

**Appendix C**  
**Alternatives Development for the**  
**Environmental Impact Statement for**  
**Remediation of Area IV and the**  
**Northern Buffer Zone of the**  
**Santa Susana Field Laboratory**

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# APPENDIX C

## ALTERNATIVES DEVELOPMENT FOR THE ENVIRONMENTAL IMPACT STATEMENT FOR REMEDIATION OF AREA IV AND THE NORTHERN BUFFER ZONE OF THE SANTA SUSANA FIELD LABORATORY

### C.1 Introduction and Summary

Alternatives analyzed in this *Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory (Final SSFL Area IV EIS)* reflect an ongoing process that has been responsive to changes that have occurred since the beginning of activities associated with the current efforts to remediate Area IV and the Northern Buffer Zone (NBZ) of the Santa Susana Field Laboratory (SSFL). Sections C.1 through C.5 of this appendix provide background and details of the process and activities that led to the development of the alternatives included in the *Draft SSFL Area IV EIS*. For this Final EIS, DOE retained the alternatives included in the Draft EIS, but in response to comments on the Draft and the now changed circumstances, DOE has added an additional scenario under one of the alternatives. As presented in more detail in Section C.6, DOE has added an Open Space Scenario under the Conservation of Natural Resources Alternative. At the time the Draft EIS was issued, The Boeing Company (Boeing) had indicated its intent to maintain its property at SSFL, which includes Area IV and the NBZ, as open space. That stated intent has now been formalized by two conservation easements and agreements that define acceptable uses and restrict development of Boeing's SSFL property. Specific details of the alternatives (e.g., soil volumes) are presented in Chapter 2 in the EIS and described in more detail in Appendix D.

The process for identifying alternatives included in the *Draft SSFL Area IV EIS* began in 2008, when the Notice of Intent (NOI) was published in the May 16, 2008, *Federal Register* (FR) (73 FR 28437). Scoping was conducted from May 16 through August 14, 2008. Preparation of this environmental impact statement (EIS) was delayed while Area IV was further characterized for radiological and chemical constituents to delineate areas of contamination. Then, in 2010, the U.S. Department of Energy (DOE) entered into an agreement with the State of California (*Administrative Order on Consent for Remedial Action* [2010 AOC] [DTSC 2010]) to clean up the soil at SSFL's Area IV and NBZ to background levels or minimum detection limits. Additionally, in accordance with the 2010 AOC, DOE agreed to have no "leave-in-place" alternatives or onsite burial or landfilling of contaminated soil. In 2012, DOE hosted a series of workshops to allow community members to contribute

#### SSFL Area IV EIS Alternatives

##### Soil Remediation Alternatives

- No Action
- Cleanup to AOC Look-Up Table (LUT) Values Alternative
- Cleanup to Revised AOC LUT Values Alternative
- Conservation of Natural Resources Alternative
  - Residential Scenario
  - Open Space Scenario

##### Building Demolition Alternatives

- No Action
- Building Removal Alternative

##### Groundwater Remediation Alternatives

- No Action
- Groundwater Monitored Natural Attenuation Alternative
- Groundwater Treatment Alternative

*Note:* For the *Final SSFL Area IV EIS* a second scenario was added to the Conservation of Natural Resources Alternative. See Section C.6 for further information.

to concepts for possible evaluation in this EIS. Because of the length of time between the 2008 scoping period and the 2010 AOC, DOE published an amended NOI on February 7, 2014, (79 FR 7439) and conducted a second scoping period (February 7 through April 2, 2014) to obtain public input on the development of alternatives and the issues that should be analyzed in this EIS. DOE considered the stakeholder input from the scoping comments from both scoping periods and the 2012 Community Alternatives Development Workshops (described in Section C.2) and, following the Prime Directives (requirements that all action alternatives must include) and the Screening Criteria (described in Sections C.3 and C.4, respectively), developed alternatives for soil remediation, building demolition, and groundwater remediation (see text box). No action alternatives are included for each category of alternative (as required by the National Environmental Policy Act [NEPA]). The action alternatives include, to the extent practicable, components put forward during the 2012 Community Alternatives Development Workshops and the 2008 and 2014 scoping periods. The screening process is described in Section C.5. A detailed description of the range of reasonable alternatives and the alternatives considered, but eliminated from detailed study, is included in Chapter 2 of this EIS. The new scenarios added under the Conservation of Natural Resources Alternative in this *Final SSFL Area IV EIS*, and the rationale for its inclusion are included in Section C.6.

## **C.2 Community Input into Draft SSFL Area IV EIS Alternatives**

Community preferences have been a major component in developing the alternatives, and DOE has provided extensive opportunities for the public to provide input. The initial opportunity for the public to express their opinions on alternatives occurred with the publication of the October 17, 2007, *Advance Notice of Intent to Prepare an EIS* (72 FR 58834).

The next opportunity for the public to express their opinions occurred in the summer of 2008, during the initial scoping process for this EIS. Preliminary alternatives were presented in the May 2008 NOI (73 FR 28437) (see Appendix A), and the public was invited to comment on the proposed alternatives or suggest other alternatives or alternative concepts. The 2008 NOI alternatives included a No Action Alternative (Alternative 1) and four action alternatives: No further cleanup or disposition of buildings and no remediation of contaminated media at SSFL Area IV (Alternative 2); Onsite Containment at SSFL Area IV (Alternative 3); Offsite Disposal of SSFL Area IV Materials (Alternative 4); and Combination Onsite/Offsite Disposal Alternative for SSFL Area IV (Alternative 5). Because the 2010 AOC (DTSC 2010) required cleanup to Look-Up Table (LUT) values<sup>1</sup> and no onsite land disposal of contaminated soil or debris, the 2008 NOI alternatives are no longer being considered for inclusion in this EIS (with the exception of a No Action Alternative with continued monitoring and security).

Subsequently, two additional opportunities for public input into development of the alternatives were provided. First, in spring 2012, DOE sponsored a series of three public workshops in which the community was asked to articulate their preferences for alternatives that they would like to see included in this EIS. The second opportunity occurred during the February 7 through April 2, 2014 scoping period, when public comment was sought on alternatives and issues that should be analyzed in this EIS. These comments are discussed in Section C.2.2 of this appendix.

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<sup>1</sup> The 2010 AOC stipulated that the soils cleanup standard would be based on LUT values, which are local background concentrations or laboratory method detection limits for contaminants for which the method detection limits exceed background concentrations.

The community expressed a number of concerns regarding various approaches to cleanup. Some wanted strict 2010 AOC compliance, including adherence to the 2017 deadline and cleanup to LUT values. Others opposed strict 2010 AOC compliance because of overriding concerns about the large number of trucks that would be transporting waste through neighborhoods and/or the possibility of causing extensive damage to biological and cultural resources by cleanup to LUT values. Some commenters that had concerns regarding potential transportation or biological and cultural resources impacts requested that DOE evaluate an alternative that would determine the extent of cleanup based on a risk assessment of the impacts compared to those of the alternatives that would provide more extensive cleanup (to LUT values).

### **C.2.1 Community Alternatives Development Workshops**

Community members developed the cleanup concepts summarized below during the 2012 public workshops held by DOE. The concepts are similar in their focus on cleaning up and restoring Area IV and the NBZ to a level that allows use of the site as open space for wildlife or human enjoyment. Each concept calls for minimizing transportation impacts. Preferred use of native plants and measures to prevent the spread of invasive, non-native plants is a common component. The approaches to meeting these objectives are different among the concepts. To the extent possible, the concepts developed by the community were incorporated into the alternatives DOE developed for this EIS. The full text of the concepts developed by each of the four groups at the workshops is included in Attachment C1 of this appendix.

**Minimize Environmental Disturbance Concept.** The focus of this concept is cleaning up the environment in a way that minimizes damage to the existing ecosystem. Cleanup would be approached in a holistic manner, working toward an end state where Area IV is integrated with the entirety of SSFL and the surrounding environs as a potential national or State park and habitat linkage. Cleanup actions would be intended to minimize the removal of soil and disturbance of the local environment. Structures (except uncontaminated structures that could be repurposed) and roads would be removed. Preference would be given to *in situ* and onsite treatment of contaminated soils, materials, and groundwater, as well as recycling. Building materials would need to be managed off site and would be disposed of or recycled as close to the site as possible to minimize transportation impacts and costs. Treated groundwater would be discharged on site.

**Risk-Based Prioritization Concept.** Under this concept, cleanup would be prioritized based on the toxicity of the contaminants to humans and biota, as well as the efficacy of cleanup methods. The schedule would not be a driver. A cost-benefit analysis may be conducted under this concept. Excavation would be minimized for both soil and groundwater; onsite treatment methods would be preferred; and cleanup levels would correlate to established U.S. Environmental Protection Agency (EPA) or California Toxicity Levels. Tritium would be monitored and reduced through natural attenuation. The existing groundwater extraction and treatment system would be expanded, and groundwater would be removed and treated to prevent further contaminant migration. Transportation impacts would be minimized by managing truck routes and schedules and using emissions-reducing technologies such as hybrid engines and alternative fuels. Protection of endangered species and cultural resources would be emphasized. Backfilling, recontouring, and cleanup impacts for the NBZ, in particular, would be minimized. At transfer, the property would be open space.

**Schedule- and Background-Driven Cleanup Concept.** The focus of this cleanup concept is on meeting the 2010 AOC (DTSC 2010) remediation requirements, including the schedule. Cleanup would be to LUT values, working toward a final state that is as near natural as possible and can be used as a wildlife corridor. All contaminated structures would be removed for disposal;

uncontaminated foundations and pads would be removed, if necessary, to facilitate soil sampling after the buildings have been removed. Onsite storage of demolition debris would be limited to 30 days. The preferential order of treatment to meet the 2010 AOC standard by 2017 would be *in situ* treatment, onsite treatment, and excavation. Tritium would be monitored and reduced through natural attenuation. Metals recycling would be prohibited. Innovative methods for moving materials off the site to minimize truck traffic on existing roadways and associated impacts, such as using a modular conveyor system or improving an existing fire road, would be used. Waste transportation to offsite disposal facilities would be done via intermodal transportation (ships, rail, and trucks).

**Green Cleanup Concept.** This concept emphasizes the use of green cleanup technologies. A point-based system would be developed to prioritize cleanup actions that would result in an open-space-land-use end state. Various methods, activities, and components of each cleanup action would be given a point value based on factors such as cost, efficacy, degree of disturbance, and vendor location (with specific preference for use of California-based companies). Preference (and therefore more-favorable point values) would be given to eco-friendly technologies and locally based capabilities. Offsite disposal would be minimized by onsite sorting, reuse, and recycling of waste, and special attention would be given to avoiding contamination or recontamination. Activities such as scheduling and planning truck movement would be undertaken to maximize public safety during transportation. Road infrastructure would be evaluated and improved as needed. There are two variations under this concept for management of existing structures. Under the building preservation variation, structures with the potential for reuse would be retained. Under the building demolition variation, all man-made structures would be removed and disposed of without consideration for reuse.

### **C.2.2 2014 Scoping Comments Concerning Alternatives Development**

DOE received comments regarding alternatives during the 2014 scoping period from Federal and State agencies and local governments, community organizations, environmental organizations, Native Americans, other organized groups, and members of the public. The alternatives-related comments ranged from those recommending that DOE analyze a full range of reasonable alternatives to comments demanding that DOE only analyze an alternative that meets the requirements of the 2010 AOC (DTSC 2010). Attachment C2 includes the comments received during the 2014 scoping period that concerned development of the alternatives to be analyzed in this EIS. The 2008 scoping comments were directed to the alternatives originally proposed in the 2008 NOI and therefore are not discussed here. A sampling of the alternative-related comments received during the 2014 scoping is included below to show the community preferences:

- This EIS must not consider alternatives that are in violation of the 2010 AOC, and alternatives must clean up to background levels.
- The 2010 AOC violates the spirit and intent of both the California Environmental Quality Act (CEQA) and NEPA; the entire SSFL should be cleaned up to comply with suburban residential levels stated in the 2007 *Consent Order for Corrective Action* (2007 CO) (DTSC 2007), except those areas where radiological materials were directly used.
- This EIS should examine a range of alternatives that could reduce truck transport and other impacts, while still assuring cleanup to background levels. These alternatives should be in two broad categories: (1) alternatives that propose ways to reduce the volume of soil that needs to be removed from the site and disposed of, while still meeting the background

cleanup goal, and (2) alternatives that could reduce, or even eliminate, the impacts from trucking soil that needs to be removed.

- DOE should consider alternative cleanup scenarios based on risk in this EIS so decision-makers can compare the soil volume, truck requirements, and other likely and potential community impacts. These risk-based cleanup scenarios should include:
  - cleanup to the 2010 AOC level;
  - cleanup to a suburban residential standard;
  - cleanup to an industrial/commercial standard; and
  - cleanup to a parkland standard.
- Only by including most, if not all, of the community-developed concepts and approaches in the EIS alternatives can DOE comply with NEPA and provide the decision-makers and the community with the information needed to arrive at a supportable decision.
- DOE should evaluate the No Action Alternative, which would address the residual effects of no action on surrounding offsite communities, as well as identify current onsite risks. This analysis should include the current groundwater extraction and treatment system and its effectiveness.
- The 2010 AOC (DTSC 2010) standard of cleanup of soils to background levels will be responsible for the vast majority of adverse impacts. The standard is unsustainable; consequently, the 2010 AOC should be repealed or renegotiated.
- Reduce transportation impacts, either by minimizing the soil that needs to be transported by *in situ* or onsite soil treatment or reducing the impacts from transporting soil. Suggestions for minimizing transportation impacts included compacting soil in trucks, incorporating multiple truck routes, sealing the trucks, developing fire roads from SSFL, using alternative energy vehicles, incorporating rail transport, and building a conveyor system to connect to an existing rail line.

