental Detailed Comments", December 14, 2017, pdf p. 14 (https://www.committeetobridgethegap.org/wp-content/uploads/2024/07/CBG_NRDC_PEIR_comments.pdf). For a more detailed discussion of the history of Boeing's cleanup standards and obligations, please refer to these NRDC and CBG comments. See also: CBG, Years of Inaction and Broken Promises in Meeting Cleanup Obligations Result in Imminent Endangerment of the Public and Environment, 2022, pdf. 4 (https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Years-of-Inaction-Appendix-C.pdf)

Thus, the initial cleanup standard for Boeing's portion of the SSFL was to be an "agricultural" or "rural residential" standard, very strong cleanup standards that DTSC said would be akin to cleaning the site up to natural background levels. This is the full cleanup of Boeing's contaminated land, consistent with background, that DTSC promised to the community.

The 2007 Consent Order required Boeing to conduct its cleanup consistent with the Standardized Risk Assessment Methodology ("SRAM") Workplan, Revision 2.[10] The SRAM was established by DTSC to set cleanup levels based on a range of risk scenarios, including rural agricultural and "suburban resident with garden." SRAM Rev. 2 was released in 2005. Following the 2007 Consent Order, Boeing should have commenced cleanup immediately using SRAM Rev. 2. Instead, Boeing and DTSC inexplicably delayed the cleanup by some seven years, finalizing changes to the SRAM that were finally released in 2014 as the SRAM Rev. 2 Addendum.[11]

Based on the risk figures in SRAM Rev. 2 Addendum, in 2015 Boeing released RCRA Facility Investigation (RFI) reports that contained eye-popping risk estimates. Boeing's estimates showed that its SSFL soil is so polluted that it would cause cancer in (depending on the specific area) two out of ten people, three out of ten people, or even 96 out of 100 people.[12] These risk estimates created great concern in the local community, and prompted then-Los Angeles County Supervisor Sheila Kuehl, then-Senator Fran Pavley, and then-Los Angeles City Council President Pro-Tempore Mitchell Englander to write a letter to then-DTSC Director Barbara Lee to urge DTSC to reject Boeing's request for "no further action" at some of these sites.[13]

DTSC subsequently wrote to Boeing directing it to remove the shocking risk estimates from its RFI reports, and claiming that the SRAM would need to be updated again.[14] Boeing's own risk estimates, despite being buried deep within technical documents, generated significant public outcry when finally disclosed. In response, DTSC directed Boeing to discontinue including such estimates, citing a purported need to revise the SRAM only two years after its issuance. DTSC justified this revision by claiming that EPA was planning to update its exposure parameters (an assertion that EPA later refuted, confirming it had no such plans).[15] DTSC's improper and unsupported changes to the SRAM would be finalized in the 2022 Settlement Agreement between DTSC and Boeing, further discussed below.

---

[10] Consent Order, 2007, §3.2.1.1
[11] CBG, Years of Inaction and Broken Promises in Meeting Cleanup Obligations Result in Imminent Endangerment of the Public and Environment, (hereafter "Years of Inaction") 2022, p. 5, (https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Years-of-Inaction-Appendix-C.pdf).
[12] CBG, "Years of Inaction", pdf pp. 7-10
[13] Supervisor Sheila Kuehl, Councilmember Mitchell Englander, and Senator Fran Pavley to DTSC Director Barbara Lee, December 15, 2015. (https://drive.google.com/file/d/1eXvHdBflAIyxRjHun4JxPQWEBo7HkPek/view?usp=sharing)
[14] DTSC to Boeing, Letter on Human Health Risk Assessments, SSFL, December 9, 2016 (https://www.dtsc-ssfl.com/files/lib_risk_assess/sram/sram/2016-12-09_SSFL_Letter_from_DTSC_to_RPs_Regarding_Risk_Assessments.pdf).
[15] CBG, 'Years of Inaction", pp. 5-15.

In sum, the 2022 Settlement Agreement is the culmination of a nearly two decade effort by Boeing to weaken SSFL cleanup standards and a simultaneous effort by DTSC to water down its own standards. The result is unmistakeable: the health of the affected community, along with the local natural environment, were subordinated to Boeing's preferences for a weaker cleanup.

Cleanup Stalls as Boeing Tries to Weaken or Evade Its Cleanup Obligations

In 2017, the year Boeing was supposed to have fulfilled its cleanup obligations under the 2007 Consent Order, Boeing instead announced that it would be dramatically scaling back its SSFL cleanup plans, by imposing a much weaker "recreator" standard (assuming just a few hours of exposure to contamination per week), and eliminating more stringent alternatives required by the 2007 Consent Order.[16] Boeing sought to justify its abandonment of cleanup obligations by pointing to a conservation easement it entered that establishes the land as open space, despite the fact that Ventura County's zoning and General Plan still permitted residential use of the property. Years later, DTSC formally rejected Boeing's attempt to leverage its conservation easement into a recreator cleanup standard, declaring that "the Conservation Easements have no bearing on the remediation standard for Boeing, which should be defined in terms of a potential future residential and garden use."[17]

In the same year that Boeing announced its intent to abandon a residential cleanup standard, DTSC issued its Draft Programmatic Environmental Impact Report (DEIR). Despite DTSC's past determinations that Boeing would need to remediate SSFL to agricultural/rural residential uses, consistent with local land use designations, the DEIR excluded any consideration of agricultural or rural residential uses.[18]

Nonetheless, Boeing effectively got much of what it wanted. A 2022 deal between Boeing and DTSC established new, crooked cleanup levels, including a so-called "resident with garden" standard with numeric cleanup levels closer to the recreator cleanup levels Boeing wanted than to the true garden standard found in the 2014 SRAM.[19] The plan DTSC implemented to meet Boeing's desires was cynical. When Boeing's efforts to adopt the "recreator" standard were met with backlash, DTSC came to Boeing's rescue by redefining the "resident with garden" standard so that it more closely aligned with Boeing's less protective recreator criteria.

---

[16] Kamara Sams (Boeing), email message to Santa Susana community members, August 22, 2017 (https://drive.google.com/file/d/1nRNtkKOTK93JKN5MFkMKHBvUmdfLkMVJ/view).
[17] DTSC-Boeing Settlement Agreement, May 9, 2022, pdf p. 5 (https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F2026541471%2FSSFL%20DTSC-Boeing%20Settlement%20Agreement%20(Final).pdf).
[18] CBG-NRDC, "Supplemental Detailed Comments", pp. 31-32.
[19] CBG, Secret Negotiations Between CalEPA & Boeing to Breach Cleanup Obligations for the Santa Susana Field Laboratory (hereafter "Secret Negotiations"), 2022, pp. 12-18 (https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Secret-Negotiations-Appendix-A.pdf).

