

From: [Christine Rowe](#)
To: [MSFC-SSFL-EIS](#)
Cc: [Elliott, Allen \(MSFC-AS01\)](#); [Fellows, Merrilee \(HQ-LD000\)](#)
Subject: DOE EIS Comments
Date: Thursday, September 19, 2013 4:01:29 AM
Attachments: [all groups - table \(1\).pdf](#)
[SSFL Final Draft Orange Group Alternatives 062412 CR.pdf](#)

Dear Mr. Elliott,

For the DOE, in June 2012, I was a part of the "Orange group" for the alternatives for their EIS.

While the DOE did tell us that our mandate was to conform to the Administrative Order on Consent, our group focused on the "Nine Balancing Criteria of CERCLA" that Mr. Rick Brausch of DTSC had explained to us at a meeting were to be considered relative to the future clean up standards at Santa Susana.

That Power Point is a part of the explanation to the community of the Agreements in Principle that is a part of the NASA / DTSC Administrative Order on Consent.

http://www.dtsc-ssfl.com/files/lib_pub_involve/meeting_agendas/64727_Agreements_in_Principle.pdf

I really appreciated some of the members of my group that were much more knowledgeable than I was on the California Native Plants, the wildlife at the site, etc. I focused more on health risk on and off site, trucks, and the cultural / archaeological aspects of the site.

I do hope that the final comments by all four groups - some of which I agree with - and some that I don't - these show the diverse thoughts relative to the SSFL cleanup. This is why the comments of one group over another should not outweigh just due to number - the scientific or legal basis for considering various alternatives related to the cleanup.

I am sure that I have stated that if the 9th Circuit upholds the ruling on SB 990, that NASA and DTSC should renegotiate the Administrative Order on Consent based on what Judge Walter said in his ruling.

I stand by that - it would be the easiest method of cleanup if all parties were subject to just one clean up standard - that all parties did commit to - the 2007 Consent Order. That is the risk based cleanup that I have always supported.

Please consider the Orange group's comments as a part of my comment on the NASA Draft EIS.

I should point out that since this document mentions structures - that this was in reference to AREA IV where no structures are considered eligible for historic preservation to the best of my understanding. And if they were - they are probably contaminated with both chemicals and radionuclides above the suburban residential standard. I do not support the demolition of all structures in AREA IV.

Least important - "meeting the 2017 deadline".

Respectfully submitted,

Christine L. Rowe

Date: June 28, 2012

Copies to:

Stephie Jennings

John Jones

John Wondolleck

Sandy Enyeart

Wendy Lowe

June 24, 2012

FINAL DRAFT

**Remediation for Area IV and Northern Buffer Zone
Santa Susana Field Laboratory
Environmental Impact Statement
Alternatives Development Workshop
Orange Group
Warner Center Marriott, Woodland Hills, CA
June 9, 2012**

SUGGESTED DISCUSSION TOPICS	GROUP CONTRIBUTION
<p>Condition of the Property at Transfer</p> <ul style="list-style-type: none">• <i>What condition do you think the property should be in before transfer to Boeing</i>• <i>Describe what the property would look like</i>• <i>What would be left behind</i>• <i>What would the land look like</i>	<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 milkvetch (<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>Structure/Infrastructure</p> <ul style="list-style-type: none">• <i>Removal of uncontaminated debris, slabs?</i>• <i>Retain any structures for historic preservation purposes?</i>• <i>Approach, sequencing, how to prioritize</i>• <i>On-site storage of debris (pending transport to disposal) – where, how</i>• <i>Sorting of debris for disposal</i>	<p>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 de-contamination priorities shall be based on toxic risk assessments.</p> <p>Known or newly discovered historical /cultural sites shall be left undisturbed and be protected.</p> <p>Short-term (measured in days or weeks, not months) on-site 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.</p> <p>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.</p> <p>Replacement structures for sensitive species, such as raptors, shall be constructed near existing structures currently used by wildlife prior to their demolition.</p>