### C.3 Prime Directives

To ensure the alternatives meet the purpose and need and to establish those alternative components that would apply across all alternatives, DOE initially identified a set of overriding considerations (Prime Directives) for use in developing the alternatives. DOE reviewed public comments and the 2010 AOC to develop the following Prime Directives considered by DOE during the alternatives screening process:

- No “leave-in-place” alternative or landfilling of soil or debris, as specified in the 2010 AOC.
- LUT values are action levels for soils. LUT values define the cleanup level of each contaminant based on background levels or minimum detection limits. DTSC has the sole discretion to establish the LUT values for chemical and radiological constituents.
- Cleanup will include soil, groundwater, building debris, and concrete (all concrete from any removed buildings will be disposed of or recycled off site).

#### Purpose and Need for Agency Action

*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.*

- Federal and California protected species (including candidate species) will be evaluated and included in the proposed 2010 AOC exemptions. Inclusion of California protected species (although not in the 2010 AOC requirements) was agreed to by the California Department of Toxic Substances Control (DTSC).
- Remediation of contamination in Area III originating from historical DOE activities in Area IV will be evaluated in the cumulative impacts analysis.
- Recognized cultural resources will be protected to the extent practical. In consultation with the California State Historic Preservation Officer, Native American groups, and other stakeholders, historic properties will be identified and addressed in accordance with the National Historic Preservation Act. Historic properties and other cultural resources will be protected in accordance with the 2010 AOC.
- DOE will evaluate the suitability of available backfill soil.
- All waste will be disposed of at licensed/permitted disposal facilities.
- EPA's Greener Cleanup Approach will be applied under all action alternatives. This includes best management practices to minimize the environmental footprint.

## **C.4 Criteria Development**

The first step in developing the alternatives was to develop screening criteria to evaluate the various concepts proposed both by the community and DOE. DOE reviewed Council on Environmental Quality (CEQ) regulations and CEQ and DOE guidance on developing alternatives. CEQ NEPA regulations in Title 40, *Code of Federal Regulations*, Section 1500.2(e) (40 CFR 1500.2(e)) require Federal agencies to “[U]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.” In the response to Questions 2a and 2b in its “Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations,” (46 FR 18026) (CEQ 1981), CEQ provides the following guidance:

**Q2a. Alternatives Outside the Capability of Applicant or Jurisdiction of Agency.** If an EIS is prepared in connection with an application for a permit or other Federal approval, must the EIS rigorously analyze and discuss alternatives that are outside the capability of the applicant or can it be limited to reasonable alternatives that can be carried out by the applicant?

A2a. Section 1502.14 requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is ‘reasonable’ rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.

and

**Q2b.** Must the EIS analyze **alternatives outside the jurisdiction** or capability of the agency or beyond what Congress has authorized?

A2b. An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or Federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered. Section 1506.2(d). Alternatives that are outside the scope of what Congress has approved or



funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies.

DOE follows this approach to alternatives development, as described in its *Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements* (DOE 2004) (Section 4.2):

Identify the range of reasonable alternatives that satisfies the agency's purpose and need. Include alternatives that would respond to the underlying purpose and need under a variety of reasonably foreseeable circumstances.

and

Address **reasonable** alternatives that are outside DOE's jurisdiction, even if they conflict with lawfully established requirements (e.g., an alternative that could be reasonable if an existing law could be amended or if a regulatory agency granted a waiver).

Additionally, EPA stated the following in their scoping comments for this EIS (EPA 2014):

The National Environmental Policy Act requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts.

With this guidance in mind, along with the purpose and need statement and Prime Directives (see Section C.3), DOE began developing the screening criteria for evaluating the concepts. First, the set of initial criteria listed below were compiled from relevant sources, including the purpose and need statement; resource and cooperating agency criteria; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) alternatives screening criteria; CERCLA criteria for evaluating alternatives; and community-based criteria. Similar criteria found among the sources were then combined into a single criterion to avoid redundancy. Nuances from the different source criteria were retained in each combined criterion. These criteria have alphanumeric designations indicating their origins.

**Initial Criteria.** The following initial criteria were compiled as described above:

**PURPOSE AND NEED CRITERIA (PN)**

- PN-1:** Regulations, orders, and agreements governing hazardous materials radiological cleanup and disposal.
- PN-2:** Compliance with criteria of the 2007 CO (DTSC 2007) (Clean up groundwater to risk-based levels.)
- PN-3:** Compliance with criteria of the 2010 AOC (DTSC 2010) (Clean up soil to LUT values, i.e., background or minimum detection limits.)
- PN-4:** Protect the environment.
- PN-5:** Protect worker and public health and safety.

**RESOURCE AND COOPERATING AGENCY CRITERIA (RA)**

- RA-1:** Protect cultural resources.
- RA-2:** Protect biological resources.
- RA-3:** Protect Native American interests: Preserve land as a sacred site or provide other required protection.

**CERCLA ALTERNATIVES SCREENING CRITERIA (CS)**

- CS-1:** Effectiveness
- CS-2:** Ease of Implementation
- CS-3:** Cost

**CERCLA NINE CRITERIA FOR EVALUATING ALTERNATIVES (PER THE NATIONAL CONTINGENCY PLAN) (CA)**

**Threshold Criteria:**

- CA-1:** Overall protection of human health and the environment
- CA-2:** Compliance with applicable or relevant and appropriate requirements (ARARs)

**Primary Balancing Criteria:**

- CA-3:** Long-term effectiveness and permanence
- CA-4:** Reduction of toxicity, mobility, or volume
- CA-5:** Short-term effectiveness
- CA-6:** Ease of implementation
- CA-7:** Cost

**Modifying Criteria:**

- CA-8:** State acceptance
- CA-9:** Community acceptance

**COMMUNITY-BASED CRITERIA (CB) (DERIVED FROM COMMUNITY CLEANUP CONCEPTS)**

- CB-1:** After cleanup, the site should be left in as near natural a state as possible, conducive to use as open space, parkland, or wildlife corridor.
  - Retain/replace with native flora to the extent possible.
  - Remove existing invasive species.
- CB-2:** Regardless of the cleanup levels, cleanup should be performed in as environmentally sensitive a manner as possible.
  - Disturb or remove for offsite disposal as little soil as possible.
  - Disturb as little habitat as possible.
  - Minimize use of natural resources such as water.
- CB-3:** Minimize transportation impacts:
  - Total distance traveled (i.e., pick the closest appropriate/permitted disposal sites).
  - Traffic congestion and safety on local roads.
  - Traffic congestion and safety on long-haul routes.
  - Air emissions (dust from loading/unloading and traveling; from exhaust).
  - Transfer of non-native or nuisance species onto or off the site.
- CB-4:** Meet 2010 AOC (DTSC 2010) remediation requirements.
- CB-5:** Include a risk-based cleanup alternative.
- CB-6:** Base cleanup on final land use (dropped for the Draft EIS because DOE is not the landowner and cannot determine final land use). After the Draft EIS was issued, Boeing formalized the open space designation as the final land use through two

conservation easements and agreements recorded with Ventura County (Ventura County 2017a, 2017b). Consequently, DOE added an Open Space Scenario under the Conservation of Natural Resources Alternative for evaluation in this Final EIS.

**CB-7:** Preference for onsite treatment of soils.

**Selected Criteria** – The initial criteria (described above) were incorporated into the selected criteria. The selected criteria were then divided into the main criteria and balancing criteria, which are described below. Four main criteria were developed that each alternative concept should meet to be incorporated into an alternative for evaluation in this EIS. Other considerations, such as stakeholder requests, also weighed into the selection of alternatives for consideration in this EIS. The remaining criteria were then designated as balancing criteria; those concepts with the largest number of favorable ratings (checkmarks) in the balancing criteria during DOE’s review were deemed the most favorable concepts. A full discussion of alternatives considered but dismissed from detailed study is provided in Chapter 2, Section 2.2, of this EIS. The main criteria and balancing criteria are as follows:

**Main Criteria**

**1. REGULATORY COMPLIANCE (PN-1,2/CA-2,8)**

Compliance with regulations, orders, and agreements governing hazardous and radiological materials cleanup and disposal. Includes compliance with the 2007 CO (DTSC 2007) and 2010 AOC (DTSC 2010).

**2. PROTECT PUBLIC AND WORKER HEALTH AND SAFETY (PN-5/CA-1)**

**3. EFFECTIVENESS (CS-1/CA-3,4/CA-5)**

Cleanup methods should be able to be implemented quickly enough to address any short-term risks and provide reliable protection over time (i.e., How well does the alternative remove or reduce the toxicity or mobility of contaminants or reduce the overall volume of contamination?).

**4. EASE OF IMPLEMENTATION (CS-2/CA-6)**

Consider the various components of the proposed alternative and the ease or difficulty with which each could be implemented.

**Balancing Criteria**

**5. PROTECT THE ENVIRONMENT (PN-4/CA-1/CB-2)**

Protect the environment, including biological and cultural resources. Regardless of the cleanup level, cleanup should be performed in as environmentally sensitive a manner as possible. Harm to sensitive species and habitats should be minimized in accordance with applicable laws and regulations, and cultural resources must be protected during cleanup activities.

Consideration should be given to:

- disturbing or removing for offsite disposal as little soil as possible;
- disturbing as little habitat as possible; and
- minimizing use of natural resources such as water.

**6. PROTECT NATIVE AMERICAN INTERESTS (RA-3)**

Preserve land as sacred site or provide other required protection.

**7. COST (CS-3/CA-7)**

Consider the estimated capital, operational, and maintenance costs of implementing each of the alternatives relative to the degree of protection afforded. Cost is generally not included in NEPA analyses of impacts, but is often a factor used in the decision process or as part of determining whether a proposed alternative is feasible.

**8. COMMUNITY ACCEPTANCE (CA-9)**

Consider whether the community will find this alternative acceptable.

**9. RETURN TO NATURAL STATE (CB-1)**

After cleanup, the site should be left in as near natural a state as possible, conducive to use as open space, parkland, or a wildlife corridor. Related activities would include:

- retaining/replacing native flora to the extent possible and
- avoiding the introduction of invasive species.

**10. MINIMIZE TRANSPORTATION IMPACTS (CB-3)**

Minimize as much as possible both the onsite and offsite impacts from transporting materials and equipment onto the site for remediation activities and waste and recycle materials off the site for disposal. Consideration should be given to:

- total distance traveled (i.e., pick the closest appropriate/permitted disposal sites);
- traffic congestion and safety on local roads;
- traffic congestion and safety on long-haul routes;
- air emissions (dust from loading/unloading and traveling; exhaust fumes); and
- transfer of non-native or nuisance species onto or off of the site.

**11. PREFERENCE FOR ONSITE TREATMENT OF SOILS (CB-8)**

Give preference to alternatives and treatment methodologies that leave soil on site rather than remove it for treatment or disposal.

## **C.5 Screening Process**

Once the above criteria were finalized, concepts for soil cleanup, structure removal, and transportation were placed into a spreadsheet and rated against the four main criteria. Those concepts that passed the main criteria or were included at the request of stakeholders were then further rated against the balancing criteria. Alternative transportation concepts are considered in this EIS based on analyses included in the DTSC *Draft Program Environmental Impact Report for the Santa Susana Field Laboratory, Ventura County, California (Draft PEIR)* (DTSC 2017). The *Draft PEIR*, Appendix J, "Transportation Feasibility Study," evaluates alternative means of transporting debris and soil from SSFL. A summary of the conclusions of DTSC's evaluation of transportation alternatives is addressed in Chapter 2, Section 2.4 of this EIS. Groundwater remediation actions would be conducted based on the 2007 CO (DTSC 2007), which directs cleanup to be completed in accordance with Resource Conservation and Recovery Act (RCRA) requirements, including preparation of a Corrective Measures Study to evaluate remedial actions. The Corrective Measures Study (CDM Smith 2018) includes an evaluation of groundwater treatment technologies. Therefore, groundwater treatment options were not subjected to the screening process described here. The

results of the screening analysis are shown in **Table C–1** for soil contamination and **Table C–2** for structures and infrastructure. In addition to meeting the screening criteria, the alternatives selected for evaluation meet CEQ and DOE NEPA regulations and related guidance, as well as reflect, to the extent possible, public input submitted during the Community Alternatives Development Workshops held in 2012 and during the EIS scoping period from February 7 through April 2, 2014. Identifying the range of reasonable alternatives was the primary purpose of the alternatives selection process.

As shown in Tables C–1 and C–2, some of the concepts had more favorable balancing criteria; all concepts that passed the main criteria were further evaluated against the balancing criteria. The “Cleanup to AOC Background Levels” concept was retained because of requests from stakeholders, even though it had some failings against the main criteria. The alternatives developed as a result of the screening process are included in Chapter 2, Sections 2.3 and 2.4 of this EIS. Additional details on alternatives or alternative concepts that were considered, but dismissed from detailed study, are included in Section 2.2.3.