The 2022 Secret Deal Between Boeing and DTSC

In 2022 – after delaying the cleanup for 15 years – Boeing and DTSC struck a secret deal to gut the SSFL cleanup. Jared Blumenfeld, then Secretary of the California Environmental Protection Agency (CalEPA), which oversees DTSC, had in 2020 repeatedly promised the local community that there would be no negotiations between DTSC and Boeing regarding the SSFL cleanup standards.[20]

Despite Blumenfeld's promises, just one year later DTSC offered to enter closed-door negotiations with Boeing, a fact that would not have been known had we not obtained DTSC-Boeing correspondence through a California Public Records Act request, and had Public Employees for Environmental Responsibility (PEER) not brought it to light through a press release.[21] Despite immense opposition from the public – including letters from congressmembers, a senator, mayors, and other elected officials[22] – DTSC and Boeing negotiated their secret deal, which was officially signed on May 9, 2022. The Settlement Agreement (hereafter "Agreement") was issued in its final form, with no opportunity for environmental review or public comment. DTSC and Boeing's secret deal was of questionable legality, and is now the subject of a lawsuit filed by community watchdog groups.[23] The lawsuit argues that the Agreement's lack of environmental review or public comment does not comply with the California Environmental Quality Act because the agreement made substantive decisions that foreclosed cleanup options demanded by the community.

The Agreement contains many troubling elements, but the most consequential is DTSC's agreement to immensely weaken the cleanup standards that determine how much contamination is allowed to be left not cleaned up.[24] DTSC had previously permitted Boeing to back away from

[20] CBG, "Secret Negotiations", p. 2.
[21] CBG, "Secret Negotiations", p. 4; PEER, Newsom Backs Off Santa Susana Clean-Up Guarantee, February 11, 2021 (https://peer.org/newsom-backs-off-santa-susana-clean-up-guarantee/).
[22] Letter to CalEPA Secretary Blumenfeld from Ventura County Supervisors Linda Parks and Robert O. Huber, Los Angeles County Supervisor Sheila Kuehl, Mayor Claudia Bill-de la Peña of Thousand Oaks, Mayor Janice Parvin of Moorpark, Mayor Paul Grisanti of Malibu, Mayor James R. Bozajian of Calabasas, Mayor Stuart E. Siegel of Hidden Hills, Mayor Denis Weber of Agoura Hills, Councilmember John Lee of Los Angeles, and Councilmember Ruth Luevanos of Simi Valley, October 14, 2021 (https://drive.google.com/file/d/1oEyVQThQgizYXR9rSWuqintOROMf89Ex/view); U.S. Senator Alex Padilla, and Congressmembers Julia Brownley, Brad Sherman, J. Luis Correa, and Grace Napolitano letter to Jared Blumenfeld, October 14, 2021 (https://drive.google.com/file/d/1hJrpALhXeQkL694WfaqkDIYqqoEwtNxI/view).
[23] Parents Against Santa Susana Field Lab v. California Department of Toxic Substances Control, Petitioners Opening Brief in Support of Alternative Writ, Case No. 56-2022- 00570675-CU-WM-VTA (Ventura County Super. Ct. filed Oct. 6, 2022) (https://www.dtsc-ssfl.com/files/lib_parent_agnstSSFLvDTSC/court_docs/69885_22-10-06_Petitioners_Brief_ISO_Alternative_Writ.pdf).
[24] For more detailed information about the Boeing Agreement, please see CBG's critiques at https://www.committeetobridgethegap.org/2022/09/14/cbg-critiques-of-calepa-deals-with-boeing-to-gut-santa-susana-cleanup/

DTSC's prior agricultural and rural residential standards that would have ensured the most comprehensive cleanup. Under the Agreement, the standards were allowed to slump even further, using the resident with garden standard only in limited areas and adopting DTSC's further-weakened "resident no garden" standard elsewhere.[25]

Furthermore, the weakened suburban residential cleanup standards adopted by DTSC through the Agreement, are residential standards in name only. In substance, Boeing and DTSC weakened the cleanup levels so that what they now call a resident with garden standard is far weaker than the garden standard in the 2014 SRAM, and is closer to the weak recreator standard Boeing has wanted since 2017.[26] The Agreement included the issuance of a new SRAM, containing fallacious and unsupported modifications to obscure risk model inputs that resulted in new, far weaker cleanup levels (Risk-Based Screening Levels, or RBSLs). The RBSLs were weakened for 80% of Boeing's SSFL pollutants.[27] For some pollutants, the Agreement allows Boeing to leave 3x, 6x, or 10x higher levels of contamination not cleaned up; for some other pollutants, Boeing is allowed to leave 20x, 219x, or 2,361x higher levels of contamination.[28]

DTSC's agreement to depart from and effectively campaign against its own prior cleanup standards exposes a deeper problem: The SRAM, DTSC's technical playbook for deriving cleanup levels, is inherently pliable as evidenced by DTSC's seemingly consequence-free ability to repeatedly rewrite and weaken its own SSFL standards over the course of two decades. The SRAM's risk-based calculations are opaque, easily manipulated, and can be controlled by discretionary assumptions rather than transparent, uniform criteria.

As if this extreme degree of weakening the cleanup standards were not enough, the Boeing Agreement allows pollution to remain at many areas of the site at 5x or 100x the already-weakened RBSLs.[29] In other words, even the newly weakened standard was not lenient enough for Boeing, leading DTSC to agree that the new standard would only apply in limited areas so highly contaminated that they exceed five times the resident with garden cleanup levels. As for the 100x multiplier, Boeing will be excused from cleanup at some portions of the site under the guise of "sensitive site resources," unless these areas are so polluted that they exceed 100x the new, weak resident no garden levels.[30]

In summary, the secretly negotiated Agreement drastically weakened toxic chemical cleanup standards. For much of the Boeing site, the Agreement created cleanup standards that are now 100s or 1000s of times weaker than the standards DTSC previously imposed. These vastly

[25] CBG, "Secret Negotiations," p. 21.
[26] CBG, "Secret Negotiations," pp. 12-18.
[27] CBG, "Secret Negotiations", pdf p. 13.
[28] CBG, Boeing Deal SRAM Comparisons, 2022 (https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Spreadsheet-Comparisons.pdf)
[29] CBG, "Secret Negotiations", pp. 14-15
[30] DTSC-Boeing Settlement Agreement, Exhibit 11 and Exhibit 12, pdf pp. 200-201

weakened cleanup standards are now being used in Boeing's soil CMS and DTSC's related Statement of Basis (SB). The CMS and SB are downstream of the Boeing Agreement and merely operationalize its determinations, including the decision to forgo cleanup of large portions of Boeing's contaminated soil.

