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27 September 2013

Allen Elliot
Santa Susana Field Laboratory Project Director
National Aeronautics and Space Administration
NASA MSFC AS01, Building 4494
Huntsville, Alabama 35812

Subject: Draft Environmental Impact Statement (DEIS), National Aeronautics and Space Administration (NASA), Proposed Demolition and Environmental Cleanup Activities for the NASA administered portion of the Santa Susana Field Laboratory (SSFL), Ventura County, California.

Dear Mr. Elliot:

The Department of the Interior has received and reviewed the Draft EIS prepared by National Aeronautics and Space Administration (NASA) for the proposed demolition and environmental cleanup activities for the Santa Susana Field Laboratory (SSFL) in Ventura County, California. The Draft EIS identifies and analyzes a no-action alternative and one action alternative for cleanup to background.

In National Park Service's (NPS) scoping letter dated September 22, 2011, NASA was asked to consider three topics relevant to conservation planning at the site:

1. NPS manages the National Register of Historic Places. SSFL was a center of scientific research during the Cold War and during early to recent space exploration; several structures from this era remain on the site. The 2008 NASA Historic Resources Survey and Assessment (revised 2009) concluded that nine structures and three historic districts are eligible for the register. In addition, SSFL contains a prehistoric site complex that was listed on the National Register in 1976.
2. SSFL is adjacent to the Santa Monica Mountains National Recreation Area. As such, it provides a wildlife linkage between lands within the NPS boundary and the adjacent Simi Hills and Santa Susana Mountains. SSFL also contains archeological sites related to archeological sites found within the NPS boundary.
3. SSFL is part of the Rim of the Valley Special Resource Study (RIVA SRS), authorized by Congress in the Consolidated Natural Resources Act of 2008 (P.L. 110-229-May-2008).

The NPS is concerned that the Draft EIS inadequately addresses these three topics. Furthermore, NPS finds that expressed purpose and need will not be fulfilled by the action alternative, as currently proposed. Our concerns and suggested modifications are summarized below; in addition we have enclosed a table with more detail on specific issues and text corrections.

SSFL's and the NASA component's location within the greater public park land and open space setting is not adequately disclosed (Affected Environment).

There is no regional vicinity map to illustrate the contextual setting of SSFL and the NASA portion among protected parkland, open space, and surrounding communities. The attached Figure 1 clearly illustrates the nexus of the proposed Project site and the surrounding regional parkland and open space setting. Maps in the Affected Environment and Appendices D and E either have no parkland identification or are missing several areas of public park land and protected open space. None of the maps includes the NPS-SMMNRA boundary. The SMMNRA boundary is shared with the southwestern boundary of SSFL. As noted previously, SSFL is ecologically continuous with the NPS-administered SMMNRA. The prehistoric archaeological sites are also connected to the greater prehistory and Native American cultural heritage of the Simi Hills and Santa Monica Mountains. It is critical to illustrate the parkland setting to more accurately disclose the project's potential for impacts to natural and cultural resources beyond the boundaries of SSFL and the NASA portion and to more fully disclose the site's current and potential future role in the region's ecology and recreation.

The Draft EIS has an incomplete description of important cultural resources in the Affected Environment (Section 3.3) and defers essential treatment to the subsequent planning (Section 4.3).

The action alternative, as currently proposed, would remove National Register-eligible historic cultural resources and potentially encroach upon and/or destroy prehistoric cultural resources. The effects on cultural landscapes, traditional cultural properties, and the Native American sacred site are uncertain because of the limited information provided in the Draft EIS.

The impacts to cultural resources clearly are adverse and significant for both historic architectural features and archeological resources. Section 106 consultation is still underway. The Draft EIS only suggests mitigation measures that might be considered, with nothing certain and final impacts stated as "Pending consultation" in Table ES-4. Thus, both the impact analysis of cultural resources and consideration of mitigation measures are difficult to evaluate. Because of the preliminary nature of information on archeological resources, clean-up impacts, and mitigation measures, the EIS does not allow for meaningful public input on cultural resource impacts. Instead, the only option for input is through participation in the limited group composed of community consulting parties that advise NASA on Section 106.

The Draft EIS does not have complete information on any aspect of the cultural resource setting. The impacts on archeological resources are uncertain because very limited information is available on the significant site complex associated with the Burro Flats Painted Cave, much of the data being extremely outdated. In addition, the analysis of impacts to cultural resources is also likely inadequate because of the limited soil testing for contaminants in areas rich in archeology, such as the Burro Flats area. Should testing at the outer limits of the cleanup footprint indicate additional soil removal to reach the Look-Up Table values, additional impacts to archeological resources would follow. These uncertainties increase the need to presently

identify feasible mitigation measures for the extensive archeological resources in this site complex. The ongoing Traditional Cultural Property and cultural landscape studies and the ongoing consultation on the Native American Sacred Site make impacts and appropriate assignment of mitigation measures even more difficult to consider.

The inventory of architectural resources representing the rocket test stands and related facilities is not well described in the Draft EIS, although an in-depth study was conducted by NASA contractors. Lack of comprehensive descriptions of the nationally significant historic districts and lack of images of the test stands make it difficult for readers of the EIS who have not visited the site to understand the full potential of these historic resources and the possible impacts of their removal.

The Draft EIS presents the possibility that some historic structures could be preserved, however it does not define how preservation of any structures would be reconciled with project goals and objectives. The Purpose and Need statement requires cleanup to background levels and the project description calls for complete demolition and hauling away of virtually all structures.

The Draft EIS has substantial shortcomings in describing biological resources and characterizing the severity of the proposed action's impacts. The Draft EIS also does not disclose adequate, feasible mitigation measures for either cultural resources or biological resources.

The Draft EIS indicates implementation of the action alternative would have mostly significant negative impacts and some moderate negative impacts on almost all resource categories that offer benefits to resources on neighboring NPS lands. Executive Summary Table ES-4 lists significant, negative, regional, long-term impacts on biological resources from project implementation. Environmental Consequences Section 4.4.1.3 (pg. 4-35) supports the finding. However, Table ES-4 also lists a moderate, beneficial, regional, long-term impact attributed to increasing the area of undeveloped habitat and from removing contamination. After mitigation, the Draft EIS finds impacts from the action alternative on the majority of topics are mostly at the level of impact of the no action alternative (Table ES-4).

We find this conclusion to be potentially incorrect due to the insufficiency of biological resource surveys and the potentially incorrect assumption that remediated areas will recover their biological diversity and ecological function. Extensive research in remediation of abandoned mine sites indicates that restoration of functional soil and vegetation communities after remediation is extremely difficult to achieve. However, the post-mitigation final impact level on both cultural and biological resources is still pending agency consultations. NPS finds the action alternative, as currently proposed, has the potential to have great irreversible negative impacts on native habitat and associated flora and fauna and wildlife movement.

