

**SUPPLEMENTAL COMMENTS
OF COMMITTEE TO BRIDGE THE GAP¹
ON NASA’S FINAL SEIS ON SSFL CLEANUP**

23 August 2020

Introduction

As indicated in the August 21, 2020, joint comments of the Natural Resources Defense Council (NRDC), the Committee to Bridge the Gap (CBG), and Physicians for Social Responsibility-Los Angeles (PSR-LA), NASA hid from public scrutiny and review a critical part of its Supplemental Environmental Impact Statement (SEIS)—its choice of preferred cleanup alternatives and the methodology by which that choice was made. That fundamental matter was withheld from the Draft SEIS and only included in the Final SEIS, thus barring the public from reviewing and commenting on it during the public hearings and the formal period for written public comments, in violation of the National Environmental Policy Act (NEPA). In the joint comments, some of the defects of NASA’s new claims are summarized. CBG here provides additional detail.

We must at the outset reiterate that NASA has no legal right or power to select *any* alternative cleanup approach to the one to which it is bound by the Administrative Order on Consent (AOC) that it executed with California in 2010. It is obligated to clean up its SSFL contamination to background, as required by the AOC. Furthermore, even were the AOC not to exist, NASA as the polluter of SSFL does not have the authority to decide how much of its pollution to clean up. Under the Resource Conservation and Recovery Act (RCRA), that authority rests with the regulator, the California Department of Toxic Substances Control (DTSC).

Nonetheless, NASA has proceeded—in violation of the AOC, NEPA, and RCRA—to issue a Final SEIS that purports to have NASA choose how much of the contamination it prefers to avoid cleaning up. The choice of those “preferred alternatives” by NASA, and the critically defective method and analysis employed to support that choice, are the subject of this assessment.

NASA’s Methodology for Selecting Its “Preferred” Cleanup Alternatives Is Fundamentally Flawed

NASA, in material in its Final SEIS excluded from the Draft SEIS, asserted that it quantified and compared the impacts of each SSFL cleanup alternative in order to determine the purportedly “Environmentally Preferred Alternatives” (Alternatives C and D).² The agency then chose an “Agency Preferred Alternative” (Alternative C) from its two Environmentally Preferred

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² National Aeronautics and Space Administration, *Final Supplemental Environmental Impact Statement for Soil Cleanup Activities at Santa Susana Field Laboratory*, July 24, 2020, Sections 2.5, 2.6, and Appendix 2G.

Alternatives. It would, by NASA's own admission, leave 84% of its contaminated acreage not cleaned up.

The assumptions made, the inputs used, and the methods employed in reaching these conclusions, however, were highly arbitrary and appear clearly tilted so as to favor alternatives that are less protective--and therefore less expensive to NASA--than the AOC cleanup to which it is legally bound. NASA does this in part by markedly misrepresenting both the impacts and benefits of the cleanup. By carefully modifying key inputs to and details of the calculation, NASA was able to give the impression of an objective decision process while simultaneously skewing that process to meet its desire to walk away from the great majority of its cleanup obligations. Furthermore, by failing to include the methodology, calculation and identification of preferred alternatives in the Draft SEIS and only putting it forward in the Final SEIS, NASA shielded from public scrutiny and comment the deeply flawed yet critical claims.

Summary of What NASA Did and How it Skewed the Results

1. NASA first established what it calls "resource categories" that could be impacted. By creating only a single category for health and safety--the main reason for cleaning up the toxic contaminants--but creating eight other resource categories (e.g., noise, traffic, geology), NASA automatically skewed the calculation against protecting public health and safety.
2. NASA then "weighted" each resource category, purportedly based on the number of members of the public who commented on that impact. As we shall see below, however, this turns out not to be true. Public comments on public health and safety outweighed every other resource categories, by about a factor of 100. Yet NASA gave four times the weight to the combination of the other categories that it gave to protecting public health and safety. NASA did the weighting in a grossly erroneous fashion, again biased against public health and safety (and thus against the AOC alternative that involves full cleanup).
3. Additionally, NASA set up multiple impact categories within each resource category, further skewing the calculation. Only four positive impact categories from the cleanup were evaluated, whereas thirty-five were established for potential negative impacts.
4. Many of the negative impact categories were duplicative, essentially double-counting. On the other hand, all public health impacts were combined into a single health impact, whereas one could have created categories for cancers, birth defects, neurological diseases, heart disease, etc.
5. For public health and safety, only two positive impact categories were set forth, and only for *onsite* exposures. No consideration was even included for protection of the public offsite from migrating contamination from the site, which is what drives the need for the cleanup.
6. For each resource category, NASA claimed very large negative impacts and virtually no positive impacts, when the opposite is the case.