Boeing Slated to Leave Over 90% of Polluted Soil at SSFL, Confirming Previous Estimates

Nowhere do Boeing or DTSC disclose the total amount of contamination present in the Boeing portions of the site (in contrast with the other Responsible Parties, NASA and DOE, who have disclosed this information). This is especially glaring in the EIR, and is one of the major flaws of the document. As NRDC and CBG wrote in 2017,

> "As to the Boeing portion of SSFL, none of the tables or figures, or the PEIR text itself, gives any data as to the extent of contamination in the Boeing areas, a principal failure of the PEIR and at odds with CEQA's disclosure and environmental analysis requirements. The PEIR fails to disclose how much contamination, with what contaminants, and at what levels and locations. This omission makes it impossible to determine how much contamination, of what kind and concentration, the PEIR proposes to exempt from cleanup. One cannot evaluate the environmental impacts without knowing what contamination is proposed to not be cleaned up."[31]

In the absence of any official characterization of the extent of contamination in the Boeing areas, the Southern California Federation of Scientists ("SCFS") calculated an estimate:

> "Assuming similar contamination in the DOE and Boeing operational areas, and considering the amount of cubic yards Boeing is responsible for, Boeing should really be remediating ~3,440,000 cubic yards. Indeed, Boeing is again only planning to remediate a fraction of the contaminated cubic soil compared to the other responsible parties. Using the contamination estimates from DOE applied to Boeing areas, the estimated percentage of cubic yards of soil to be remediated is only 9.6-11% of the overall amount of contaminated soil in Boeing's SSFL operational areas -- similar to the calculations for Boeing's estimated acreage remediation."[32]

So the best estimate available of Boeing's total volume of polluted soil at SSFL is about 3.4 million cubic yards. Yet the Boeing CMS proposes to remove only 226,688 cubic yards of contaminated soil. This plan would leave an estimated 93% of the contaminated soil not cleaned up. After incorporating DTSC's decisions regarding biological and cultural exemptions, that

[31] NRDC-CBG, "Supplemental Detailed Comments", p. 54

[32] The Southern California Federation of Scientists, Comments on the Draft Program Environmental Impact Report and Draft Program Management Plan for the Santa Susana Field Laboratory, December 7, 2017, pdf p. 33 (https://rocketdynecleanupcoalition.org/files/SCFS%20Comment_Final%20PDF.pdf).

number becomes roughly 315,340 cubic yards.[33] Thus, **DTSC is set to allow Boeing to walk away from about 92% of its contamination**, and endorse a cleanup without knowing, or declining to reveal, the full extent of contamination at the Boeing site. The calculations made by SCFS in its comments on the DPEIR estimated a similar percentage of contaminated soil would be left on site; now, it can be confirmed. In proceeding in part on the basis of incomplete information, DTSC is taking a profound gamble with the health of the local community and environment.

Hugely Weakened Cleanup Levels Allow Boeing to Conduct Zero Cleanup for Much of Its Soil

Excluding Soils from even being considered in CMS Area

Boeing accomplishes much of the abandonment of its contaminated soil via the selection of which soils are included or not in a CMS area. Whether a given patch of soil is or is not included in a CMS area is largely determined by the cleanup standard that is used to compare against soil sample data. If soil is included in a CMS area, it could at least theoretically receive some cleanup; soil that is not included in a CMS area is categorically excluded from cleanup.[34]

As discussed above, DTSC and Boeing fail to include any consideration of the most protective cleanup standards – agricultural or rural residential – in establishing which parts of Boeing's soil will be cleaned up. Across much of the site, many areas of soil that are contaminated by Boeing's toxins at levels above agricultural or rural residential standards will receive no cleanup, remaining contaminated in perpetuity.

The two main cleanup standards that Boeing is using for its soil cleanup are the newly-weakened suburban resident with garden and suburban resident no garden scenarios.[35] Both these standards are pale imitations of the real residential standards that DTSC required in the 2014 SRAM. DTSC's true, protective suburban resident and garden standards from 2014 were mangled and

[33] This figure was calculated by CBG. DTSC does not provide an estimate of the soil volume that will be cleaned up after incorporating DTSC's decisions regarding exceptions. The CMS has Boeing's soil volume excavation estimates (with and without Boeing's proposed exceptions) in Appendix C, and the SB has, in Table 5, DTSC's determinations granting and denying the exceptions. We summed the volume numbers from Appendix C for each CMS Area, using the figure in Column O (soil volume before exemptions) when DTSC denied the exception and using the figure in Column Z (soil volume with Boeing proposed exemptions) when DTSC approved the exception. It was unclear, for many of DTSC's determinations, whether DTSC actually approved or denied the exception. We emailed DTSC asking for clarification, but DTSC's response left some questions unclear; additionally, there were some "partial" exceptions granted, for which there was no volume estimate provided, only estimates for the full exception or no exception. In such cases where the volume estimate was uncertain, we conservatively summed from Column O, crediting DTSC for requiring more soil cleanup than is actually the case. Thus, this figure is likely an overestimate and the true value of how many cubic yards of soil Boeing will remove is likely lower.

[34] With the possible exception of some radionuclide remediation; 2022 Agreement pdf p. 179 (point 2).

[35] For some of its soil CMS areas, Boeing plans to use other cleanup standards, including "groundwater protection" and weak "worker," "recreator," and "ecological" cleanup standards.

diluted by Boeing and DTSC in the 2022 Settlement Agreement. If adopted, the 2022 Agreement's standards will produce what are called "residential standards" in name only given that the Agreement effectively rewrote and hollowed out DTSC's genuine residential standards that existed in the 2014 SRAM. These hollowed out standards are now being used in Boeing's CMS and DTSC's SB. In short, in 2022, Boeing and DTSC agreed to inappropriately adjust some of the exposure assumptions in the 2014 SRAM for the resident with garden scenario to grossly inflate the cleanup standards and produce a weakened cleanup for Boeing.[36]

These new standards set cleanup levels that allow some pollutants to remain on-site at levels **hundreds** or **thousands** of times higher than would have previously been allowed. Comparing the numerical cleanup levels shows that the new so-called resident standards are actually closer to the much weaker recreator standard Boeing has long wanted than they are to the authentic suburban resident standards in the 2014 SRAM.[37] To call these standards "residential" is a misnomer, a false label, like opening a box of cereal and finding dog food.