The Draft EIS undervalues the NASA property's open space and habitat contribution to wildlife movement through the greater SSFL and surrounding open space setting (Section 3.4.2).

NPS cannot overemphasize that SSFL, including the NASA property, contributes to habitat connectivity owing to juxtaposition with contiguous open space and park land and because of the diversity and overall quality of the on-site native habitat.

The Draft EIS states:

“SSFL habitat and species diversity, physical attributes, and geographic location make the area a potentially important route for species migrations. Open space at SSFL could play a role for habitat linkage among the Santa Susana Mountains, the Simi Hills, and possibly, the Santa Monica Mountains (NASA, 2011b). However, the NASA-administered portions of SSFL are outside of the critical habitat corridors in the region identified by the U.S. Fish and Wildlife Service (USFWS) (Figure 3.4-2) (Ventura County, 2005)” (pg. 3-23).

There are several errors in this statement. The citation is incorrect and fails to reference the key report on the habitat linkage between the Sierra Madre and the Santa Monica Mountains (South Coast Missing Linkages Report, Penrod, et al. 2006). The presentation that SSFL could only “possibly” play a role connecting habitat into the Santa Monica Mountains illustrates a lack of familiarity with research on habitat connectivity in this region. The exclusion of NASA property from the habitat linkage is overly conservative and presents a narrow interpretation of the complex set of factors used to model and map a wildlife habitat linkage.

The Environmental Consequences assessment of wildlife impacts (Section 4.4.1.3, pg. 4-36) perpetuates the Affected Environment’s inaccurate presentation that the NASA portion of SSFL is not part of any wildlife movement corridor. By asserting that the NASA property is not part of a wildlife movement corridor, the Draft EIS inappropriately lacks analysis of effects on wildlife movement through the cleanup areas.

The Draft EIS minimizes the extent of impacts on several sensitive species owing to non-systematic wildlife surveys.

The Draft EIS bases impacts on listed species on wildlife surveys that were opportunistically conducted during the special-status plant surveys (Appendix E, Section 2.2, pg. E-28). Therefore, no USFWS or other rigorous protocols were followed when looking for species that were endangered, threatened, or of special concern. Appropriate survey protocols may have led to discovery of several more sensitive species than observed in the fall 2010 and spring 2011 biological surveys, with associated negative impacts to those species.

The Environmental Consequences’ contaminant impacts on wildlife are not substantiated (Section 4.4.1.3) and impacts from loss of native habitat are not considered.

The Draft EIS states that contaminants on-site, such as mercury and polychlorinated biphenyls (PCBs), could result in wildlife mortality owing to ingestion that becomes concentrated in animals higher in the food chain. This may be occurring at the site, although the Draft EIS offers no studies to substantiate contaminant levels in wildlife either residing within or moving through the site. It is possible that a more significant impact could result from the removal of native habitat and soils and following habitat type conversion than the negative impact of ingestion of contaminated vegetation or soils.

The subsequent EIS should provide an analysis of the impacts of contaminant ingestion on wildlife based on contaminant levels in vegetation and typical ingestion rates and possible accumulation rates in the food chain versus impacts on wildlife from the complete loss of native habitat for the foreseeable future.

The Draft EIS references an inadequate vegetation survey and obscures the importance of rocky outcrop habitat by including it within other vegetation types.

The Draft EIS refers only to Appendix D, the 2010 fall field work report dated February 2011. However, Appendix E does provide a more extensive list of species observed in spring, 2011, and the information is presented accurately and more comprehensively. Relevant information in Appendix E should be incorporated in the analysis prepared for the subsequent EIS.

Rocky outcrop habitat should be included as a habitat type in Table 3.4-1. The incorporation of rocky outcrops into other types, as presented in Appendix D, limits the disclosure of rocky outcrop habitat as a critical substrate for the state-listed Santa Susana tarplant. Appendix E has a much more comprehensive description of the rocky outcrop habitat on-site and its value as substrate for the Santa Susana tarplant. The Draft EIS project description and impact analysis notes that excavation of rocky outcrops would be avoided, yet rocky outcrops are part of other habitat types that will be destroyed during soil removal. The rare plant surveys conducted also incorrectly conclude that no *Astragalus brauntonii* (Braunton's milkvetch) is present on site.

This species has an extensive and long-lived seedbank and NPS and others' research indicates that it can appear in sites where it was not previously seen after a vegetation clearing event such as a fire. The fact that appropriate habitat is present should be taken as an indication that the species may be present and impacts to the species from clean up may occur.

Inadequacy of Mitigation measure Biology BMP-1 (Section 4.4.2).

Mitigation measure Biology BMP-1 should not be considered either a best management practice (BMP) or a mitigation measure for the irreversible effects of habitat and native soil removal. Biology BMP-1 recommends reseeded with a commercially available native seed mix that is of the same composition of plants that currently exist at SSFL. A three-year implementation program is recommended, with a goal of 50% native cover at the end of the timeframe. The Draft EIS offers no long-term management plan for restoration. Lack of long-term monitoring is a primary reason for revegetation failure. In addition, obtaining native seed can be difficult and ensuring genetic appropriateness of seed is also difficult.

Numerous invasive species are also present on site and are likely to colonize disturbed soils and outcompete native plants seeded on disturbed soils. NPS finds that it is likely that Biology BMP-1 would result in habitat type conversion and loss of biodiversity.

Biology BMP-1 should also not be considered an effective mitigation measure for long-term wind and water erosion. Without the long-term monitoring and ongoing treatment, erosion of soils would become a long-term negative impact if restoration of plant cover is not successful.

The action alternative project description does not identify any confirmed replacement soil source.

The proposed action would replace removed soils at a backfill volume of one-third of the removed volume. The Draft EIS lists potential sources of backfill topsoil (Section 2, pg. 2-19), but fails to analyze whether the suggested sources would be the same soil type(s) as removed soils and whether or not the soils would be guaranteed uncontaminated and free of invasive weed

seeds. Given that soil treatment is the key element in the cleanup action alternative, a clear identification of the replacement soil source and its suitability is a critical factor in defining a viable cleanup program which needs to be included in the subsequent EIS.

The soils impact analysis does not take into account indirect impacts of remedial grading (Section 4.2).

The 500,000-cubic-yard estimated maximum soil removal could be significantly increased based on the need to resolve unforeseen unstable soils. There is also an inherent risk of determining the point at which the soils meet the Look-Up Table's background levels and limits on detectability. Unanticipated expansion of the grading footprint has the potential to exacerbate potential impacts on archaeological resources or sensitive species and native habitat.

Supplemental or the final EIS should consider Santa Ana wind events to fully assess fugitive dust impacts (Section 4.7).

