



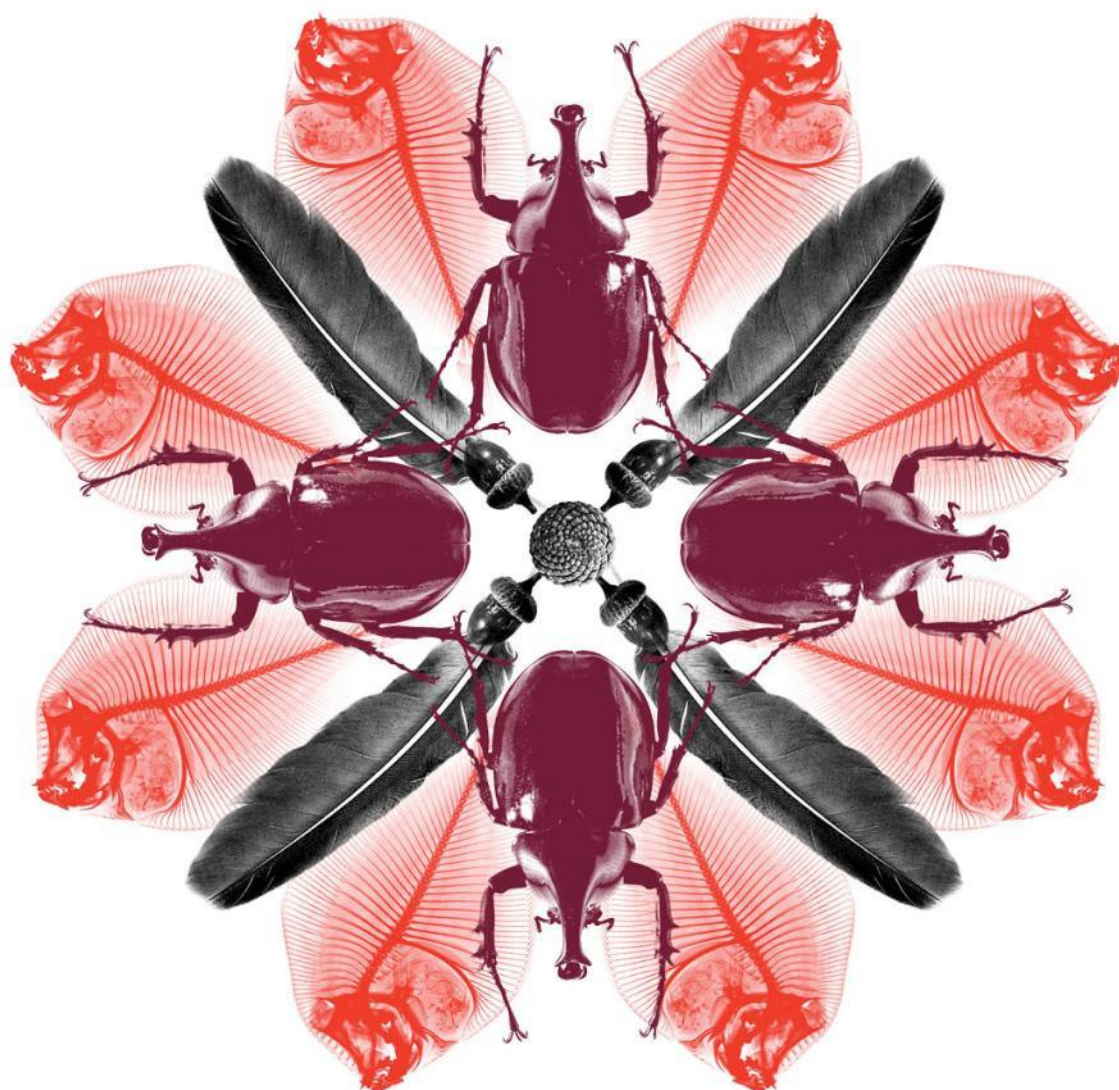
Australian Government  
Department of Agriculture  
and Water Resources

# Machinery Cleaning Guide - Articulated Dump Trucks

**Biosecurity**

Publication series

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# Cleaning guidelines




## Cabin

Description	Images
<p>The new style of articulated dump truck Cabin. Cabin door rubbers can be contaminated and are therefore an area of concern to the department (green arrow). The engine cover is to be lifted, (red arrow), the rear radiator covers removed (blue arrow) and all handrails checked for open ends or drainage holes. On some models of articulated dump trucks, the cabin can be hydraulically tilted, allowing access to the top of the engine block.</p>	
<p>The older style of articulated dump truck cabin. Again, all cabin door rubbers (red arrow) may be of concern, the air-filter pre-cleaner (blue arrow) removed for cleaning and inspection as well as cabin vents covers (aqua arrow). The rear non-affixed panels have already been removed in this illustration (green arrow).</p>	
<p>The inside of the articulated dump cabin. The rubber floor matting is to be removed (red arrow) as well as the non-affixed floor pan, allowing access to the engine (see later illustration). Remove air-filter cover (blue arrow) for cleaning and inspection.</p>	



Description	Images
<p>Depending on the configuration, the internal door void (red arrow) may harbour biosecurity risk material and be of interest to the department. Likewise door rubbers (blue arrow) and air-conditioning vents (green arrow) have previously been found to be contaminated and therefore will need to be inspected.</p>	
<p>Biosecurity risk material has previously been found in some air-conditioning vents (red arrow) and therefore is an area of interest to the department.</p>	
<p>A close up of the air-vent cover. Remove the grill (red arrow) and check the cleanliness of the internal filter (pressurised air). The rubber cabin pedals (green arrow) have been removed for cleaning and inspection.</p>	