In its press release announcing the Boeing Agreement, DTSC stated that Boeing's cleanup could be "up to" a resident with garden standard – clearly indicating that much of the cleanup would, in fact, be to a weaker standard.[38] Indeed, nearly a third of the CMS areas included in Boeing's cleanup plan are slated to use the (new, weakened) resident no garden standard, with some 57% of the CMS areas to use the somewhat stronger (though still unacceptably weakened) resident with garden. But this is misleading; it's worse than that.

If one simply looks at the number of CMS areas, one comes to the conclusion that Boeing and DTSC are proposing the stricter (but still weakened) resident with garden standard at the majority of Boeing areas. But looks can be deceiving: in fact, the majority of Boeing's excavated soil will use the weaker standard. The resident with garden standard only applies to the top two feet of soil (further discussed below), thus greatly limiting the amount of soil to which the stronger (but still unacceptably weak) standard will be applied. After incorporating DTSC's determinations on biological and cultural exemptions, there will be approximately 140,500 cubic yards of soil removed under the resident with garden standard and 149,300 cubic yards of soil removed under the resident no garden standard.[39] Thus, even though there are many more resident with garden CMS areas, Boeing intends to use the weaker resident no garden standard for the majority of contaminated soil excavations.

---

[36] Please see our critiques of the new SRAM in the Boeing Agreement for a full description of the weakening of cleanup levels. https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Years-of-Inaction-Appendix-C.pdf and https://www.committeetobridgethegap.org/wp-content/uploads/2022/09/Secret-Negotiations-Appendix-A.pdf.

[37] CBG, "Secret Negotiations," pp. 17-18

[38] DTSC, Comprehensive Framework to Hold Boeing Accountable for SSFL Cleanup (hereafter "Comprehensive Framework"), May, 2022 (https://dtsc.ca.gov/boeing-cleanup-settlement-agreement/).

[39] These figures were calculated by CBG based on Boeing and DTSC data. See footnote 33 for a description of our calculation.

As we've already established, the resident with garden standard is not a real resident with garden standard but, in fact, a greatly weakened and manipulated standard that will allow much more contamination to remain on-site. Yet it's worse than that: Boeing plans to only apply the resident with garden standard to the top two feet of soil; soil that is more than two feet below ground surface will not be cleaned up (unless it is so polluted that it exceeds the new, weak resident no garden standard). By this weakening alone, Boeing and DTSC make clear that this is to be a superficial cleanup, in many places literally only remediating the soil surface. This is a betrayal of the previous commitment to a full SSFL cleanup, and leaves polluted soil in place where it can readily be exposed to the public and the environment, including by plant roots which easily penetrate below two feet, as has been shown by soil physicist Dr. William Bianchi in his paper, "Plant Uptake of Radionuclides and Toxic Chemicals from Contaminated Soils Below a Shallow Soil Cover."[40]

In sum, the proposed cleanup is largely cosmetic, achieved through redefining standards and the strategic, and at times confusing, use of language to create the illusion of a comprehensive remediation.

Much Soil Will Be Not Cleaned Up Due to "5x Multiplier" Weakening Cleanup Standards

Even worse, DTSC is poised to approve Boeing's illogical plan to allow polluted soil to remain not cleaned up even when it contains toxins at as much as five times the new, weak resident with garden RBSLs. The RBSLs are based on a 1 x 10^{-6} (one in a million, or "de minimis") cancer risk and a Hazard Quotient of 1 for non-cancer risks.[41] The Agreement allows a "multiplier" of 5 over those cancer and non-cancer risks for parts of the property;[42] i.e. allowing cleanup standards that are 5 times weaker than the already weak RBSLs.[43] The Agreement states:

> "Resident with Garden-based cleanup areas will be proposed where the SOF [Sum of the Fractions] results are above 5 times the de minimis cancer risk of 1 in a million or a non-cancer hazard of 1 (i.e., a cumulative cancer risk >5 x 10-6 and a cumulative non-cancer hazard index >5) on a sample point specific basis where the sample includes the identified COCs/ROCs (herein termed the '5X multiplier' approach)."[44]

[40] Bianchi, William. "Plant Uptake of Radionuclides and Toxic Chemicals from Contaminated Soils Below a Shallow Soil Cover" (hereafter "Plant Uptake of Radionuclides and Chemicals") August 2019. (https://www.committeetobridgethegap.org/hunters-point-reports/BianchiReport.pdf)
[41] DTSC-Boeing Agreement, pdf p. 195.
[42] DTSC-Boeing Agreement, pdf pp. 192-6.
[43] Under the Agreement, areas with estimated cancer risks less than 5 x 10^{-6} and non-cancer risks (HI) less than 5 will not be considered for resident with garden Corrective Measure Study areas. DTSC-Boeing Agreement, pdf p. 195
[44] Agreement, Exhibit 8, Attachment 1, "5X Multiplier Supplement for Resident with Garden Procedures for Identifying CMS Areas," pdf p. 195

The 5x multiplier provision incorporates a Sum of Fraction (SOF) calculation. The relationship between the SOF calculation, 5x multiplier, and resulting CMS determination is as follows: in a given soil sample, if there are multiple contaminants present, one identifies what fraction of the RBSL each contaminant concentration represents, sums those fractions, and if that sum is less than 5, Boeing does not include the area in its soil cleanup. This approach is clearly inconsistent with DTSC's statements that it is enforcing a cleanup based on a cancer risk of 1 x 10^{-6}.[45] Boeing's CMS is essentially using a cancer risk of 5 x 10^{-6} for the resident with garden scenario, effectively a further inflation of cleanup goals even beyond the weakening enshrined in the 2022 SRAM.

In practical terms, an analogy to what DTSC is about to approve would be a rule requiring a speeder to go 250 m.p.h. in a 50 m.p.h zone before a speeding ticket could be issued.