The soil contamination cleanup concept, “Cleanup levels should correlate to established EPA or State of California toxicity levels,” was initially eliminated because it proposed a lower cleanup standard than required in the 2010 AOC (DTSC 2010). Because elected neighborhood councils from four neighborhoods in the nearby communities have requested a risk-based cleanup to suburban residential levels, and community members have asked for a comparison of impacts between 2010 AOC-compliant alternatives and other cleanup approaches that might minimize transportation impacts and preserve more of the natural environment at SSFL Area IV, DOE evaluated a traditional risk-based cleanup to a suburban residential level. (For this Final EIS, DOE subsequently added an Open Space Scenario with cleanup to a recreational user level as discussed in Section C.6.)

Mixing uncontaminated soil with minimally contaminated soil to meet the required cleanup levels is not allowed by RCRA. Even if it were an appropriate cleanup method, it would not likely bring the contaminant levels down to background levels, given the large volume of clean soil that would be needed. The use of mules and helicopters in inaccessible areas was eliminated for safety considerations of the workers and mules, especially in areas with steep terrain.

Cleanup to the 2010 AOC background standard by 2017 was initially kept as an alternative. Because of delays related to soil sampling for chemicals in accordance with the 2010 AOC, preparation of required documents, review and approval of documents, and the time necessary to haul building debris and excavated soil from the site, it became obvious that the cleanup could not be completed in the 2017 time frame. The alternative was considered and dismissed as unreasonable.

Flushing water down inaccessible areas of the northern drainages to collect soil contaminants and collecting the flushed water in catch basins, where it would be collected for treatment, was also eliminated because it would use water unnecessarily and increase disposal volumes. The National Aeronautics and Space Administration (NASA) and Boeing have demonstrated that focused removal of contaminated sediment can be performed in the drainages without creating copious amounts of liquid wastes (Haley and Aldrich 2007, 2008; NASA 2009, 2013).

**Table C-1 Draft SSFL Area IV EIS Alternatives Development and Selection Criteria**  
**Alternative Component: Soil Contamination**

PROPOSED ALTERNATIVE CONCEPTS	Using CERCLA balancing criteria, clean up soils consistent with ultimate land use.	<i>In situ</i> treatment has the highest priority on the scale, and offsite disposal has the lowest. Highest-risk areas should be cleaned up first.	Prioritize cleanup based on toxicity (use cost-benefit analysis) and minimize excavation (onsite soil treatment is preferred).	Cleanup levels should correlate to established EPA or State of California toxicity levels.	Cleanup to meet 2010 AOC background standard.	Preferential order of cleanup: <i>in situ</i> treatment, onsite treatment, and excavation.	Use a point-based system to evaluate and minimize soil removal by treating on site and <i>in situ</i> where possible.	Use existing buildings for soil treatment.	Mix uncontaminated soil with minimally contaminated soil to meet required cleanup levels.	Use mules and helicopters in inaccessible areas.	Flush water down inaccessible areas with steep slope. Collect the flushed water in catch basins and treat.
CRITERIA											
<b>MAIN CRITERIA</b>											
<b>1. Regulatory Compliance</b>	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
<b>2. Protect Public and Worker Health and Safety</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
<b>3. Effectiveness</b>	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	??	No
<b>4. Ease of Implementation</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes
Retained for further evaluation?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
<b>BALANCING CRITERIA</b>											
5. Protect the Environment	-	✓	✓	-	-	✓	✓	-	-	-	-
6. Protect Native American Interests	-	✓	✓	-	-	✓	✓	-	-	-	-
7. Cost	-	-	✓	-	-	-	-	✓	-	-	-
8. Community Acceptance	-	Split <sup>a</sup>	Split <sup>a</sup>	-	Split <sup>a</sup>	✓	✓	✓	-	-	-
9. Return to Natural State	-	-	-	-	-	-	-	-	-	-	-
10. Minimize Transportation Impacts	-	✓	✓	-	-	-	-	-	-	-	-
11. Preference for Onsite Treatment of Soils	-	✓	✓	-	-	✓	✓	✓	-	-	-

AOC = *Administrative Order on Consent for Remedial Action*; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; EPA = U.S. Environmental Protection Agency; ✓ = a positive response relative to the criterion (only positive responses were recorded; all others were noted with a “-”).

<sup>a</sup> “Split” indicates there were community members who supported the proposed alternative and other community members who opposed the proposed alternative.

**Table C-2 Draft SSFL Area IV EIS Alternatives Development and Selection Criteria**  
**Alternative Component: Structures and Infrastructure**

PROPOSED ALTERNATIVE CONCEPTS	Remove all roads and road beds.	Remove all unnecessary or contaminated roads. Retain critical access roads and use existing, uncontaminated roads and parking areas to the extent possible. Remove when cleanup is finished.	Remove all contaminated structures and infrastructure (roads, buildings, pads, footings).	Remove all structures both above and below grade.	Remove all structures both above and below grade, except those that can be appropriately repurposed.	Develop a process/point system to evaluate structures for beneficial reuse versus demolition.	Dispose of uncontaminated demolition debris in onsite landfill.	Manage (dispose of or recycle) uncontaminated materials off site.	Provide replacement structures for sensitive species.	Onsite containerized storage should not exceed 30 days.	CRITERIA
<b>MAIN CRITERIA</b>											
1. Regulatory Compliance	NA	NA	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
2. Protect Public and Worker Health and Safety	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Effectiveness	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Ease of Implementation	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Retained for further evaluation?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
<b>BALANCING CRITERIA</b>											
5. Protect the Environment	✓	✓	✓	✓	✓	✓	-	-	✓	✓	
6. Protect Native American Interests	-	-	✓	-	✓	✓	-	-	-	-	
7. Cost	-	-	-	-	✓	✓	-	-	-	-	
8. Community Acceptance	-	-	✓	-	✓	✓	-	✓	✓	✓	
9. Return to Natural State	✓	✓	-	✓	-	-	-	-	-	-	
10. Minimize Transportation Impacts	-	-	✓	-	✓	✓	-	-	-	-	
11. Preference for Onsite Treatment of Soils	-	-	-	-	-	-	-	-	-	-	

✓ = a positive response relative to the criterion (only positive responses were recorded; all others were noted with a “-”).

For the structures and infrastructure, the only concept that did not pass the screening process was disposing of uncontaminated demolition debris in an onsite landfill. This action is prohibited by the 2010 AOC. DOE also eliminated a number of concepts that would not be used. However, DOE would not remove the roads because they will be needed in the future for accessing the monitoring wells and evaluating revegetation efforts. DOE will not use existing buildings for soil treatment because the buildings would be removed first to allow sampling of the soil beneath the foundations, and there are no proposed soil treatment processes that would need the use of the existing buildings. The possibilities of retaining one or more structures for possible use after the property is returned to Boeing and building replacement structures for sensitive species were eliminated because the property does not belong to DOE.

As shown in Tables C-1 and C-2, some of the concepts had more favorable balancing criteria; all concepts that passed the screening were further evaluated under the alternatives for this EIS. The alternatives developed as a result of the screening process are described in detail in Chapter 2, Sections 2.3 and 2.4, of this EIS. Additional details on alternatives or alternative concepts that were considered, but dismissed from detailed study, are included in Section 2.2.3.

## C.6 Final SSFL Area IV EIS Alternatives

In preparing this *Final SSFL Area IV EIS*, DOE made revisions to the *Draft SSFL Area IV EIS* in response to comments received from other Federal agencies, State, and local government entities, Native American tribes, and the public. In addition, the Final EIS was revised to reflect changed conditions since issuance of the Draft EIS. One such changed condition was Boeing and the North American Land Trust executing a Grant Deeds of Conservation Easement and Agreements (see text box). To fully reflect the future land use in accordance with Boeing's conservation easements, DOE modified the Conservation of Natural Resources Alternative to include two scenarios. The first scenario reflects the exposure scenario as evaluated in the *Draft SSFL Area IV EIS*, that is, an onsite suburban resident with no garden. DOE added a second scenario that more accurately reflects the future use of the site as open space; it establishes risk-based cleanup levels commensurate with exposure of an onsite recreational user.

DOE also added sensitivity evaluations of the alternatives (see Appendix L). Responding to comments that asserted that the soil volume associated with the Cleanup to AOC LUT Values Alternative were underestimated and other comments that objected to setting aside areas in which the exemption process would be applied and areas where low concentrations of total petroleum hydrocarbons would be allowed to attenuate, DOE analyzed the potential impacts of the maximum soil volume that could reasonably be expected to be excavated. Under this scenario, ecological and cultural resources would not be protected as required by applicable laws, regulations, and the 2010 AOC. Sensitivity analyses were also added that evaluate the potential impacts from constraints (for example, budget constraints, longer-than-expected confirmation processes) that might result in soil remediation proceeding more slowly than evaluated in the baseline alternatives and scenarios. DOE

### Boeing Grant Deed of Conservation Easement and Agreement

In April and November 2017, Boeing made legally binding commitments to conservation easements held by North American Land Trust to permanently preserve as open space habitat nearly 2,453 acres of land that Boeing owns at SSFL, which includes Area IV and the NBZ. The conservation easements require that Boeing's property be managed in perpetuity such that any use of the property is consistent with preservation and maintenance of the conservation values of the property. Those conservation values are identified as significant natural, ecological, cultural, historic, aesthetic, educational, scientific, scenic, and open space values. Towards that end, the conservation easements are legally enforceable documents that, among other restrictions, forever prohibit residential, agricultural, or commercial development or uses of the site (Ventura County 2017a, 2017b).



also evaluated a scenario that completed demolition and removal of the DOE buildings in Area IV on an accelerated schedule.

## **C.7 References**

CDM Smith, 2018, *Draft RCRA Facility Groundwater Corrective Measures Study, Area IV, Santa Susana Field Laboratory, Ventura County, California*, September.

CEQ (Council on Environmental Quality), 1981, “Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations,” 46 FR 18026, *Federal Register*, Executive Office of the President, Washington, DC, *Federal Register*, Vol. 46, March 23, as amended.

DOE (U.S. Department of Energy), 2004, *Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements*, Second Edition, Office of NEPA Policy and Compliance, Washington, DC (available at [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-DOE-greenbook.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-DOE-greenbook.pdf)), December.

DTSC (State of California Department of Toxic Substances Control), 2007, *The State of California Environmental Protection Agency, Department of Toxic Substances Control, The Boeing Company, the National Aeronautics and Space Administration, and the United States Department of Energy, In the Matter of: Santa Susana Field Laboratory, Simi Hills, Ventura County, California, Consent Order for Corrective Action*, Docket No. P3-07/08-003, Health and Safety Code Section 25187, August 16.

DTSC (State of California Department of Toxic Substances Control), 2010, *The State of California Environmental Protection Agency, Department of Toxic Substances Control and the United States Department of Energy, In the Matter of: Santa Susana Field Laboratory, Simi Hills, Ventura County, California, Administrative Order on Consent for Remedial Action*, Docket No. HSA-CO 10/11-037, Health and Safety Code Sections 25355.5(a)(1)(B), 58009 and 58010, December 6.

DTSC (State of California Department of Toxic Substances Control), 2017, *Draft Program Environmental Impact Report for the Santa Susana Field Laboratory, Ventura County, California*, SCH# 2013111068, September.

EPA (U.S. Environmental Protection Agency), 2014, Letter from K. Martyn Goforth, to S. Jennings, U.S. Department of Energy, “Amended Notice of Intent to Prepare an Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory, Ventura County, CA,” April 2.

Haley and Aldrich (Haley & Aldrich, Inc.), 2007, *Report on Former Shooting Range/Northern Drainage Clay Target Debris Removal Work Plan, Santa Susana Field Laboratory, Ventura County, California*, San Diego, California, August 31.

Haley and Aldrich (Haley & Aldrich, Inc.), 2008, *Former Shooting Range Overshot Area Visible Lead Shot Removal Work Plan, Santa Susana Field Laboratory, Ventura County, California*, San Diego, California, August.

MWH (MWH Americas, Inc.), 2014, *Final Standardized Risk Assessment Methodology Revision 2 Addendum, Santa Susana Field Laboratory, Ventura County, California*, Pasadena, California, August.

NASA (National Aeronautics and Space Administration), 2009, Fact sheet: *Santa Susana Field Laboratory NASA’s Interim Source Removal Action*, November.

NASA (National Aeronautics and Space Administration), 2013, “Stormwater Improvements in Place Ahead of the Rainy Season,” *Fieldnote, An Update on NASA’s Cleanup Efforts at Santa Susana Field Laboratory*, October.

Ventura County, 2017a, Grant Deed of Conservation Easement and Agreement between The Boeing Company and North American Land Trust, recorded in Ventura County (recording number 20170424-00053180-0 1/41), April 24.

Ventura County, 2017b, Grant Deed of Conservation Easement and Agreement between The Boeing Company and North American Land Trust, recorded in Ventura County (recording number 20171117-00149829-0 1/51), November 17.



## **ATTACHMENT C1 COMMUNITY ALTERNATIVES DEVELOPMENT WORKSHOPS ALTERNATIVE CONCEPTS**

In May and June of 2012, DOE conducted a three-session workshop series designed to obtain input on alternative concepts from members of the local community. In Session 1 (May 15, 2012), Sean Hecht, J.D, from the University of California, Los Angeles Law School, provided an overview of applicable environmental laws to 21 members of the community. DOE also provided information on how DOE implements the relevant Federal regulations. For Session 2 (June 7, 2012), DOE provided information to 34 community members regarding the purpose and need for DOE action and the elements that would need to be included for each alternative concept to be considered in this EIS. These elements included: the condition of the property at transfer to Boeing, structures/infrastructure, soil contamination, disposal of contaminated soil and construction debris, transportation of material to disposal sites as well as fill material back to the site, and groundwater. For Session 3 (June 9, 2012), 35 members of the public were divided into four groups, with each group working together to develop alternative concepts for this EIS. A facilitator recorded the alternative concepts for each group, and the groups reviewed the draft alternative concepts and made adjustments. The final alternative concepts for each of the four groups are provided on the following pages.