Description	Images
<p>Behind all internal wall linings (red arrows) is to be cleaned and accessible at the time of inspection.</p>	
<p>The internal housing of all joystick control panels (red arrows) is to be cleaned and accessible at the time of inspection. Air-conditioning vents (green arrow) are to be internally cleaned and accessible for inspection.</p>	
<p>All storage compartments (red arrow) are to be internally cleaned as well as behind any wall paneling (green arrow).</p>	
<p>Inside the cabin, the floor pan has been removed, allowing inspection access to the top of the engine block (red arrow). The blue arrow highlights where the rubber pedal covers have been removed for cleaning and inspection, while the green arrow highlights the rubber seat shroud, which must be cleaned both internally and externally. On some of the newer models the whole cabin can be hydraulically tilted sideways, allowing access to the topside of the engine block.</p>	


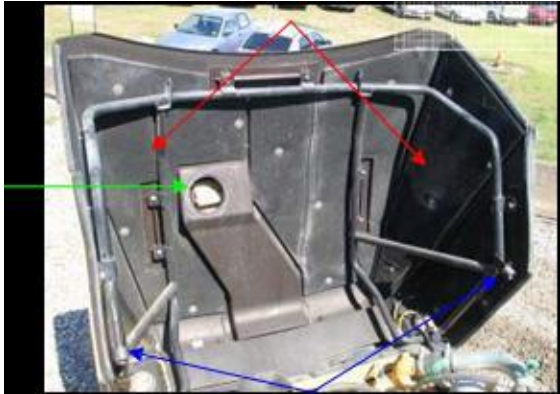
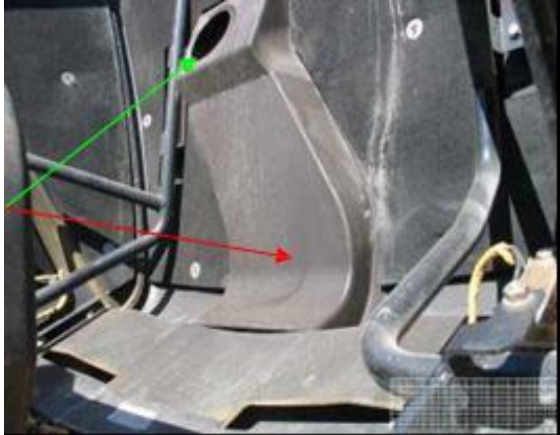
Description	Images
<p>The non-affixed floor pan behind the seat has been removed, allowing cleaning and inspection access (green arrow).</p>	
<p>The air-filter pre-cleaner (red arrow) and air-conditioning vent cover (blue arrow), require removal for cleaning and inspection.</p>	
<p>The ladder leading to the cabin may have open-ended channels as those highlighted by the green arrows. Each footstep must be thoroughly cleaned, including the underside (green arrow).</p>	

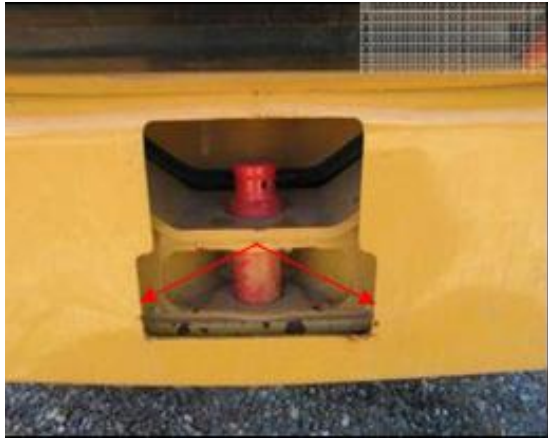





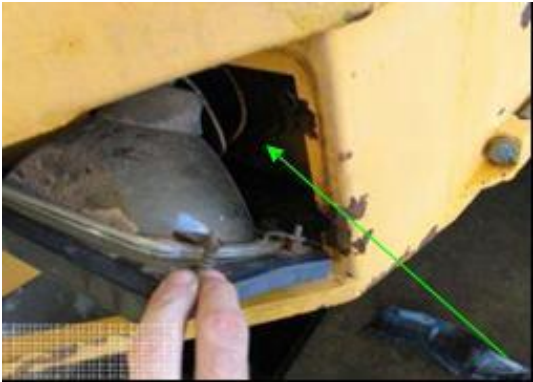


Description	Images
<p>The non-affixed radiator cover panels (red arrow), located behind the cabin. Both must be removed to allow access to the radiator and oil cooler fins, as well as the inside of the radiator shroud. All looming (green arrow) is to be checked for internal cleanliness.</p>	
<p>The radiator is not located behind the cabin on this older model, however the non-affixed covers have still been removed, allowing cleaning and inspection access (green arrow).</p>	



## Engine housing and front end


Description	Images
<p>The sleek front end of the newer model articulated dump trucks.</p>	
<p>The fibreglass engine cover tilted up, allowing access to the top of the block. All insulation foam (red arrows) is to be verified clean and check all internal tubing (blue arrows) for open ends or drainage holes. If present these will require flushing to verify cleanliness. Also clean and inspect the air intake cover (green arrow).</p>	
<p>The air intake vent (red arrow) on the inside of the engine housing. The internal surfaces are to be cleaned and inspected.</p>	

Description	Images
<p>On some models, along the front drawbar is a towing pin. Check this front drawbar for any hollow channels (red arrows).</p>	
<p>The older style engine cover with no internal insulation and numerous hollow, open-ended channels (red arrows). All require flushing to verify cleanliness.</p>	
<p>The front drawbar on the older models, as seen from the side. The red arrow highlights the access points to the hollow nose channels, which require flushing.</p>	
<p>Check for cavities behind all lights that will require access for inspection if not sealed units.</p>	

