

CHAPTER 12

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12.00 Introduction

Fuel is a valuable resource and is crucial to Caltrans' ability to improve and maintain California's infrastructure, as well as respond to traffic emergencies and natural disasters. There are three ways Caltrans obtains fuel, including bulk fuel, fuel card (Voyager) for retail fuel, and Cardlock. Maintenance gets the majority of its fuel from bulk fuel tanks located at many of its maintenance stations.

Bulk fuel management requires effective coordination among many participants in implementing Caltrans policies and procedures. The primary outputs of bulk fuel management are the accurate tracking of fuel deliveries into fuel tanks and fuel disbursements from fuel pumps. Fuel deliveries are tracked by the type of fuel, delivery date, and quantity. Fuel disbursements are tracked by fuel type, operator and vehicle authorized to use the fuel, the date, and the quantity of fuel. Fuel deliveries and disbursements are reconciled at the end of each month and reported to Caltrans management and the Division of Accounting in support of fuel asset management, invoicing other agency fuel users, and seeking reimbursement for taxes paid on diesel fuel used by off-road vehicles.

This chapter outlines and describes bulk fuel management roles and responsibilities and provides an overview of the necessary forms and steps an individual must follow to support effective management of bulk fuel.

12.01 Bulk Fuel Program Overview

12.01.1 Background

Adequate bulk fuel supplies are essential for Maintenance staff to respond to events that can occur at any time. These events can range from non-injury to major traffic incidents, and to natural disasters including fire, landslides and earthquakes. In each of these cases, Caltrans must respond quickly and with the appropriate people and equipment. In addition to many high-profile activities, Maintenance relies upon the availability of equipment, and fuel to perform routine roadway maintenance and repair.

Other state agencies, including the California Highway Patrol and the California Department of Forestry, utilize Caltrans bulk fuel in areas with limited availability of commercial fuel. Since many bulk fuel sites have their own generated power, a major power outage would not affect refueling vital emergency-service vehicles. Moreover, Caltrans has bulk fuel sites located in strategic and densely-populated areas such as the Bay Area and southern California. These resources represent an immediate and deployable resource for emergency responders.

12.01.2 Safeguarding Bulk Fuel Assets

Fuel has a direct bearing on the means and resources to respond to emergencies and to maintain California's infrastructure. Protecting and carefully managing this asset ensures that fuel is available whenever it is needed. Effectively managing bulk fuel requires that Caltrans employees

follow established policies and procedures to accurately report fuel usage and to detect and prevent potential fraud.

12.01.3 Manual and Automated Bulk Fuel Sites

Of the 250 maintenance stations located across the state, 220 have on-site bulk fuel storage tanks for diesel, biodiesel or unleaded gasoline. Additionally, there are numerous Caltrans-owned sources of E85 fuel.

Bulk fuel is currently managed through either automated or manual processes. The automated sites use a host application integrated with their fuel control terminals to authorize fueling, and tank level sensors for monitoring fuel tank levels. At the manual bulk fuel sites, fuel disbursements are recorded by entering specific data on paper forms. The amount of fuel on hand is determined by manually “dipping” a calibrated stick into the fuel tanks.

12.01.4 Definitions

The following are industry-specific terms that apply to automated and manually operated bulk fuel systems.

Fuel Tank Dip Stick: Fuel storage in manual bulk fuel tanks requires a physical means to measure tank volumes. A dip stick is used to measure the depth of fuel within the tank; the volume of fuel is calculated based on the capacity of the tank.

Fuel Control Terminal: Electrical devices used at automated bulk fuel sites to control the fuel pumps, track fuel disbursements, and communicate data with the headquarters automated bulk fuel system. Fueling disbursements are initiated by swiping a valid fuel card into a card reader and then entering meter readings and district and department codes numbers using a keypad. Vehicle information transmitters, installed on many Caltrans maintenance vehicles, wirelessly update meter, quantity, district and department code.

Fuel Pump: A mechanical device that houses the necessary parts to physically pump, meter, and dispense fuel.

Fuel Pump Meter: A mechanism within each fuel pump that measures the gallons of fuel dispensed.

Fuel Slippage: Variations in fuel readings are defined broadly as slippage and may result from fuel expansion or contraction due to temperature, tank water content, misreading of tank fuel levels at manual sites, theft or leakage. All variances exceeding 2% must be investigated, resolved, and explained on monthly recapitulation of bulk fuel.