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**Santa Susana Field Laboratory Area IV Environmental Impact Statement  
 Alternatives Development Workshop June 9, 2012,  
 Proposed Alternative Concepts**

	<b>Minimize Environmental Disturbance (Blue Group)</b>	<b>Risk-Based Prioritization (Orange Group)</b>	<b>Schedule-and-Background Driven Cleanup (Salmon Group)</b>	<b>Green Cleanup (Yellow Group)</b> <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>		
<b>Summary Statement</b>	Cleanup SSFL Area IV environment in such a way as to not cause damage to the existing ecosystem in excess of need.	Orange Group members believe that DOE should produce a full-scope EIS that takes into consideration a full range of alternatives not limited to the cleanup to background for soils stipulated by the 2010 AOC Agreement in Principle. We would appreciate a sincere effort on the part of the DOE to adopt a comprehensive approach in the EIS that unequivocally covers the potential damage to the natural environment, water, air, and public health resulting from a wholesale removal of soils. The wholesale removal of soils with low to high levels of contaminants is a poorly conceived method intended to clean up the site to an ill-defined or impossible-to-define "background."	We feel strongly that DOE should take all steps necessary to obtain sufficient funds to implement the 2010 AOC on the agreed schedule. DOE should take all steps necessary to meet the 2017 schedule. There should be no back-tracking and DOE should focus on implementing the 2010 AOC. In addition, DOE should work in cooperation with the California Department of Toxic Substances Control to prepare a joint Environmental Impact Statement/ Environmental Impact Report (in compliance with the National Environmental Policy Act and the California Environmental Quality Act).	<ul style="list-style-type: none"> <li>- At the beginning of the cleanup &amp; throughout the cleanup process, consider the entire SSFL property's condition at transfer &amp; potential end use.</li> <li>- Establish point-based prioritization system (similar to LEED system for Green Construction certification) for all activities.</li> <li>- Minimize creation of new risks and new problems as we solve old ones.</li> <li>- Engage California companies and California residents in any new jobs created.</li> <li>- Minimize soil movement by use of alternative treatment technologies; careful sorting of contaminated materials to keep as much out of disposal facilities as possible; preserving uncontaminated infrastructure, vegetation, and soil.</li> <li>- Establish a place open to the public with potential for one or more museums, research laboratories, etc. that documents the site's history and remediation and provide facilities for research on remediation relevant to the SSFL.</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>Building preservation variation:</b> Preserve uncontaminated structures.</td> <td style="width: 50%;"><b>Building demolition variation:</b> Remove all buildings in Area IV, as all structures have been declared NOT significant.</td> </tr> </table>	<b>Building preservation variation:</b> Preserve uncontaminated structures.	<b>Building demolition variation:</b> Remove all buildings in Area IV, as all structures have been declared NOT significant.
<b>Building preservation variation:</b> Preserve uncontaminated structures.	<b>Building demolition variation:</b> Remove all buildings in Area IV, as all structures have been declared NOT significant.					

	<b>Minimize Environmental Disturbance (Blue Group)</b>	<b>Risk-Based Prioritization (Orange Group)</b>	<b>Schedule-and-Background Driven Cleanup (Salmon Group)</b>	<b>Green Cleanup (Yellow Group)</b> <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>		
<b>Condition of the Property at Transfer</b>	<ul style="list-style-type: none"> <li>- Complete mitigation supportive of native habitat, including cultural resources, flora, and fauna.</li> <li>- Property should be conducive to integration with open space/parkland.</li> <li>- Infrastructure should support such open space/parkland use.</li> <li>- Property should commemorate the history of the site.</li> </ul>	<p>At transfer, the property should be open space, highly invasive non-native plant species removed, re-vegetated with native habitat, preserving biological, botanical, cultural, and historical resources. All Federal, State, and local special status species will be protected. In particular, the major population of federally endangered Braunton's milk-vetch (<i>Astragalus brauntonii</i>) growing on the southwestern hills in Area IV will be undisturbed and protected, as will the major populations of Santa Susana tarweed (<i>Deinandra minthornii</i>) growing in the northern portion of Area IV. Smaller populations of Santa Susana tarweed growing on the rock outcrops around Area IV will also be protected from disturbance. The SSFL property will have a visitor's center focusing on history and educational issues relevant to the site. Replacement nesting/roosting structures shall exist on the site. (See Structure/Infrastructure below.)</p>	<p>Clean the property to the 2010 AOC's requirement of background levels. This is not an alternative but a requirement, consistent with the Purpose and Need statement. Following cleanup, Area IV should be clean enough to serve as a wildlife corridor, in a near natural state similar to the state of property prior to the installation of buildings.</p>	<ul style="list-style-type: none"> <li>- Using a collaborative process, consider the entire SSFL property's condition at transfer and potential end use as cleanup decisions are made and implemented.</li> <li>- Establish a decision-tree process to preserve and document site history and history of cleanup.</li> <li>- Maximize sustainability.</li> <li>- Keep uncontaminated infrastructure wherever possible.</li> <li>- Don't create new problems as you solve the old ones.</li> <li>- Establish a space open to the public but with limited private vehicle access to minimize future environmental damage.</li> <li>- Preserve peripheral slabs for public parking, so shuttles can take people on the site.</li> <li>- Preserve archeological features.</li> <li>- Foster the natural state:               <ul style="list-style-type: none"> <li>• Return the site to the original state as near as possible and practical: try to ascertain and re-establish what was there prior to development, at the same time as you maintain positive features currently in place, like the oak forest.</li> <li>• Do not create additional damage during cleanup – for example, avoid cutting down existing vegetation and spray painting the rocks, as was done during characterization.</li> </ul> </li> <li>- Minimize soil movement to reduce truck traffic.</li> </ul> <table border="1" data-bbox="1398 1039 1953 1317" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="1398 1039 1703 1317"> <b>Building preservation variation:</b>            Keep uncontaminated buildings wherever possible.         </td> <td data-bbox="1703 1039 1953 1317"> <b>Building demolition variation:</b>            Remove all buildings in Area IV. Do not support attempting to save any structures in Area IV. All structures have been declared NOT significant already.         </td> </tr> </table>	<b>Building preservation variation:</b> Keep uncontaminated buildings wherever possible.	<b>Building demolition variation:</b> Remove all buildings in Area IV. Do not support attempting to save any structures in Area IV. All structures have been declared NOT significant already.
<b>Building preservation variation:</b> Keep uncontaminated buildings wherever possible.	<b>Building demolition variation:</b> Remove all buildings in Area IV. Do not support attempting to save any structures in Area IV. All structures have been declared NOT significant already.					



	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>	
Structure/Infrastructure	<ul style="list-style-type: none"> <li>Remove all structures except those that can be appropriately repurposed (for example, keep the million dollar hole [Building 56 excavation] and the Sodium Pump Test Facility).  <i>Option A</i> – Leave non-contaminated/stable subsurface structures and footings in place.  <i>Option B</i> – Remove building foundations, roads and road base for appropriate offsite management.  <i>Option C</i> – Same as Option B, with onsite management.</li> <li>Remove roads after the A, B, or C option.</li> </ul>	<ul style="list-style-type: none"> <li>Remove all contaminated structures and infrastructure that cannot be decontaminated in place on a cost-effective basis. Where possible, consider re-using non-contaminated structures for the visitor center. Removal and decontamination priorities shall be based on toxic risk assessments.</li> <li>Known or newly discovered historical /cultural sites shall be left undisturbed and be protected.</li> <li>Short-term (measured in days or weeks, not months) onsite storage of containerized debris shall be confined to unused paved parking lots. No land shall be cleared for the purpose. Sorting of debris shall be done at the site of removal. Recycling shall be given priority.</li> <li>Remove all unnecessary road paving. Maintain critical access roads and use existing, uncontaminated roads and parking lots to the extent possible. Assess need for remaining uncontaminated infrastructure using best management practices and /or on a case-by-case basis. Uncontaminated debris and slabs may be left in place.</li> <li>Replacement structures for sensitive species, such as raptors, shall be constructed near existing structures currently used by wildlife prior to their demolition.</li> </ul>	<ul style="list-style-type: none"> <li>Remove contaminated roads, pads, etc. as required by the 2010 AOC. Remove uncontaminated pads and foundations as needed to investigate for the presence of contamination. This is not an alternative but a requirement, consistent with the Purpose and Need statement.</li> <li>Short-term, onsite contained storage is acceptable, but should not exceed 30 days.</li> </ul>	<p><b>Building preservation variation:</b>            Establish a process for evaluating structures for beneficial use prior to demolition. Avoid unnecessarily filling trucks with non-contaminated structures. Focus on things that must be done. Apply a point system to determine whether it is more cost-effective to keep or demolish each structure. Retain all uncontaminated structures that can potentially be turned to beneficial use (like the Annenberg Foundation Malibu Creek project – see attachment). This would be part of the program to reduce the amount of soil that is moved around. Set aside “appropriate” buildings for future use as museum(s) and related facilities, such as Science of Remediation or Laboratory for Future Projects (such as testing of technologies) and Education. View this as part of making the site self-sustaining cost-wise... “Build it and they will come,” meaning colleges and universities.</p>	<p><b>Building demolition variation:</b></p> <ul style="list-style-type: none"> <li>Remove all buildings in Area IV.</li> <li>Do not support attempting to save any structures in Area IV. All structures have been declared NOT significant already.</li> </ul>

	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
Soil Contamination	<p>Remediate soil to level consistent with ultimate land use. Avoid removal to the extent possible.</p> <p><i>Step 1:</i> Develop hierarchy of area's cultural and ecological assets based on balancing criteria in CERCLA.</p> <p><i>Step 2:</i> Select from suite of technologies for soil remediation based on Step 1. Give preference to <i>in situ</i> remediation.</p> <p><i>Step 3:</i> Perform soil removal, minimizing the potential for water runoff and migration of contaminants to other areas of SSFL and off site. Make sure room is left for possible future options that are not explored at this time. Work in order of these priorities:</p> <ol style="list-style-type: none"> <li>1. <i>In situ</i> Treatment</li> <li>2. Onsite Treatment</li> <li>3. Onsite Containment</li> <li>4. Isolate sources of multiple contaminants mixing to prevent further mixing</li> <li>5. Other Option</li> <li>6. Other Option</li> <li>7. Any Other Option</li> <li>8. Soil Removal to Offsite Location (last resort/last option)</li> </ol> <p>** Remediate highest-risk areas first</p> <p>** Implement phytoremediation immediately</p>	<ul style="list-style-type: none"> <li>- Toxicity is a major consideration in development of LUTs.</li> <li>- Conduct toxicity analyses on known areas of contamination. Prioritize cleanup areas by toxicity. Based upon prioritization, select best available treatment(s) for those most toxic areas first. Following that, focus on areas of lower toxicity. Minimize excavation by using a suite of alternative treatments, including onsite treatment, based on priorities (determined by toxicity analyses). This approach includes the assumptions:             <ul style="list-style-type: none"> <li>• That the prioritization process described above is carried forward through the LUT development and application;</li> <li>• LUT numbers should be able to correlate with established EPA or State of California toxicity levels.</li> </ul> </li> <li>- The cleanup process should be thoughtfully applied without deadline(s) as the driver. New treatment technologies should be continually sought. Cost-benefit analysis, based on toxic risk, shall be applied proactively and funds budgeted accordingly.</li> </ul>	<p>For contaminated soils, cleanup to meet the 2010 AOC standard of background levels by 2017 as stipulated in the 2010 AOC as follows:</p> <ol style="list-style-type: none"> <li>1. Remediation <i>in situ</i> (in place) using technologies that have been demonstrated to be effective and timely where possible.</li> <li>2. Excavate and treat on site using technologies that have been demonstrated to be effective and timely where possible for soils that cannot be remediated <i>in situ</i>.</li> <li>3. Excavate no more than necessary (e.g., aiming to not excavate soil to a depth deeper than where the contamination is located) for those soils that cannot be treated using 1 or 2 (above).</li> <li>4. Remove that which must be removed as soon as possible.</li> <li>5. For contamination found in relatively inaccessible parts of the northern drainages, consider:             <ol style="list-style-type: none"> <li>a. Installation of catchment basins in more accessible locations downstream and introduction of water at or above the location of the contamination to allow accessible impoundment to remove and/or treat contamination. Flush with water, collect in a catchment, and treat or remove with vacuum trucks for remote disposal.</li> <li>b. Use of mules and/or helicopters to minimize disturbance.</li> </ol> </li> <li>6. Consider use of soil vapor extraction to address volatile organic compounds in the soil.</li> </ol>	<ul style="list-style-type: none"> <li>- To reduce the volume of contaminated soil to be removed, identify and treat the gradients of less contaminated soil surrounding the "pink blobs" so this less contaminated, now treated, soil can remain on site.</li> <li>- Use existing buildings for soil treatment.</li> <li>- Ensure "outlier" contaminated soils (those that occur outside the sphere of the main contaminated areas) are treated or removed.</li> <li>- Evaluate sorting out uncontaminated onsite soil and mixing it with soil that has low levels of contamination to bring the mixed soil within the levels required by the LUTs.</li> <li>- Have a system for making decisions about moving soil. Always use alternate technologies over "muck and truck." Model the system on the U.S. Green Building Council, LEED Certification System. (The highest level is Platinum.) Use a system that already exists and take the emotion out of decision-making.</li> <li>- For remaining characterization of site soils, take samples of plant materials that grow in the soil to be tested and analyze them to see whether they show signs of any of the contaminants of concern.</li> <li>- During remaining characterization and cleanup, ensure that all workers are properly wearing personal protective equipment for all tasks.</li> <li>- Evaluate whether the entire SSFL is a "Traditional Cultural Property" and ensure active on-going consultation with Native American populations in the area.</li> <li>- Have a soil treatment options system that includes a parallel evaluation of the site for areas that have "sensitive" issues, such as archeological or biological or safety issues and therefore call for special treatment. Some areas may call for sequestering, for example, the steep incline in the northern drainages.</li> </ul>