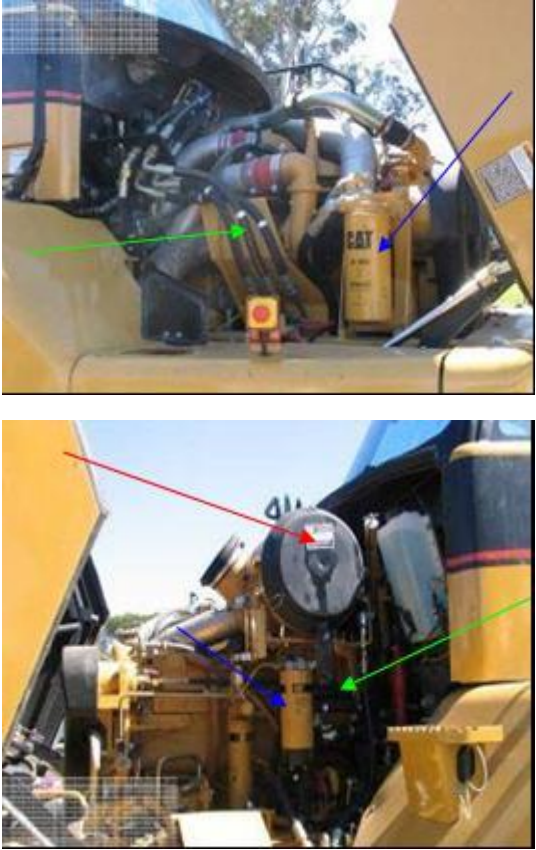
Description	Images
<p>Highlights the recess found behind the light covers (green arrow), which has been found to harbour significant amounts of biosecurity risk material.</p>	
<p>On some of the older models, drainage holes like the one highlighted by the red arrow above the headlight, require flushing to ensure cleanliness.</p>	
<p>All batteries are to be loosened from tie-down points for underside cleaning and inspection (red arrow).</p>	

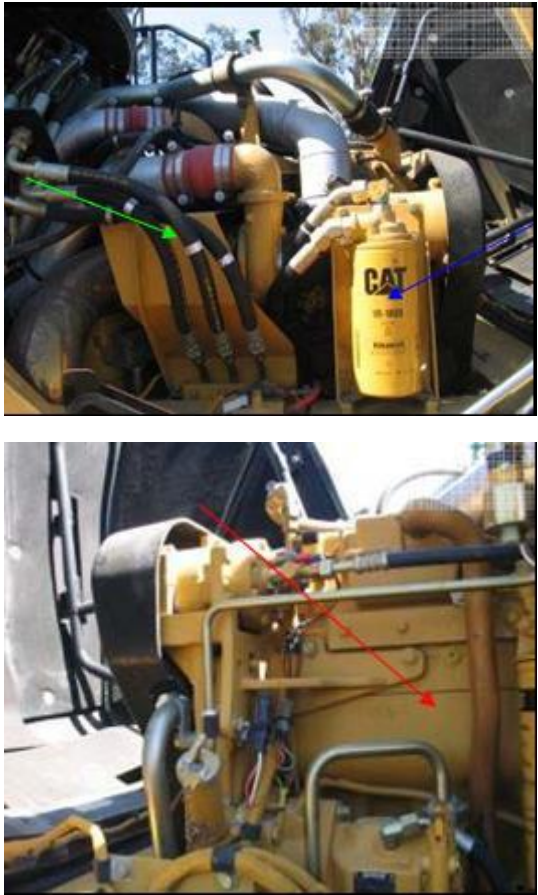

Description	Images
<p>The underside of the front drawbar. On this model the area has no hollow channels, but rather numerous nooks and ledges that all require thorough cleaning and inspection (red arrow).</p>	
<p>Check under the nose, just forward of the tyres, for hollow sections like those highlighted by the red arrows, some requires flushing to verify cleanliness.</p>	



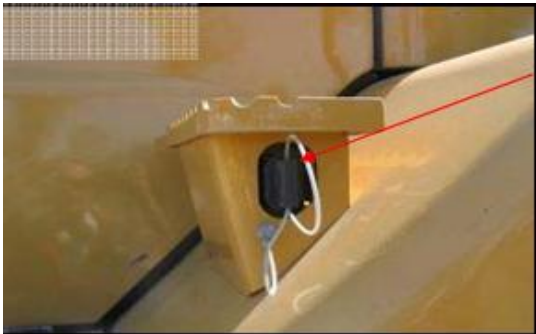


Description	Images
<p>On older models, the drainage holes (green arrows) under the nose may not be as obvious as on the newer models, however these areas also require flushing to verify cleanliness.</p>	

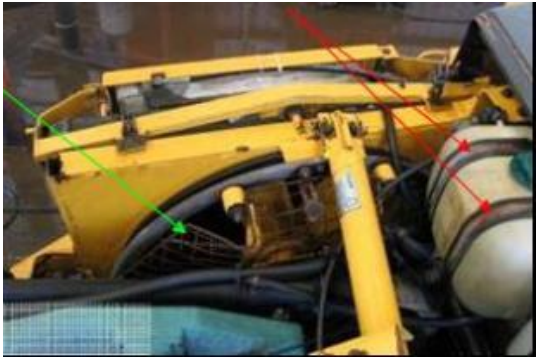

## Engine block and belly plates

Description	Images
<p>Both sides of the dump truck engine block. All hydraulic hoses (green arrows), oil filters (blue arrows) need to be thoroughly cleaned, as well as the side and front of the block and the air-filter (red arrow).</p>	 <p>The images show two views of a yellow dump truck engine block. The top image shows the side of the engine with a green arrow pointing to a hydraulic hose, a blue arrow pointing to an oil filter, and a red arrow pointing to the air filter. The bottom image shows the front of the engine with a green arrow pointing to a hydraulic hose, a blue arrow pointing to an oil filter, and a red arrow pointing to the air filter.</p>