Tank Level Sensor: Sensors located within fuel tanks to communicate with the fuel control terminal to enable fuel volumes, tank leakage alarms, water content and temperatures to be automatically reported to the automated bulk fuel system.

Vehicle Information Transmitter: Devices installed on the pump hose nozzles of automated sites and on the fuel tank filler necks of approximately 2,600 fleet vehicles. Once connected, a wireless coupling occurs to automatically validate the vehicle and log fuel transactions.

Voyager/Proprietary/Site Fuel Cards: Cards used at automated sites to authenticate transactions. A vehicle's fuel card must be validated in the bulk fuel system in order for the vehicle to access fuel. Vehicle odometer reading, district and department code is manually entered using a fuel control terminal keypad.

12.02 Bulk Fuel Forms

Bulk fuel management at automated sites does not require special forms. At manually operated bulk fuel sites, each fuel transaction needs to be recorded on a Disbursement Record – Bulk Fuel form and monthly recapitulations of bulk fuel are required using the Recapitulation of Bulk Fuel form. These forms and their requirements are described in the following sections.

12.02.1 Disbursement Record – Bulk Fuel (DME-0045)

The purpose of the DME-0045 form is to capture information related to every fuel disbursement transaction that occurs at manually operated bulk fuel sites. All transactions are to be completed using an ink pen.

Accurate reporting on the DME-0045 ensures benefits to Caltrans such as identifying and preventing fuel slippage, receiving off-road tax credits and reimbursements from fueling non-Caltrans vehicles, and enabling determination of vehicle fuel efficiencies.

A separate DME-0045 form is required for each fuel tank and pump. Furthermore, separate forms are required for other agencies with an interagency agreement in effect and for rental and miscellaneous equipment without a maintenance classification number.

When fueling rental or miscellaneous non-C type equipment such as chainsaws, weed eaters, and generators at manual bulk fuel sites, the ID numbers listed in Exhibit 12.01, Caltrans District Rental and Miscellaneous Equipment ID Numbers, are required to be entered in the Equipment ID field of the DME-0045. Filling fuel cans for portable equipment is not to be charged to the vehicle used for transporting the fuel.

Supervisors fill out important information at the top of each form prior to providing them for use. This includes location name, phone number, district, agency, tank and pump identification numbers, month and year, and the type of fuel.

Fuel users are required to use an ink pen to record a complete and legible entry on the DME-0045 after each fuel disbursement. The required information includes the date, equipment ID number, gallons disbursed, odometer/hour readings, printed operator name, and ending pump meter. It is critical that care be exercised to avoid errors, omissions, or illegible entries.

Copies of completed DME-0045 forms are sent to the bulk fuel unit for processing; originals are sent to the Region Manager or designee, who ensures that the forms are complete and that the Supervisor has identified other agency fuel usage and off-road vehicle IDs and their off-road percentages for reimbursement purposes.

Care should be taken to ensure the most current version of the form is provided near the pumps for vehicle operators to use. The most recent version of DME-0045 is available through the Caltrans Electronic Form System at <http://cefs.dot.ca.gov/forms/index.html>. Instructions for proper use are included with the form.

12.02.2 Recapitulation of Bulk Fuel (FA-0095)

The purpose of the FA-0095 form is to calculate fuel usage, deliveries and end-of-month volumes for the different fuel types, pumps and tanks. The FA-0095 is also used to reconcile fuel usage as recorded using meter readings against tank level monitoring. The procedure is completed at the end of each month.

The information captured on the FA-0095 enables effective management of bulk fuel inventories, reconciliation of fuel usage and invoices, monitoring of fuel budgets, and reimbursement for fuel taxes paid on diesel/biodiesel used in off-road vehicles.

Fuel site Supervisors complete the FA-0095 to report monthly volumes by fuel tank ID, pump ID, pump meter readings, fuel type, on-hand fuel, and fuel purchases and then obtain approval from the Area Superintendent prior to forwarding it to the Region Manager or designee for quality review.

If variances (fuel slippage) between the calculated versus actual fuel on hand exist when recapitulating bulk fuel, the Site Supervisor is required to investigate and resolve the reason(s), and obtain Area Superintendent's approval. Reasons for the slippage and the actions taken to resolve the discrepancy must be fully articulated on the FA-0095 and approved by the Area Superintendent, with notification provided to the Region Manager. If the slippage is found to be the result of theft, the Region Manager contacts Audits and Investigations and the California Highway Patrol.