SUGGESTED DISCUSSION TOPICS	GROUP CONTRIBUTION
<p>Soil Contamination</p> <ul style="list-style-type: none"> • <i>Thoughts regarding the balance between excavation and on-site treatment</i> • <i>How to minimize impacts on biological resources</i> • <i>How to minimize impacts on cultural resources</i> • <i>Prioritization, approach, sequencing under constrained budget scenarios</i> • <i>Contamination in the northern drainages?</i> 	<p>Toxicity is a major consideration in development of look-up tables.</p> <p>Conduct toxicity analyses on known areas of contamination. Prioritize clean-up 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 on-site treatment, based on priorities (determined by toxicity analyses). This approach includes the assumptions:</p> <ul style="list-style-type: none"> • That the prioritization process described above is carried forward through the look up table development and application; • Look up table numbers should be able to correlate with established EPA or State of California toxicity levels. <p>The clean up 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.</p>
<p>Disposal</p> <ul style="list-style-type: none"> • <i>Preferences for radiological contamination</i> • <i>Preferences for radiological/chemical contamination (mixed)</i> • <i>Preferences for chemical contamination</i> • <i>Preferences for uncontaminated debris</i> • <i>Acceptability of recycling uncontaminated metals?</i> • <i>Prioritization, approach, sequencing under constrained budget</i> 	<p>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.</p> <p>Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</p>
<p>Transportation</p> <ul style="list-style-type: none"> • <i>Depending upon preferred disposal sites:</i> <ul style="list-style-type: none"> ○ <i>Transportation modes</i> ○ <i>Routes</i> ○ <i>Logistics, as needed</i> ○ <i>How to minimize traffic impacts</i> ○ <i>How to minimize noise?</i> ○ <i>How to minimize air emissions and climate impacts?</i> ○ <i>How to maximize safety</i> • <i>Method and route for transporting fill material</i> 	<p>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.</p> <p>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 after dark</p>

SUGGESTED DISCUSSION TOPICS	GROUP CONTRIBUTION
<p>Groundwater</p> <ul style="list-style-type: none"> • <i>Technology options</i> • <i>Prioritization, approach, sequencing under constrained budget</i> 	<p>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.</p> <p>Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</p> <p>Groundwater and soil treatment must be considered and treated at the same time to prevent recontamination of new soil by groundwater.</p>
<p>Additional Actions</p> <ul style="list-style-type: none"> • <i>What else might be necessary to accomplish the desired condition:</i> <ul style="list-style-type: none"> ○ <i>Backfilling?</i> ○ <i>Recontouring?</i> ○ <i>Revegetation?</i> ○ <i>Long-term monitoring?</i> ○ <i>Restoration of the northern drainages?</i> • <i>Would your proposed alternative accomplish your desired condition?</i> 	<p>Backfilling should be minimized, and its placement should be timed to lessen erosion potential.</p> <p>Backfill soils should be similar to what was taken from the contaminated area.</p> <p>Any recontouring should be minimal, should consider natural drainage patterns, and should be performed for remediation purposes only after soil disturbances.</p> <p>Re-vegetation 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.</p> <p>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). Clean-up impacts to the Northern Buffer Zone should be minimized to the extent possible.</p> <p>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.</p> <p>The group believes its suggestions for conditions at transfer can be accomplished.</p>

SUGGESTED DISCUSSION TOPICS	GROUP CONTRIBUTION
<p>Total Package</p> <ul style="list-style-type: none"> • <i>What is most important, least important</i> • <i>What is urgent?</i> • <i>Brainstorm predictable impacts – positive and negative</i> • <i>Is the alternative as robust as possible?</i> <p><i>Any weaknesses that should be addressed</i></p>	<p>Most important: Review results of site assessments and toxicity characterization. Prioritize clean up accordingly based upon toxicity to humans and biota.</p> <p>Least important: Meeting the 2017 deadline.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Possible negative impacts: Transportation of hazardous waste and non-hazardous 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.</p> <p>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.</p>