Description	Images
<p>Both sides of the dump truck engine block. All hydraulic hoses (green arrow), oil and fuel filters (blue arrow) need to be thoroughly cleaned, as well as the side and front of the block (red arrow).</p>	
<p>On the newer models a protective plastic shroud as highlighted by the red arrow covers the harmonic balancers. It must be removed for cleaning and inspection.</p>	

Description	Images
<p>Check for recesses like the one highlighted by the green arrow, located at the side of the block in front of the cabin.</p>	
<p>The air-filter must be removed from the housing (red arrow) and cleaned. Check along the topside of the block between the tappet covers (blue arrow).</p>	
<p>This small step at the side of the engine housing must be internally cleaned and inspected (red arrow).</p>	



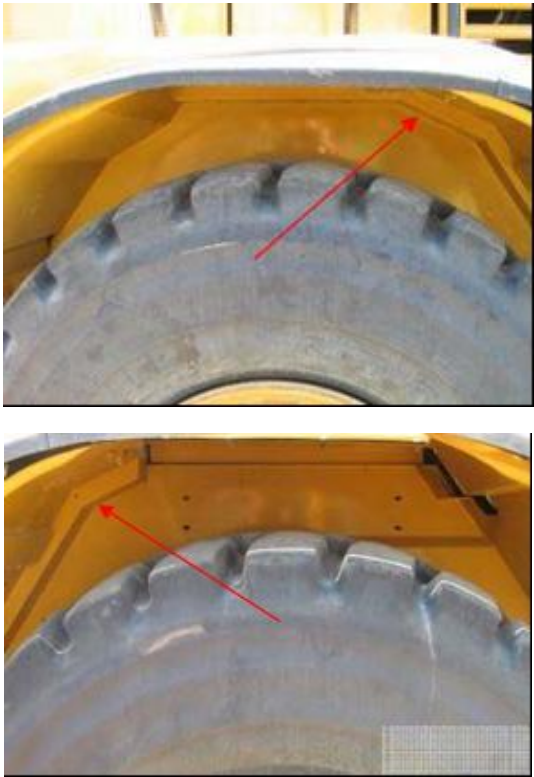
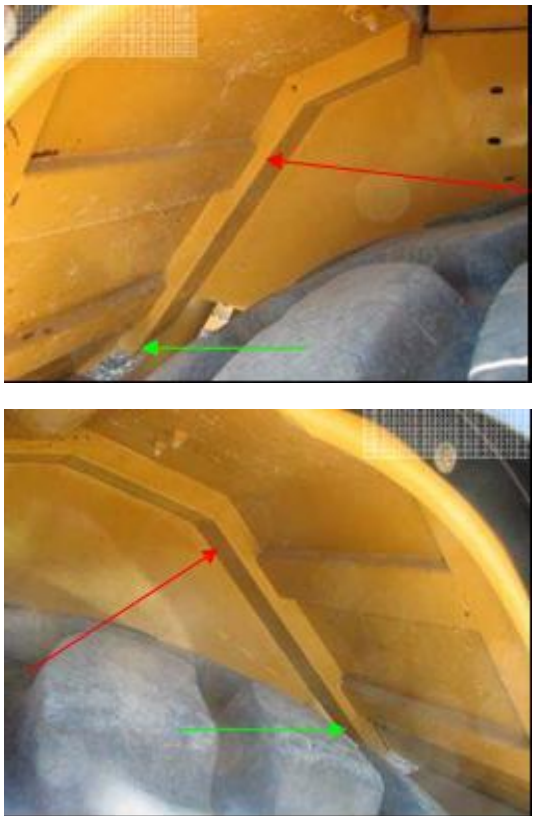
Description	Images
<p>On older models, the radiator is located in front of the cabin. For cleaning and inspection, several non-affixed radiator cover panels have been removed. The shroud grill (green arrow) is still in place, preventing access into the bottom of the shroud. Loosen bands around tanks (red arrows) and flush.</p>	
<p>The fins on both the radiator (red arrow) and oil cooler (blue arrow) must be flushed in the presence of the inspecting officer to verify cleanliness. On some models the oil cooler can be unbolted on one end and swung open on hinges to facilitate this access. The green arrow highlights the small recess between the radiator and oil cooler fins, which requires thorough inspection.</p>	

Description	Images
<p>The belly plates that are in place under the dump truck can be released on their hinges (red arrow).</p>	
<p>The underside cross-members, where the belly plates attach, can be hollow structures, (red arrow) which require flushing to verify cleanliness.</p>	