The Region Manager or designee sends the FA-0095 to the Division of Accounting, Service Transactions & Asset Reconciliation Section, for reconciling fuel usage and invoices, monitoring fuel budgets, and seeking reimbursements from the California Board of Equalization (BOE) for fuel taxes paid on fuel used in off-road vehicles.

Care should be taken to ensure the most current version of the FA-0095 is used for monthly recapitulation of bulk fuel. The most recent version of the form is available through the Caltrans Electronic Form System at <http://cefs.dot.ca.gov/forms/index.html>. This form can be completed either electronically or manually and instructions are included with the form.

12.03 Roles and Responsibilities

This section summarizes the primary roles and responsibilities of key participants involved in the management and use of bulk fuel.

Chief, Division of Maintenance:

- Determines and allocates Maintenance bulk fuel resources to the districts.
- Establishes Maintenance bulk fuel goals and objectives within authorized resources.

Deputy District Directors, Maintenance:

- Review resource allocations for fuel, and update the district plan to achieve the expected fuel goals and objectives.
- Allocate personal service dollars, PYs (person years), and OE (operating expenses) including contracting resources within the district/regions, and review regional work plans to assure conformance with district and bulk fuel program goals and objectives.

Region Managers:

- Conduct quality reviews of completed FA-0095 and DME-0045 forms ensuring that all records are complete, legible and accurate, that off-road diesel/biodiesel usage has been properly accounted for, and that other agencies' use of bulk fuel, if it occurs, is authorized.
- Submit approved FA-0095 forms to the Division of Accounting, Service Transactions & Asset Reconciliation Section.
- Initiate investigations if fuel slippage exceeding 2% is identified in monthly recapitulations of bulk fuel and cannot be resolved, by contacting Audits and Investigations, and if the slippage is the result of theft, the California Highway Patrol.
- Ensure that Interagency Agreements are in effect before authorizing any other agency to use Caltrans-owned bulk fuel.

Area Superintendents:

- Conduct quality reviews of completed DME-0045 and FA-0095 forms ensuring that all records are recorded in ink, complete, legible and accurate, off-road diesel/biodiesel usage has been properly accounted for, and that other agencies' use of bulk fuel, if it occurs, is authorized.
- Approve and send FA-0095 forms to the Region Office for processing.
- Investigate and resolve, if possible, instances of fuel slippage exceeding 2% identified on monthly recapitulation of bulk fuel and notify Region Manager.

Bulk Fuel Site Supervisors:

Automated Sites

- Monitor tank fuel levels using tank level sensors and order fuel as needed.
- Ensure all fuel-related equipment is in proper working order.
- Initiate emergency repairs for fuel-related equipment problems using contractors authorized within the area.
- Report non-emergency fuel-related equipment problems to the headquarters automated bulk fuel system coordinator.
- Implement the use of DME-0045 forms if the automated system becomes inoperable.
- Ensure that an executed Interagency Agreement is in effect prior to allowing other agency access to bulk fuel, except in the case of emergency.
- Investigate and explain reasons if notified by headquarters that fuel slippage exceeds 2%. Inform and obtain approval from the Area Superintendent. Respond to the notification by email.

Manual Sites

- Monitor fuel tank levels using dip sticks or tank level sensors, if installed, and order fuel as needed.
- Ensure bulk fuel users use an ink pen to accurately record all disbursements on the DME-0045.
- Ensure that any non-Caltrans agency not be permitted to obtain Caltrans bulk fuel without an executed Interagency Agreement in effect, except in the case of emergency.
- Ensure DME-0045 forms are available for each fuel type, pump, rental and non-C equipment, and for use by other agencies with an executed Interagency Agreement in effect.
- Collect DME-0045 forms as completed, review for accuracy and legibility, and send them to the headquarters bulk fuel unit for processing.
- Send copies of monthly DME-0045 forms to the Region Manager, or designee for approval and further processing.
- Perform monthly recapitulation of bulk fuel using FA-0095 making sure to account for fuel deliveries and off-road diesel/biodiesel usage and submit to Area Superintendent for review and signature.
- If, when recapitulating monthly bulk fuel use, fuel slippage exceeds 2%, investigate, resolve, if possible, and explain on DME-0095 if. Inform and obtain approval from the Area Superintendent.

- Ensure all fuel-related equipment is in proper working order.
- Initiate repairs for all fuel-related equipment problems using contractors authorized within the area.