	Blue Group	Orange Group	Salmon Group	Yellow Group ¹	
Summary Statement	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 clean-up to background for soils stipulated by the Administrative Order on Consent/Agreement in Principle. We would appreciate a sincere effort on the part of the Department of Energy 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 Administrative Order on Consent (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 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).	At the beginning of the cleanup & throughout the cleanup process, consider the entire SSFL property's condition at transfer & potential end use	
				Establish point-based prioritization system (similar to LEED system for Green Construction certification) for all activities Minimize creation of new risks and new problems as we solve old ones Engage California companies and California residents in any new jobs created 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, & soil 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	
				<i>Building preservation variation:</i> Preserve uncontaminated structures	<i>Building demolition variation:</i> Remove all buildings in Area IV, as all structures have been declared NOT significant

¹The Yellow Group presents variations on points where participants' preferences diverged, as shown in parallel columns.

	Blue Group	Orange Group	Salmon Group	Yellow Group ¹		
Condition of the Property at Transfer	<p>Complete mitigation supportive of native habitat including cultural resources, flora, and fauna. Property should be conducive to integration with open space/parkland.</p> <p>Its infrastructure should support such open space/parkland use.</p> <p>Property should commemorate the history of the Site.</p>	<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 milkvetch (<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 AOC's requirement of background. 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"> • Using a collaborative process, consider the entire SSFL property's condition at transfer and potential end use as clean-up decisions are made and implemented. • Establish a decision-tree process to preserve and document site history and history of cleanup • Maximize sustainability • Keep uncontaminated infrastructure wherever possible • Don't create new problems as you solve the old ones • Establish a space open to the public but with limited private vehicle access to minimize future environmental damage • Preserve peripheral slabs for public parking, so shuttles can take people on the site • Preserve archeological features • Foster the natural state: <ul style="list-style-type: none"> ○ Return the site to the original state as near as possible and practical: try to ascertain and reestablish what was there prior to development, at the same time as you maintain positive features currently in place, like the oak forest ○ Do not create additional damage during cleanup – for example, avoid cutting down existing vegetation and spray painting the rocks, as was done during characterization <p>Minimize soil movement to reduce truck traffic</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Building preservation variation: Keep uncontaminated buildings wherever possible</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Building demolition variation: 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.</p> </td> </tr> </table>	<p>Building preservation variation: Keep uncontaminated buildings wherever possible</p>	<p>Building demolition variation: 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.</p>
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Structure/Infrastructure	<p>Remove all structures except those that can be appropriately repurposed (e.g. – the million dollar hole – building 56, sodium pump test facility)</p> <p>Option A – Leave non-contaminated/stable subsurface structures and footings in place</p> <p>Option B – Remove building foundations, roads and road base for appropriate off-site management.</p> <p>Option C – Same as Option B with on-site management</p> <p>Remove roads after the A, B, or C option</p>	<p>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 de-contamination priorities shall be based on toxic risk assessments.</p> <p>Known or newly discovered historical /cultural sites shall be left undisturbed and be protected.</p> <p>Short-term (measured in days or weeks, not months) on-site 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.</p> <p>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.</p> <p>Replacement structures for sensitive species, such as raptors, shall be constructed near existing structures currently used by wildlife prior to their demolition.</p>	<p>Remove contaminated roads, pads, etc. as required by the 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.</p> <p>Short-term, on-site contained storage is acceptable, but should not exceed 30 days.</p>	<p>Establish a process for evaluating infrastructure for beneficial use prior to demolition. The idea is to avoid unnecessarily filling trucks with non-contaminated infrastructure.</p> <table border="1"> <tr> <td> <p>Building preservation variation: 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> </td> <td> <p>Building demolition variation: 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.</p> </td> </tr> </table>	<p>Building preservation variation: 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>Building demolition variation: 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.</p>
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Soil Contamination	<p>Remediate soil to level consistent with ultimate land use. Avoid removal to the extent possible.</p> <p>Step 1: Develop hierarchy of area's cultural and ecological assets based on balancing criteria in NEPA and CEQA.</p> <p>Step 2: Select from suite of technologies for soil remediation based on Step 1. Give preference to in-situ remediation.</p> <p>Step 3: Perform soil removal minimizing potential for water run-off and migration of contaminants to other areas of SSFL and off-site.</p> <p>Make sure room is left for possible future options, not explored at this time. Work In order of these priorities.</p> <ol style="list-style-type: none"> 1. In-situ Treatment 2. On-site Treatment 3. On-site Containment 4. Isolate sources of multiple contaminants mixing to prevent further mixing. 5. Other Option 6. Other Option 7. Any Other Option 8. Soil Removal to Off-site Location (last resort/last option) <p>** Remediate highest risk areas first.</p> <p>** Implement phytoremediation immediately</p>	<p>Toxicity is a major consideration in development of look-up tables.</p> <p>Conduct toxicity analyses on known areas of contamination. Prioritize clean-up 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 on-site treatment, based on priorities (determined by toxicity analyses). This approach includes the assumptions:</p> <ul style="list-style-type: none"> • That the prioritization process described above is carried forward through the look up table development and application; • Look up table numbers should be able to correlate with established EPA or State of California toxicity levels. <p>The clean up 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.</p>	<p>For contaminated soils, cleanup to meet the AOC standard of background by 2017 as stipulated in the AOC as follows:</p> <ol style="list-style-type: none"> 1. Remediation in-situ (in place) using technologies that have been demonstrated to be effective and timely where possible. 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 in-situ. 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). 4. Remove that which must be removed as soon as possible. 5. For contamination found in relatively inaccessible parts of the northern drainages, consider <ol style="list-style-type: none"> 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. b. Use of mules and/or helicopters to minimize disturbance. 6. Consider use of soil vapor extraction to address volatile organic compounds in the soil. 	<ul style="list-style-type: none"> • 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. • Use existing buildings for soil treatment. • Ensure "outlier" contaminated soils (those that occur outside the sphere of the main contaminated areas) are treated or removed. • Evaluate sorting out uncontaminated on-site soil and mixing it with soil that has low levels of contamination to bring the mixed soil within the levels required by the Look-up Tables. • Have a system for making decisions about moving soil. Always use alternate technologies over "muck and truck." Model the system on the US 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. • For remaining characterization of site soils, test plant materials that grow in the soil to be tested. • During remaining characterization and cleanup, ensure that all workers are properly wearing personal protective equipment for all tasks. • Evaluate whether the entire SSFL is a "traditional cultural property" and ensure active on-going consultation with Native American populations in the area. • 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.