The Draft EIS asserts that fugitive dust is likely to be deposited within or near the project site (pg. 4-104). The Draft EIS fails to consider Santa Ana high-speed wind conditions that occur throughout the year, and mostly during the fall through early winter months. Santa Ana winds come from the northeast and would carry contaminated fugitive dust onto state and federal park land within SMMNRA in the Simi Hills southwest of SSFL. The subsequent EIS should fully consider how to contain contaminated fugitive dust during Santa Ana high-speed winds and low humidity conditions when 105 acres of ground surface may be exposed.

Supplemental or the final EIS should address land use as an impact topic (Section 2).

Land use as an impact analysis topic was dismissed (Table 2.5-1). The Draft EIS states: "Existing and proposed land uses do not conflict with federal or state land use plans, policies, regulations, or laws. Therefore, no impacts to land use would occur". NPS has several concerns about dismissing land use from impact analysis.

The NPS Rim of the Valley Corridor Special Resource Study is not referenced.

As set forth by Congress, the purpose of the special resource study is to determine whether any portion of the Rim of the Valley Corridor study area is eligible to be designated as a unit of the National Park System or can be added to an existing NPS unit through a boundary adjustment to Santa Monica Mountains National Recreation Area. The NPS anticipates providing the public with a draft study report early in 2014, and the final report will be transmitted to Congress at the end of 2014. NPS staff is currently completing environmental analysis of a range of alternatives and developing recommendations for the study area. All of the preliminary alternatives include SSFL and the NASA property, and consider the cultural resources at SSFL nationally significant.

The study also recognizes the natural landscape at SSFL that contributes to the critical habitat linkage between Los Padres National Forest and the Santa Monica Mountains. The NPS urges that the forthcoming study be referenced in the subsequent EIS under a land use topic that informs the public of this and other studies or plans which may be affected by the action alternative.

NPS finds the resulting landscape from cleanup to background needs to consider impacts to the management goals and objectives of surrounding park agencies.

The greater land use setting around SSFL is largely public native open space parkland—the vast majority of which is managed by agencies with missions to preserve and protect natural and cultural resources and to provide resource-dependent public recreation. SSFL open space is continuous with both the ecological and cultural resource setting associated with NPS-administered Santa Monica Mountains National Recreation Area. In its current state, SSFL provides ecological benefits for NPS and other park lands. These benefits include wildlife corridors and population “reservoirs” of rare plants. The subsequent or final EIS needs to consider the project’s consequences for the surrounding parkland land use and other agencies mandates for managing these parklands.

The possible action by Congress affecting the future of the SSFL area should also be considered.

In conclusion, the NPS finds the Draft EIS does not adequately address the stated Purpose and Need for the project.

The stated need for the proposed action is “to protect human health and the environment, to meet the requirements of the 2010 AOC by the completion date of 2017, to reduce ongoing maintenance costs, and to prepare the property for disposition” (Section 1.2).

The action alternative, as currently proposed, does not fully meet the stated need to protect the environment.

Based on our previous comments on the inadequacy of biological surveys, the inadequacy of evaluation of impacts, and the inadequacy of mitigation measures, we are concerned that the action alternative, as currently described, is not capable of meeting the goal of protecting the environment. Although the action alternative would remove contaminants – a benefit – as currently proposed it also would adversely impact soils, habitats, corridors and vegetation – long term unacceptable consequences.

The action alternative seeks to achieve “background levels” for contaminants at the site. Based on the need to remove or treat 500,000 cubic yards of native soil, the resulting disturbance will render the landscape into an unnatural assemblage of vegetation, soils, topography, and wildlife diversity, and the overall aesthetic and ecological condition will be artificially disjointed from the surrounding natural parklands. In this sense, the post-cleanup environment would be very unlike the reference sites on NPS lands within the SMMNRA used for the chemical and radiological background level studies. Indeed, the proposed cleanup may exacerbate negative site conditions, such as non-native invasive plant proliferation, habitat type conversion, and reduced wildlife diversity.

The Draft EIS does not demonstrate the project would reduce maintenance costs.

NPS did not find in the Draft EIS adequate discussion of the costs to be incurred in order to adequately implement the action alternative. Therefore, it is unclear whether the action alternative, as currently described, is capable of achieving the stated need to reduce maintenance costs, particularly compared to the no action alternative.

The NPS appreciates the opportunity to provide comments about information needed in order to prepare the subsequent EIS. For clarification, if needed, regarding our comments, or for further assistance in addressing these concerns and recommendations, please contact David Szymanski, Superintendent, Santa Monica Mountains National Recreation Area, (805) 370-2344.

Sincerely,

A handwritten signature in black ink that reads "Patricia Sanderson Port". The signature is written in a cursive, flowing style.

Patricia Sanderson Port
Regional Environmental Officer

Enclosures:

NPS Figure 1. Regional Map of SSFL Parkland and Open Space Context

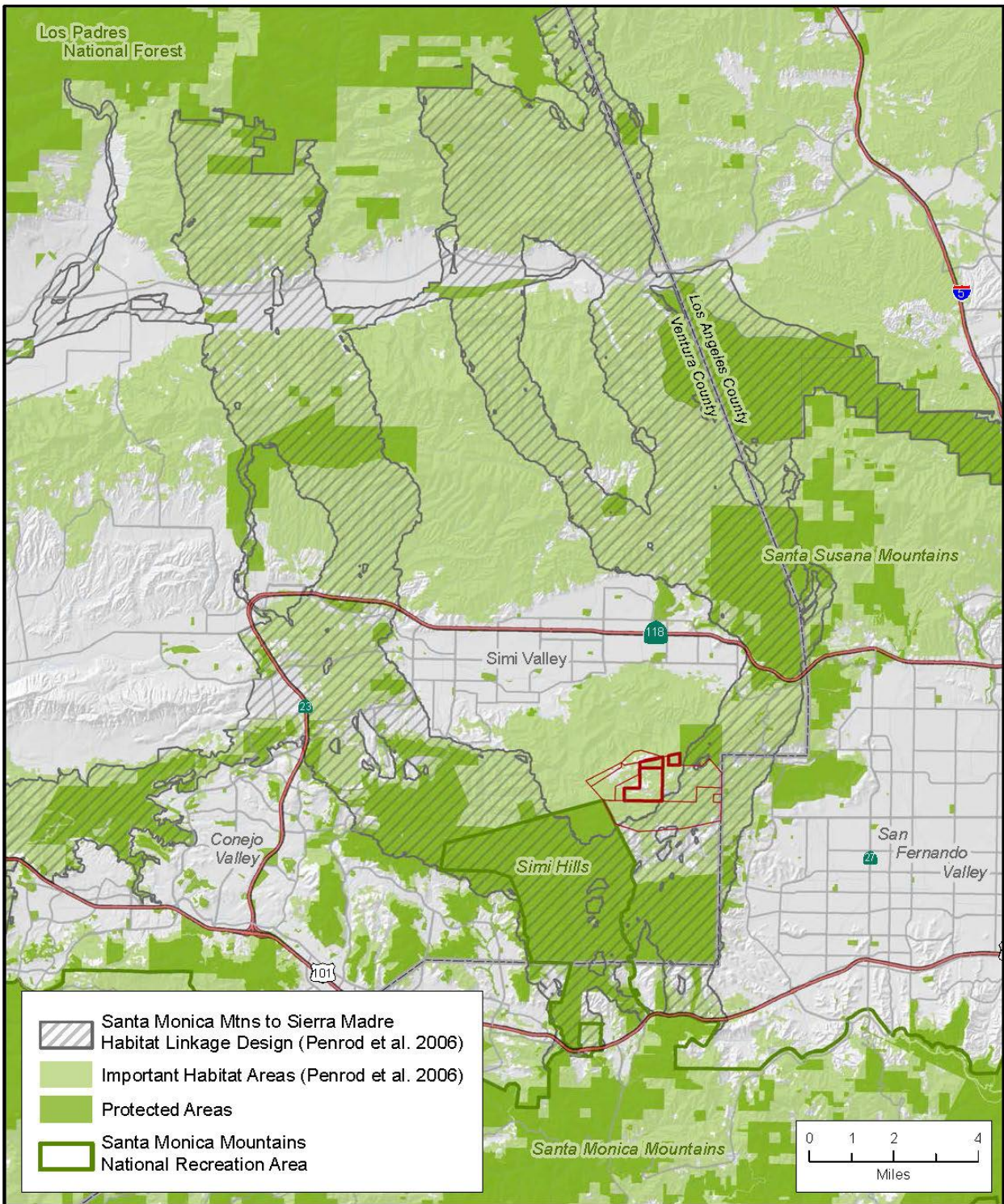
NPS Table 1. Detailed Comments

cc:

Director, OEPC

Regional Director, NPS, San Francisco, CA

OEPC Staff Contact: Lisa Chetnik Treichel



NPS Figure 1. Regional Map of SSFL Park Land and Open Space Setting. Santa Monica Mountains to Sierra Madre Habitat Linkage Design and Important Habitat Areas (Penrod et al. 2006) shown in context of existing park land. Santa Susana Field Lab parcels are shown in red, with NASA properties highlighted. Data sources: South Coast Missing Linkages, California Protected Areas Database (CPAD 1.9), NPS, Santa Monica Mountains Conservancy.

No.	Page Number, Section, or Reference	Comment/Proposed Revision
1.	Regional Park Land Setting Affected Environment Section 3 and Appendices D & E	Maps in Section 3 and Appendices D and E either have no parkland identification (Figures 3.4-2, Wildlife Migration Corridor and 3.10-1, Transportation Network), or are missing several areas of public parkland and protected open space (Figure 3.12-3). Several maps in the Draft EIS appendices are also absent any parkland identification (Appendix D, E). None of the maps include the NPS-administered Santa Monica Mountains National Recreation Area boundary. The SMMNRA boundary is shared with the southwestern boundary of SSFL.
1.	Cultural Resources Executive Summary pg. ES-7 Table ES-4, pg. ES-12	The Executive Summary states “Demolition would have a significant, negative, local, and long-term impact to all of the historic architectural resources.” The historic structures have been deemed eligible for the National Register. Thus, the impact would be beyond local since the Determination of Eligibility deemed the test stand resources were of national significance. Impact would be national.
2.	Cultural Resources Affected Environment Section 3.3	<p>The archaeological resources in Area II have been identified through surface surveys in a heavily vegetated and rugged, sometimes inaccessible landscape that precludes reliable identifiable of archeological resources in much of the project area. The Draft EIS assumes that subsurface archeological resources throughout the developed areas are likely to be disturbed. At the one clearly significant archeological site complex (Burro Flats Painted Cave), site boundaries were left undetermined. Either a thorough review of the existing documentation or intensive surface survey/mapping would have resolved this, but neither appears to have been conducted. The 1975 National Register nomination form, based on a 1973 archeological survey report, describes a huge midden area within the extensive site complex (CA-VEN-1072) that should have been mapped in order to define the affected environment at this location. As described in the Draft EIS and the associated cultural resource study (Appendix C), the site would appear be focused on the main pictograph panel, but the midden area could be an equally significant site component, one that might contain buried house structures and human burials. At present, all knowledge about this area is based on unpublished and largely unanalyzed data collected by avocational and field school excavations over a half century ago.</p> <p>The boundaries for the Santa Ynez Band of Chumash Indians’ Sacred Site have not yet been determined, and it is unclear how this applies to the Area of Potential Effect. The Traditional Cultural Properties (TCP) and Cultural Landscape Assessment are still underway to determine whether there is a TCP that is eligible for listing on the National Register. Without additional information, it is impossible to know how these potential resources comprise portions of the affected environment.</p>
3.	Cultural Resources Appendix C-51 Section 6.1.2	Statement that limited Holocene soils are present in most of APE is questionable. North 1/3 of area has several areas of deep soils.
4.	Cultural Resources Appendix C-52	Recommended plan for dealing with “unanticipated discoveries” at VEN-1072 is inadequate for an eligible archeological site that has demonstrated subsurface potential of great significance. The recommended approach would barely suffice for twentieth-century style “salvage archeology.”