Inappropriate Use of Averaging in Residual Risk Determinations Allows Pollution Above Weakened RBSLs to Be Abandoned

Boeing appears to be, for at least some of the RFI sites, regarding risk goals as being met based on an area average, rather than a sample-by-sample comparison.[46] This means that areas of polluted soil with levels exceeding Boeing's new, weakened RBSLs would not be cleaned up. Boeing explains that this averaging method is built into its delineation of CMS area boundaries, defining each area so that only enough contaminated soil is removed to bring the average concentration within the area below the risk goal.

In practical terms, this means that DTSC wants to allow highly contaminated soil to possibly be left in place so long as it is offset by cleaner nearby samples.

Polluted Soil Removed from CMS Areas Due to Being Under SSFL Roads

Boeing excludes a substantial amount of polluted soil from its CMS areas on the basis that there is a road going over that area.[47] While this may seem reasonable, these are nonetheless areas of polluted soil that should be cleaned up. It is not clear that there will be a continued need for roads at SSFL after the cleanup – especially if, as Boeing would have it, the site will be a wildlife

[45] See, for one example of DTSC claiming it is enforcing a 1 x 10^{-6} risk level, DTSC, "Myths & Facts Regarding Boeing's Comprehensive Cleanup Framework at SSFL." (https://dtsc.ca.gov/myths-facts-regarding-boeings-comprehensive-cleanup-framework-at-ssfl/)
[46] See Boeing RFI Site Risk Assessments. For example Boeing, Final Risk Assessment Report, Boeing RFI Subarea 5/9 South, Santa Susana Field Laboratory, pdf p. 687, 703, 1285, etc.
[47] Boeing, Final Resource Conservation and Recovery Act Limited Corrective Measures Study Report Surficial Media Operable Unit, Boeing RFI Subareas, Santa Susana Field Laboratory (hereafter "Boeing Soil CMS), Appendix C. Proposed CMS Area Detailed Summary, pdf pp. 196-208 (https://dtsc.ca.gov/wp-content/uploads/sites/31/2025/09/2025.09.01_SMOU_CMS_DTSC-Final-04102025_redacted.pdf).

preserve. As the last step of the cleanup, it would be reasonable for DTSC to require Boeing to decommission these roads and conduct cleanup beneath them, instead of leaving soil polluted.

Unacceptable Use of Background Soil Sample Data to Determine Pollutants for Cleanup

The method by which Boeing selected the pollutants to be considered for cleanup in CMS areas is problematic. Boeing compared maximum site detections to maximum background detections to determine if a constituent would be a chemical of potential concern ("COPC"). If the maximum site detection for a pollutant was lower than the maximum background detection, that pollutant was not selected as a COPC. If the maximum detection was 2x the maximum background detection, the pollutant was selected as a COPC. However, if the maximum site detection was above the maximum background detection but below 2x the maximum background detection, Boeing applied a statistical evaluation to determine whether the sample data for that constituent was statistically greater than the background data.[48] In some cases, even though the maximum site detection for a constituent was above the maximum background detection, that constituent was not selected as a COPC.

This is especially concerning considering the fact that Boeing is not conducting a cleanup to background, but a risk-based cleanup – some constituents that were not selected as COPCs may have had maximum site detections above the RBSLs. By using the *maximum* detected background value for comparison, Boeing inappropriately inflates the value that is considered "background," thus erroneously declaring some soil data to be below background and thus not included in cleanup. Furthermore, there should be no need for Boeing to conduct a statistical "background comparison test" it has designed itself when DTSC already calculated a perfectly usable set of Background Threshold Values for the express purpose of comparing to soil data to confirm with statistical confidence whether or not a sample is above background.[49]

In summary, Boeing proposes, and DTSC allows, leaving large swaths of Boeing's SSFL soil in their polluted state based on: the inexplicable exclusion of the agricultural and rural residential cleanup standards DTSC previously admitted should be used; the massive weakening of suburban residential cleanup standards in the 2022 Settlement Agreement; the application of the new, weak resident with garden standard (now the strongest standard on offer) to only the top two feet of soil; and the use of that resident with garden standard only when soil is polluted enough to exceed five times the resident with garden standard.

[48] See Boeing Risk Assessments for RFI Sites. For example, Boeing, Final Risk Assessment Report, Boeing RFI Subarea 5/9 South, Santa Susana Field Laboratory, September 6, 2023, pdf p. 135.
[49] DTSC, "Combined-Data Background Threshold Values and Methodology Narrative, Chemical Soil Background Study," December 21, 2012, https://www.dtsc-ssfl.com/files/lib_cbs/results_report/csbs_report/65787_Combined_Data_BTVs_&_Methodology.pdf

Soil Vapor Extraction: A Weak Cleanup Method Made Worse by Boeing

The total volume of soil that is planned for remediation in the Boeing CMS and DTSC SB is about 1.1 million cubic yards (which is only a third of Boeing's total polluted SSFL soil; see estimate above). The remediation method Boeing plans to use for the majority of that soil (about 786,000 cubic yards, or about 71%) is soil vapor extraction (SVE).[50] While Boeing's other soil remediation method, excavation, completely removes contaminated soil, SVE is very limited in its ability to reduce site pollution. Boeing itself, in its SVE Pilot Study, states that SVE is unlikely to achieve residential cleanup standards.[51] Boeing's CMS does not provide critical details about its planned SVE operations, such as the length of time Boeing plans to conduct SVE or the number or location of wells at which Boeing plans to conduct SVE. Worse still, Boeing appears unwilling to implement SVE in the ways required to be effective, thus leaving even more contamination not cleaned up.

SVE is used for volatile organic compounds (VOCs), pollutants that volatilize some of their source mass into vapor. Boeing will only consider excavating areas of contaminated soil vapor down to seven feet; below that, all soil vapor contamination will be left in place and merely addressed via SVE.[52] SVE uses vacuum blowers and extraction wells to remove those toxic vapors from soil; it does very little to reduce the contaminant mass that is the source of the toxic vapors. SVE effectiveness is limited by many factors including soil type, soil structure, and the volatility of the waste being extracted.[53] The unsuitability of any of these factors can affect the successful use of SVE.