7. The calculation dropped consideration of time periods, further skewing the analysis, because benefits of the cleanup are permanent and longstanding, whereas negative impacts are temporary and short-lived, restricted largely to the period of the cleanup.
8. NASA assumed, contrary to all facts and scientific basis, that cleaning up only a tiny fraction of the contamination had precisely the same health benefits as cleaning up all of it, and that leaving hundreds of times higher concentrations of contamination had precisely the same health benefits as leaving behind concentrations hundreds of times lower, even while admitting that cleanup provided significant, permanent beneficial health and safety impacts.

All of these indefensible assumptions produce the clear impression of an agency desperate to get out of commitments to reverse the environmental damage it had done to SSFL and pulling out of the air, as it were, assumptions to get to that desired conclusion.

The Formula Used for Justifying NASA's Preferred Alternatives

NASA's calculation multiplied together three factors for each "resource" category:

- **the number of purported impacts** to that category (e.g., for cultural resources, the impacts to SSFL as an archeological district, as a traditional cultural property, and as a sacred site, were counted as *three* separate impacts, even though they were to the same area);
- **the impact score** that was assigned to each impact, from a scale of +3 to -3;³
- **the weighting** assigned to that resource category, supposedly determined, according to NASA, by the number of public comments made concerning that resource.

The scores for each resource category were then added together by NASA to determine the final score for each cleanup alternative.

Thus the final score for each cleanup alternative was based on the following:

Score For Each Resource Category = weight x (sum of positive impact scores - sum of negative impact scores)

Where the sum of positive impacts = (impact score of 3 x # of significant impacts) + (impact score of 2 # of moderate impacts) + (impact score of 1 x # of minor negative impacts)]

³ A significant beneficial impact was given a +3, a moderate beneficial impact +2, a minor beneficial impact +1, and negligible beneficial impact 0; significant, moderate, minor and negligible negative impacts were given values of -3, -2, -1, and 0 respectively.

The sum of negative impacts = (impact score of -3 x # of significant impacts) + (impact score of -2 x # of moderate impacts) + (impact score of -1 x # of minor negative impacts)]

Final Cleanup Alternative Score = Sum of All Resource Category Scores

The cleanup alternatives with the highest score was deemed the Environmentally Preferred Alternative.⁴ In fact, this was based on the least negative score, because NASA's methodology was so heavily biased as to assert that all cleanup alternatives would hurt the environment far more than they would help it. This is of course an incredibly self-serving claim, designed to justify the predetermined desire to get out of the cleanup obligations NASA had previously committed to carrying out.

NASA gave the cleanup required by the Administrative Order on Consent to which it is bound a score of -132; then the Revised LUT Cleanup a score of -113; followed by the supposedly Suburban Residential and Recreational Cleanups which both received a score of -77. Of the two Environmentally Preferred Alternatives, NASA chose as the Agency Preferred Alternative what it calls the Suburban Residential Cleanup⁵ (even though it uses cleanup standards as much as a hundred times weaker than the official suburban residential standard set forth in the Standardized Risk Assessment Methodology (SRAM) 2 Update, as we detailed in our comments on the Draft SEIS).⁶ This alternative would leave vastly more contamination at SSFL than the legally-binding AOC Cleanup, and place at risk human health of onsite receptors or communities near SSFL exposed to contamination that migrates offsite.