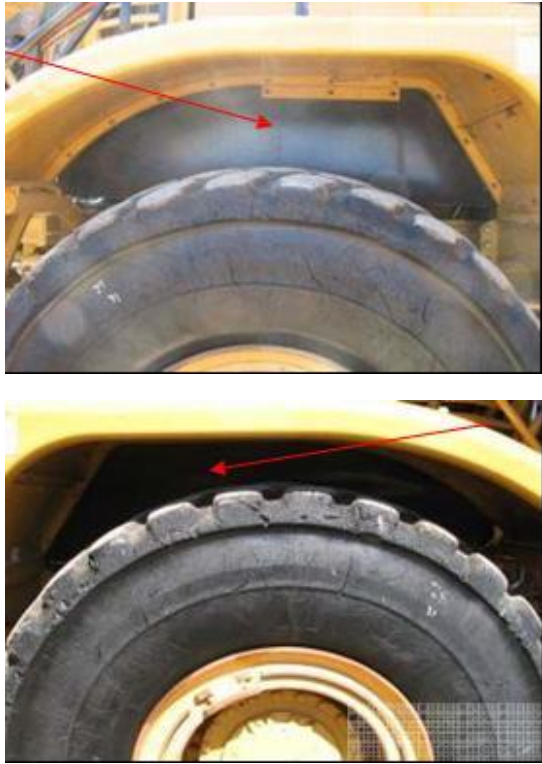


Description	Images
<p>The side of the engine block, highlighting the lip along the side (red arrow), which can harbour biosecurity risk material.</p>	
<p>The belly plates, when removed, expose the underside of the engine block for cleaning and inspection. Check the topside of the engine mounts (red arrows) for cleanliness. The foam insulation (green arrow) is also highlighted.</p>	
<p>On some older models, foam insulation (green arrows) can be found around some of the hydraulic hoses. This must be internally cleaned and inspected.</p>	
<p>The topside of the differential (red arrows) must be thoroughly cleaned and inspected.</p>	






## Wheel arches, rims & tyres



Description	Images
<p>The front wheel arches on the newer models. Check all underside channels (red arrows) for open ends, or drainage holes.</p>	 <p>The top photograph shows a close-up of the front wheel arch with a red arrow pointing to the underside channel. The bottom photograph shows a similar view from a slightly different angle, also with a red arrow pointing to the underside channel.</p>
<p>A closer view of the channels inside the front wheel arches. The channels (red arrows) have hollow openings at the bottom (green arrows) and require flushing to verify cleanliness.</p>	 <p>The top photograph is a close-up of the underside channel with a red arrow pointing to the channel and a green arrow pointing to the hollow opening at the bottom. The bottom photograph is another close-up of the underside channel, also with a red arrow pointing to the channel and a green arrow pointing to the hollow opening at the bottom.</p>



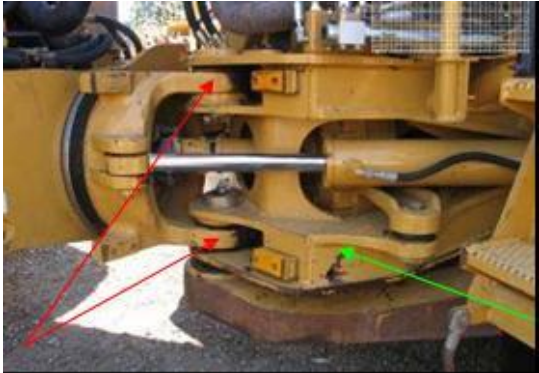
Description	Images
<p>The wheel arches on the earlier models may have black protective shrouds (red arrows) on the inside, which can be removed to facilitate the access to the side of the engine, located under the cabin.</p>	
<p>The wheel arches of the earlier models have a combination of hollow channels (red arrow) and ledges (green arrows).</p>	
<p>Highlighted by the red arrow is a small box section found inside the wheel arch. This requires checking for drainage holes underside. If spot welded, then the internal cleanliness will require verification.</p>	

Description	Images
<p>All ledges inside the wheel arch (red arrows) are to be cleaned and verified.</p>	
<p>On earlier models, the cavity (green arrow) can be found inside the front wheel, just above the chassis rail. This area can harbour a significant amount of biosecurity risk material.</p>	
<p>Examples of open and hollow sections (red arrows) located just in front of the front tyre, below the wheel arch.</p>	

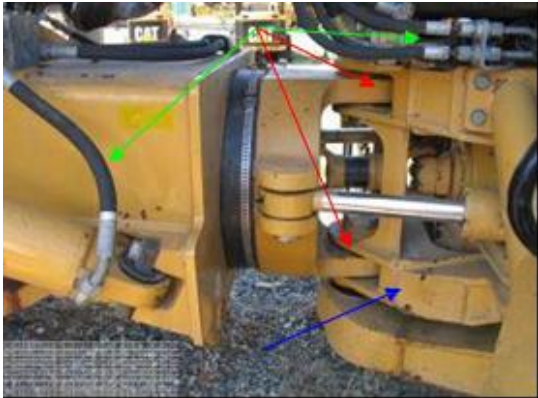

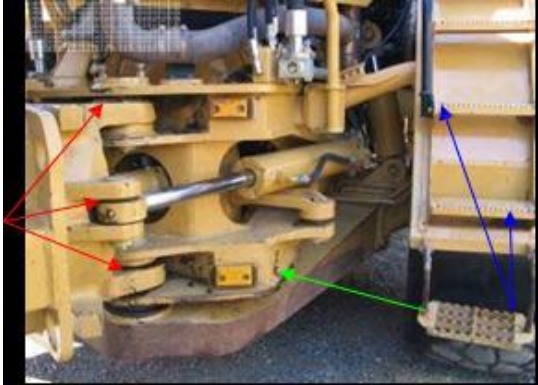
Description	Images
<p>Examples of drainage holes found in the surrounding framework, under the wheel arches. All require flushing in the presence of the inspecting officer to verify cleanliness.</p>	
<p>An example of an acceptable tyre, which can be easily cleaned and inspected.</p>	
<p>Imported tyres with cracks and splits harbour biosecurity risk material and each verified at the time of inspection.</p>	


Description	Images
<p>All non-affixed wheel rim covers (red arrow) are to be removed to facilitate the cleaning and inspection process.</p>	
<p>Congested rims like the one illustrated may require flushing as well as inspection to verify cleanliness.</p>	