Boeing itself is not particularly hopeful about the effectiveness of SVE to remediate its soil, stating in the CMS that "The long-term effectiveness of SVE as it relates to the permanence of COC concentration reductions achieved with SVE is uncertain … based on the results of the SVE pilot study, it is possible that target cleanup levels for a future resident would not be met at a majority of the soil vapor CMS areas."[54]

However, DTSC's comments on the CMS push back. DTSC writes that Boeing's conclusion is

> "... drawn from a pilot study that was run for a short duration (approximately six months) with the results being specific to that RFI site given the heterogeneity of the site. Even if concentrations were not reduced to target cleanup levels for a future resident, significant mass was removed and overall risk to human health

[50] This figure was calculated by CBG. See Footnote 33 for further details.
[51] Boeing Soil CMS, pdf pp. 77-78
[52] DTSC-Boeing Settlement Agreement pdf p. 202.
[53] Liu, Y., Huang, F., Zhou, D., Wang, T., & Wang, G. (2024). Study of factors affecting the remediation of contaminated soil through pneumatic fracturing and soil vapor extraction. Journal of Hazardous Materials, 467, N.PAG. (https://doi.org/10.1016/j.jhazmat.2024.133776)
[54] Boeing Soil CMS, pdf pp. 77-78

> and ecological receptors was reduced. Reducing the mass will allow for target cleanup levels to be reached faster than with no cleanup at all. The more mass that is left in place, the longer it will take for monitored natural attenuation do the job. There is value in reducing mass and reducing risk in that it will result in shorter cleanup times overall."[55]

DTSC also suggests that Boeing operate the SVE systems cyclically over a longer timescale, which is a common way to design SVE systems for more effective contaminant mass removal.[56] In response to DTSC's comment, Boeing asserts, ridiculously, that because residential cleanup standards for VOCs may not be met, "operation of the system would not likely reduce risk…"[57] In effect, Boeing claims that lowering levels of toxins do not reduce health risks until toxin levels are reduced below a certain threshold. Furthermore, Boeing asserts that it doesn't have to improve the design and effectiveness of its SVE systems per DTSC's suggestions, because it has determined SVE to be ineffective and thus, per Exhibit 13 of the Settlement Agreement, it does not have to implement SVE.[58] If this sounds like circular logic, that's because it is.

In summary, while Boeing wishes to take credit for supposedly remediating a huge portion of its polluted soil using SVE, Boeing also stubbornly insists that its SVE program be designed to fail. Further, Boeing claims that it has proven that SVE at SSFL is ineffective (via a pilot study that DTSC criticized for using an SVE system not designed to be effective), and thus that "Running the SVE systems as suggested in DTSC's comment is not required by the Settlement Agreement and any remedy mandate to perform SVE would be inconsistent with the methodologies, processes, standards and specifications in Exhibit 13 of the Settlement Agreement."[59] Exhibit 13 shows that SVE will only be run if it is determined to be effective.[60] Boeing says that SVE is ineffective; DTSC says that SVE would be more effective if Boeing designed its SVE system better; Boeing says it doesn't have to take DTSC's suggestions for making SVE more effective because Boeing has shown that SVE is ineffective.

It is unclear where this leaves us because, as already noted, neither Boeing nor DTSC provide crucial details about the SVE portion of Boeing's cleanup (such as number of SVE wells, contaminants targeted, or length of time operating the SVE systems). Pdf p. 78, volume to be remediated by SVE is not even finalized – main cleanup plan is "can we reduce cleanup volumes?" We presume that Boeing simply plans to operate SVE ineffectively, not taking DTSC's suggestions for improvement.

---

[55] Boeing Soil CMS, pdf p. 7
[56] *Ibid.*
[57] *Ibid.*
[58] *Ibid.*
[59] *Ibid.*
[60] DTSC-Boeing Settlement Agreement, Exhibit 13, pdf p. 202

All of this is somewhat besides the main point, which is that **SVE is largely ineffective at removing contaminant source mass from the soil**. Even if operated properly (as suggested by DTSC, and resisted by Boeing), at best, SVE targets only a portion of the many pollutants in Boeing's soil, and leaves Boeing's polluted soil where it sits. Remediation approaches like SVE, that clean up soil *in-situ*, should be encouraged; but SVE should not be used, as it is by Boeing, to create the false impression that an additional 786,000 cubic yards of soil will be cleaned up. When soil contaminant concentrations remain in exceedance of cleanup levels – as they will at Boeing's SVE sites – Boeing should excavate that soil.

Unsupported Exaggeration of Supposed Cleanup Impacts to Exploit Exemptions and Leave Soil Polluted

DTSC's Statement of Basis (SB) grants exceptions for approximately 71,000 cubic yards of soil, allowing Boeing to leave these areas of soil polluted in perpetuity.[61] That's enough soil to fill a football field three stories tall (33 ft). Boeing and DTSC propose to leave all this soil polluted based on a cynical exploitation of goodwill, excusing Boeing from a significant chunk of its cleanup obligations under cover of excuses about protecting sensitive cultural and biological resources. The conceit is that Boeing and DTSC are concerned to protect Native American artifacts and endangered species from the impacts caused by the cleanup, but one wonders where this supposed concern was during the decades of rocket tests, partial nuclear reactor meltdowns, and improper toxic waste disposal at the site – and why Boeing and DTSC presume that such sensitive resources are best protected by leaving egregious levels of pollution at SSFL.

The other SSFL Responsible Parties, DOE and NASA, have similar plans to exploit the sensitive resources excuse to escape large portions of their cleanup obligations.[62] Yet under the terms of the 2010 Administrative Orders on Consent (AOC), DOE and NASA theoretically have a higher bar to clear to be granted their cleanup exceptions: a Biological Opinion from the U.S. Fish and Wildlife Service (USFWS), or a Native American artifact that is formally recognized as a Cultural Resource.[63] Boeing declined to sign the AOC, and the 2007 Consent Order contains no provisions regarding exceptions to the cleanup.

Boeing and DTSC, in the 2022 Settlement Agreement, established a framework for granting Boeing exceptions to its cleanup. The standards for Boeing's exceptions are concerningly loose: instead of formal recognition for cultural artifacts, Boeing need only "identify areas of cultural significance in consultation with Tribal representatives"; in place of a Biological Opinion from USFWS, Boeing need only "identify areas of biological significance in consultation with County,

[61] This figure was calculated by CBG. See Footnote 33 for further details.
[62] CBG-NRDC, "Supplemental Detailed Comments"
[63] NASA Administrative Order on Consent pdf. 43 (https://www.dtsc-ssfl.com/files/lib_correspond/agreements/64789_SSFL_NASA_AOC_Final.pdf). The DOE AOC contains the identical language.