	<b>Minimize Environmental Disturbance (Blue Group)</b>	<b>Risk-Based Prioritization (Orange Group)</b>	<b>Schedule-and-Background Driven Cleanup (Salmon Group)</b>	<b>Green Cleanup (Yellow Group)</b> <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
<b>Disposal</b>	<p>Categorize waste by level of contamination.</p> <ul style="list-style-type: none"> <li>- Dispose of most contaminated soil first. Only most contaminated soil goes off site to appropriate landfill (closest and least expensive).</li> <li>- Separate waste streams to maximize onsite disposal and minimize offsite disposal.</li> <li>- Recycling of uncontaminated metal and other recyclables should be pursued whenever possible.</li> </ul>	<ul style="list-style-type: none"> <li>- For contaminated material: Subsequent to implementation of all treatment options, remaining contaminated materials would be taken to appropriate, licensed facilities. All other debris would be disposed of by landfill or recycling as appropriate, and include requirements as described in Structure / Infrastructure. Where necessary and feasible, local disposal, for example at Calabasas Landfill, is preferred over long-distance transport.</li> <li>- Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>- For radiological contamination: The three options identified by DOE for disposal of radiological contamination (Nevada National Security Site in Nevada, EnergySolutions in Utah, and Waste Control Specialists in Texas) seem acceptable. DOE should choose between the three based on the following considerations (in order of importance):               <ul style="list-style-type: none"> <li>• Minimize the distance that contamination must be shipped.</li> <li>• Minimize impacts on communities already negatively impacted by environmental hazards (environmental justice considerations).</li> <li>• Select a disposal site that can accept rail shipments (presuming rail transportation is selected for transport to disposal site).</li> <li>• Minimize cost.</li> </ul> </li> <li>- For mixed waste (containing both radiological and chemical contaminants): follow the same considerations listed above to select the most appropriate disposal site from among the same three disposal sites identified for radiological contamination.</li> <li>- For waste containing chemical contamination, follow the same considerations listed above for selection from among licensed facilities that can accept chemical contamination.</li> <li>- Before any excavated material can be shipped to a disposal site not licensed to receive radiological or chemical contamination, that waste must be proven to be uncontaminated.</li> <li>- This group prefers that no metals be shipped for recycling based on prior bad experiences.</li> <li>- Minimize the quantity of material to be disposed of (soil and construction debris) by using clean (based on the 2010 AOC) onsite fill material in areas where fill is needed.</li> </ul>	<ul style="list-style-type: none"> <li>- First priority is treatment to reduce need for disposal.</li> <li>- Place high priority on onsite sorting of waste to minimize creation of mixed waste.</li> <li>- Place high priority on using California-based companies, such as disposal sites for nonradioactive waste.</li> <li>- Strive for solutions that are characterized by longevity, with the goal to avoid recontamination.</li> <li>- Develop a matrix system for easier and more efficient decision-making on disposal that recognizes cost, jobs, local impacts, environmental justice, health effects, safety, etc. For example, safety must be a factor in deciding what to do about characterizing and cleaning up the steep inclines in the northern drainages.</li> <li>- Reduce debris by good sorting – concrete slabs can be reused as foundations for shade pavilions. Don't remove the slabs if it is not necessary.</li> <li>- Recycle metals, equipment, building materials.</li> <li>- Use a point system for setting priorities under a constrained budget.</li> </ul>

	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
Transportation	<p>MINIMIZE!!!</p> <p>Minimize offsite transportation requirements by onsite treatment and containment.</p> <ul style="list-style-type: none"> <li>- Assess feasibility of improving existing fire roads from northern drainage area to Southern Pacific rail spur</li> <li>- Evenly distribute transportation routes for disposal</li> <li>- Evaluate railroad option</li> <li>- Consider current and projected traffic conditions along suggested routes, especially Woolsey Canyon Road, Lake Manor Drive, Plummer Street, Topanga Canyon Blvd. and State Route 118 (Ronald Reagan Freeway) (e.g., rush hour, overloaded intersections, current traffic impacts, ability for trucks to navigate existing roadways [i.e., - turns])</li> <li>- Be mindful of invasive species control with vehicles coming on and off site.</li> <li>- Include an appropriate interval between truck shipments (such as one every 5 minutes) leaving SSFL.</li> </ul>	<ul style="list-style-type: none"> <li>- Minimize number of loads and transportation of waste from site by truck by making every effort to treat soil on -site. Follow established routes and select route based upon contaminant types, concentrations, and load weights. For example, Chatsworth route may not be appropriate, because it is a narrow two lane road through a residential and light commercial area, and the road may not be designed to support hours of heavily loaded truck traffic. Look to minimize shipping distances when selecting approved and /or licensed disposal locations. Best management practices should be utilized to protect the public health by minimizing noise and air pollution; trucks should be required to utilize new technologies such as alternate fuels, new hybrid engines, and/or engines with low emissions.</li> <li>- Transportation activities should occur during the hours between 0900 and 1430 to avoid rush hours and school arrivals and departures, and to prevent accidents that could occur by trucks driving on Woolsey Canyon Road after dark.</li> </ul>	<p><i>Mode of transport:</i></p> <ol style="list-style-type: none"> <li>1. Off the mountain, consider using a modular conveyor system with dust controls (either an enclosed belt or sealed containers for the materials being conveyed) or (if that won't work) trucks using modular containers. Conveyance system may also be suspended cable - think zip line or ski lift - to which the containers are attached.</li> <li>2. To the disposal site, consider rail option of transferring onto rail. Evaluate use of transfer points on both sides of the county line (e.g., Simi Valley and Chatsworth).</li> <li>3. If the Texas disposal site is selected, consider using ship transport relying on Port Hueneme or Los Angeles harbor.</li> <li>4. If trucks must be used, use electric or natural gas to minimize air emissions.</li> <li>5. If trucks must be used, employ truck washing/ decontamination (including tires) to avoid moving contamination off the site.</li> </ol> <p><i>Routes:</i></p> <ol style="list-style-type: none"> <li>1. Off the mountain, consider developing an existing fire road from Area IV into Simi Valley OR through Ahmanson Ranch (possibly to Van Nuys rail yard for transfer to rail transport) as an alternative to Woolsey Canyon Road.</li> <li>2. If trucks down Woolsey Canyon Road, consider alternative routes from the bottom of Woolsey Canyon Road and consider spreading out the impact by rotating among multiple route options.</li> <li>3. Consider upgrading roads to compensate for damages to be incurred.</li> </ol> <p><i>For fill:</i> Use onsite material for fill and onsite re-contouring whenever possible. If must use offsite fill, use the same mode of transportation and routes as for excavated materials.</p>	<ul style="list-style-type: none"> <li>- Ensure road infrastructure from top to bottom of mountain is safe:             <ul style="list-style-type: none"> <li>• Include a bike lane and turnouts on Woolsey Canyon Road/Valley Circle Blvd. so cyclists are not run off the road.</li> <li>• Establish a clear definition of ownership of the road</li> <li>• Use natural gas for fuel and other environmentally protective steps.</li> <li>• Rework/reconstruct the intersection at Woolsey Canyon Road and Valley Circle Blvd.</li> <li>• Incorporate safety measures, including live monitors, strict enforcement of speed limit.</li> </ul> </li> <li>- Maximize safety to community and to drivers.</li> <li>- Minimize fill to be brought in.</li> <li>- Minimize bringing new materials to SSFL that will have to be taken away later.</li> <li>- Coordinate transportation among all parties responsible for SSFL cleanup to minimize impacts to community and the environment.</li> <li>- Keep jobs in California for chemical waste disposal</li> <li>- Build temporary treatment plant in Area IV for SSFL chemical waste - then dismantle after cleanup.</li> </ul>

	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
<b>Groundwater</b>	<p>Priority: Focus on source removal to minimize impacts to groundwater (vadose zone):</p> <ul style="list-style-type: none"> <li>– Continue SSFL site-wide coordination of groundwater investigation and remediation. This includes Area IV.</li> <li>– Continue monitoring forever, including seeps and springs.</li> <li>– Continue treatment using existing systems.</li> <li>– Explore new technologies as they become available.</li> <li>– Treated groundwater should go back into the ground on site. If this is not possible, it should be retained for discharge during the appropriate season (wet season) in consideration of biological resources.</li> <li>– Groundwater treatment technologies cannot cause a bigger problem than what treatment is trying to fix (i.e., fracking).</li> </ul>	<ul style="list-style-type: none"> <li>– Expand GETS. Pump groundwater to prevent further contaminant migration. Explore data gaps on seeps and springs. Install vapor extraction system where necessary. Continue with tests that are in place, but accelerate groundwater treatability studies to include present and future technologies. Tritium in groundwater: allow natural attenuation with continued monitoring.</li> <li>– Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</li> <li>– Groundwater and soil treatment must be considered and treated at the same time to prevent recontamination of new soil by groundwater.</li> </ul>	<ul style="list-style-type: none"> <li>– Implement radically enhanced pump and treat system (better than Boeing's current or previous Groundwater Extraction Treatment System) to treat the groundwater and control further spread of contamination.</li> <li>– In parallel, aggressively investigate, test, and implement, in a timely fashion, advanced technologies (that have been demonstrated to be effective) to treat groundwater contamination.</li> <li>– Install long-term monitoring wells, including at the base of the Santa Susana Mountains [Simi Hills] where they intersect with the Simi Valley alluvium to detect migration of contaminants.</li> <li>– It is possible that Tritium cannot be addressed as it is too difficult to separate from water for treatment; short life means quantity will diminish significantly in relatively short period of time.</li> </ul>	<ul style="list-style-type: none"> <li>– Use phytoremediation and other alternative technologies to reduce soil movement and draw contamination toward "neutralization" points.</li> <li>– Keep native plants and use plants that reduce secondary impacts, i.e., if the plants are non-native, make sure they do not cause other adverse impacts.</li> <li>– Use treated groundwater to irrigate phytoremediation plants; in reusing treated groundwater, store it as close to original location as possible.</li> <li>– In event of constrained funds:               <ul style="list-style-type: none"> <li>• Use funds where they will have the best and most beneficial effects.</li> <li>• Halt contaminant migration patterns.</li> </ul> </li> </ul>

	<b>Minimize Environmental Disturbance (Blue Group)</b>	<b>Risk-Based Prioritization (Orange Group)</b>	<b>Schedule-and-Background Driven Cleanup (Salmon Group)</b>	<b>Green Cleanup (Yellow Group)</b> <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
<b>Additional Actions</b>	<ul style="list-style-type: none"> <li>- <i>Backfill</i> – Use locally sourced and similar type and seed bank, reuse onsite soil when possible.</li> <li>- <i>Re-contour</i> – return the land, as much as possible, to the original land contours.</li> <li>- <i>Revegetate</i> – local natives.</li> <li>- All actions done in consultation with other appropriate State resource agencies including State Parks, Fish and Game, and Santa Monica Mountains Conservancy.</li> <li>- Create and implement SSFL Integrated Restoration and Resource Management Plan before hand-over to Boeing.</li> <li>- Make property accessible for educational opportunities.</li> <li>- Property should be conducive to integration into regional open space parkland and Rim of the Valley planning.</li> <li>- Integrate property into Santa Monica Mountains National Recreation Area or similar national park service entity (i.e., Rim of the Valley).</li> <li>- Create an Endowment.</li> <li>- Must address cumulative impacts with NASA and Boeing.</li> <li>- Bury non-contaminated debris on site.</li> <li>- Conduct a cost-benefit analysis of all possible cleanup levels on the site.</li> <li>- Cleanup visible debris in northern drainage area.</li> </ul>	<ul style="list-style-type: none"> <li>- Backfilling should be minimized, and its placement should be timed to lessen erosion potential.</li> <li>- Backfill soils should be similar to what was taken from the contaminated area.</li> <li>- Any re-contouring should be minimal, should consider natural drainage patterns, and should be performed for remediation purposes only after soil disturbances.</li> <li>- Revegetation should be site-specific, consist of local, native plant species and should allow for re-colonization of Area IV by native plant species from adjacent habitat.</li> <li>- Long-term monitoring will be performed and will include monitoring of soils, drainages, historical, archaeological and biological resources that are protected or listed (or when these resources are discovered during the remediation process). Cleanup impacts to the NBZ should be minimized to the extent possible.</li> <li>- Systematic monitoring of plants growing on contaminated soils should be instituted to evaluate the effectiveness of contaminant uptake, degradation, and potential adverse effects on consumer species.</li> <li>- The group believes its suggestions for conditions at transfer can be accomplished.</li> </ul>	<ul style="list-style-type: none"> <li>- For the Sodium Burn Pit, a permanent remedy is needed for contamination in, near, and beneath (including the bedrock) the former sodium burn pit, including the NBZ, as previous cleanup work was to provide an interim remedy only. A final remedy is needed for long-term protection, consistent with the 2010 AOC.</li> <li>- Backfilling, re-contouring, and revegetation to restore the landscape to the desired condition (wildlife corridor).</li> <li>- Long-term monitoring to assure ongoing effectiveness.</li> <li>- Maintain complete records in a form that will last to memorialize all known information and maintain those records in a form that can be accessed using existing technology in perpetuity.</li> </ul>	<ul style="list-style-type: none"> <li>- Revegetation should include native plant species that are beneficial to erosion control, as well as those that are efficient in uptake of potential remaining contaminants.</li> <li>- Establish responsible contour of land to protect drainages, prevent erosion, etc.</li> <li>- Establish long-term monitoring to ensure no recontamination and to make sure contaminants do not move (as with groundwater).</li> <li>- Long term monitoring should also include phyto-data as far as contaminant uptake, number of cycles, to demonstrate progress and how alternative solutions are applied and their success measured.</li> <li>- Establish mechanism for coordinated decision-making among all parties to ensure cooperation, information sharing, etc.</li> <li>- Provide for active dust suppression by a guy with a hose (meaning a human who can judge how much water is just right – not too much or too little).</li> </ul>