5.	Cultural Resources Appendix C-52 Section 6.1.4 Affected Environment Section 3.3.3.1, pg. 3-15	Sacred Site is assumed to encompass the entire APE. What is this based on? Santa Ynez has expressed concern about VEN-1072 and the documented Native American occupation which is clearly focused on the south 1/3 of APE.
6.	Cultural Resources Appendix C-52 Section 6.1.5 Affected Environment 3.3.3.2, pg. 3-15	TCP study is underway, but no results are provided in draft EIS. It is not clear if there is a TCP at this point. How relevant is the TCP to the DEIS. The survey report and EIS may be premature at this stage of TCP identification.
7.	Cultural Resources Appendix C-36-37	The description of the Burro Flats Painted Cave (CA-VE-1072) is extremely superficial, as is the summary of previous work conducted there. The authors claim to have fully re-documented the site complex to resolve inconsistencies and problems with previous work, when these issues were actually resolved in 1991 by Al Knight and colleagues. Although Knight's work and subsequent publications are not acknowledged, his nomenclature for incorporating multiple previous site designations into a single complex (VEN-1072) is adopted. The 2007 record by CH2MHill is actually very limited and produced little new information except for a new map of the site superimposed on aerial imagery. The south and west site boundaries are undefined, although the report elsewhere includes recommendations that imply that basic site parameters including site boundaries have been determined.
8.	Cultural Resources DEIS Section 3.3.3.3 pg. 3-16	Again, the EIS states that numerous multiple sites were re-recorded in 2007 to form one larger site (VEN-1072) and reduce misinterpretations and inconsistencies. In fact, this work was conducted over a decade earlier by Al Knight as independent research that was permitted by NASA, but done for purposes of Section 106 compliance or with any linkage to the current undertaking.
9.	Cultural Resources Environmental Consequences Section 4.3.1.1 pg. 4-17	Demolition of buildings and facilities is said to be a minor impact and no adverse effect because of previous disturbance, including piping and other facilities in and around VEN-1072. However, intact subsurface archeological deposits are routinely found adjacent to areas which have previously been trenched and otherwise impacted for installation of utilities. With no prior subsurface evaluations of depth, character, and integrity, the currently existing data from the site indicate that adverse effects are much more likely to occur. Because of partial loss that has already occurred, the remaining archeological resources at this extremely important site are especially important.
10.	Cultural Resources Environmental Consequences Section 4.3.2 pg. 4-25	Regarding Measure #3, suggesting a "more in-depth ethnographic study" that would build on the 2013 TCP study is meaningless when all that has been said at this point is that the TCP study is currently underway. There is no reason to believe that additional subsequent research would be productive without knowing anything about what has already been learned from this type of research.

11.	Cultural Resources Environmental Consequences Section 4.3.2 pg. 4-25	Regarding Measure #4, “use of local archeologists and anthropologists with knowledge of the area” to determine site boundaries and gain a better scope of the site sounds like work that should have already been done before impacts could effectively be evaluated. It also imposing on the local community to help NASA do work that is normally a very intensive and sometimes expensive professional service done by paid contractors. This sounds like suggesting that a volunteer effort to remedy current deficiencies in site knowledge would somehow help mitigate partial destruction of VEN-1072. These deficiencies are not unanticipated. They have been discussed in previous 106 Consulting Party discussions, and the NPS Cultural Resource Manager at SMMNRA has suggested twice in those conversations that new fieldwork and testing were needed to define site parameters. In one conversation, NASA agreed to arrange site testing at VEN-1072 to remedy the deficiency. That clearly has not taken place.
12.	Cultural Resources Environmental Consequences Section 4.3	The Draft EIS suggests that total demolition of the historic architecture might not be necessary if preserving one or more historic structures is selected as mitigation for the removal of other historic resources. What technical constraints are involved? Exactly where preservation-over-demolition might be feasible is not identified in the Draft EIS. If one test stand could be preserved, why not preserve more of these nationally significant structures? Suggested mitigations for impacts to prehistoric archeological resources actually consist of remedial documentation to provide information that typically is used for planning data recovery or other mitigation measures commensurate with an undertaking of this type and scale. As described also in the Affected Environment, the existing data are not adequate for scoping and designing effective mitigation for impacts.
13.	Biological Resources Affected Environment Wildlife “Migration” Corridors Section 3.4.2	Figure 3.4-2 illustrates the habitat linkage area, but lacks habitat quality information and does not show park land and open space in the vicinity of the property. Thus, the figure does not adequately illustrate the location of this property in the context of existing parkland and important habitat. Please see attached NPS Figure 1 for a more accurate illustration of the greater park land and open space setting.
14.	Biological Resources Affected Environment Wildlife “Migration” Corridors Section 3.4.2	The citation upon which the Draft EIS statement is based incorrectly references U.S. Fish and Wildlife Service (USFWS) as the source for critical habitat corridors in the region. USFWS maps critical habitat for listed species and is not responsible for mapping critical habitat linkages for wildlife movement. The correct reference would be the South Coast Missing Linkages project report (Penrod et al. 2006: Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, E. Rubin, R. Sauvajot, S. Riley, and D. Kamradt. 2006. South Coast Missing Linkages Project: A Linkage Design for the Santa Monica-Sierra Madre Connection. Produced by South Coast Wildlands, Idyllwild, CA. www.scwildlands.org, in cooperation with National Park Service, Santa Monica Mountains Conservancy, California State Parks, and The Nature Conservancy.). The South Coast Missing Linkages report was the product of a major collaborative effort among a dozen governmental and non-governmental organizations. This landmark report on wildlife habitat linkages is not cited in the Draft EIS.
15.	Biological Resources Affected Environment Wildlife “Migration” Corridors Section 3.4.2	The Draft EIS’s statement that “SSFL <i>could</i> play a role for habitat linkage among the Santa Susana Mountains, the Simi Hills, and <i>possibly</i> into the Santa Monica Mountains” (pg. 3-23) (emphasis added) is incorrect. The South Coast Missing Linkages report identified the entire SSFL, including the NASA portion, as an important habitat area containing habitat for 19 of the 20 species considered in the habitat linkage analysis (the 20th species was the southern steelhead trout; the study found no currently existing habitat for this species in the area studied). SSFL presents a continuum of native habitat types; there is nothing distinguishing habitat on the 451-acre NASA property versus the rest of the 2,850-acre site and its service to wildlife living within or moving through SSFL and beyond into parkland within Santa Monica Mountains National Recreation Area. With that observation, the South Coast Missing Linkages report included open space within SSFL in a priority habitat linkage design connecting the <i>Santa Monica Mountains</i> through the Simi Hills and Santa Susana Mountains to the Sierra Madre.

