

RECORD OF ENVIRONMENTAL CONSIDERATION

1. Description of the Proposed Action: The proposed test site is just west of the Ellison Onizuka Center for International Astronomy (aka Hale Pohaku) at the mid-level elevation of approx. 9,000 ft on the southern slope of Mauna Kea. It is in an area currently used for game bird hunting, and has existing 4-wheel drive roads. A request has been made to have the Mauna Kea Support Services road crew (who maintain the summit access road) to grade the existing 4WD road into the test site. They have the equipment on site and have the unique experience and expertise for grading on cinder roads at altitude. This infrastructure improvement will benefit the other users of this area after the test period.

This will be a very low impact test. The SCARAB robot is slightly larger than a desk, akin to a golf cart. It will be controlled via tether connected to a computer interface with a human operator.

The proposed action is in support of NASA's Constellation Program. NASA has prepared the Final Constellation Programmatic Environmental Impact Statement (PEIS) to address the potential environmental impacts associated with continuing preparation for and implementing the Constellation Program. The Constellation Program encompasses NASA's efforts to extend the human presence throughout the Solar System as the President outlined in his Vision for Space Exploration. The Constellation Program is focused on providing the capability to transport humans and cargo to the moon, in support of lunar exploration missions, and to the International Space Station (ISS), while future efforts would support missions to Mars and beyond. The Final Constellation PEIS was developed in accordance with the National Environmental Policy Act (NEPA) and NASA's regulations for implementing NEPA (14 CFR 1216.3). The Final Constellation PEIS includes a high-level discussion of the systems identified as necessary to meet the Constellation Program goals.

2. Purpose and Need: Components of the project include:

- a. Operate a computer-controlled robot in field conditions in a lunar analog terrain, utilizing new technology wheels that are low impact and non-rutting.
- b. Using the above robot, proceed to a prepared area (buried 6 inch PVC pipe filled with tephra) and execute a core drilling sample extraction.
- c. Transfer the extracted tephra into a portable in-situ resource utilization (ISRU) processing plant that is located on the robot.
- d. This ISRU project (entitled RESOLVE) will then extract the oxygen from the tephra and safely store it in the form of water.
- e. Small scale field experiments will be done on the processed tephra to determine suitability for future space uses (e.g. breathing oxygen, oxidizing materials for energy extraction).
- f. The processed tephra will then be replaced at its natural location, where the (reduced) tephra will then re-absorb oxygen from the air and water from rain events and be restored to its original condition.

3. Anticipated date and/or duration of proposed action: Project Dates are October 27, 2008 to November 21, 2008

4. The above action is adequately covered in an existing EA/EIS:

Programmatic Environmental Impact Statement for the Constellation Program, January 2008.

5. The above action has no environmental impact as indicated by the results of an Environmental Analysis Checklist and/or a detailed Environmental Analysis. (Attach Checklist or Environmental Analysis as applicable).

SIGNED:


CXP Environmental Manager

Date 10.20.08