

## Standard Operating Procedure 02

# Inspection of Vehicles, Construction Materials, Scientific Equipment, & Supplies

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## 1. Purpose and Scope

This standard operating procedure (SOP) is designed to reduce the risks from the introduction of invasive species to University of Hawai'i (UH) managed lands. As outlined in the 2009 Maunakea Comprehensive Management Plan (CMP), inspection and cleaning of construction and scientific equipment is required prior to traveling above the Saddle Road / Maunakea Access Road junction. This SOP refers to loads, deliveries, packages, construction materials, scientific tools and equipment that will be used on Maunakea in addition to the baseyard or parking lot where vehicles and equipment are kept. This SOP only applies to UH Managed lands on Maunakea, regardless of destination (i.e. it applies to users accessing the Natural Area Reserve through UH Managed lands). Cleaning of vehicles with 2 axles or less and vehicles kept in lots with irregular grounds keeping are described in *SOP 01: Cleaning of Vehicles and Personal Belongings*.

Guidelines within this SOP include separate requirements for small containers and packages, packages or containers stored outdoors or indoors on an unpaved surface (including construction materials, aggregate, equipment, and supplies), equipment stored or staged at Halepōhaku, containers or packages stored indoors, and vehicles and equipment kept in baseyards or parking lots that do not have regular grounds keeping. These guidelines only apply to vehicles that are engaged in an activity covered by a permit (CDUP, Special Use, etc.).

## 2. Baseyard and Parking Lot Guidelines

These guidelines are required even if other inspection requirements above do not apply. Guidelines are focused on the parking areas in which all vehicles and equipment are kept. Regular grounds keeping and invasive species control is highly recommended.

**Regular (at least every 30 days or more frequently) grounds keeping and invasive species control of parking lots and vehicle or equipment storage areas is defined as:** a) grass and other vegetation in and adjacent to vehicle parking areas cut and maintained at a maximum length of approximately 6 inches (or typical vehicle ground clearance), b) overhanging vegetation is minimized (leaf and other materials do not accumulate in vehicles or on equipment), and c) non-native species are controlled (specially arthropods (ants, spiders, and wasps) and other species adapted to dry climates.

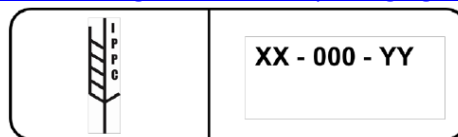
When regular grounds keeping and invasive species control does NOT occur, requirements outlined in this plan are increased to reflect that:

- 1) All vehicles and equipment must be cleaned **at least weekly**.
- 2) All vehicles, equipment, and deliveries – regardless of size, use, number of axles, or other characteristics – **must be inspected by a DLNR-approved biologist before each use on Maunakea**. This includes staff vehicles that travel up to the mountain everyday.

## 3. Preparation

Those shipping or traveling to University managed lands are **encouraged** to:

- Review International Standards for Phytosanitary Measures #23 “Guidelines For Inspection”, prepared by the Secretariat of the International Plant Protection Convention, <https://www.ippc.int/publications/guidelines-inspection>.
- Self-inspect deliveries at point of origin. This does not alter inspection requirements below.
- Maintain clean storage, workshop, and shipping locations that are free of invasive plants, insects and other animals.
- Use **bark-free wood** as identified in International Standards for Phytosanitary Measures (ISPM) #15 “Regulation of Wood Packaging Material in International Trade”, prepared by the Secretariat of the International Plant Protection Convention (IPPC), <https://www.ippc.int/publications/regulation-wood-packaging-material-international-trade-0>.



Example mark (above) found on wood meeting the treated **and** bark-free requirement of ISPM #15. This mark is not required, but is encouraged (treatment to ISPM #15 standards is not available in the State of Hawai'i as of January 2015).

- Maintain regular (at least every 30 days) grounds keeping and invasive species control in areas where vehicles and equipment are kept. See *Section 2* above for details.
- Plan accordingly as an inspection by a DLNR-approved biologist may be required. Maintain a location for inspections that is free of plant, animal, or earthen material; regularly treated for invasive species; with suitable cleaning supplies (vacuums, running water, etc.) available to take remedial action when concerns are identified during inspections.

