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*This is a living document. An updated version will be provided when additional and more detailed information becomes available.*

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**CONCEPTUAL WORKPLAN EQUIPMENT AND HAULING TRUCK EMISSIONS COMPLIANCE  
DEVIL'S GATE RESERVOIR RESTORATION PROJECT  
(Version 1, May 15, 2019)**

## **1. INTRODUCTION**

The 2009 Station Fire burned more than 160,000 acres of the San Gabriel Mountains, and the subsequent storms brought in more than 1.3 million cubic yards of sediment into Devil's Gate Reservoir, which greatly reduced the flood control capacity of the reservoir (Figure 1). Los Angeles County Public Works will restore the reservoir capacity by removing sediment to protect downstream communities along the Arroyo Seco. As part of the project, more than 70 acres of enhanced habitat will be created and restored, and invasive species removed (Attachment 1, Devil's Gate Reservoir Restoration project). The sediment removal component of the Devil's Gate Reservoir Project is expected to commence in May 2019.

In addition to enforcing strict administrative and engineering controls regarding diesel and dust emissions, a Compliance Monitoring and Ambient Air Measurements Workplan<sup>1</sup> will be implemented to collect the air quality data prior to and during implementation of sediment removal at Devil's Gate Reservoir.

## **2. OBJECTIVE**

The primary objective of implementing an off-road equipment and haul truck emission compliance program is to minimize emissions from equipment and vehicles.

## **3. PROPOSED MITIGATION MEASURES AND IMPLEMENTATION SCHEDULE**

Proposed mitigation measures for off-road equipment and haul truck emissions are to be implemented in multiple phases. First phase includes measures to be implemented immediately when the project starts; and, the second phase includes measures that are currently being studied, require further research, and may be implemented when the technologies are proven successful in field operation.

### **3.1. First Phase Mitigation Measures**

#### **3.1.1. Haul Trucks**

- Only haul trucks operating engines certified to the USEPA 2010 emission standards may operate on site. The contractor must provide evidence of engine emission compliance.
- Contractor will submit NO<sub>x</sub> and PM<sub>10</sub> Reduction Plans and monthly updates that include:
  - a) Comprehensive inventory of all construction equipment, haul trucks, street sweepers,

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<sup>1</sup> Tetra Tech, 2019. *Compliance Monitoring and Ambient Measurements Workplan, Devil's Gate Reservoir Restoration Project, April.*

- generators and all other owned, and leased equipment/vehicles, including those of subcontractors, suppliers, and brokers.
- b) Certification documents and Executive Orders issued from the California Air Resources Board (CARB) identifying the tier rating, horsepower rating, and engine production year.
- Haul trucks must be registered with CARB's Truck Regulation Upload Compliance and Reporting System (TRUCRS) database (<https://www.arb.ca.gov/msprog/onrdiesel/tblookup.php>)
  - To qualify to work on site, the haul truck must not have a malfunction Indicator Light (MIL) on, and have opacity measured using an SAE J1667 test, Periodic Smoke Inspection Program (PSIP) of less than 5%. If a failure is identified, the haul truck will be removed from service and must provide evidence of check and repair prior to being allowed back on-site. Contractor notified to report MIL "on" conditions.
  - To qualify to work on site, the haul truck must not have an engine emission recall, or provides evidence that the haul truck has been repaired pursuant to the recall.
  - Public Works will implement the following haul truck controls, and will document by truck license plate:
    - a. Periodically spot check and photograph the haul truck dashboard to check for MIL status
    - b. Observe for visible smoke. PSIP retest performed if visible.
    - c. Check to ensure proper freeboard of load.

### 3.1.2. Idling Restrictions<sup>2</sup>

Public Works will ensure the following:

- Compliance with state idling regulations.
- Prohibit contractors from staging or queuing haul trucks and construction equipment on local streets.
- Haul trucks waiting to be loaded must be within the project site.
- No idling will occur within 100 feet from residential areas or schools.

### 3.1.3. Construction Equipment<sup>3</sup>

- Construction equipment should meet or exceed USEPA emission standards for Tier 3 equipment. All construction equipment must be registered with CARB's Diesel Off-Road Online Reporting System (DOORS) database ([https://www.arb.ca.gov/doors/public\\_info.html](https://www.arb.ca.gov/doors/public_info.html)). Registration through DOORS ensures that the construction equipment meets, at a minimum, Tier 3 emission standards. Contractors will provide a copy of their CARB Executive Order for their engine models and operating permits, if applicable, issued by ARB or AQMD.
- Public works will ensure 75% of the equipment to be used on the Project is Tier 4 and will strive to exceed the percentage when possible.
- Portable equipment must be registered with CARB's Portable Equipment Registration Program (PERP) database (<https://ww2.arb.ca.gov/resources/documents/perp-application-record-keeping-reporting-forms>) before operating on site.

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<sup>2</sup> <https://dpw.lacounty.gov/swe/devilsgate/docs/DraftEquipmentandTruckIdlingPlan.pdf>

<sup>3</sup> <https://dpw.lacounty.gov/swe/devilsgate/docs/OffRoadEquipmentInventory.pdf>

- If off-road construction equipment is equipped with on-board engine diagnostics, these engines will be periodically subject to "MIL on" monitoring requirement as haul trucks.

Public Works will conduct more frequent spot check of haul trucks and construction equipment in the beginning of the project. Frequency will be adjusted thereafter based on results.

Public Works is exploring opportunities and technologies as they become available for the project. Public Works will post haul truck compliance information on the project website, [www.devilsgateproject.com](http://www.devilsgateproject.com)

### **3.2. Future Measures (Second Phase)**

- Other I/M measures that are under consideration and require time to develop and deploy, include, but are not limited to, the following:
  - a. A method for monitoring on-board diagnostics (OBD) – this would most likely be accomplished using a dongle tied to a monitoring system using WIFI or through telematics.
  - b. Some type of emissions monitoring using plume capture or remote sensing such as University of Denver's Remote Sensing Monitor or CARB's PEAQS to identify high emitting vehicles and to gauge success of the program; or, use UCR-CERT on-board Portable Emission Measurement System (PEMS) to measure in-use emissions.
  - c. Review results with CARB and SCAQMD and evaluate potential next steps.
- Install a closed circuit television (CCTV) camera and a recorder to record truck activities and any visual smoke emissions from haul trucks along the exit route.

Figure 1. Devil's Gate Reservoir Restoration Project Site Map