	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>		
<b>Total Package</b>	<p>Cleanup SSFL Area IV environment so as to not cause damage to the existing ecosystem in excess of need,</p> <p><i>Priority:</i> Protect, Don't Destroy.</p> <p><i>2nd Priority:</i> Ultimate (best and highest use) – Parkland and Habitat Linkage.</p> <p><i>3rd Priority:</i> Ecological functionality and cultural resource protection:</p> <ul style="list-style-type: none"> <li>– Contain and treat as much as possible on site.</li> <li>– True cleanup, not relocation.</li> <li>– Regional Coordination.</li> <li>– Site-wide Coordination.</li> <li>– Document historic significance of Area IV.</li> <li>– Scientific decision-making</li> </ul>	<ul style="list-style-type: none"> <li>– Most important: Review results of site assessments and toxicity characterization. Prioritize clean up accordingly based upon toxicity to humans and biota.</li> <li>– Least important: Meeting the 2017 deadline.</li> <li>– Urgent: There is a need for rumor control and a reliable, responsive source of information dissemination to combat exaggerated claims of negative health and safety impacts emanating from the site.</li> <li>– Possible positive impacts: public health and safety will be protected; the SSFL site will be restored to open space; and native habitat will be protected and restored as necessary.</li> <li>– There is a lessening of fear levels in surrounding communities, a growing appreciation of the natural beauty and cultural history of the site, and involvement by local residents in staffing and in volunteering at the onsite Education Center.</li> </ul>	<p>Most important – Get started and get finished.</p>	<ul style="list-style-type: none"> <li>– Make it safe while protecting what's there today.</li> <li>– Least important: the political "win."</li> <li>– Most urgent: identify all potential contaminant pathways so that best priorities can be established.</li> <li>– Positives: we'll have a clean site.</li> <li>– Negatives: Land-use limitations must be detailed for perpetuity, as we believe it is inappropriate to consider any part of Area IV for residential land-use, due to known groundwater impacts likely to exceed the several generations required to complete that cleanup.</li> <li>– The vision: A site that shows it was cleaned up with green technology, striving for a reduced foot print, (complete with each of the two variations below)</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <p><b><i>Building preservation variation:</i></b> ...keeping uncontaminated buildings (such as Building 9 with the movable roof) so that they might be used for a museum to showcase site history, remediation technologies, and responsible reuse (as examples).</p> </td> <td style="width: 50%; padding: 5px;"> <p><b><i>Building demolition variation:</i></b> ...removing all buildings in Area IV, as all structures have been declared NOT significant already.</p> </td> </tr> </table>	<p><b><i>Building preservation variation:</i></b> ...keeping uncontaminated buildings (such as Building 9 with the movable roof) so that they might be used for a museum to showcase site history, remediation technologies, and responsible reuse (as examples).</p>	<p><b><i>Building demolition variation:</i></b> ...removing all buildings in Area IV, as all structures have been declared NOT significant already.</p>
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	Minimize Environmental Disturbance (Blue Group)	Risk-Based Prioritization (Orange Group)	Schedule-and-Background Driven Cleanup (Salmon Group)	Green Cleanup (Yellow Group) <i>The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.</i>
		<ul style="list-style-type: none"> <li>– Possible negative impacts: Transportation of hazardous waste and nonhazardous waste and infrastructure and all transportation associated risks and drawbacks, including damage to the site environment, roads, etc., health and safety impacts for the community living in the area which include potential lung and other illnesses associated with traffic, the potential for accidents and spills, and noise. Increased contamination of other areas (other landfills) that may be impacted by Area IV and NBZ remediation. Maintenance and security considerations may impact long-term site access for humans and wildlife.</li> <li>– Weakness to be addressed: There is a potential for failures of treatment methodologies, lack of clarity as to the end state desired, failures or obstruction due to political interference, failures or obstruction from a proliferation of misinformation, and / or deliberate disinformation campaigns.</li> </ul>		<p><b>Please note that the Yellow Group provided an exhibit to illustrate their vision for the future.</b></p>

AOC = Administrative Order on Consent for Remedial Action; Blvd. = Boulevard; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; EPA = U.S. Environmental Protection Agency; GETS = Groundwater Extraction and Treatment System; LEED = Leadership in Energy and Environmental Design; LUT = Look-Up Table; NASA = National Aeronautics and Space Administration; NBZ = Northern Buffer Zone.



## ATTACHMENT C2

### SCOPING COMMENTS PERTAINING TO DEVELOPMENT OF ALTERNATIVES FOR THE *DRAFT SSFL AREA IV EIS*

**February 7 through April 2, 2014**

Code <sup>a</sup>	Commenter and Comment Summary
	<b>AL = Alternatives/Alternative Development</b>
AL-1	<i>Commenters: Multiple form letters, individuals and organizations</i> DOE needs to clean up Area IV to background levels as indicated by the legally 2010 AOC. The 2010 AOC requires that DOE’s actions be in accordance with applicable Federal, State, and local laws and regulations, including the NEPA.
AL-2	<i>Commenters: Multiple form letters, individuals and organizations</i> The NOI includes numerous alternatives and “concepts” that would violate the 2010 AOC (three out of four) and leave behind most of the contamination that was promised to be cleaned up (e.g., <i>in situ</i> ). The EIS must not include alternatives that would violate the 2010 AOC.
AL-3	<i>Commenters: Multiple form letters, individuals and organizations</i> As it prepares for the EIS, DOE appears to be trying to find ways to get out of complying with its cleanup agreement.
AL-4	<i>Commenters: Multiple form letters, individuals and organizations</i> DOE expressly promised in 2012 that the EIS alternatives would not include any that would violate the requirements of the cleanup agreement (with the exception of the standard No Action Alternative), yet that seems to be what DOE is now proposing. DOE should live up to the 2010 AOC and its 2012 commitments about the EIS.
AL-5	<i>Commenters: Individuals</i> Unable to tell which of the “community-built” alternatives was integrated into the alternatives listed in the NOI. Specific request to incorporate one of these alternatives in the EIS.
AL-6	<i>Commenters: Multiple individuals and organizations</i> The proposed deadline for cleanup of 2017 is not feasible; the deadline should be extended. An extension of the cleanup deadline under the 2010 AOC appears necessary, or the use of a risk-based cleanup that can be accomplished by 2017.
AL-7	<i>Commenters: Multiple individuals and organizations</i> NEPA and the CEQA both set standards for environmental considerations that must be addressed in environmental documents, and contracts that are inconsistent with those laws do not trump NEPA and CEQA provisions. The NEPA and CEQA analyses must consider all options, not the single path set by the 2010 AOC.
AL-8	<i>Commenter: Organization</i> Exclusion of any possible cleanup alternatives, except the expected 2010 AOC-mandated cleanup approach, would be a momentous detriment to the usefulness of the EIS and would likely invalidate it under NEPA. The EIS must not exclude from consideration reasonable alternatives supported by authorized standards of the State of California, including: No Project; Cleanup under the 2010 AOC; Cleanup to Open Space standards; and Cleanup to Suburban Residential standards.
AL-9	<i>Commenters: Multiple individuals and organizations</i> DOE’s EIS must, for each alternative, present comparison of costs, time durations, and all related effects on transportation, biological resources, cultural resources, soil, water, and air. Every cleanup measure proposed must be subject to a rigorous cost-benefit analysis. A comparison of the benefits of proposed remediations versus the comprehensive and cumulative costs, biological, watershed and environmental costs. The cost must include not only dollar costs, but cost of damage to the environment; the effects on local water resources-streams and canyons; damage to the air and to the health of the surrounding communities; damage to cultural (Chumash) sites and artifacts; damage to the space race history structures; destruction of local roads and bridges; and costs to repair Los Angeles County, Los Angeles City, and State highways from the estimated extremely high volume of truck trips.