When shipping supplies and equipment to UH managed lands, operators are **required** to:

- **Minimize materials** and dunnage included to the minimum required for safe and secure delivery. If minimizing materials is not possible, then be prepared to remove packing materials for any inspection.
- **Clean vehicles and deliveries:** Cleaning includes removal of all plant, animal, and earthen materials on supplies and equipment prior to arrival on UH managed lands. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for cleaning details.
- **Maintain vehicles and equipment:** Ensure that equipment and vehicles are in good working condition and are free of leaks (hydraulic, transmission, radiator, fuel, motor oil, etc.).
- **Once cleaned and inspected,** if diverted to another job outside of UH managed lands, vehicle and cargo must be re-cleaned and re-inspected prior to returning to Maunakea. See *SOP 01: Cleaning of Vehicles and Personal Belongings* and this SOP for details.
- Schedule a re-inspection if **equipment is stored at Halepōhaku:** Those that plan on staging or storing equipment or supplies at Halepōhaku, destined for the summit, for 4 days or more are required to **schedule a re-inspection** of the staged item(s) before proceeding above Halepōhaku. Please plan accordingly.

## 4. Equipment, Materials, Supplies, & Load Guidelines

### 1) Aggregate materials:

- a) Aggregate and fill materials **must** be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials. The load itself **and** the site where aggregate and fill materials were extracted or stored must both be inspected. The vehicle carrying the aggregate or fill material and tools for handling/manipulating aggregate must follow vehicle procedures stated in *SOP 01: Cleaning of Vehicles and Personal Belongings*, as well as this SOP, and be inspected by a DLNR-approved biologist. If plant, animal, or earthen materials are found in aggregate or fill materials, the vehicle and entire delivery **must be re-inspected and approved** (by a DLNR-approved biologist) before use on Maunakea. Aggregate and fill materials must be inspected within 4 days (96 hours) prior to arrival on University lands.

### 2) Items Stored Outdoors or Indoors on an Unpaved Surface (not including shipping and port holdings)

Items stored outdoors, or indoors on unpaved surfaces, have a greater chance of hosting invasive species. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for cleaning details. An approved inspection certificate is required to proceed onto UH managed lands.

#### a) Construction Materials and Equipment (i.e. supplies, vehicles with three (3) or more axles, lumber, steel, wiring or cables, earth moving equipment, etc.):

- i) **Cleaning:** All construction materials and equipment **must** be cleaned before arrival onto UH managed lands.
- ii) **Inspection:** All construction materials and equipment stored outdoors or on unpaved surfaces **must** be *inspected by a DLNR-approved biologist* after cleaning. If plant, animal, or earthen materials are observed, then the cleaning and inspection process must be repeated. All construction supplies and materials **must** be free of plant, animal, and earthen materials before arrival on UH managed lands. Inspections must occur within 4 days (96 hours) prior to arrival on University lands.

#### b) All Other Containers or Packages stored outside or on an unpaved surface, regardless of size:

- i) **Cleaning:** All items stored outside or indoors on an unpaved surface for at least 4 days **must** be cleaned before arrival on UH managed lands.
- ii) **Inspection:** All items, regardless of size, stored outside or indoors on an unpaved surface **must** be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials.

Large and small items must be inspected within 4 days (96 hours) **prior to arrival** on UH managed lands.