Resource Category Weights Are Disproportionately Assigned

According to the Final SEIS, the weighted value assigned to each resource category is "based on the number of public comments received on that resource during the comment periods for the SEIS and the original 2014 FEIS."⁷ The resources and their associated weights are as follows: Cultural Resources (3), Biological Resources (3), Air Quality (2), Water Quality (2), Geology (1), Hazardous and Nonhazardous Materials and Waste (1), Health and Safety (4), Transportation (3), and Noise (1).

If NASA had done this as they claimed, the weighted values for each category should proportionately reflect the number of public comments concerning that category. We therefore undertook to check the actual number of members of the public who commented on each category and found that NASA has grossly misrepresented the numbers, resulting in NASA vastly underweighting the category of Health and Safety. Public health is at the center of the

⁴ NASA, Final SEIS Section 2.5

⁵ NASA, Final SEIS Section 2.6

⁶See Joint Comments of NRDC-CBG-PSRLA on Draft SEIS, January 8, 2020, pp. 46-7

⁷ NASA, Final SEIS pg. 2-27.

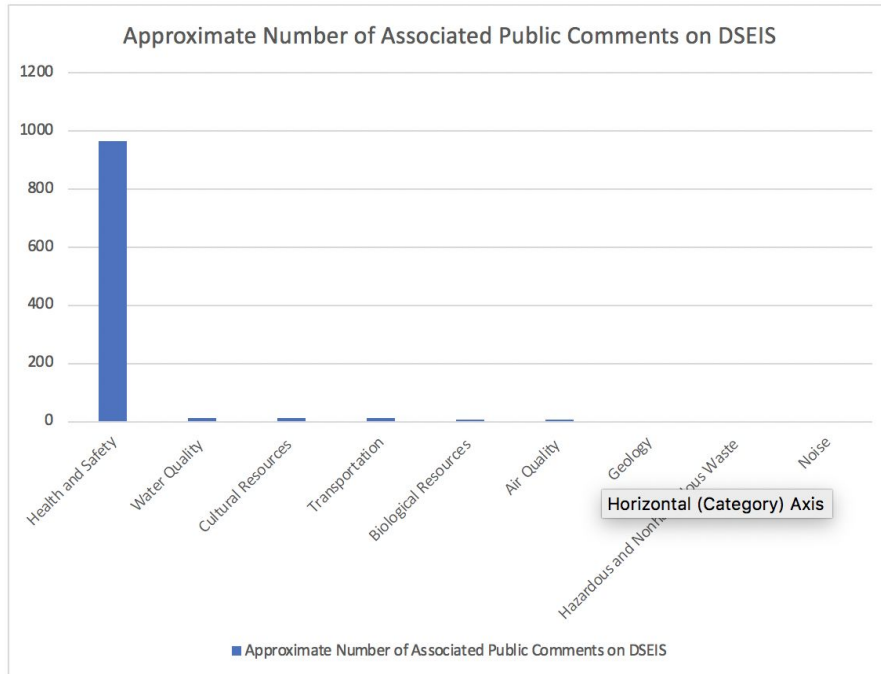
vast majority of public comments made on both the DSEIS and DEIS, and yet this is not reflected in the weight NASA assigned.

Below is a table comparing each resource category and its associated weight as claimed by NASA, compared with the approximate number of members of the public who in fact submitted comments on each category during the SEIS comment period.⁸

Resource	~Number Public Comments Concerning the Resource DSEIS
Health and Safety (4)	961
Cultural Resources (3)	10
Biological Resources (3)	8
Transportation (3)	9
Water Quality (2)	13
Air Quality (2)	5
Geology (1)	0
Hazardous and Nonhazardous Waste (1)	0
Noise (1)	0