16.	Biological Resources Affected Environment Wildlife "Migration" Corridors Section 3.4.2	The Draft EIS's statement that the mapped habitat linkage excludes the NASA property is overly conservative and presents a narrow interpretation of the complex set of factors upon which to map a wildlife habitat linkage. The Missing Linkage report's mapped linkage area was defined through delineation of the top one percent (1%) of habitat as identified by a GIS least-cost model. The modeled linkage does not mean that areas outside the critical linkage map are unimportant to the wildlife corridor. The mapping also does not imply that outside areas are unimportant habitat or unimportant to wildlife movement. The fact that the NASA property is not included in the critical linkage map only means those parcels were not selected as the top 1% of the habitat. The NASA portion of the SSFL is immediately adjacent to the 1% critical habitat linkage area and appears in the South Coast Missing Linkage report's 3% and 5% habitat linkage areas.
17.	Biological Resources Affected Environment Wildlife "Migration" Corridors Section 3.4.2	The Draft EIS uses the phrase "wildlife migration corridor" throughout the document, although this phrase presents a limited purpose for protecting habitat for wildlife movement. The appropriate phrase is "wildlife habitat linkage."
18.	Biological Resources Special Status Wildlife Appendices D and E	<p>The Fall 2010 (Appendix D) and Spring 2011 (Appendix E) biological surveys did not conduct systematic wildlife surveys (see Appendix E p. E-28 for information). Surveys were for vegetation, and wildlife that was encountered was incidentally noted. Therefore, no USFWS or other rigorous protocols were followed when looking for species that were endangered, threatened, or of special concern.</p> <p>For sensitive, threatened, or endangered birds: Point counts, area searches, and nest searches should have been conducted.</p> <p>For sensitive, threatened, or endangered aquatic amphibians: Stream surveys during the day and night should have been conducted.</p> <ul style="list-style-type: none"> • California red-legged frogs (<i>R. draytonii</i>) - The local population of <i>R. draytonii</i> is about 3.5 miles away from SSFL. Movements of frogs from the local population to sites less than 1 mile away have been documented every year since 2009. It is unknown whether adult frogs would travel the 3.5 miles to SSFL, but USFWS survey protocols should be followed to determine if there are <i>R. draytonii</i> on the NASA property. Suitable breeding and year-round habitat exists on the property. <p>For sensitive, threatened, or endangered terrestrial herpetofauna: cover boards, visual surveys, transect walks, pitfall trapping, or comparable census methods should have been conducted.</p> <p>For sensitive, threatened, or endangered Desert woodrats: Sherman trapping at nests should have been conducted.</p> <p>Incorrect Information in Appendix D Table 2 (p. 4-10 to 4-12):</p> <ul style="list-style-type: none"> • Mountain garter snake (<i>Thamnophis elegans</i>) is not found in this area. Most likely, the surveyors saw a two-striped garter snake (<i>Thamnophis hammondi</i>) and misidentified it because they were not familiar with the local species. • Bobcat species name should be <i>Lynx rufus</i>. • Mountain lion species name should be <i>Puma concolor</i>. • Wild pig (<i>Sus scrofa</i>) has not been detected before in this area. It is highly unlikely that wild pigs are in the area of SSFL because they have not been detected in other park sites like Cheeseboro Canyon or Upper Las Virgenes Canyon. The report does not say what the "sign" of pigs was. NPS staff will follow up on this.

19.	Biological Resources Affected Environment Special Status Wildlife Section 3.4	<p>Species that were not detected does not mean they were not there. Survey methods were not appropriate to make the conclusions that are made in this table and in Appendix D and E (see below).</p> <ul style="list-style-type: none"> - Desert woodrat (<i>Neotoma lepida</i>) - not detected during observations but highly unlikely that woodrat species in SSFL is this species of special concern, as the habitat is highly suitable to this species. Without night surveys and trapping, there is no way the surveyors could have determined what species of woodrat was found. - Fairy shrimp species - not detected during observations but no aquatic surveys (i.e. dip net, kick net) were done. - Spadefoot toad (<i>Spea hammondi</i>) - personal communication from a reliable source (local biological consultant) told me (K. Delaney) that ponds at SSFL Area IV were breeding grounds for this species. SSFL has highly suitable habitat for this species, it has been documented in the CNDDDB in this area, and individuals have been captured in the Simi Hills (by NPS) and at Chatsworth Nature Preserve (by Southwestern Herpetological Society) within the last 10 years. It is possible that this species could also be found on the NASA property. - Coastal California gnatcatcher (<i>Poliophtila californica californica</i>) - suitable habitat is found nearby. More extensive surveys during the spring breeding season should have been done to confirm non-detection of this species.
20.	Biological Resources Environmental Consequences Special Status Wildlife Section 4.4 pp. 4-30, 4-31	<ul style="list-style-type: none"> - Fairy shrimp: Finding of “no expected impacts” is premature given no surveys were done for these species. - Coast horned lizard: <ol style="list-style-type: none"> 1. Three juvenile lizards were observed during the surveys, the report only states the 1 lizard seen during Fall 2010 surveys. 2. The conclusion that the population of coast horned lizards is small because only 1 individual was observed during surveys is incorrect. A population size cannot be determined from a few incidental observations. 3. The observation of juvenile lizards suggests a healthy breeding population of this sensitive species 4. The impact of the proposed action on this species would be <u>moderate to significant</u>, <i>negative</i>, <i>local</i>, and <i>short term</i>. - Two-striped garter snake: NPS finds the proposed action on this species would also be <u>moderate to significant</u>, <i>negative</i>, <i>local</i>, and <i>short term</i>.
21.	Water Resources Wildlife Environmental Consequences Section 4.6	<p>All actions that affect surface water (ponds and streams) would affect native amphibian breeding habitat. Native amphibians known to breed on the property include the Western toad, Pacific tree frog, and spadefoot toad. Effects from the proposed action to surface water would have <i>significant</i>, <i>negative</i>, <i>local</i> and <i>short term</i> impacts to native amphibian breeding.</p>
22.	Biological Resources Wildlife Affected Environment Table 3.4-3	<p>Please correct typo: “gnatcatcher” is misspelled.</p>

23.	Environmental Consequences Biological Resources Section 4.4.1.3 Section 6 Biology BMP-1	<p>Biology BMP-1 is unrealistic. Removal of 500,000 cubic yards of soil would be akin to a quarrying operation, thereby removing all native substrate and rendering no opportunity for soil crust regeneration and associated native recolonization. Studies of native revegetation efforts at mining reclamation sites have found lack of success, and typically the result is conversion to non-native plant populations and loss of native diversity (“<i>Does post-mining rehabilitation restore habitat equivalent to that removed by mining? A case study from the monsoonal tropics of northern Australia.</i>” Author S. Gould. Wildlife Research 38(6) 482-490, November 2011). Soil properties (physical, chemical, organics like roots that hold soil together, microbial properties) need to be similar to the native soils. Replacement soils would be unconsolidated and subject to wind and rain erosion, particularly when vegetation is not yet established. What metrics would be used to determine soil integrity and to what extent would the replacement soils be compacted during installation?</p> <p>Biological soil crusts are particularly important in arid and semi-arid places, including many areas of soils in the Santa Monica Mountains and Simi Hills. The following link to a study on soil crusts describes the importance of soil crusts to plant establishment: http://sbcs.wr.usgs.gov/products/pdfs/Belnap_et_al_ch21_Influence_on_soil.pdf.</p> <p>Removal of the top two feet or more of native soils would also eliminate the native seed bank. The proposed seeding alone would not be sufficient. Plantings from local sources of stock would be necessary. Control of invasive plant propagules would be important to avoiding noxious plant spread, assuming the imported replacement soils could be deemed weed-free.</p> <p>Long-term site maintenance is recommended—ten or more years for such a large area of high disturbance, or until the plant cover is a self-sustaining native community. The three-year monitoring period proposed in the Draft EIS is considerably too short for such an extensive area of disturbance.</p>
24.	Biological Resources Vegetation Environmental Consequences Section 4.4.1.2 pg. 4-31	<p>The statement that impacts to native vegetation communities is short-term is unsupported by data. What evidence indicates ability to successfully restore the native vegetation communities that were present, after soil is removed? Ecological restoration is extremely difficult and simply re-seeding areas where 2 to 20 feet of topsoil has been removed seems unlikely to result in restoration of a functioning native ecosystem. Impacts should be reclassified as long-term and possibly permanent losses.</p>
25.	Biological Resources Vegetation Environmental Consequences Section 4.4.1.2 pg. 4-31	<p>The Draft EIS states “Over time, the demolition would increase the amount of undeveloped, vegetated area and would have a moderate, beneficial, local, and long-term impact.” This statement is unsupported by data. Please provide additional data to support this claim. NPS experience in the Santa Monica Mountains National Recreation Area, as well as other studies in the ecological restoration literature, suggests that if the removal areas do become revegetated over time, the likeliest outcome is that they will be non-native annual grassland or other non-native herbaceous weeds. NPS studies of seeding in the Santa Monica Mountains have found it to be an ineffective treatment for the most part without large amounts of hand-weeding post-seeding.</p>
26.	Biological Resources Vegetation and Land Cover Types Affected Environment Section 3.4.1	<p>The Draft EIS refers only to Appendix D, the 2010 Fall field work report dated February 2011. Appendix D includes vegetation survey reports that are difficult to assess owing to mixing of old and new taxonomy without identifying synonymy, listing by common names (species are not grouped by family and genera), and misspelling of several scientific names. The findings in Appendix D were based on plant survey lists from 2008, 2009, and fall 2010 (pg. D-78, Appendix D). A more comprehensive field effort was carried out in spring, 2011, and resulted in the report dated December 2011, presented in the Draft EIS as Appendix E. Appendix E has a more extensive list of species observed in spring, 2011, and the information is presented accurately and more comprehensively. NPS finds Appendix E should be referenced in the Draft EIS, because Appendix D insufficiently presents vegetation and land cover types.</p>