- 3) Stored Indoors (items stored outdoors or indoors on an unpaved surface must refer to #2 above):**
- a) Small containers/packages (maximum 4m (156") girth and not to exceed 90kg (200 lbs)):**
- i) Cleaning:** All small containers or packages (less than or equal to 4m (156") girth, 90kg (200 lbs)) stored indoors **should** be cleaned before arrival on UH managed lands.
  - ii) Inspection:** all small containers **must** be inspected for plant, animal, and earthen materials by *the carrier* (i.e. Observatory staff) no more than 4 days (96 hours) **prior to arrival** on University lands. Reporting is not necessary unless plant, animal, and or earthen materials are encountered.
- b) Large containers / packages (shipping containers, open freight, and large packages (greater than 4m (156") girth and/or weighing more than 90kg (200 lbs)):**
- i) Cleaning:** All large containers stored inside **must** be clean before proceeding above the Saddle Road junction and arrival on UH managed lands.
  - ii) Inspection:** All large containers, packages, and materials **must** be *inspected by a DLNR-approved biologist* for plant, animal, and earthen materials. Items must be inspected within 4 days (96 hours) prior to arrival on UH managed lands.
- 4) Staged or stored outdoors at Halepōhaku for 4 days or more, and destined for the summit**
- The Halepōhaku area has multiple ant (*Cardiocondyla kagutsuchi*) populations, and staging or storing equipment outdoors at Halepōhaku for 4 days or more increases the threat of contaminating stored item(s). Therefore, items stored outdoors for 4 days or more **must** be re-inspected prior to proceeding above Halepōhaku, including storage on a vehicle.
- i) Inspection:** Items destined for the summit that is staged or stored outdoors or on a vehicle at Halepōhaku for 4 days or more **must** be *inspected by a DLNR-approved biologist* for animal plant, and earthen materials. These items must be inspected within 4 days (96 hours) prior to proceeding above Halepōhaku.
- 5) Routine Deliveries and Equipment Use**
- Many deliveries (such as water, portable toilets, compressed gasses, Keck mirror segments, etc.) and equipment uses (such as MKSS utilities snow removal, road grading, etc.) occur regularly. OMKM will work with these routine entities to certify that equipment is stored in invasive species free sites and appropriately maintained. This invasive species maintenance at their storage site is the responsibility of the partner entity, not OMKM.
- i) Cleaning:** All applicable cleaning criteria still apply. See *SOP 01: Cleaning of Vehicles and Personal Belongings* for details. Portable toilet contents may only include: hand cleaning solution (i.e. waterless hand sanitizer), toilet paper, and non-formaldehyde based deodorizing solution; and must be clean and unused with a secondary door retainer.
  - ii) Inspections with routine entities include 3 phases:**
    - (1) Site Inspections:** After an initial meeting and program review with OMKM, all company-owned staging or storage sites used by the company will be *inspected by a DLNR-approved biologist* at least annually and without advance notice. Sites must be free of invasive plant species (plant and animal), and if species are present a treatment plan devised and implemented by the partner entity, approved by OMKM, and treatment records shared as described in the treatment plan.
    - (2) Vehicle Inspections:** Highway licensed vehicles will be inspected during the site inspection(s) and again at random times on UH managed lands, as opposed to concurrent

with each entry onto UH managed lands. Those failing inspections on UH managed lands will be subject to penalties outlined in *SOP 01: Cleaning of Vehicles and Personal Belongings*.

- (3) Equipment & Cargo Inspections:** At present the only potential cargo suited for routine delivery is water, compressed gasses, portable toilets, and Keck mirror segments. The only equipment (unlicensed vehicles) suitable for routine delivery processes is MKSS road maintenance equipment permanently stored at Halepōhaku. All equipment and cargo is subject to random inspection on UH Managed lands.
- iii) Anyone wishing to approve other vehicles, cargo, or equipment for routine delivery should contact OMKM.

## 5. Corrective Action

If plant, animals, or earthen materials are observed on vehicles, equipment, or supplies on UH managed lands at any time, the operator is to stop, confine the material(s), remove the contaminated item(s) from UH managed lands, and report any remedial actions taken to OMKM within 12 hours. This requirement does not extend to typical road dust, etc. that accumulate while on UH managed lands. Containment of insect, soil, or plant material(s) may be accomplished by placing it in a sealable plastic, glass, or similar container to share with OMKM for identification. Do not brush it off onto the ground, roadside, or into the trash. The contaminated package or delivery is not permitted to proceed to University lands, until re-inspected and *approved by a DLNR-approved biologist*.