## Articulated pivot point

Description	Images
<p>The articulated pivot point behind the cabin. All contaminated grease is to be removed from all pivot points (red arrows), while the green arrows highlight the drainage holes at the rear to the chassis which will be discussed later.</p>	




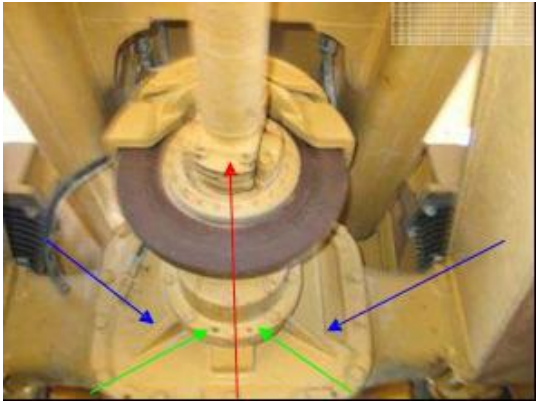

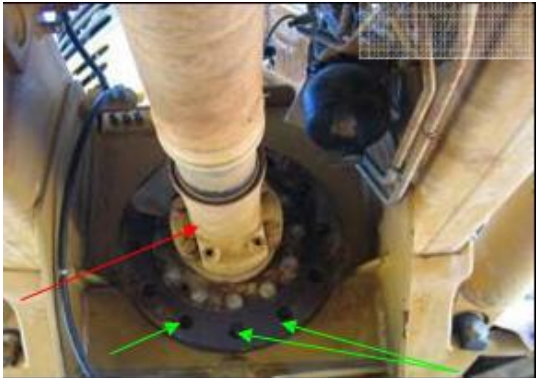

Description	Images
<p>Another view of the articulated pivot point. All contaminated grease is to be removed from the pivots (red arrows), as well as the hydraulic hoses (green arrows). The blue arrow highlights the drainage holes at the rear of the chassis rails.</p>	
<p>The universal joint leading back from the front of the dump truck to the rear chassis. All contaminated grease must be removed from this area and the universal joint (green arrow).</p>	
<p>In this illustration, the cabin has been turned slightly to the left, making access for cleaning and inspection of the pivot point a little easier. The red arrows highlights the pivot points, the blue arrows under the cabin footsteps and the green arrow highlights the chassis drainage holes.</p>	

Description	Images
<p>The drainage holes (red arrows) at the rear of the chassis, near the pivot point. These hollow channels must be flushed in the presence of the inspecting officer in order to verify cleanliness.</p>	 <p>The top photograph shows a close-up of the rear chassis of a yellow articulated dump truck. A red arrow points to a small, dark, circular drainage hole located on the lower part of the chassis, near the pivot point. A black label with white text is visible above the hole. The bottom photograph shows a similar view from a slightly different angle, with a red arrow pointing to another drainage hole on the chassis.</p>

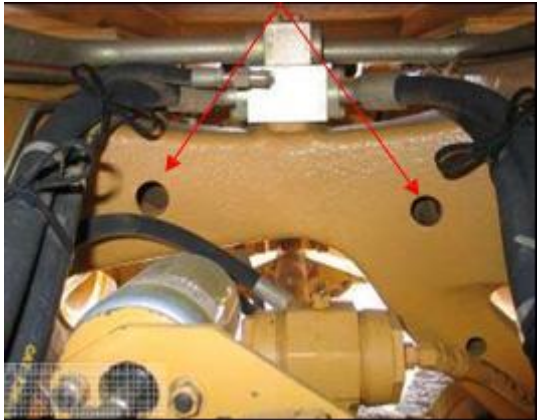

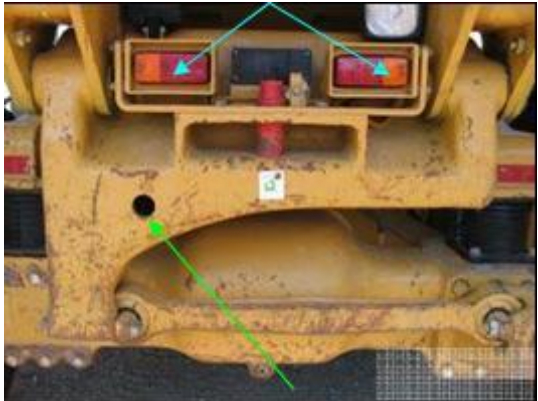
Description	Images
<p>Just behind the pivot point is the start of the rear chassis. Check for drainage holes like those illustrated (red arrows) and flush to verify internal cleanliness.</p>	