27.	Biological Resources Environmental Consequences Santa Susana Tarplant Section 4.4.1.1 pg. 4-30	Impacts to Santa Susana Tarplant are not adequately evaluated. Please identify what portion of the population at SSFL would be destroyed by soil removal/remediation activities. Also, please identify that seed production and seedling survival rates in remaining population are high enough to support population viability into the future. Also, please evaluate vulnerability of the population under climate change to show that the individuals lost during soil removal will not be critical to future population survival.
28.	Biological Resources Environmental Consequences Braunton's Milkvetch Section 4.4.1.1 pg. 4-30	Impacts to Braunton's milkvetch are not adequately evaluated. Braunton's milkvetch appears to have a long-lived seedbank and a meta-population type dynamic in natural areas. NPS has had Braunton's milkvetch show up in previously unrecorded areas after a fire or other form of soil disturbance (exposing surface soils to the light) (NPS, unpublished survey data can be provided upon request). These more transitory populations may play an important role in the long-term persistence of these species (a regional population viability analysis is needed to evaluate the role of these transitory populations in the long-term persistence of the species). If appropriate habitat exists in the ROI, negative impacts to this species should be assumed and mitigated appropriately rather than assuming no impacts because no plants above ground were observed. Alternatively, an extensive series of soil samples could be collected and germinated in the greenhouse to test for the presence of Braunton's milkvetch in the seedbank.
29.	Biological Resources Vegetation and Land Cover Types Affected Environment Section 3.4.1, pg. 3-24	<i>Plantago erectus</i> should be corrected to <i>Plantago erecta</i> . (In 2 nd paragraph below Table 3.4-2)
30.	Biological Resources Vegetation and Land Cover Types Affected Environment Section 3.4.1, pg. 3-35	No need to capitalize 'palustrine' in mid-sentence.
31.	Biological Resources Vegetation Appendix D-15	<i>Eriodictyon crassifolia</i> should be corrected to <i>Eriodictyon crassifolium</i> . (Under 4.1.1.2 Chaparral)
32.	Biological Resources Vegetation Appendix D-17	<i>Artemesia</i> is spelled <i>Artemisia</i> (1 st paragraph under 4.1.1.3)
33.	Biological Resources Vegetation Appendix D-17	The document doesn't state which source is followed in plant names (TJM1 or TJM2)--possibly TJM1, so <i>Sambucus mexicana</i> probably okay although besides TJM1 it is commonly recognized now that <i>S. mexicana</i> was a mis-id for California. The species we have is <i>S. nigra</i> subsp. <i>caerulea</i> . Later on pg. D-19, under Venturan CSS, <i>Acmispon glaber</i> is based on TJM2 while <i>Yucca whipplei</i> is based on TJM1. On previous page <i>Eremocarpus setigerus</i> is based on TJM1. Under sensitive species, <i>Deinandra minthornii</i> is based on TJM2. It would probably be good to follow TJM2 in all plant names since that is the new standard.

34.	Biological Resources Vegetation Appendix D-18	Under 4.1.1.6 Mulefat Scrub, 2nd sentence “consists of mostly of...”; 3rd sentence: <i>Baccharis salicifolia</i> shrubland alliance (not <i>salicifolias</i>)
35.	Biological Resources Vegetation Appendix D-57	Under disturbed chaparral: We shouldn’t have <i>Eriodictyon californicum</i> . Likely <i>E. crassifolium</i> (also under Disturbed Sage Scrub on page D-59). Likewise, we shouldn’t have <i>Yucca schidigera</i> —our species is <i>Y. whipplei</i> .
36.	Biological Resources Vegetation Appendix D-65	Under dominant vegetation for ruderal: <i>Dieteria</i> (segregated from <i>Machaeranthera</i>) has not been reported from our area. (<i>Symphyotrichum lanceolatum</i> var. <i>hesperium</i> does occur in our floristic region. Images are posted at www.smmflowers.org/bloom/species/Symphyotrichum)
37.	Biological Resources Vegetation Appendix D-71	Plant species list is generally better organized alphabetically first by family and then by genus/species, listing the scientific name first. Common names are ambiguous and a genus with several species will be distributed in different places on the list, making it difficult to understand the nature of the species complex/community.
38.	Biological Resources Vegetation Appendix D-74 and onward	Plant list typos and suspicious entries: <i>Yucca whipplei</i> (not <i>whipleri</i>); <i>Salvia columbariae</i> (not <i>columberiae</i>); <i>Ceanothus arboreus</i> is a mis-id, we don’t have that—see www.smmflowers.org/bloom/species/Ceanothus for SMMNRA species (<i>C. crassifolius</i> , <i>C. oliganthus</i> , and <i>C. spinosus</i> are known from the site); <i>Ceanothus crassifolius</i> (not <i>crassifolia</i>); <i>Lonicera hispidula</i> is suspect...we have not been able to confirm an old record from Malibu Canyon. You begin to run into <i>L. hispidula</i> along the coast at about Santa Barbara (<i>Lonicera subspicata</i> var. <i>denudata</i> would be more likely); <i>Artemisia douglasiana</i> (not <i>Artemesia</i>); <i>Chlorogalum pomeridianum</i> (not <i>Chloragalum</i>); <i>Eriodictyon crassifolium</i> (not <i>crassifolia</i>);
39.	Biological Resources Vegetation Appendix D-82	Caption for Photo 6: Likely the exposed outcrop habitat has not resulted from non-native ‘grassland’ eroding away. The non-native annual grasses are likely a later introduction from ranching era, encroaching on the crust/moss/ <i>Selaginella</i> /native forb patches. This comment applies also to Photo 22.
40.	Biological Resources Vegetation Appendix D-84	Caption for Photo 14: The dry plant in foreground looks more like <i>Carduus pycnocephalus</i> (based on habit/stature; heads are not clear enough to determine from picture either way...) The difference would be native vs. non-native...
41.	Biological Resources Vegetation Appendix D-86	Photo 21: the non-chalky <i>Dudleya</i> sp. is <i>D. lanceolata</i> . (Also in Photo 23.) During survey in June 2011, only <i>D. lanceolata</i> and <i>D. pulverulenta</i> was found. No suitable habitat for sensitive <i>Dudleya</i> known from this floristic region was found at the site. June 2011 survey was attended by a botanist with extensive knowledge of local common and sensitive <i>Dudleya</i> .
42.	Biological Resources Vegetation Appendix D-86	Photo 22: <i>Dudleya pulverulenta</i>