Remediation may be required during or after inspections due to evidence of plant, animal, or earthen materials on the cargo or vehicle. Typically, remediation is minimal and can include sweeping or vacuuming the cargo to ensure removal or unwanted materials. However, some remediation may require more extensive efforts such as use of insecticide foggers, replacement of wooden materials, or pressure washing of equipment or vehicles. See Sections 2 and 3 for guidelines that would aid in the prevention of extensive remediation requirements.

## 6. Inspectors

As stipulated in the 2009 Maunakea Comprehensive Management Plan, inspectors must be a biologist, recommended by OMKM, and approved by the Department of Land & Natural Resources (DLNR). To be recommended by OMKM, a biologist must:

- 1) Attend Maunakea resource orientation,
- 2) Review the Maunakea Invasive Species Plan and all associated materials, including IPPC information.
- 3) Participate in one or more inspections with OMKM invasive species program staff for training purposes.
- 4) Demonstrate knowledge, training, and understanding of invasive species.
- 5) Be able to identify common invasive species threats.

DLNR-approved biologists for Maunakea invasive species inspections are:

Name	Title	Date Approved
All Inspectors	Hawai'i Dept. of Agriculture, Plant Quarantine Branch	Nov. 5, 2013
OMKM Natural Resource Staff	Office of Maunakea Management	Nov. 5, 2013
BIISC Biologists	Big Island Invasive Species Committee	Nov. 5, 2013
UH Hilo TRAC Lab Entomologists	UH Hilo	Nov. 5, 2013
Hawaii Ant Lab Biologists	Hawaii Ant Lab	Nov. 5, 2013

For more information on who may inspect or to schedule an inspection, visit <http://www.malamamaunakea.org/inspections>, email [inspections-grp@hawaii.edu](mailto:inspections-grp@hawaii.edu), or call 808-933-0734.

## 7. Inspection Process

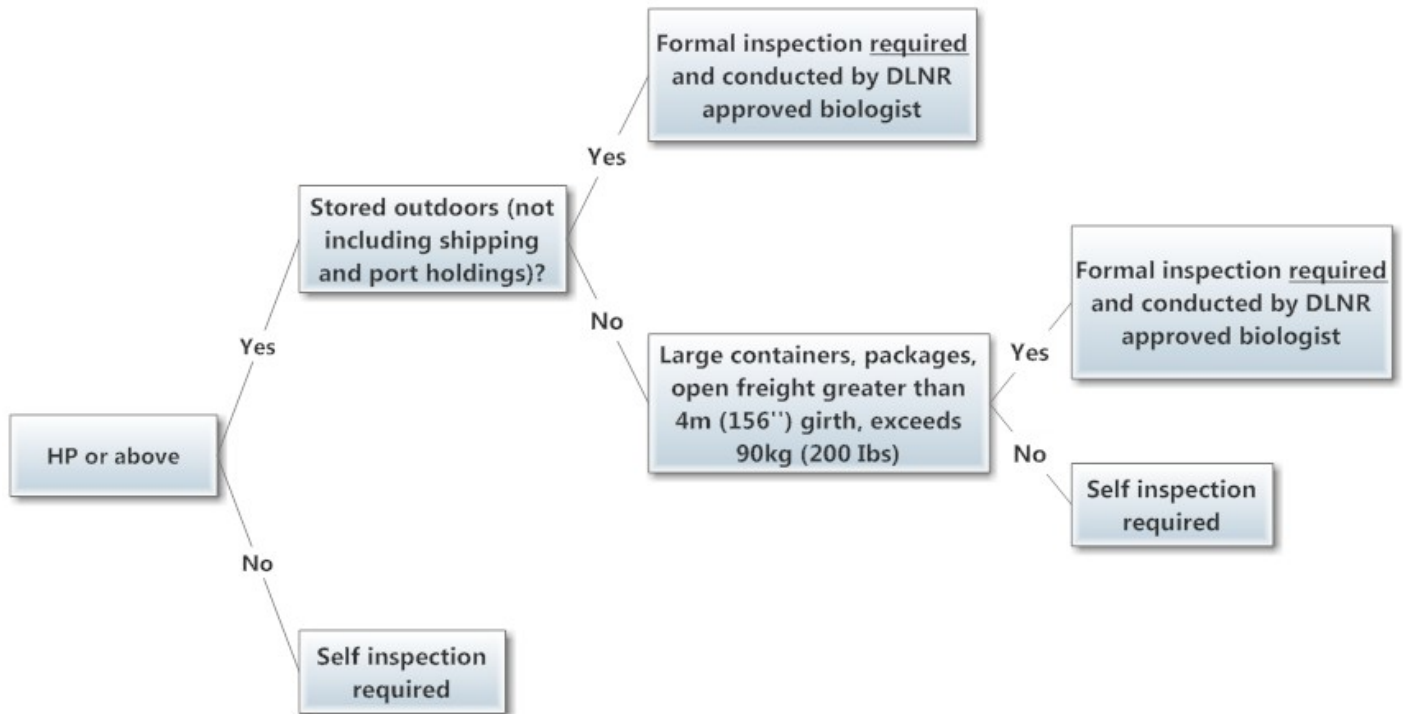
Inspectors look for plant, animal, and earthen materials, as well as hydraulic, transmission, radiator, fuel, and oil leaks on the equipment or vehicle. Inspecting for these items help to ensure the protection of both natural and cultural resources on Maunakea. If the entire delivery can be visually observed and physically accessed by the inspector, then a visual inspection will typically be conducted. Inspectors may however, choose to use bait techniques with such a delivery. The entity requesting the inspection is responsible for identifying an inspection location that is free of plant, animal, or earthen material; regularly treated for invasive species; and has cleaning supplies (vacuums, running water, etc.) available to take remedial action when concerns are identified.