Automated Bulk Fuel System Coordinator:

- Administers the automated bulk fuel system's host application
- Centrally manages access to bulk fuel via fuel cards and vehicle information transmitters, audits reconciliation of deliveries and usage, and provides management and fuel usage reports.
- Updates equipment numbers and Voyager fuel card assignments in the system as needed to authorize use of automated fuel dispensing equipment.
- Ensures that there is an executed Interagency Agreement with Caltrans at specific locations prior to validating another agency's fuel cards for use in the system.
- Processes automated bulk fuel site monthly reconciliations, identifies instances of fuel slippage that exceed 2%, and sends notifications to bulk fuel Site Supervisors that an investigation, resolution and a response is necessary.
- Monitors the operation of the automated bulk fuel system to ensure that data is received from the district sites and that it is accurate regarding fuel usage.
- Assists in developing and administering service contracts to maintain and repair the fuel-related equipment located at automated bulk fuel sites.
- Serves as primary contact for automated site fuel-related equipment issues and manages the service contract(s) used to repair and maintain that equipment and provides troubleshooting assistance for automated bulk fuel site supervisors and documents repair calls.
- Provides administration of service contracts by reviewing and approving invoices submitted for payment.
- Prepares monthly and special-request reports to support management, auditing, investigations, or other special requirements.

Division of Accounting

Service Transactions & Asset Reconciliation:

- Receives bulk fuel recapitulation reports provided from headquarters Maintenance Division's automated bulk fuel system and through manual bulk fuel site FA-0095 forms.
- Calculates statewide total bulk fuel usage and its inventory value.
- Completes monthly general ledger reconciliation for the State Highway Account (Fund 042, BSA 1910, and Sub-BSA 1004).

- Prepares the fuel tax return to obtain a refund from the Board of Equalization for fuel taxes that applied to equipment used off-road (\$0.18 per gallon in March 2011).

Accounts Payable:

- Processes payments of fuel invoices received for bulk fuel deliveries.

Accounts Receivable:

- Bills and collects payments from non-Caltrans agencies for their use of Caltrans bulk fuel.

Division of Procurement and Contracts

Office of Procurement:

- Acquisition Analysts process requests from the Districts for the acquisition of various types of fuel for operating Caltrans fleet vehicles and equipment.
- Acquisition Analysts create and obtain approval of the Purchasing Authority Purchase Orders for bulk fuel.
- Acquisition Analysts act as the liaison to their assigned District for assistance in obtaining bulk fuel during effective contract periods as well as during the times when the contract period has lapsed and there is no contract in place.
- Purchasing Specification Analysts work with the Department of General Services (DGS) in the development of contract language and establishing delivery locations in the statewide commodity contracts that will meet Caltrans' needs.
- Purchasing Specification Analysts act as the Caltrans liaison to DGS when contract extensions, problems or needs arise.

Division of Equipment

Resource Management:

- Works with the Division of Procurement and Contracts, Office of Procurement, to ensure sufficient funds are available prior to approving Purchase Orders for bulk fuel.

Caltrans Fuel Users:

- Report fuel-related equipment that is not in proper working order to the site Supervisor.
- Use approved Voyager, Proprietary, Site Card or vehicle information transmitter-equipped vehicle to authenticate fueling transaction at automated sites.
- Using an ink pen, carefully, completely, and legibly enter each fuel disbursement on the DME-0045 form at all manually operated sites and at automated bulk fuel sites when the automated system is down.

Other Agencies

- Except in the case of a true emergency, vehicle operators from other agencies are to ensure that an executed Interagency Agreement is in effect at a specific location prior to using Caltrans bulk fuel.
- Vehicle operators are required to use an ink pen to carefully record each transaction on the DME-0045 provided at manual sites or enter the vehicle number on the key pad at automated sites.

12.04 Bulk Fuel Procedures

Key elements of bulk fuel processes include the supplier delivering fuel with an associated delivery ticket that includes the date, fuel type and volume supplied to the site. The site Supervisor typically requests fuel deliveries in response to the amount of fuel remaining in their tanks.

Under the existing DGS fuel delivery blanket contracts, suppliers invoice for gallons of fuel delivered, making tank level measurements the quantifiable means of determining actual receipts, and further making accuracy a critical issue.

The following sections describe the major processes related to the management of bulk fuel.