	Blue Group	Orange Group	Salmon Group	Yellow Group ¹
Disposal	<p>Categorize waste by level of contamination.</p> <ul style="list-style-type: none"> Dispose of most contaminated soil first. Only most contaminated soil goes off-site to appropriate landfill (closest and least expensive) Treatment of treat waste streams to separate components to maximize on-site disposal and minimize off-site disposal requirements. Recycling of uncontaminated metal and other recyclables should be pursued whenever possible 	<p>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.</p> <p>Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</p>	<p>For radiological contamination: The three options identified by DOE for disposal of radiological contamination (Nevada National Security Site in Nevada, Energy Solutions 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):</p> <ul style="list-style-type: none"> Minimize the distance that contamination must be shipped Minimize impacts on communities already negatively impacted by environmental hazards (environmental justice considerations) Select a disposal site that can accept rail shipments (presuming rail transportation is selected for transport to disposal site) Minimize cost. <p>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.</p> <p>For waste containing chemical contamination, follow the same considerations listed above for selection from among licensed facilities that can accept chemical contamination</p> <p>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.</p> <p>This group prefers that no metals be shipped for recycling based on prior bad experiences.</p> <p>Minimize the quantity of material to be disposed (soil and construction debris) by using any material that is clean (based on the AOC) on the site in areas where fill is needed.</p>	<ul style="list-style-type: none"> First priority is treatment to reduce need for disposal Place high priority on on-site sorting of waste to minimize creation of mixed waste Place high priority on using California-based companies, such as disposal sites for non-radioactive waste Strive for solutions that are characterized by longevity, with the goal to avoid recontamination 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. Reduce debris by good sorting – concrete slabs can be recycled as shade pavilions. Don't remove them if it is not necessary. Recycle metals, equipment, building materials Use a point system for setting priorities under a constrained budget