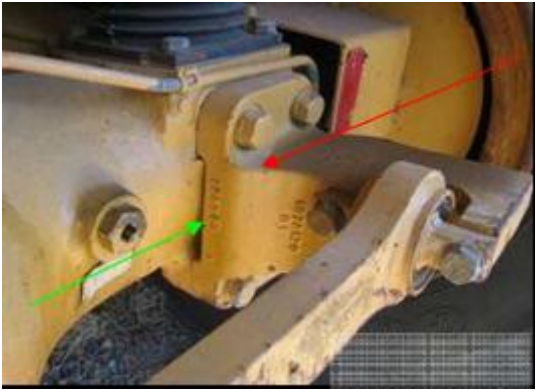

## Rear chassis


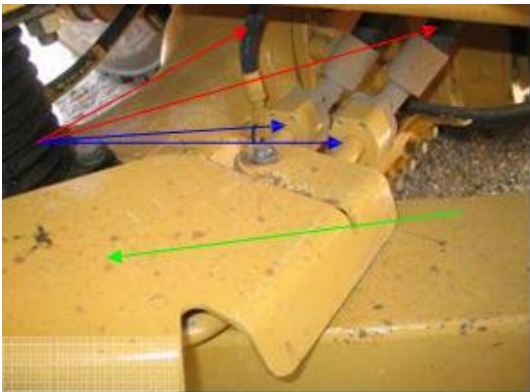
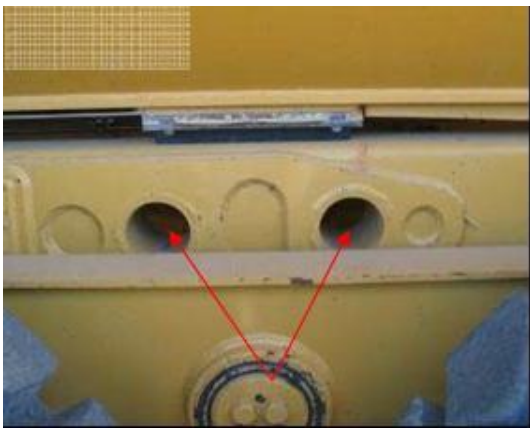
Description	Images
<p>To enable cleaning and inspection of the rear chassis, the dump tray must be lifted (locking pins must be in place). All plastic conduit (red arrows) is to be flushed to verify internal cleanliness.</p>	

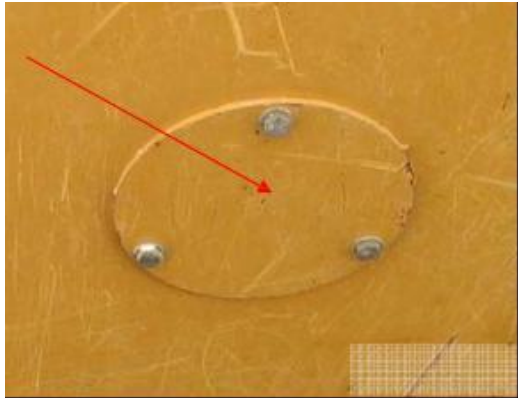
Description	Images
<p>The first universal joint (red arrow) on the rear chassis. All contaminated grease must be removed. Check that all ledges (blue arrows) and countersunk holes (green arrows) are free of biosecurity risk material.</p>	
<p>Box sections like the one illustrated are found at the front of the rear chassis. This one has a non-affixed panel at the top, which allows access for cleaning and inspection (red arrow).</p>	
<p>The other end of the universal joint, directly behind the pivot point. All grease and biosecurity risk material must be removed from the universal joint (red arrow) and countersunk holes (green arrows).</p>	
<p>The rear universal joint and chassis rails (blue arrows).</p>	




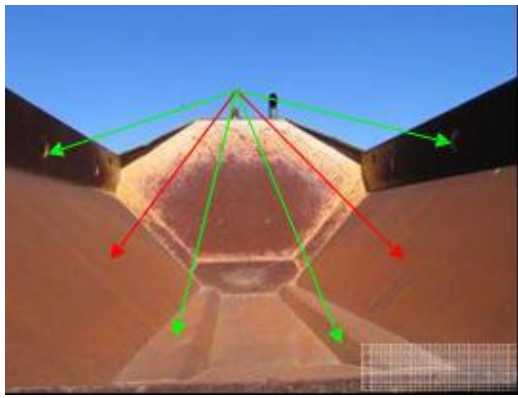
Description	Images
<p>On some models, a cross-member between the two rear chassis rails may be present. The red arrows highlight the access points to this hollow area which must be verified free of biosecurity risk material.</p>	
<p>Some sections on the rear chassis may have hollow sections as highlighted by the red arrow and require flushing to verify cleanliness.</p>	
<p>The rear end of the chassis. All light covers (aqua arrows) are to be removed and internally cleaned and inspected. Note the holes in the chassis (green arrow). These hollow cavities must be verified clean.</p>	

Description	Images
<p>A closer view of the holes (green arrows) in the rear chassis. The internal of the chassis must be verified clean.</p>	
<p>The bracket on the rear of the axel, highlighted by the red arrow is a hollow structure and can harbour a significant amount of biosecurity risk material. This area can be accessed via the small gap as highlighted by the green arrow and flushed to verify cleanliness.</p>	
<p>Another view of the small bracket on the rear of the axel, highlighting the small opening (green arrow), where a 90 degree lance can be inserted to flush this area and verify cleanliness.</p>	




Description	Images
<p>The underside of the axel on the rear chassis. Ensure all biosecurity risk material has been removed from this undulating surface (red arrows).</p>	
<p>All hydraulic hoses (red arrows) and couplings (blue arrows) are free of biosecurity risk material. Remove any non-affixed panels (green arrow) for cleaning and inspection.</p>	
<p>Openings in the chassis rails (red arrows) that require verification.</p>	

Description	Images
<p>On some models, circular, non-affixed plates such as those highlighted (red arrow) may be found on the chassis rails. If present, these must be removed and the hollow channels verified clean.</p>	

