

CAT740B Articulate Tank Truck Design Verification Report

24th July 2015



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EXECUTIVE SUMMARY

The purpose of this report is to review and certify if a client supplied off road articulate dump truck fitted with a tank and service module is structurally sound, stable and suitable for its specified purpose and load conditions. A caterpillar Cat740B model truck shall be purposely fitted with the client specified Gecko Tank complete with its associated service module. The underside of the tank is designed with an interface mounting sub-frame to suit the caterpillar mounting chassis and articulate connection points. This Gecko Tank Service Truck was designed purposely to provide the supply of diesel Fuel, oil, grease, and coolant within off road mining sites for the resources industry.

This report provides a structural analysis and design review of the modified tank truck in association with relevant codes and standards on behalf of Alpha Plant Maintenance to confirm if the tank design is suitable for its load conditions. This included a verification of the load conditions associated with the truck modification to confirm compliance to the original equipment manufacturer (OEM) guidelines and specification. A structural design analysis was conducted to confirm the suitability of the main support connection points of the tank to truck. The Service module bolting to the truck was also reviewed and specified. Review for the stability of the tank truck for designed operation conditions was also conducted to ensure the truck is stable.

The design review has concluded that the specified tank and modified truck assembly was structurally suitable for its load conditions and client specified purpose. The tank body structure and tank internal baffle system was found to comply with the required codes and standard to ensure strength, sloshing stability and a balanced load distribution on the truck. Overall loads and axle load distribution were within the CAT 740B Highway Truck manufactures requirements.

Overall the CAT740B Gecko Tank Service Truck was found to be well designed, balanced and meets the applicable codes and standards and is certified suitable for its specified load conditions and purpose of use.

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