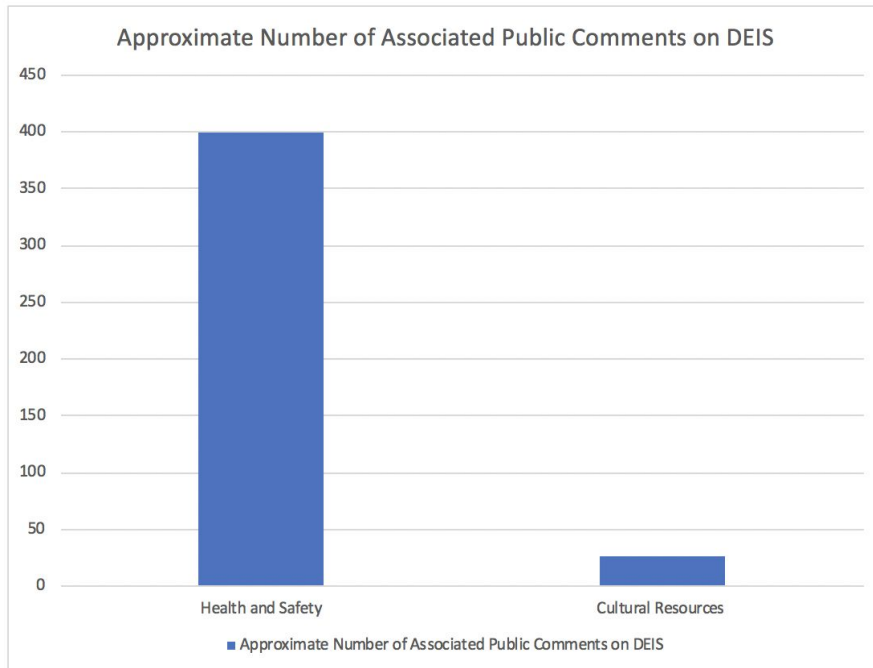
As seen above, 961 comments were received on health and safety matters, while only 10, 8, and 9 were submitted on cultural and biological resources and transportation respectively. So, there were more than one hundred times as many comments on health and safety as on transportation, for example, yet NASA gave transportation $\frac{3}{4}$ the weight of health and safety. Health and safety had 961 comments, compared to 45 for all other categories combined--i.e., more than twenty times as much. Yet NASA gave health and safety a weight of 4 while giving those other categories were collectively given a weight of 16, quadruple the weight. Thus NASA *misrepresented by a factor of 80* the public comment ratios and the weight that should, *according to its own stated methodology*, be given to each category. If NASA had done what it claimed and accurately weighted the category of Health and Safety based on its prevalence in the public comments, Health and Safety would be weighted anywhere about 300, not 4. NASA, in other words, showed by its falsification of the actual comment ratios upon which it said it based the weighting, that it places vanishingly small value on protecting public health and safety from the contamination that its irresponsible practices at SSFL created.

⁸ The compilation is derived from the annotating the Final SEIS compilation of public comments; the annotated compilation is attached hereto.



The table and graph above address the public comments made on the DSEIS only, not the DEIS. The DEIS public comment document, “APPENDIX K: Public Comments on Environmental Impact Statement” is over 2,700 pages long and therefore difficult to precisely characterize. However, a preliminary search using keywords “Native American” and “Cancer” found that comments regarding concern over Native American artifacts numbered 27, while comments regarding concern about cancer exceeded 400. Therefore, as is the case for the public comments on the DSEIS, public comments concerning Health and Safety vastly exceed those concerning Cultural Resources during the EIS comment period.

Below is a graph illustrating the relative frequencies of public comments on the Draft EIS raising cancer risks from the contamination compared to comments regarding Native American artifacts. As is shown, there were vastly more comments concerning Health and Safety, and this should have been reflected in the weighting of the resource, if NASA had indeed followed the methodology it claimed.



Aside from massively underweighting Health and Safety as an impact category, NASA also falsely represents the prevalence of concern over matters such as Cultural Resources. Only 10 comments expressed concern over Cultural Resources in the Draft SEIS comment period, which was given a weighting of 3, while comments concerning Water Quality were mentioned 13 times in the Draft SEIS comment period, but given a weight of 2. NASA’s entire methodology for assigning weight based on the resource’s prevalence in public comments is inconsistent. It seems clear that the weighted values were arbitrarily assigned, with bias given towards the outcome of identifying the less protective cleanup scenarios as environmentally preferable. Note also that many of the comments on water quality were concerns about contaminated water and the impacts to water of not cleaning up the site, whereas NASA gave far more consideration to the far less significant issue of supposedly negative impacts on water quality of doing the cleanup.