12.04.1 Monitor Fuel Tank Levels

The bulk fuel process begins with scheduling and the delivery of fuel to the bulk fuel site. The primary output to this process is the accurate logging of fuel type and quantity received at each bulk fuel site.

Fuel deliveries are requested when the amount of fuel calculated by manually dipping tanks or reviewing the tank level sensor readings indicate that additional fuel is needed. Fuel delivery terms and invoices reference a DGS blanket contract by gallons of fuel delivered and not by tank levels “as received”. Note that discrepancies can occur between volumes of fuel delivered and tank level sensor readings due to variables such as fuel expansion or slippage from temperature, tank water content or misreading tank fuel levels.

Quality and Safety Checks

- Monitoring fuel tank levels manually results in levels that are subject to more variation than levels provided by an automated tank level sensor. Exercise care when dipping the tanks and calculating tank fuel volumes.
- Immediately address any and all defective fuel-related equipment or issues.

12.04.2 Authorize and Record Fuel Disbursements

There are four ways to authorize fuel disbursements. The choice of authorization types varies from site to site.

At manual fuel sites, the authorization is based upon the honor system. After each fuel disbursement, vehicle operators are required to use ink pen to record the date, Equipment ID, number of gallons, odometer reading, their printed name and ending pump meter reading onto a DME-0045.

At automated sites, fueling is authorized by Voyager Cards, Proprietary or Site Cards, or by vehicle information transmitters that are installed on many Caltrans fleet vehicles. Cards must be activated by the headquarters bulk fuel coordinator before the card will function. For vehicles equipped with vehicle information transmitters, the system automatically determines whether or not it is an authorized vehicle, and if it is, activates the pump and allows fueling.

Quality and Safety Checks

- Manage Voyager and Proprietary Cards by making sure those responsible for administration are ordering and maintaining an inventory of cards accurately by performing periodic audits.
- Each driver should be assigned a unique Driver Identification Number that is to be kept strictly confidential.
- Avoid the use of “spare” or generically-assigned Proprietary Cards
- Immediately report lost, missing, or damaged fuel cards.
- When employees leave or transfer, immediately cancel all assigned fuel cards.
- When a vehicle is retired or sold, immediately cancel the assigned fuel card.
- DME-0045s are often illegible due to rushed entries, dirt, or the effect of the elements on the paper forms. This paper-based process relies on the person fueling to provide complete, legible responses. Where possible, the form should be stored in a convenient location protected from the elements.
- At manual sites, there is no way to prevent pumping the wrong type of fuel into a vehicle. Alert new equipment users to the importance of using the correct fuel type for each vehicle or piece of equipment.

- Although automated sites provide a limited degree of security, fuel cards are allocated to a vehicle and not to an individual operator. A card allocated to a particular vehicle is capable of fueling a completely different vehicle. Ensure users understand that fuel cards are to be used only for the assigned vehicle.
- At automated sites, fuel cards require manual keying of vehicle meter readings, district and department code before fueling. The automated system does not check if the meter reading entered is valid. Ensure users understand that odometer or hour meter values must be correct to support proper equipment maintenance.

12.04.3 Reconcile Fuel Delivery and Usage

Reconciling fuel deliveries to fuel usage at automated sites is performed by the automated bulk fuel system coordinator and can be performed as frequently as management requires. Fuel tank deliveries, tank levels and fuel disbursements may be reconciled at any time.

At manually operated sites, the site Supervisor must complete an FA-0095 form that tracks monthly volumes by fuel tank ID, pump ID, pump meter reading, fuel type, on-hand fuel and fuel purchases. The FA-0095 compares the month-end calculated on-hand fuel with actual on-hand fuel. Fuel reconciliation amounts must be within 2 percent of calculated values. Additionally, Supervisors must calculate the amount of diesel or biodiesel fuel used both on- and off-road. Once the FA-0095 form is complete, the site Supervisor obtains review and approval by an Area Superintendent, who then sends it to the Region Manager or designee for quality review. Upon completion of the quality review, the form is submitted to the Division of Accounting's Service Transactions & Asset Reconciliation Section along with the site's monthly fuel delivery tickets. When Accounting receives the FA-0095 form and delivery tickets from each site, a comparison to actual fuel supplier invoices validates volume amounts so payment may be authorized.

All fuel slippage exceeding 2% must be investigated, resolved and the proper notifications made.

Additionally, the site Supervisor should send all DME-0045s with the FA-0095 to the Region Manager or designee for quality reviews.