[California Department of Fish and Wildlife] CDFW, and USFWS."[64] These are highly ambiguous and vague standards, requiring no formal documentation, leaving Boeing a lot of leeway to concoct its own justification for cleanup exceptions.

Worse, the Boeing Agreement smuggles a 100-fold weakening of the cleanup standards into the process for granting Boeing's cleanup exceptions. The Risk-Based Screening Levels (RBSLs) are set at a level that would produce a one-in-a-million cancer risk (at least theoretically; as described above, Boeing and DTSC have weakened the RBSLs so that they will, in reality, produce markedly higher risks). Exhibits 11 and 12 of the Boeing Agreement, which establish the process for granting Boeing's cleanup exceptions, indicate that exceptions will be "likely granted" if the soil is polluted to a risk level of "$<10^{-4}$, resident" – which is to say, one-in-ten-thousand cancer risk, or 100 times weaker than the new, weakened resident no garden RBSLs. Thus, large swaths of Boeing's land that receive exceptions will remain polluted at high levels. This unacceptable exception framework is carried forward into Boeing's CMS and DTSC's Statement of Basis.[65]

To be clear, we are not opposed in principle to the need to protect sensitive cultural and biological resources. Quite the opposite: we are sensitive to the need to protect Native American artifacts and endangered plant and animal species. What Boeing proposes, and DTSC approves, will not protect such sensitive resources; instead, leaving toxins at the SSFL will continue to sicken plants and animals, and endanger the health of people who come to the site to be with the cultural resources.

The way Boeing's exception process is structured encourages Boeing to find as many exemptions as possible, exaggerating the number and vulnerability of supposedly sensitive resources, and minimizing the degree of mitigation that is possible. For instance, in comments on the Draft Programmatic Environmental Impact Report, NRDC and CBG wrote:

> The PEIR identifies only 6 formally recognized Native American artifacts. [citation omitted] Those are all rockshelters, which presumably wouldn't be affected by cleanup of soil in any case, but which can be readily worked around if cleanup nearby were required. … A 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

[64] DTSC-Boeing Settlement Agreement, Exhibit 11 and 12, pdf pp. 200-201.
[65] DTSC, Draft Statement of Basis for the Surficial Media Operable Unit (SMOU) Proposed Remedy Selection in the Boeing Areas of Responsibility at Santa Susana Field Laboratory (hereafter "Statement of Basis"), September 2025, pdf p. 18 (https://www.dtsc-ssfl.com/files/lib_pub_comment_docs/docs_for_review/09.15.2025_STATEMENT_OF_BASIS.pdf).

> avoided during the survey or carefully collected and then returned to their original location, which could be done as well during the cleanup. [citation omitted]"[66]

As for biological exceptions, there has been no Biological Opinion by U.S. Fish and Wildlife Service (USFWS) indicating the ecological necessity of exceptions for any of the Responsible Parties, and thus no legitimate biological basis for leaving SSFL soil polluted.[67] Yet Boeing goes to great lengths to portray its polluted SSFL landscape as a wildlife sanctuary and a "critical wildlife corridor."[68] Boeing has held meetings with USFWS and CDFW; these meetings did not yield any Biological Opinion from the wildlife agencies contraindicating Boeing's cleanup. Summaries of those meetings are provided in the CMS, but those summaries omit the critical detail: an analysis of which species would supposedly be jeopardized by Boeing's cleanup.[69] Additionally, though for NASA and DOE, USFWS concurred with the identification of several species that the cleanup could possibly jeopardize, Boeing jumps to completely different species that were not discussed by USFWS, NASA, or DOE. This in all makes it incredibly difficult for the public to make informed commentary on the exemptions, forcing Boeing's will through without public discussion.

Frustratingly, DTSC continues to advance the meritless narrative that the entirety of SSFL should be exempted from any cleanup whatsoever under a cultural exception. In the Statement of Basis, DTSC states that "The entire SSFL site has been nominated for listing on the National Register as the Burro Flats Cultural District."[70] DTSC fails to disclose that it was one of the Responsible parties, NASA, that made the nomination in a blatant attempt to evade its SSFL cleanup obligation. DTSC also, extraordinarily, fails to mention that the Keeper of the Register refused to approve the nomination in 2020, citing "technical deficiencies" with the nomination.[71] DTSC claims that "The entire SSFL site … has been used by Native Americans for at least 7,000 years," which is true for the entire State of California; if DTSC wants to join the indigenous landback movement, it should first consider not allowing Boeing to leave the land severely polluted.

---

[66] NRDC-CBG, "Supplemental Detailed Comments", pdf pp. 27-28.
[67] USFWS said not cleaning a specific part of Area IV would not jeopardize the milkvetch and that they would have to do another evaluation if the Braunton's milkvetch's area was to be cleaned, not that cleaning the area would jeopardize the Braunton's milkvetch. Appendix J U.S. Fish and Wildlife Service Biological Opinion, 2018 (https://www.dtsc-ssfl.com/files/lib_doe_area_iv/RMHF_Complex_Demo/DOE_Supporting_Documents/69380_App_J_Biological_Opinion_Aug_2018.pdf).
[68] Video of Boeing RCRA Corrective Measures Study Report (CMS) Surficial Media Operable Unit (SMOU, Oct 7, 2025, posted to YouTube (https://www.youtube.com/watch?v=mPCuoW6K5NE); Boeing, Join our mission to clean, restore, and preserve Santa Susana, website accessed October 29, 2025 (https://comment.restoresantasusana.com).
[69] Boeing Soil CMS, Appendix D, "Biological and Cultural Exception Processes," pdf p. 209.
[70] DTSC, "Statement of Basis, pdf p. 21
[71] Keeper of the Register, NPS, Burro Flats Cultural District, National Register of Historic Places Return Comments, October 19, 2020.

Finally, large chunks of information on the exemptions are completely redacted from the CMS and SB. Presumably the justification for this is to protect information about sensitive biological and cultural resources that could lead to vandalism or other harm. Yet the redactions in the CMS far exceed what would be required to protect the resource. For example, numerous maps are redacted in their entirety.[72] Entire columns from key tables are censored, containing information like soil volume that do not put supposedly sensitive resources at risk but are critical to assessing the document.[73] These redactions are largely unjustified, and allow Boeing to hide essential information about its cleanup from the public.