One final example serves to illustrate how the inappropriate assignment of weights, especially in combination with the other factors in the calculation, works in NASA’s favor. As indicated earlier, the Cultural Resources category is given a weight of 3, despite there being vastly more public comments for the Health and Safety category, which nonetheless receives a weight that is only marginally higher (4). This inappropriately high weight for Cultural Resources acts as a multiplier for it, because NASA asserts there are six identified negative impact types -- an inflated number that we show below includes duplicative negative impacts and excludes any beneficial impacts to cultural resources. Those six impacts are all given a Significant Negative score of -3, which again ignores the potential for beneficial impacts to cultural resources from the cleanup, and

ignores the cultural resource mitigation measures found both in the AOC and the SEIS itself, further increasing the Cultural Resources score by another inflated multiplier. All of these factors combined to produce a Cultural Resources score of -54 for the AOC Cleanup, a huge negative score that accounts for more than a third of the AOC Cleanup's final score of -132. If these factors had not been manipulated in the ways just described, it is likely the AOC cleanup would have fared far better in NASA's assessment of the preferred alternative.

Number of Negative Impacts to Resources from Cleanup Activities Is Inflated and Positive Impacts Are Understated

In the Final SEIS, NASA included tables summarizing purported impacts from cleanup activities that would affect each resource.⁹ The impacted resources include: Cultural, Biological, Air Quality, Water Quality, Geology, Hazardous and Nonhazardous Materials and Waste, Health and Safety, Transportation, and Noise. The number of impacts from each table was used as an input to the Preferred Alternative comparison calculation. For example, there are a total of six asserted impacts to Cultural Resources included in the Final SEIS summary table.¹⁰ Thus, the number six is an input to the Cultural Resources section of the Appendix 2G table.¹¹ However, NASA's list of impacts from cleanup activities for each resource focuses primarily on the potential negative effects that cleanup would have, and includes relatively little consideration of the positive impacts. Many of the negative impacts associated with performing cleanup appear to overlap or are unnecessarily duplicative, and therefore result in an inflated number of negative impacts. NASA therefore created a bias towards less extensive cleanup alternatives by overstating the negative impacts of a full cleanup while failing to acknowledge the positive impacts.

One of the ways in which the final cleanup alternative scores (or, as NASA calls them in Appendix 2G, the Total Based on Resource Weights) are inflated is by inappropriately increasing the number of negative impacts from cleanup activities that are listed in the Final SEIS while leaving the beneficial impacts underrepresented. By expanding a single negative impact into several, NASA is able to double-, triple-, and quadruple-count the same negative impact. For example, the six impacts identified with regards to Cultural Resources are impacts to: Indian Sacred Site and TCP; Burro Flats Site; Archaeological District; Individual Archaeological Sites; Historic Districts; and Individually Eligible Structures. There is much overlap and duplication in these impacts. It would appear NASA is referring to "Indian Sacred Site" as the entire SSFL.¹² The TCP, or Traditional Cultural Property, is another name for this

⁹ NASA, Final SEIS page number for each resource category Summary of Impacts table: Cultural Resources, p. 3-21; Biological Resources, p. 3-46; Air Quality, p. 3-60; Water Resources, p. 3-70; Geologic Resources, p. 3-84; Hazardous and Nonhazardous Materials and Wastes, p. 3-91; Health and Safety, pp. 3-104 - 3-105; Traffic and Transportation, pp. 3-125 - 3-126; Noise, p. 3-134.

¹⁰ NASA, Final SEIS p. 3-21

¹¹ NASA, Final SEIS Appendix 2G

¹² SSFL is listed in the California Native American Heritage Commissions's Sacred Lands File.

same sacred site. The TCP also encompasses the Archaeological District.¹³ The Archaeological District encompasses the area that houses the Individual Archaeological Sites.¹⁴ To assert there are six different impacts to Cultural Resources relies on spurious distinctions between various names for near-identical areas with significant overlap.