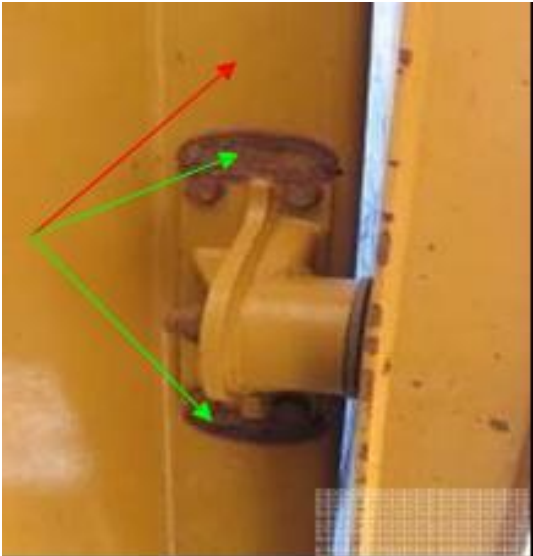
## Dump tray

Description	Images
<p>After the rear chassis has been cleaned and inspected, the tray must be lowered for inspection. The exhaust openings (red arrows) must be flushed to verify internal cleanliness.</p>	
<p>The internal 'skin' of the tray must be thoroughly checked for any cracks, splits or evidence of repair. The sides (red arrows) are only single skinned however the green arrows highlight hollow areas that can harbour biosecurity risk material if breached.</p>	

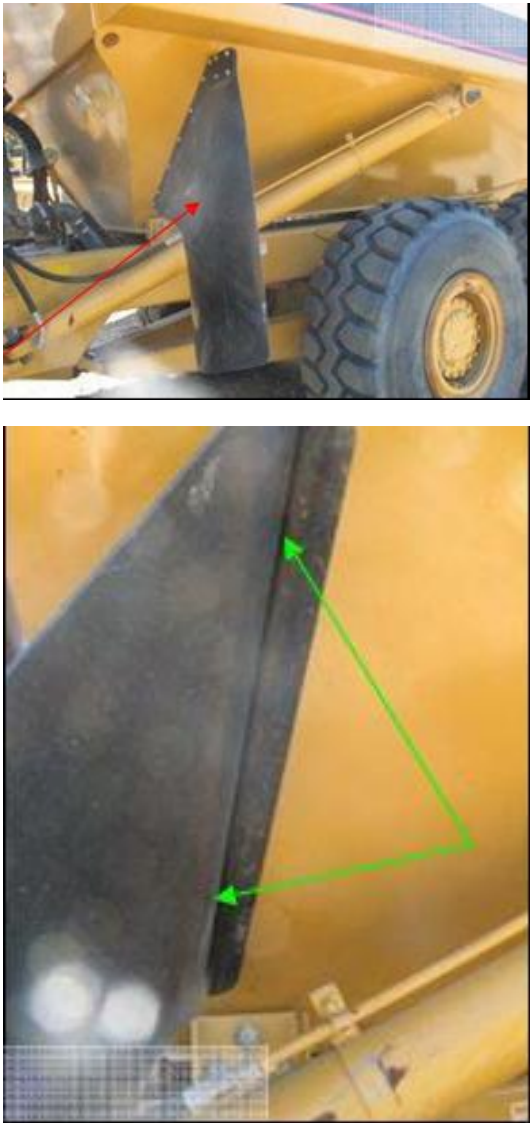



Description	Images
<p>The rear section of the tray also has hollow sections (red arrows) that can harbour biosecurity risk material if cracked, split or breached. Check along weld seams for any evidence of damage or breaches, allowing biosecurity risk material to enter these sections.</p>	
<p>On some models a rear tray door may be present (red arrow). These dump tray doors have hollow sections. Check both the internal and external surfaces as well as the welding seams for any cracks, splits or evidence of repair. If any cracks, splits or evidence of repair is found on any part of the dump tray, these must be investigated and it will be the responsibility of the importer to verify these areas are clean and free of biosecurity risk material.</p>	
<p>All welding seams (red arrows) must be thoroughly checked for any cracks, splits or evidence of repair.</p>	

Description	Images
The rubber mounts (green arrows) under the tray need to be flushed to verify cleanliness.	 <p>A close-up photograph of the underside of a yellow articulated dump truck. Two green arrows point to rubber mounts located under a metal tray. A red pipe is visible in the background. A warning label is partially visible on the right side of the image.</p>
All contaminated grease must be removed from all pivot points (green arrows).	 <p>A close-up photograph of a yellow articulated dump truck chassis. Two green arrows point to pivot points on the chassis. The area is heavily greased and shows signs of wear.</p>
On some models, hollow channels under the tray must be cleaned and inspected (red arrow).	 <p>A close-up photograph of a yellow articulated dump truck chassis. A red arrow points to a hollow channel under the tray. The area is heavily greased and shows signs of wear.</p>

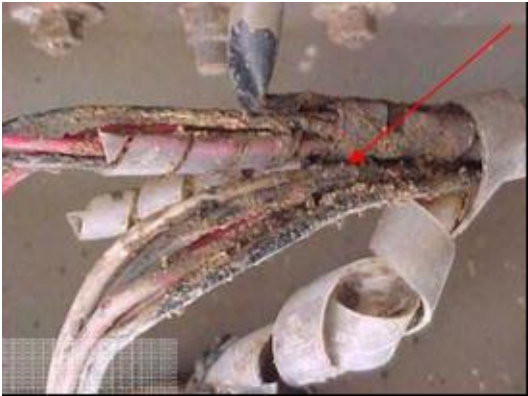

Description	Images
<p>Evidence of repair (green arrows). This illustration was from under the tray, where the hinges for the rear door attach. The section it attaches to is hollow (red arrow) and will require further investigation.</p>	

## General

Description	Images
<p>The rear mudguards and the small recess where it attaches to the tray. This area must be flushed to ensure cleanliness (red and green arrows).</p>	
<p>All wiring harnesses must be free of biosecurity risk material and thoroughly checked (red arrow).</p>	



## Biosecurity

Description	Images
<p>All looming must be free of biosecurity risk material and thoroughly checked (red arrow).</p>	
<p>Verify that the internal light fittings are clean.</p>	
<p>Flush all hollow tubing as highlighted by the red arrows.</p>	