If the entire delivery cannot be visually observed or physically accessed by the inspector, or if the delivery was stored in a contaminated location, or stored for more than 3 months outside, baits will be used as an attractant. Users should expect a typical inspection duration with baits of at least 1 hour. Baits will combine attractants (jam, spam, and peanut butter [carbohydrate, protein, lipid]) using vials or cards, with at least 5 samples/traps (each with all 3 baits) per delivery.

Inspections are a commercial activity and are not permitted on road shoulders or private property without landowner permission. Inspectors may deny delivery of loads, cargo, or vehicles when the inspection location is known to be contaminated (for example, Argentine Ants (*Linepithema humile*) are known to be present at the Saddle/ Access Road junction). Except for equipment and materials stored at Halepōhaku, inspections must occur below the Saddle Road Junction. Inspections will not occur on State or County road shoulders, State or County Parks, Department of Hawaiian Home Lands, etc. as permission has not been granted.

Items must be inspected within 4 days (96 hours) prior to arrival on UH managed lands.

## 8. Decision Tree for Inspections



## 9. Requesting Inspections and Reporting

Inspections are both requested by users with results of inspections by DLNR-approved biologists recorded at <http://www.malamamaunakea.org/inspections>. Each observatory has management access to generate reports of inspection requests and results of inspections conducted by DLNR-approved biologists. OMKM will prepare annual summaries to be included in the Invasive Species Annual Report. Reporting of inspections conducted by anyone other than DLNR-approved biologists is not required.

**Invasive Species Inspection Certificate**

**XXXX**

Date Inspected: \_\_\_\_\_

Inspector: \_\_\_\_\_

Delivery Must Occur by: \_\_\_\_\_

Destination: \_\_\_\_\_

Vehicle License (or description): \_\_\_\_\_

Cargo Description: \_\_\_\_\_

Cargo inspected at point of origin (Y/N/?): \_\_\_\_\_ Comments/Remediation: \_\_\_\_\_

Delivery is                      **Approved**        -----        **Rejected**                      (circle one)

**Inspections valid only for stated vehicle, cargo, destination, & time frame (96 hours/4 days).  
Please provide this certificate to facility manager (Construction Site Manager).**

For more information please visit: [www.malamamaunakea.org/inspections/](http://www.malamamaunakea.org/inspections/)