Further, of the six impacts to Cultural Resources identified in the SEIS, all are deemed negative.¹⁵ NASA failed to identify any positive impacts to Cultural Resources that would result from remediation activities. For example, if the site were to be restored to its original state prior to Field Lab activities, as the legally binding AOC cleanup agreement requires, the Native American communities who have cultural ties to the site would not be limited in the amount of time they could safely spend at the site and the damage done to the site by decades of rocket tests, reactor accidents, and radioactive and toxic chemical releases would be healed. The site could be used for traditional uses safely without causing harm to Native Americans. Remediating the decades of intense damage to the site would restore it to the condition it was in when first occupied. These would be significant benefits of the cleanup to Cultural Resources, and yet NASA failed to include any positive impact on Cultural Resources from the cleanup in its list of impacts.

The Biological Resource list of impacts similarly inflates the number of negative impacts that would result from cleanup activities. Some of the negative impacts that are listed -- Biology Impact-1: Impacts to native vegetation communities, Biology Impact-8: Impacts to state-listed species, and Biology Impact-6: Impacts to Santa Susana tarplant -- are duplicative. In these cases, the various impacts identified are different ways of referring to the same plants.¹⁶ For example, the SEIS states that "A single state-listed special-status plant species was documented within the NASA-administrated properties....The Santa Susana tarplant (*Deinandra minthornii*) is state-listed as rare."¹⁷ Therefore, Impacts 6 and 8 only encompass the same, single plant. Further, The Santa Susana tarplant is a native plant species, and therefore a part of the native vegetation community, rendering Biology Impact-6: Santa Susana tarplant and Biology Impact-1: Impacts to native vegetation communities duplicative.

The positive impacts from cleaning up the contamination at the site are severely understated and lacking in breadth. A prime example of this can be found in the Health and Safety section, in which health impacts to those living off site due to offsite migration of toxic chemicals and radionuclides is not acknowledged as an impact despite the numerous health studies that identify it as such.¹⁸ The one Biological impact deemed *beneficial* (Biology Impact-5) receives no

¹³ NASA, Final SEIS, p. 3-13. "The TCP and the Indian Sacred Site are assumed to include the entirety of SSFL, so the impacts to each would be similar. The archeological district identified by the Santa Ynez Band of Chumash Indians also includes the SSFL area."

¹⁴ NASA, Final SEIS, p. 3-13

¹⁵ NASA, Final SEIS, Table 3.1-3, "Summary of Cultural Resource Impacts"

¹⁶ NASA, Final SEIS p. 3-46

¹⁷ NASA, Final SEIS p. 3-23.

¹⁸ University of California, Los Angeles, "Epidemiologic Study to Determine Possible Adverse Effects," 1997.

such treatment, no listing of the subtle gradations within the many ways in which “Reduction in contamination” would impact biological resources. NASA is clearly cherry picking the impacts from cleanup activities to give bias towards a weak cleanup scenario.

Impact Scores Have No Basis and Are Biased To Exaggerate Negative Impacts

The base number of impacts described in the previous section are multiplied by an Impact Score (ranging from -3 to +3), purportedly correlating with the degree of harm or benefit associated with the impact. However, in assigning Impact Scores, NASA largely failed to assess accurately the impacts to resources that would occur under the various cleanup alternatives. One instance of this is that NASA ignores the increased positive impact that the AOC cleanup would have on Water Quality, Health and Safety, and Biological Resources compared to the other cleanup alternatives, and gave the same Impact Score to each cleanup alternative. In fact, for all of the beneficial impacts identified, NASA strategically gave each cleanup alternative the same impact score -- glossing over the huge variance in impacts from the different cleanups, and stripping them of proportional influence on the final calculation to determine the Environmentally Preferred Alternative.

The impact score is a multiplier in the equation used to determine the final scores for cleanup alternatives comparison, so understanding the methodology by which impact scores are assigned is important. NASA does not provide justification or basis for its assignment of impact scores, many of which do not seem to accord with the facts. For instance, under the Cultural section, the AOC cleanup is given a “Significant Negative” score of -3, despite the explicit provisions in the AOCs that protect Native American artifacts.