Code <sup>a</sup>	Commenter and Comment Summary
AL-10	<p><i>Commenter: Organization</i></p> <p>A discussion of alternatives should include what DOE will do if the Appeals Court supports the lower court decision, which will have the effect of stating that a special, negotiated cleanup standard is not permissible at SSFL under California law. An explanation should be provided to explain why the public should pay for a cleanup that is inconsistent with the law, and why local residents should be subjected to significant environmental contaminants from emissions, disturbed soil and related fugitive dust effects, and surface water runoffs that are greatly increased by unavoidable consequences of a background level cleanup of the site. A District Court decision filed May 5, 2011, prohibits the DTSC from compelling compliance with SB990. DOE's 2010 AOC appears to operate as a substitute for a questionable law, but the justification for its position requiring a "background level cleanup" on this important site is very unclear. That DTSC and political pressure seem to have required signature of the 2010 AOC by DOE shortly before this decision was issued in May 2011 is very significant. We believe all decision-makers and the public are entitled to see the impacts of all alternatives.</p>
AL-11	<p><i>Commenter: Organization</i></p> <p>There are many environmental cleanup projects in the United States. They all (as far as anyone knows) MUST operate according to Federal and State [U.S. and California] EPA laws that were passed by legislators concerned with protecting the environment. Operating under EPA processes means any toxic cleanup MUST evaluate multiple reasonable alternatives. The DOE SSFL cleanup was forced to be uniquely different from other projects because the 2010 AOC was signed before any EIS-type document. Why the difference? How is the different treatment of these projects explained? We can fathom no reasonable explanation. DOE cleanup based on scientific results, testing, and standards, not political pressures.</p>
AL-12	<p><i>Commenters: EPA, and Organizations</i></p> <p>NEPA requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (Title 40, <i>Code of Federal Regulations</i>, Section 1502.14(c) [40 CFR 1502.14(c)]). A robust range of alternatives will include options for avoiding significant environmental impacts. The EIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail.</p>
AL-13	<p><i>Commenter: EPA</i></p> <p>The environmental impacts of DOE's proposed action and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of wetlands impacted, cubic yards of soil to be transported, tons per year of emissions produced).</p>
AL-14	<p><i>Commenter: EPA</i></p> <p>The EIS should describe how each alternative was developed, how it addresses cleanup of soil and groundwater contamination, how it would be implemented, and the time frame for cleanup activity completion. The EIS also should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).</p>
AL-15	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>DOE's soil volume estimates are inflated. The estimates came from studies done by Boeing, who has fought for decades against cleanup. This represents a potential conflict of interest.</p>
AL-16	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>DOE's EIS must fully address how appropriate backfill soil will be sourced. DTSC must give guidance on how soils that must match the specific background levels for SSFL will be identified. Source sites from which sufficient quantities of such soils may be obtained must be identified. This is a very important issue because, if adequate replacement soils cannot be located, alternative solutions, including on site treatments, clearly should be allowed, and the overall approach to the cleanup may need to change.</p>
AL-17	<p><i>Commenters: Organizations</i></p> <p>The 2010 AOC requires replacement soil, not gravel. Since properties of gravel are very different from soil (specifically, little or no plant replacement will be possible, will not absorb water, runoff increases, may affect aquifer replenishment, impacts plant and wildlife unfavorably), we encourage compliance with replacement soil (not gravel). Include in the EIS applicable alternatives for replacement soil and the impacts of what is chosen.</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-18	<p><i>Commenter: Organization</i></p> <p>The EIS must explain why or how any soil replacement plans may remove significantly more soil from the site as will be backfilled. Can permanent reduction (by non-backfilled removal) of thousands of cubic yards of soil be deemed appropriate mitigation? Will DOE follow NASA’s proposal in its EIS to not replace 2/3 of the removed soil? What will happen with soil replacement on the DOE parcel, if not all removed soil needs to be replaced?</p>
AL-19	<p><i>Commenter: Organization</i></p> <p>Surface water runoff effects resulting from any substantial reduction in surface soils must be reviewed, explained, and disclosed in the EIS, if DOE proposes to replace significantly less soil than it removes. It is well settled that a reduction in permeable surfaces (typically associated with development) causes significantly increased runoffs. What will be the runoff effects of the decreased soil in a year with average rainfall? What is expected when rainfall is significantly over average levels?</p>
AL-20	<p><i>Commenters: Organization and individuals</i></p> <p>“Onsite” (<i>ex situ</i> and <i>in situ</i> treatment) soil cleanup is a promising alternative to soil removal, where appropriate. Yet, the 2010 AOC seems to prohibit this and state the only allowable method for soil cleanup is removal. DOE must explain how this seeming contradiction is possible based on the 2010 AOC language. The “leave in place” remediation alternative should be considered in the NEPA and CEQA analysis because such a remediation approach would entail significantly less environmental impact by reducing soil excavation, hauling, and soil replacement.</p>
AL-21	<p><i>Commenters: Organizations, and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>DOE’s EIS must commit to complete protection for all communities along transport routes from the contaminated material that the 2010 AOC requires to be removed. Effective measures for reduced dust from the trucks and containment of all materials, including dust from bumps as the material is trucked, need to be developed and implemented.</p>
AL-22	<p><i>Commenter: Organization</i></p> <p>Is remediation in a project like this, where buildings are removed, adequate where a flat landscape is left after remediation? Should remediation include providing topographic restoration or variable elevations/topography, such as the site originally had?</p>
AL-23	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>A “risk-based” and/or health-effects-based assessment is needed. Such an analysis must be based on what is measurable and exists today, not what might have happened or did happen years ago.</p>
AL-24	<p><i>Commenter: DTSC</i></p> <p>If alternatives are rejected, it would be useful to have a brief statement of why an alternative was not included.</p>
AL-25	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>Takes issue with use of <i>Rough Order of Magnitude Estimates for AOC Soil Cleanup Volumes in Area IV, and Associated Truck Transport Estimates Based on DTSC Look-up Table Values</i>. Methodology of this report is flawed on multiple counts and science is questionable. The report should be withdrawn, and DOE commit itself to honest science for the EIS.</p>
AL-26	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>Consider an alternative for transporting contaminated soil that utilizes a railroad tunnel and railcars, instead of moving trucks full of contaminated soils through residential areas. This would require the construction of a temporary railroad siding near Corriganville Park in Simi Valley.</p>
AL-27	<p><i>Commenters: Individuals and organization</i></p> <p>All effort to treat soil at the site needs to be considered. Using land managed by NASA/Boeing to treat DOE soil would greatly reduce the need to truck it away. This will allow for relatively “clean” soil to be redeposited and allow for native plants to become re-established. Without this replacement soil, plants and animals that use this important wildlife corridor will not be able to survive.</p>
AL-28	<p><i>Commenter: Individual</i></p> <p>Contaminant mobility should be considered when evaluating the <i>in situ</i> treatment of impacted soils. Contaminant migration may result in serious consequences to project scope, cost, and schedule due to the unprecedented 2010 AOC cleanup requirement.</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-29	<p><i>Commenters: Individuals</i></p> <p>DOE must incorporate all five alternative uses for the SSFL and the NBZ: (1) Do Nothing, (2) Open Space, (3) Urban Residential, (4) Rural Residential, and (5) Look-Up Tables/Detect/Background. Maps that show these five levels of cleanup should be done for the EIS showing contamination (the pink and purple “blobs”) from the scoping presentation.</p>
AL-30	<p><i>Commenter: Organization</i></p> <p>DOE must adequately analyze and mitigate the environmental impacts of the demolition and disposal of remaining buildings in Area IV consistently with the 2010 AOC. For example, the EIS must characterize whether any of the DOE buildings are radiologically impacted and analyze the safe and appropriate disposal of the resultant debris.</p>
AL-31	<p><i>Commenters: EPA and individuals</i></p> <p>The Amended NOI does not provide an estimate of potential soil volumes that will require transportation to offsite landfills. The EIS should include annual estimates of contaminated soil volumes, chemical and radiological, to be transported off site for each alternative. The EIS should also include the latest soil volume estimates to be removed by NASA and Boeing.</p>
AL-32	<p><i>Commenter: EPA</i></p> <p>Given the potentially large soil volumes requiring transport from DOE’s portion of SSFL, in conjunction with soil volumes from cleanup activities at other portions of the site, the EIS should discuss coordination with solid and hazardous waste facilities, as necessary. While these facilities may have large permitted capacities, the EIS should evaluate the ability of receiving waste disposal facilities to handle the potential volumes of contaminated soil from the proposed alternatives. This evaluation should include information regarding the magnitude of the volume being disposed of relative to the available disposal capacity.</p>
AL-33	<p><i>Commenters: EPA and individual</i></p> <p>DOE should consider shipment to multiple facilities as a means to reduce impacts at the receiving facilities. To the extent possible, DOE should coordinate with NASA and Boeing on their remediation projects (e.g. schedules, disposal facilities and changes in soil volumes), so that its EIS may contain as comprehensive a discussion of cumulative impacts as possible.</p>
AL-34	<p><i>Commenters: EPA and individual</i></p> <p>The EIS should discuss the potential for cross-property contamination from DOE’s portion of the site onto others (e.g., NASA, Boeing), or vice versa. If such potential exists, the EIS should include a discussion on whether different standards for soil remediation may be used. The EIS should also discuss the timing of the cleanup for any neighboring properties where cross-property contamination may present an issue, as well as measures to prevent cross-contamination (pre-and post-remediation). For example, if one entity completes soil removal prior to DOE, contamination from the DOE property might still migrate onto another's property, or vice versa.</p>
AL-35	<p><i>Commenters: EPA and individual</i></p> <p>DOE should consider EPA and DTSC resources for Greener Cleanups and take advantage of any aspects of these resources that may be beneficial in the cleanup of the Santa Susana Field Lab. DOE may want to make use of the ASTM International <i>Standard Guide for Greener Cleanups</i>, released in November 2013, which outlines a voluntary process for evaluating and implementing activities to reduce the environmental footprint of a cleanup.</p>
AL-36	<p><i>Commenter: Organization</i></p> <p>The best alternative (best for the flora, the fauna, and the future of the area) is to demolish and clean up the most contaminated buildings, pads, and sump ponds, to use various proven scientific and safe remediation methods for removal and/or remediating contamination by heavy metals, industrial chemicals/solvents, minor radiological elements in the short term. Then to use biological remediation of the soil over the long term to achieve a healthy natural resource suitable for recreational use by humans and as a vital wildlife linkage between the Santa Monica Mountains and Los Padres National Forest. Over an even longer term, the natural ecological systems will come into balance once again.</p>
AL-37	<p><i>Commenters: Organization and individual</i></p> <p>Will the timetable of the project include the follow-up native plant habitat remediation to make the site stable enough to prevent frequent dust storms carrying allergens and valley fever from blowing down on residential communities, or severe erosion and floods due to heavy winter rains or changes in groundwater levels and drainages that will negatively affect downstream water sources, native plant habitat, and residential areas?</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-38	<p><i>Commenters: Organizations and individuals</i></p> <p>Where will the contaminated soil go? If the soil is so contaminated that it is defined as hazardous (the only reason to remove it from the site), then where are the hazardous waste sites with enough remaining space to accommodate these millions of cubic yards (DOE, NASA, etc.)? Buttonwillow, Chiquita Canyon, Lancaster Landfill, or Sunshine Canyon are not appropriate for this. The Port of Los Angeles does not have space or permission to store that enormous amount of hazardous waste while waiting for ships permitted to load such materials.</p>
AL-39	<p><i>Commenter: Organization</i></p> <p>To support what native habitat remains, the fill soil must, at least, have similar pH and an agricultural profile similar to the soils native to the site. Where will that come from? Will it be “clean” or contain further contaminants, either chemical or biological?</p>
AL-40	<p><i>Commenters: Organizations and individuals</i></p> <p>Since Area IV was heavily involved in research of radiological materials, all remaining structures that show evidence of contamination should be removed, and the soil within the building footprint, including an approximately 30-meter buffer, at least horizontally, shall be cleaned up to background levels, as specified in the 2010 AOC. Areas outside of the radiologically contaminated buildings can be cleaned up to either background levels or suburban residential levels, depending on their location and level of radiological contamination.</p>
AL-41	<p><i>Commenters: Organizations and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>The EIS should examine a range of alternatives that could reduce those truck and other impacts while still assuring cleanup to background. These alternatives would be in two broad categories: (1) ways to reduce the volume of soil that needs to be removed from the site and disposed of, while still meeting the background cleanup goal; and (2) alternatives that could reduce, or even eliminate, the impacts from trucking that soil which does need to be removed (compaction of soil in trucks, refining estimate of how much soil needs to be cleaned up, better delineation of contamination, look at using multiple routes to minimize impacts to one group of people, look at using fire roads, use alternate energy vehicles (electric or natural-gas-powered), seal trucks so contaminants aren’t released, look at truck to rail transport, and consider conveyor system to the rail line).</p>
AL-42	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>Will the EIS explore the option of there may well be numerous other possible routes? Spreading the trucks over multiple routes would reduce the impacts to people near any one route. Will the option of improving existing fire roads leading off SSFL or create a new one be explored?</p>
AL-43	<p><i>Commenter: Individual</i></p> <p>If DOE is unable to find suitable soil, incorporate all five alternative uses, and include a rigorous and comprehensive risk-based analysis, then the EIS must modify its preferred selected alternative to match that which can be achieved. The community and Elected Official preferred alternative of Open Space would dictate the least destructive, disruptive, and expensive of the remediations proposed. My sense of what my community’s opinion is that the highest and best use of this site is as open space, and or as a Chumash sacred space. Whether this property eventually belongs to the Federal, State, county governments, or to the only locally recognized American Indian tribe/Santa Ynez Band of Chumash; none of these entities want to industrialize, develop, or farm this site.</p>
AL-44	<p><i>Commenter: Individual</i></p> <p>Only highly contaminated areas of DOE-SSFL that exceed EPA and DTSC health risk standards (i.e., are sufficiently contaminated to be a true health risk for an open space user) and cannot be “cleaned” with any other method and refilled with appropriate soil, should be allowed to be treated in a separate manner. These “highly contaminated areas” could be subject to scoop, haul, and replacement soil using whatever can be found, even the less desirable remediations of gravel and sand.</p>
AL-45	<p><i>Commenter: Individual</i></p> <p>If cleanup can be accomplished through phytoremediation, and other <i>in situ</i> techniques which are slower, but effective, they should not be discounted because of the artificially selected time lines. From the most recent analysis presented at local community meetings by responsible parties’ staff, it seems that these alternative methods are often as effective and much less damaging to the DOE-SSFL site and to the surrounding communities; their major drawback is that they just take more time to work.</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-46	<p><i>Commenter: Organization</i></p> <p>The following suggestions are offered as to some of the characteristics replacement soil should have: (1) capable of supporting native plants characteristic of the areas to be mined throughout all phases of their life cycle, including germination, establishment, growth, persistence, reproduction and dispersal; (2) capable of supporting microflora characteristic of the various native plant associations typically found in the area, including aeromonas, rhizobia, mycorrhizae, etc.; (3) replacement soil should be capable of supporting the numerous species of burrowing animals found at SSFL, such as insects (especially pollinators), California legless lizard, and a number of other reptiles, amphibians, mammals, insects, and others; (4) replacement soil should not contain any substances or organisms that will inhibit the germination, growth, persistence, or development of reproductive or dispersal structures of native plants; (5) replacement soil should not contain any substances or organisms that inhibit pollinators, seed dispersers, mutualistic microorganisms, or other organisms critical in the life cycles of native plants; (6) soil texture, chemical composition, and type should be mimicked as much as possible to increase the probability over time for the re-establishment of native plant communities and their associated fauna; and (7) replacement soil should be free of pathogenic fungi, bacteria, insect pests, weed seeds, and other harmful organisms or chemicals.</p>
AL-47	<p><i>Commenter: Organization</i></p> <p>DOE can reduce the impacts somewhat by excavating relatively small areas at a time and immediately backfilling those areas with suitable replacement soil and restoring the native vegetative cover (in some cases replacing invasive weeds with native plants).</p>
AL-48	<p><i>Commenter: Individual</i></p> <p>The number of calculated truckloads does not include return trips of empty trucks to the site. Therefore, the actual number of truck trips needed for transport of excavated material would be roughly double that estimate. The figure also does not include an undetermined number of truck trips required to transport materials originating from demolished structures, whether to a landfill or to a recycler. The EIS should include hard numbers on both the amount of this material and the number of truck trips required to transport it. Likewise, the calculated number of truck trips does not include the number required to transport construction, demolition, excavation, drilling, or other equipment to and from the site. Finally, these figures, plus the number of commuting trips involving workers needed to accomplish the goals of the cleanup, need to be added in to formulate the final figure for the number of vehicle trips to and from the site during the cleanup.</p>
AL-49	<p><i>Commenter: Individual</i></p> <p>DOE should provide rationale and evaluations for each alternative, including those that are rejected from consideration.</p>
AL-50	<p><i>Commenter: Individual</i></p> <p>DOE should consider that the negative environmental impacts of the cleanup impact only a few adjacent communities and those on truck traffic routes and disposal site communities, while the claims for more-severe cleanup come from more-distant communities which are not likely at risk from the current levels of contamination at SSFL or from the necessary truck traffic required to implement the more severe cleanup alternatives.</p>
AL-51	<p><i>Commenters: Multiple Individuals</i></p> <p>DOE should avoid weaknesses of the NASA EIS, as identified by EPA in its September 30, 2013, letter. The major EPA comment relative to the scoping of the DOE EIS was that the 500,000 cubic yards of soil to be dug and hauled by NASA's 2010 AOC cleanup was excessive and would have negative health impacts, while placing a burden on available disposal facilities. Since the current DOE soil estimates range from 1.1 to 1.7 million cubic yards and they would add to both the NASA and Boeing soil removal and hauling amounts, the EPA suggestion of evaluating a health-risk-based alternative, such as Suburban Residential, with a greatly reduced soil removal, should be followed.</p>
AL-52	<p><i>Commenters: Organizations and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>In the EIS, DOE committed to looking at alternative ways of accomplishing the cleanup to background required by the 2010 AOC. What DOE committed not to do was, with the exception of the required No Action alternative, prepare an EIS on whether it should violate the requirements of the 2010 AOC and use a far less protective cleanup standard that would leave much of the contamination on site, not cleaned up. The EIS alternatives were to be alternative ways to clean up to background as required by the 2010 AOC, not whether to comply with the 2010 AOC</p>
AL-53	<p><i>Commenters: Organizations and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>There is no serious consideration in the amended NOI of alternative ways of reducing or even avoiding truck impacts. Although there are some who are exaggerating the truck impacts as a way to try to block the cleanup, nonetheless, there are legitimate desires to reduce such impacts if possible. An EIS that takes a hard look at ways to reduce those impacts, while still fully complying with the requirement to clean up to background, would be useful.</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-54	<p><i>Commenters: Organizations and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>The EIS should examine a range of alternatives that could reduce those truck and other impacts while still assuring cleanup to background. These alternatives would be in two broad categories: (1) ways to reduce the volume of soil that needs to be removed from the site and disposed of, while still meeting the background cleanup goal, and (2) alternatives that could reduce, or even eliminate, the impacts from trucking that soil which does need to be removed.</p>
AL-55	<p><i>Commenters: Organization and Mitchell Englander (Councilman 12<sup>th</sup> District)</i></p> <p>Soil volumes targeted for either treatment or offsite disposal could be markedly reduced were efforts employed to more carefully characterize the boundaries of the contamination, and we recommend that this alternative be carefully evaluated as well. DOE has, as indicated above, released a draft order-of-magnitude estimate of soil volumes prepared by Boeing's prime contractor at the site. The Southern California Federation of Scientists has produced a detailed critique of the estimates, identifying a number of assumptions that in its view markedly inflate the figures, concerns which we share. (<i>Statement of the Southern California Federation of Scientists at DOE Scoping Hearing for the Draft Environmental Impact Statement for the Santa Susana Field Laboratory</i>, March 1, 2014.) A clear alternative that should be examined in detail in the EIS to reduce volumes of soil that need removal and transport would involve better delineation of the extent of the contamination and careful work to assure that one is removing contaminated soil and not large amounts of soil that is not above background. It would reduce both onsite impacts of the cleanup and offsite impacts associated with transport through neighborhoods and subsequent disposal.</p>
AL-56	<p><i>Commenters: Organization and individual</i></p> <p>Request that the EIS consider showing alternative cleanup scenarios based upon risk so that the decision-makers can compare the soil volume, the trucks, and other likely and potential impacts on our community. These alternative standards should include cleanup to the (1) 2010 AOC level; (2) cleanup to a suburban residential standard; (3) cleanup to an industrial/commercial standard; (4) cleanup to a parkland standard.</p>
AL-57	<p><i>Commenters: Individual and organization</i></p> <p>Remediation at most EPA Superfund sites is based upon future use and risk to those who will be using the property when remediation is complete, although we do acknowledge that Santa Susana is not a Superfund site.</p> <p>DTSC is the lead agency for this project. According to the PowerPoint on the Agreements in Principle, DTSC has entered into an agreement with DOE and NASA under their State Superfund authority. This authority requires the use of the Nine Balancing Criteria which are: (1) overall protection of human health and the environment; (2) compliance with applicable, relevant and appropriate requirements; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) ability to implement; (7) cost; (8) State acceptance; and (9) community acceptance.</p>
AL-58	<p><i>Commenter: Organization</i></p> <p>In the draft document prepared by MWH for the DOE, there is a map that shows the clearly contaminated chemical areas which must be removed. We would like to see the soil volume for this map, and the DOE should explain just what chemicals are found in these areas and why these areas must be removed. Please provide maps that show the soil volumes for these [in] all of Area IV and the NBZ, based on alternative cleanup standards.</p>
AL-59	<p><i>Commenters: Organization and individual</i></p> <p>NASA's Office of Inspector General stated that NASA should consider a cleanup based upon risk. A risk-based cleanup would decrease the soil volume by half, or possibly as much as two thirds, depending upon the cleanup scenario. Is this the case for the area that DOE is responsible for remediating as well? In the EIS, please explain risk and the associated exposure pathways and explain the EPA methods of determining how EPA determines toxicity and risk based upon future use.</p>
AL-60	<p><i>Commenter: Organization</i></p> <p>The EPA recommended that NASA clean up all radionuclides to background levels. However, they indicated to NASA that DTSC and EPA clean up chemicals based upon risk. DOE must show all alternative cleanup scenarios and their associated costs in order for the decision-makers, including Congress, to make the appropriate appropriations for the cleanup.</p>
AL-61	<p><i>Commenter: Organization</i></p> <p>Supports <i>in situ</i> treatment when possible as long as the treatments are deemed safe. These proposed treatments must be spelled out in the EIS. Also support <i>in situ</i> treatment using the naturally occurring onsite bacteria and with site-specific native plants.</p>