**Invasive Species Inspection Certificate**

**XXXX**

Date Inspected: \_\_\_\_\_

Inspector: \_\_\_\_\_

Delivery Must Occur by: \_\_\_\_\_

Destination: \_\_\_\_\_

Vehicle License (or description): \_\_\_\_\_

Cargo Description: \_\_\_\_\_

Cargo inspected at point of origin (Y/N/?): \_\_\_\_\_ Comments/Remediation: \_\_\_\_\_

Delivery is                      **Approved**        -----        **Rejected**                      (circle one)

**Inspections valid only for stated vehicle, cargo, destination, & time frame (96 hours/4 days).  
Please provide this certificate to facility manager (Construction Site Manager).**

For more information please visit: [www.malamamaunakea.org/inspections/](http://www.malamamaunakea.org/inspections/)



**OMKM Invasive Species Inspection Data Sheet**

<b>Inspector</b>	<b>Inspection Location</b>	<b>Date/Time of Inspection</b>	<b>Expiration Date/Time of Inspection</b>
OMKM approved inspection biologist	Where was the inspection conducted?	When was inspection conducted?	Inspections are valid for 4 days (96 hours).
<b>Destination</b>	<b>Facility Affiliation</b>	<b>Facility Representative</b>	<b>Vehicle Owner</b>
Inspections are for a specific destination.	Who is this inspection for (for example: TMT, even if the cargo is destined for Keck)?	Who was present from the facility, contractor, etc.?	Identify owner: examples: private, Subaru, Isemoto, Oahu AirConditioning, etc.
<b>Vehicle Lic.</b>	<b>Cargo Description</b>	<b>Inspection @ Origin?</b>	<b>Bait (Attractant) used?</b>
If applicable, identify License #. If unlicensed, describe.	Briefly describe cargo, if any, applicable to inspection.	Was the cargo inspected prior to shipping to Hawaii?	Identify baits used (i.e. Spam, Peanut Butter, Jam, Cat food, etc.), duration, & quantity
<b>Concerns Identified</b>	<b>Remediation Taken</b>	<b>Re-inspection</b>	<b>Approved for delivery</b>
Identify if any concerns were identified in the inspection (vehicle, cargo, operator, inspection site, etc.).	Were any remedial efforts made during inspection to pass? If so, describe in detail. As opposed to a delivery rejected for treatment and subsequent re-inspection.	Was this a re-inspection following up from a previously rejected delivery? Yes or No	Was the delivery approved or rejected? Approved or Rejected
Certificate # _____			Data Entered: _____

## 10. Emergencies

In the event of an emergency, such as telescope instrument failure with delivery of replacement parts the same day/night, the entity operating under a permit must still *first* submit the inspection request in the online system: [www.malamamaunakea.org/inspections](http://www.malamamaunakea.org/inspections) and clearly state in the comment field the nature of the emergency, vehicle used in delivery, and describe the cargo delivered (or via email to [inspections-grp@hawaii.edu](mailto:inspections-grp@hawaii.edu) if the online system is unavailable). OMKM may follow up with on-site inspections of the delivery or vehicle, and will summarize emergency deliveries in annual reporting.

Health and safety emergencies are exempt from all requirements and no reporting is necessary.

## 11. Revision History Log

New Version #	Version Date	Author	Changes Made	Reason for Change
1.0	May 2012	FLK	Original Procedures.	
1.1	Feb. 2015	JK	Consistent with comprehensive plan.	
1.2	Feb. 2016	JK	Address unmaintained grounds and parking lots.	Increased risk associated with unmaintained grounds.
1.3	Jan. 2017	DY	Included paragraph on inspection remediation	Inclusion of fogger use
Add rows as needed for each change or set of changes associated with each version.				

## 12. Recommended Citation

Kirkpatrick, J.; Yogi, D.; F.Klasner. 2017. *Standard Operating Procedure 02, Inspection of Vehicles, Construction Materials, Scientific Equipment, & Supplies, v1.3*. 10 pp. In: Vanderwoude, C., F. Klasner, J. Kirkpatrick and S. Kaye. 2015. Maunakea Invasive Species Management Plan. Technical Report No. 191. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i.