43.	Soils Environmental Consequences Section 4.2	The soils impact analysis does not take into account remedial grading that typically ensues when any large amount of soil is excavated. The 500,000 cubic yard estimated maximum soil removal could be significantly increased based on the need to resolve unforeseen unstable soils.
44.	Soils Environmental Consequences Soils Section 4.2 Executive Summary, Look-up Table dated June 11, 2013	There is also the risk of over-excavation owing to difficulty in confirming the field point at which the soils meet the Look-Up Table's background levels and limits on detectability. It is apparent in the Look-Up Table document that the potential for false positives, i.e. remaining contamination, could lead to excessive excavation. The statistical method for reducing false positive readings was an important consideration in setting the testing standard for cleanup to background levels. The Draft EIS did not provide a layman's description of the testing parameters described very technically in the Look-Up Table document. The document is difficult to interpret. Such technical presentation, accessed by reference only in the Draft EIS, makes the ramifications of the proposed cleanup to background difficult to grasp.
45.	Air Quality, Fugitive Dust Environmental Consequences Section 4.7.1.2	The Draft EIS needs to consider the potential for Santa Ana wind events to create fugitive dust. The wind roses provided in Figures 4.7-1, 2, and 3 may indicate overall mild wind patterns, but they do not illustrate the potentially severe Santa Ana wind conditions. NPS studies of Santa Ana wind speeds collected from the Cheeseboro Canyon RAWS site between 1997 and 2010 found maximum wind speeds between 34 and 45 miles per hour (mph) during Santa Ana wind events, with 0 to 6.8 events per month. Raphael ("The Santa Ana Winds of California", <i>Earth Interactions</i> , Vol. 7, Paper No. 8, 2003) found a mean number of 20 Santa Ana weather events occur per year, lasting typically 1.5 days per event. The Draft EIS should evaluate the ability to control fugitive dust during high wind/low humidity conditions lasting both day and night.
46.	Hazardous Materials and Waste Executive Summary Section ES-5.0 and 5.3.3 Table ES-4 Environmental Consequences Hazardous Materials and Wastes Section 4.12	The Draft EIS states conflicting impact levels for the Hazardous Materials and Waste topic. The Executive Summary states an overall finding of a " <i>significant</i> , beneficial, local, and long term" impact for the removal of hazardous wastes. Environmental Consequences Table 4.12-2 summarizes eight individual impacts, with only one finding of a <i>moderate</i> , beneficial impact—for reduction or removal of hazardous material from soils and groundwater. No significant impacts were identified in the Environmental Consequences. Furthermore, the Executive Summary (Section ES-5.3.3) proceeds to justify the significant beneficial impact based only on the large volume of soil removed, without regard for any other quantitative or qualitative factors. NPS finds this inconsistency important, because in return for only a moderate long-term positive impact for hazardous waste removal (and water quality) from the cleanup-to-background action alternative, there are several significant or moderate long-term negative impacts on all other resource areas, including natural and cultural resources of concern to NPS.
47.	Reduced Maintenance Cost Purpose & Need Section 1.2	While NEPA does not require preparation of a cost-benefit analysis, if one has been prepared that would substantiate that the proposed project would reduce site maintenance costs, the cost-benefit analysis needs to be included in the Draft EIS (40 CFR 1502.23).
48.	Topics Dismissed Land Use Project Description Section 2 Table 2.5-1	Dismissal of Land Use: The Draft EIS does not include the basic information of existing land use and zoning classifications assigned by Ventura County to SSFL and the NASA component. The Draft EIS also does not present any surrounding land use classification typically found in a "Setting" description within an EIS.

49.	Topics Dismissed Land Use Project Description Section 2 Table 2.5-1	<p>The dismissal of land use as a topic does not correlate with the Draft EIS's Need statement to prepare the property to support future disposition. The Draft EIS does not follow the advice provided in CEQ's list of 40 questions on implementing NEPA. Question 18 addresses uncertainty about indirect impacts and discusses uncertainty related to land use in the event of disposition. The advice notes that an EIS preparer should discuss indirect impacts on an issue like land use when trends are ascertainable or potential purchasers have made themselves known. At least one potential purchaser (recipient) of the property has been officially identified: Santa Ynez Band of Chumash Indians (notification to GSA as an interested party). Boeing has also expressed commitment to native open space as a future land use. While the Boeing property is jurisdictionally separate from the NASA land within the overall SSFL site, there is no ecological distinction between the two ownership areas, and Boeing has offered in the past to convey their property to the state for public parkland. The potential to hold the land as a native habitat and cultural resource protection open space park has been widely discussed among parkland agencies, including at meetings of the interagency Linkage Implementation Alliance (LIA). LIA participants include NPS and several other parkland and resource management agencies with jurisdiction in the Santa Monica Mountains and Simi Hills, as well as CalTrans. The LIA seeks solutions to protect and preserve habitat linkages between Los Padres National Forest and the Santa Monica Mountains. NPS and the other participants have been anticipating disclosure in the Draft EIS of cleanup impacts, particularly impacts on future land use as well as on natural and cultural resources. The disclosure of the project's indirect impacts on future land use is critical to NPS's or other agencies' decision-making tree to pursue acquisition of the NASA property.</p>
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