Quality and Safety Checks

- The manual tank level measurement process is prone to errors such as misreading the dip stick, ineffective dipping techniques, miscalculating tank volumes, and number transposition.
- While completing FA-0095 form, take extra care for accuracy and ensure that off-road diesel/biodiesel usage is properly accounted for.
- For sites with tank level sensors, it is possible to misread the tank level sensor output and transpose numbers, or there could be potential issues with the sensors themselves. Take extra care for accuracy and look out for any red flags that could point to possible equipment problems.

- Recapitulation of bulk fuel at manual sites is a procedure that, if done incorrectly, may result in lost revenues back to Caltrans or unaccountability of fuel. Tracking billable disbursements and off-road fuel usage requires more time and effort, but increases revenue back to Caltrans for diesel fuel used in off-road equipment.
- The FA-0095 form can be completed electronically or manually, depending on the users' preference, and is prone to errors and incomplete information. Keep accurate records and check for calculation errors.
- Other manual duties such as reading pump meters are also prone to errors resulting from misreading and transposition. Extra care is required for accuracy.
- Fuel tank leaks, while not common, may occur. Pay attention to data flags when comparing meter readings, tank levels, and calculated data as discrepancies could indicate tank leaks or other equipment failures.
- Fuel 'slippage' or misappropriation, also not common, may occur. Pay attention to data flags when comparing meter readings, tank levels, and calculated data as discrepancies could mean fuel has been misappropriated.

12.04.4 Manage Non-Caltrans Fuel Usage

Bulk fuel sites not only support Caltrans vehicles, but may also allow outside agency vehicles (e.g., CHP, CAL FIRE) that may need fuel periodically depending on weather conditions or in the course of responding to emergency situations within the state. The Division of Maintenance pays for all bulk fuel regardless of it being for Caltrans or non-Caltrans use.

In cases other State agencies request to use Caltrans bulk fuel, Caltrans and the agency are required to enter into an Interagency Agreement that enables Caltrans to be reimbursed for fuel usage. Notwithstanding an emergency, bulk fuel should not be provided to non-Caltrans vehicles without an executed Interagency Agreement being in place. The Interagency Agreement specifies the terms and conditions for the use of Caltrans bulk fuel and payment and is developed for approval by the other agency.

At manual bulk fuel sites, separate DME-0045 forms are provided for other agencies to record disbursements of bulk fuel. The site Supervisor is required to ensure that all non-Caltrans fuel users are associated with an agency that has an executed Interagency Agreement on file. A copy of the approved DME-0045 form is forwarded to the Division of Accounting, Accounts Payable which processes monthly invoices on total fuel.

For fuel used by other agencies at automated bulk fuel sites, an executed Interagency Agreement is still required. Upon verification of a current agreement, the bulk fuel system coordinator validates the cards listed on the agreement and attributes all subsequent disbursements authorized to the non-Caltrans card to the correct agency. The coordinator provides billable disbursements to the Division of Accounting, Accounts Payable, which multiplies the gallons of fuel by a price per gallon to determine the invoice amount. The

Accounts Payable staff enters the amount into the Accounts Receivable System and generates an invoice.

Copies of all executed Interagency Agreements are to be provided to the headquarters bulk fuel administrator.

Quality and Safety Checks

- The site Supervisor must ensure that non-Caltrans users have an Interagency Agreement in place and that a separate DME-0045 is provided near the fuel pump to record the relevant disbursement information with an ink pen. Any agency without a valid executed Interagency Agreement with Caltrans should not be permitted to obtain bulk fuel at any Caltrans bulk fuel facility, except in the case of emergency.

12.04.5 Track Off-Road Diesel/Biodiesel Fuel Usage

For every documented gallon of diesel or biodiesel used off road, Caltrans may seek reimbursement from BOE for the taxes paid for the fuel. Caltrans and the BOE have agreed upon set reimbursement percentages for classes of equipment (refer to Exhibit 12.02). To determine the gallons of fuel used off road, the gallons used by each piece of equipment are multiplied by the off-road percentage.

At manually operated sites, Supervisors refer to Exhibit 12.02 and the DME-0045 forms completed during the month to identify the off-road equipment that has used diesel or biodiesel. After identifying off-road equipment and calculating off-road diesel/biodiesel usage, the off-road gallons are recorded on the FA-0095. On-road diesel/biodiesel is the difference between the total diesel/biodiesel used and the calculated off-road amount.