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Transportation	<p>MINIMIZE!!! Minimize off-site transportation requirements by on-site treatment and containment.</p> <ul style="list-style-type: none"> Assess feasibility of improving existing fire roads from northern drainage area to Southern Pacific rail spur Evenly distribute transportation routes for disposal Evaluate railroad option Consider current and projected traffic conditions along suggested routes: especially Woolsey Canyon, Lake Manor Drive, Plummer, Topanga Canyon Blvd. and the 118 freeway. e.g. (rush hour, overloaded intersections, current traffic impacts, ability for trucks to navigate existing roadways (i.e. – turns)) Mindful of invasive species control with vehicles coming on and off Site. - Timing of trucks driving off-site (i.e. – one every 5 minutes) 	<p>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.</p> <p>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 after dark.</p>	<p>Mode of transport:</p> <ol style="list-style-type: none"> 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 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) If the Texas disposal site is selected, consider using ship transport relying on Port Hueneme or Los Angeles harbor If trucks must be used, use electric or natural gas to minimize air emissions If trucks must be used, employ truck washing/ decontamination (including tires) to avoid moving contamination off the site <p>Routes:</p> <ol style="list-style-type: none"> 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 If trucks down Woolsey Canyon Road, consider alternative routes from the bottom of Woolsey and consider spreading out the impact by rotating among multiple route options Consider upgrading roads to compensate for damages to be incurred <p>For fill: Use on-site material for fill and on-site re-contouring whenever possible. If must use off-site fill, use the same mode of transportation and routes as for excavated materials</p>	<ul style="list-style-type: none"> Ensure road infrastructure from top to bottom of mountain is safe <ul style="list-style-type: none"> Include a bike lane and turnouts on Woolsey Canyon/Valley Circle so cyclists are not run off the road Establish a clear definition of ownership of the road Use natural gas for fuel and other environmentally protective steps Rework/reconstruct the intersection at Woolsey Canyon and Valley Circle Incorporate safety measures, including live monitors, strict enforcement of speed limit Maximize safety to community and to drivers Minimize fill to be brought in Minimize bringing new materials to SSFL that will have to be taken away later Coordinate transportation among all parties responsible for SSFL cleanup to minimize impacts to community and the environment Keep jobs in California for chemical waste disposal Build temporary treatment plant in Area IV for SSFL chemical waste – then dismantle after cleanup

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Groundwater	<p>Priority: Focus on source removal to minimize impacts to groundwater (vadose zone)</p> <ul style="list-style-type: none"> • Continue SSFL site-wide coordination of groundwater investigation and remediation. This includes Area IV. • Continue monitoring forever, including seeps and springs. • Continue treatment using existing systems • Explore new technologies as they become available • Treated groundwater should go back into the ground on-site.... If this is not possible, retain for discharge during the appropriate season (wet season) in consideration of biological resources • Groundwater treatment technologies can't cause a bigger problem than what we're trying to fix (i.e. fracking) 	<p>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.</p> <p>Priorities should follow the recommendations indicated under Structure / Infrastructure, and cost-benefit analysis should be applied as indicated under Soil Contamination.</p> <p>Groundwater and soil treatment must be considered and treated at the same time to prevent recontamination of new soil by groundwater.</p>	<p>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</p> <p>In parallel, aggressively investigate, test, and implement, in a timely fashion, advanced technologies (that have been demonstrated to be effective) to treat groundwater contamination</p> <p>Install long-term monitoring wells, including at the base of the Santa Susana Mountains where they intersect with the Simi Valley alluvium to detect migration of contaminants</p> <p>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</p>	<ul style="list-style-type: none"> • Use phytoremediation and other alternative technologies to reduce soil movement and draw contamination toward "neutralization" points • 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 • Use treated groundwater to irrigate phytoremediation plants; in reusing treated groundwater, store it as close to original location as possible • In event of constrained funds: <ul style="list-style-type: none"> ○ Use funds where they will have the best and most beneficial effects ○ Halt contaminant migration patterns