Further, under the Biological category, Biological Impact-5: Reduction in contamination is deemed to be of “minor” benefit to species at the site, when in reality the removal of toxins from their environment could clearly be of huge benefit to the health of the individual species and environment as a whole. Similarly, all the other Biological Resources impacts are given negative scores under the AOC cleanup, which ignores the net *benefit* that the complete cleanup of

<http://www.rocketdynecleanupcoalition.org/files/UCLA-Rocketdyne-Radiation-Study-Sept-1997-release.pdf>;

University of California, Los Angeles, “Epidemiologic Study to Determine Possible Adverse Effects to Rocketdyne/Atomics International Workers from Exposure to Selected Chemicals,” 1997.

<http://www.rocketdynecleanupcoalition.org/files/UCLA-Rocketdyne-Chemical-Study-Jan-1999.pdf>;

University of California, Los Angeles, “The Potential for Offsite Exposures Associated with Santa Susana Field Laboratory, Ventura County, California,” 2006.

<http://www.rocketdynecleanupcoalition.org/resources/documents/potential-for-offsite-exposures-associated-with-santa-susana-field-laboratory/>;

Hal Morgenstern et. al, “Cancer Incidence in the Community Surrounding the Rocketdyne Facility in Southern California,” 2007.

<http://www.rocketdynecleanupcoalition.org/files/UofM-Rocketdyne-Epidemiologic-Study-Feb-2007-release.pdf>.

toxins would provide to sensitive species at the site, and further ignores the immense potential for revegetation to mitigate almost entirely against the listed negative impacts.

The Water Quality category suffers from similar obfuscations, with the AOC cleanup claimed to provide some “moderate” benefit to water quality but mostly to have negative impacts; again, it is unsupportable to claim that the removal of vast amounts of toxins would have a worse impact on water quality than the impact of leaving those toxins there.

The Health and Safety category follows this same pattern, with only two of the impacts given a +3 “significant beneficial” score, and the rest of the impacts falling somewhere in the negative scores. It has been well-documented that toxins known to cause severe human health problems exist on-site in large quantities, and that these toxins migrate offsite. Thus, to assign impact scores that give the impression of a net negative impact on Health and Safety from the cleanup is clearly spurious.

Finally, and importantly, the benefits from the AOC cleanup alternative are once again understated in the impact scores. All of the cleanup alternatives, from the AOC down to the Recreational cleanup, are given identical impact scores for their beneficial impacts to Biology, Water Quality, and Health and Safety. Yet the AOC cleanup would remove vastly more contamination from the site than would any of the other cleanups, and so would have a much higher beneficial impact to the health and wellbeing of the community and environment. NASA has chosen to misrepresent this fact and to instead massively understate the positive impacts of doing the cleanup (and massively overstate the negative impacts) in its assignment of impact scores.

Conclusion

The Draft SEIS did not include Appendix 2G, the table showing the calculation of preferred alternatives, nor did it include sections 2.5 and 2.6, which discuss the selection of the environmentally preferred alternative and the agency preferred alternative, respectively. Section 2.5 and 2.6 and Appendix 2G are arguably the most consequential aspects of the SEIS, because they determine which cleanup scenario is chosen as preferred. Despite this, the analysis presented there was not included in the Draft SEIS, meaning no meaningful public review or comment was able to occur on those key--and inaccurate--claims.

NASA’s “Agency Preferred Alternative,” which would leave the great majority of the contaminated soil and acreage not cleaned up, would violate the legally binding AOC it signed, is beyond NASA’s authority to choose because under RCRA that authority rests with its regulator, is based on grossly incorrect methodology and inputs, and would result in placing public health and safety at risk. NASA’s intense devaluation of public health and safety as an impact from its contamination and from its efforts to breach its cleanup obligations has been dramatically demonstrated in the Final SEIS. NASA should reverse course and commence

forthwith to expeditiously comply, fully and completely, with the cleanup agreement it executed in 2010.