Code <sup>a</sup>	Commenter and Comment Summary
AL-62	<p><i>Commenters: Organization and individual</i></p> <p>Recommend that Area IV be divided into the sub-areas that are currently drawn, and that each sub-area be addressed separately based upon the contaminants that are present, risk, what archaeological sites are in the area, the locations of protected endangered species and protected trees, and the locations of wildlife habitats. Each must be prioritized based upon risk, while considering all Federal, State, and local laws and the balancing criteria.</p>
AL-63	<p><i>Commenters: Individual and organization</i></p> <p>There is not even enough soil to be used as backfill which complies with “background levels”—even for the totally inadequate amount that NASA is proposing. We strongly believe that the entire SSFL should be cleaned up to suburban residential levels, except with regard to areas where radiological materials were directly used, which is a stricter level than EPA allows for parkland usage (the Boeing land will become open space parkland once the cleanup is completed to suburban residential levels).</p>
AL-64	<p><i>Commenters: Individuals</i></p> <p>Consider an alternative route for truck trips to and from SSFL that routes all vehicles directly past the residences of the 2010 AOC advocates and supporters, including agency officials. As part of this alternative, please also consider an alternative of contributing to the development of new landfills to receive SSFL soil waste in the communities of Santa Cruz, Oak Park, and Simi Valley, where many of the 2010 AOC supporters and advocates live or have their base of operations.</p>
AL-65	<p><i>Commenter: Individual</i></p> <p>Consider alternatives that create more local jobs so that those communities that have been damaged by the SSFL at least get some benefit of having local jobs created.</p>
AL-66	<p><i>Commenters: Individuals</i></p> <p>Where will the funding for the project come from? Will it be fully funded or will you get 3 years into the remediation and just run out of money? The EIS should address how the effort will be funded and if it will be funded for the entire life span of the project.</p>
AL-67	<p><i>Commenter: Individual</i></p> <p>DOE is pretending in their analysis that green cleanup and risk-based cleanup and suburban cleanup are contradictory, but this is not the case. If the cleanup is done to schedule and to background, it should be clean, and it will permit the wildlife to return to the clean and secure space and open it to public use.</p>
AL-68	<p><i>Commenter: Organization</i></p> <p>Chemical contamination (and to leave it <i>in situ</i>) is not within DOE's discretion. Not only is there a 2010 AOC, but under RCRA, it's the State and regulator who decide how much contamination is to be cleaned up, and they have spoken. You don't have the discretion to do an EIR/EIS to walk away from chemical contamination.</p>
AL-69	<p><i>Commenter: Individual</i></p> <p>Will the EIS employ or discuss the radiological trigger levels? It appears that many of the radiological trigger levels are multiples over background.</p>
AL-70	<p><i>Commenters: Multiple individuals and organizations</i></p> <p>The best approach for the EIS would be a risk-based assessment, with the final intended use of the SSFL as the ultimate goal.</p>
AL-71	<p><i>Commenter: Individual</i></p> <p>Figure 2 from the public meetings (Area IV 2010 AOC Radiological Soil Areas) does not show an area near Runkle Canyon that is significantly above background (strontium-90) and another area where Area IV meets Runkle Canyon, Ahmanson Ranch, and the Southern Buffer Zone. Will the EIS address why such areas are not listed in the proposed cleanup?</p>
AL-72	<p><i>Commenter: Individual</i></p> <p>Will the Southern Buffer Zone be included in analysis/considered for cleanup activities and/or addressed in the EIS?</p>
AL-73	<p><i>Commenter: Individual</i></p> <p>Are all radionuclides bad? How will DOE remove the site-related radionuclides without stirring up the naturally occurring radionuclides? Are all radionuclides worse than the chemicals on site?</p>



Code <sup>a</sup>	Commenter and Comment Summary
AL-74	<p><i>Commenter: Individual</i></p> <p>There is no way to sum the contaminants of concern at the SSFL site and to clean up the site based on risk. I don't believe that we have the ability to establish the combined risk from all of the chemicals and radionuclides. For example, polyaromatic hydrocarbons and the dioxins at the SSFL site are contaminants of concern, and some of the hardest to detect, and some of the most toxic at very low levels. Yet these contaminants are widespread throughout the SSFL site due [to] the 2005 fire, as well as from site activities. How do we determine if all of these dioxins on the SSFL site should be removed when the dioxins on the adjacent properties of Sage Ranch, Ahmanson Ranch, Brandeis Bardin, Dayton Canyon, and Runkle Canyon have probably not been sampled for these contaminants of concern—yet they are most likely there due to the same fire history as the SSFL?</p>
AL-75	<p><i>Commenter: Individual</i></p> <p>Radionuclides should be listed with their columns for Look-Up Table Values compared to the EPA screening levels for the various scenarios—agricultural, suburban residential, industrial/commercial, and parkland/open space.</p>
AL-76	<p><i>Commenter: Individual</i></p> <p>There should be a discussion based upon the EPA recommendations to NASA of cleaning up Area IV to “background” for the radionuclides, and to a risk based level for chemicals.</p>
AL-77	<p><i>Commenter: Organization</i></p> <p>DOE can reduce the impacts somewhat by excavating relatively small areas at a time and immediately backfilling those areas with suitable replacement soil, and restoring the native vegetative cover (in some cases replacing invasive weeds with native plants).</p>
AL-78	<p><i>Commenter: Individual</i></p> <p>It appears that based upon Judge Cochran's comments in the current litigation against DTSC <i>et al.</i>, that the most environmentally friendly cleanup standard under the 2010 AOC would be the No Further Action.</p>
AL-79	<p><i>Commenter: Individual</i></p> <p>A Cost Table should be presented for each separate SSFL area and for all areas combined. The costs of cleanup for all six levels need to be done; emphasis should be on a comparison between recreational level, suburban residential level, and cleanup to background/Look-Up Table (cleanup to background) level.</p>
AL-80	<p><i>Commenter: Individual</i></p> <p>One major theme for analysis should be based on an ultimate use of the property as a park/open space/ recreational area. Most of the local communities surrounding SSFL do not want SSFL turned into an industrial park or millionaire mansions; the consensus of the local community is to transfer the land to Federal, State, county, or local cities as a park/open space/recreational area.</p>
AL-81	<p><i>Commenter: Individual</i></p> <p>Explain why SSFL requires a higher level of cleanup than other, more-hazardous sites in California? Please list all California sites that were cleaned up to recreational, industrial, suburban residential, rural residential, or agricultural levels. Has some or all of California agricultural land ever been tested to determine its contamination level?</p>
AL-82	<p><i>Commenter: Individual</i></p> <p>The cleanup needs to be health-risk-based. The CA DTSC must create a new Look-Up Table based on scientific, health-risk research, with a priority ranking of chemical and radiological contaminants.</p>
AL-83	<p><i>Commenter: Individual</i></p> <p>There should be no remediation or cleanup measures that cannot be easily reversed until after all legal and planning/work plan activities are finalized.</p>
AL-84	<p><i>Commenter: Individual</i></p> <p>There needs to be a net health benefit of the cleanup. More-moderate cleanup levels (suburban residential, recreational) should be applied to SSFL instead of the proposed CUB level. Research is beginning to show that the health, environmental, cultural, environmental justice, and psychological costs of the 2010 AOC proposed cleanup at SSFL are greater than the supposed health risks of the current SSFL, especially if used as open space. Will cleanup to background actually result in any meaningful reduction of health risks?</p>

<i>Code</i> <sup>a</sup>	<i>Commenter and Comment Summary</i>
AL-85	<p><i>Commenter: Individual</i></p> <p>Can the NBZ be left undisturbed? It was once used as a ranch, grazing, and rural residential. Can this area be exempted from soil remediation and immediately be reclassified as recreation/parkland?</p>

AOC = *Administrative Order on Consent for Remedial Action*; Boeing = The Boeing Company; CA = California; CEQA = California Environmental Quality Act; CFR = *Code of Federal Regulations*; CUB = cleanup to background; DTSC = California Department of Toxic Substances Control; EIR = environmental impact report; EIS = environmental impact statement; EPA = U.S. Environmental Protection Agency; MWH = MWH Americas, Inc.; NASA = National Aeronautics and Space Administration; NBZ = Northern Buffer Zone; NEPA = National Environmental Policy Act; NOI = Notice of Intent; RCRA = Resource Conservation and Recovery Act.

<sup>a</sup> The code corresponds to the entries in a database containing all of the comments received during the 2014 scoping period.