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Additional Actions	<p>Backfill – Use locally sourced and similar type and seed bank, reuse on-site soil when possible</p> <p>Re-contour</p> <p>Re-vegetate – local natives</p> <p>All actions done in consultation with other appropriate state resource agencies including State Parks, Fish and Game, and Santa Monica Mountains Conservancy.</p> <p>Create and implement SSFL Integrated Restoration and Resource Management Plan before hand-over to Boeing.</p> <p>Make property accessible for educational opportunities.</p> <p>Property should be conducive to integration into regional open space parkland and Rim of the Valley planning.</p> <p>Integrate property into Santa Monica Mountains National Recreation Area or similar national park service entity (i.e. Rim of the Valley)</p> <p>Create an Endowment</p> <p>Must address cumulative impacts with Boeing and NASA.</p> <p>Bury non-contaminated debris on-site.</p> <p>Conduct a cost-benefit analysis of all possible levels of activity on the Site.</p> <p>Cleanup visible debris in northern drainage area.</p>	<p>Backfilling should be minimized, and its placement should be timed to lessen erosion potential.</p> <p>Backfill soils should be similar to what was taken from the contaminated area.</p> <p>Any re-contouring should be minimal, should consider natural drainage patterns, and should be performed for remediation purposes only after soil disturbances.</p> <p>Re-vegetation 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.</p> <p>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).</p> <p>Clean-up impacts to the Northern Buffer Zone should be minimized to the extent possible.</p> <p>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.</p> <p>The group believes its suggestions for conditions at transfer can be accomplished.</p>	<p>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 Northern Buffer Zone, as previous cleanup work was to provide an interim remedy only. A final remedy is needed for long-term protection, consistent with the AOC.</p> <p>Backfilling, re-contouring, and re-vegetation to restore the landscape to the desired condition (wildlife corridor).</p> <p>Long-term monitoring to assure on-going effectiveness.</p> <p>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.</p>	<ul style="list-style-type: none"> • 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 • Establish responsible contour of land to protect drainages, prevent erosion, etc. • Establish long-term monitoring to ensure no recontamination and to make sure contaminants do not move (as with groundwater) • 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. • Establish mechanism for coordinated decision-making among all parties to ensure cooperation, information sharing, etc. • 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)

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Total Package	<p>Cleanup SSFL Area IV environment in such a way as to not cause damage to the existing ecosystem in excess of need. Priority: Protect, don't Destroy! 2nd Priority: Ultimate (best and highest use) – PARKLAND and HABITAT LINKAGE 3rd Priority: Ecological functionality and cultural resource protection</p> <ul style="list-style-type: none"> Contain and treat as much as possible on-site. True cleanup, not relocation Regional Coordination Site-wide Coordination Document historic significance of Area IV Scientific decision-making 	<p>Most important: Review results of site assessments and toxicity characterization. Prioritize clean up accordingly based upon toxicity to humans and biota. Least important: Meeting the 2017 deadline. 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. 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. 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. Possible negative impacts: Transportation of hazardous waste and non-hazardous 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.</p>	Most important – Get started and get finished	<ul style="list-style-type: none"> Make it safe while protecting what's there today Least important: the political "win" Most urgent: identify all potential contaminant pathways so that best priorities can be established Positives: we'll have a clean site 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. 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) 	
				<p><i>Building preservation variation:</i> ...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><i>Building demolition variation:</i> ...removing all buildings in Area IV, as all structures have been declared NOT significant already.</p>

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		<p>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.</p>		<p><i>Please note that the Yellow Group provided an exhibit to illustrate their vision for the future,</i></p>