Instead of exemptions for biological and cultural resources, Boeing should be applying mitigation measures much more frequently, thus allowing cleanup to happen. For instance, seed banks can be used for many types of plant, reseeding into clean backfill. A study by Land IQ found that "unavoidable impacts to Braunton's milkvetch and Santa Susana tarplant from cleanup to AOC standards can be mitigated to a less than significant level."[74] Similarly for many of the cultural resources, such as arrowheads and grinding stones, they can simply be removed and then replaced after the cleanup is complete.

The most effective way to protect the site's biological and cultural resources is through a cleanup that removes all Boeing's contamination, allowing evidence-based exceptions only when absolutely necessary, consistent with the AOCs, and using targeted mitigation measures to safeguard sensitive resources during the cleanup.

Additional Issues With the CMS

Flawed Cleanup Will Leave Radioactivity Not Cleaned Up

The CMS is also deficient in its treatment of radiological contamination. Boeing proposes to only clean up radiological contamination between 0 and 10 feet below ground surface (bgs), leaving contamination below 10 feet bgs in place.[75] There is no basis for arbitrarily cutting off the cleanup of radionuclides at 10 feet bgs – contamination below 10 feet still has the potential to harm ecological and human receptors. Plant roots can penetrate soil below 10 feet, and can absorb the toxins there, bringing those toxins to the surface by incorporating them into their leaves, and as the leaves fall the toxins spread on the surface.[76] In its public announcement of the 2022 Agreement, DTSC claimed that the radiological cleanup would be to background; notwithstanding the fact that this is a a completely false claim (the risk-based CMS areas include

[72] Boeing Soil CMS, pdf pp. 253-71
[73] Boeing Soil CMS, Appendix C, pdf pp. 196-208
[74] Land IQ, RE: Measures To Mitigate Impacts To Braunton's Milk-Vetch And Santa Susana Tarplant Related To Soil Cleanup In SSFL Area IV And NBZ, April 11, 2017, pdf p. 7. (https://drive.google.com/file/d/1AC8_uDm8wYfWCAC98TtDeu66Q-62p0Zx/view).
[75] Boeing Soil CMS, pdf p. 58.
[76] Bianchi, "Plant Uptake of Radionuclides and Chemicals".

radiological contamination), it is also irrelevant since the vast majority of contamination is from chemicals, not radionuclides.[77] It is still instructive, though, to recognize how brazenly DTSC lies to the public.

Inappropriate Disposal of Hazardous Waste at Landfills Not Designed to Accept it

In its discussion of off-site disposal for its contaminated soil, Boeing states in the CMS that it will assume 85% of soil that does not contain radioactive contamination above look-up table values is non-hazardous and will be disposed of at facilities only authorized to receive non-hazardous waste.[78] One of these facilities that Boeing lists is located in Simi Valley, just miles from SSFL itself. Additionally, in order to confirm its assumed characterization of hazardous waste to be disposed of off-site, Boeing says it will conduct confirmation sampling for just one in every 150 cubic yards of soil, or roughly one in every 10 truckloads.[79] It is inappropriate for Boeing to simply assume that 85% of soil not known to contain radioactivity above cleanup values is non-hazardous and eligible to be disposed of in facilities not designed to handle hazardous waste – the assumption has the potential to put in danger the very people Boeing's already-inadequate cleanup is supposedly protecting.

Boeing Attempts to Skew Public Input on Its CMS

On October 20, Boeing sent out a mass email encouraging people to submit public comments in support of its CMS proposal to DTSC. Nowhere in the email is it made clear that the email comes from Boeing: the email is sent from info@comment.restoresantasusana.com, and the Boeing logo does not appear in the email. The email states:

> "Please take a few minutes to submit a supportive comment asking DTSC to move forward with the proposed soil remedy in its Draft SMOU Statement of Basis. The proposed "resident with garden" soil remedy requires Boeing to perform a cleanup that is protective of people and the environment, preserves valuable cultural and biological resources, and is consistent with the long-term use of the site as open-space habitat under a conservation easement."

Such attempts to solicit public comment on its own proposal are inappropriate, particularly when the email contains numerous misleading and/or false statements.

[77] DTSC, "Comprehensive Framework"; CBG, "Secret Negotiations," p. 21
[78] Boeing Soil CMS, pdf p. 72.
[79] Boeing Soil CMS, pdf p. 2135 (the CMS contains the "1 per 150 CY" language for each cost estimate table, which exists for every RFI site); 1 in every 10 trucks is a conservative estimate based on the capacity of trucks carrying contaminated soil off-site.

DTSC Acting as Advocate for, Rather Than Regulator of, the Responsible Party, Boeing

In a normal regulatory setting, the polluter would propose its preferred remedy and opponents would identify defects in the proposal and better alternatives and the public would be able to comment on the responsible party's proposal. Then, having heard from both sides and the general public, the regulator would consider all that information and issue a proposed decision, which would be subject to further public input and final revision. In robust proceedings, the responsible party and intervenor groups would all be parties, able to call expert witnesses to testify and submit evidence, before Administrative Law Judges. But at minimum, the agency would hear from all sides before making its proposed decision.

In this case, however, DTSC held a public hearing in which it put forward Boeing's proposal and DTSC's plan to adopt it. Similarly, DTSC issued its proposed Statement of Basis, which essentially adopts the responsible party's proposal, and the terms of DTSC's secretly negotiated agreement with Boeing, while relegating public comment to after-the-fact objections.

DTSC appears far more interested in implementing the desires of the responsible party than regulating the responsible party or protecting the public and environment. Though the cleanup under consideration is for soils that Boeing is responsible for, and though Boeing is the author of the main substantive environmental document at issue, DTSC has largely adopted Boeing's positions. *Indeed, at the public meeting held by DTSC, it appeared to present Boeing's proposals as its own.* DTSC is ostensibly the regulator overseeing the cleanup, yet here it seems rather to be doing work on behalf of one of the parties it is supposed to be regulating, Boeing.

Conclusion

Boeing's CMS and DTSC's SB are the final nails in the coffin of the full cleanup of SSFL. The CMS and SB are the culmination of a years-long effort by Boeing to abandon the full SSFL cleanup to which it committed in 2007. Boeing now seems poised to round third base on its way to ridding itself of its SSFL cleanup obligations, as DTSC waves them home. The weakened cleanup standards, 5x multiplier, use of ineffective SVE, and biological and cultural exemptions all serve to hugely dilute Boeing's cleanup. Boeing's soil CMS enacts the 2022 Settlement Agreement and lets Boeing off the hook for the vast majority of the contaminated soil it is responsible for remediating, which will continue to put ecological and human health at grave danger.