At automated sites, off-road diesel/biodiesel usage is automatically calculated by the automated bulk fuel system. The system generates these quantities and forwards the monthly Tank Level Sensor Reconciliation report to the Division of Accounting's Service Transactions & Asset Reconciliation Section.

Quality and Safety Checks

- Extra care should be taken when reviewing DME-0045s to ensure that all qualifying diesel/biodiesel disbursements are used in calculating off-road fuel usage.
- Ensure that off-road fuel use is accurately calculated. This will enable Caltrans to obtain full fuel tax reimbursements.
- Stress the importance of complete and accurate entries on DME-0045s to diesel/biodiesel fuel users and ensure that an ink pen is used to record each transaction.

12.04.6 Support Fleet Management

The equipment identification number, mileage and/or hours, and gallons of fuel consumed are recorded either manually or automatically for each fuel transaction and are ultimately entered into the Division of Equipment's fleet management system, Fleet Anywhere (FA). FA stores this data to determine fuel efficiency and factors related to equipment replacement.

Quality and Safety Checks

- Care should be taken at manual sites when entering fuel disbursement information on the DME-0045 forms to ensure that all necessary information is entered accurately and legibly with an ink pen.
- DME-0045 forms need to be regularly sent to the bulk fuel unit for entry into FA.

12.04.7 Provide Bulk Fuel Data and Management Reports

The reporting of fuel consumption, represented in meaningful terms, is the primary tool to ensure oversight and control of bulk fuel. The automated bulk fuel system is capable of generating many reports that contribute to effective management of bulk fuel.

- Availability of Bulk Fuel: The Inventory Status and Forecast Fuel Stock reports provide information on the quantities of current and forecasted bulk fuel assets.
- Management of Bulk Fuel: Bulk Fuel management not only requires sufficient volumes of fuel, but also receiving and disbursing fuel efficiently and effectively. Detailed Reconciliation and Disbursement reports are available to provide the right information to understand and make decisions about usage, storage, deliveries, safety, staffing, and disbursements.
- Accounting of Fueling Transactions: Caltrans uses more than 13 million gallons of fuel each year. It is imperative that financial information be available in order to analyze budgets and expenditures. To accomplish this, four reports are generated.
 - Billable Disbursements: Reports fuel disbursed to other agencies.
 - Vehicle Meter Readings: Reports vehicle usage for maintenance and fuel efficiency purposes.
 - Vehicle Information: Reports specific vehicle diagnostic conditions.
 - Off-Road Tax: Reports off-road diesel/biodiesel usage for refunds back to Caltrans.
- Fueling Transactions Exceptions: Information regarding specific fueling transactions is important to Caltrans in order to identify issues with fueling processes, procedures or equipment. Detailed information about individual transactions is very helpful.
 - Vehicle Fuel Volume: Reports fuel disbursement quantities that exceed vehicle fuel tank capacity.

- Unauthorized Attempts: Reports unsuccessful fueling attempts.
- Automated System Health: Reports the overall condition of the automated system including Site Equipment Status and Connectivity, indicating successful data transfers.

Exhibit 12.01: Caltrans District Rental and Miscellaneous Equipment ID Numbers

Non-Caltrans Rental Equipment		Caltrans Miscellaneous Non-C Type Equipment	
Assigned Designation Numbers		Assigned Designation Numbers	
District	Equipment ID	District	Equipment ID
1	999999901	1	888880188
2	999999902	2	888880288
3	999999903	3	888880388
4	999999904	4	888880488
5	999999905	5	888880588
6	999999906	6	888880688
7	999999907	7	888880788
8	999999908	8	888880888
9	999999909	9	888880988
10	999999910	10	888881088
11	999999911	11	888881188
12	999999912	12	888881288
HQ	999999959	HQ	888885988

Notes:

Manual bulk fuel sites - Vehicle operators record the Assigned Designation number on the Disbursement Record - Bulk Fuel (DME-0045) form's Equipment ID field after each fueling.

Automated bulk fuel sites - When prompted at the Fuel Control Terminal (FCT) reader, enter the appropriate Assigned Designation number for District Equipment ID number.

Exhibit 12.02: Diesel/Biodiesel Powered Equipment Off-Road Percentages

Maint. Class	Description	Off-Road %		Maint. Class	Description	Off-Road %
1341	PLUMBING TRUCK	80		3380	PERSONNEL HOIST 65-FT TREE TRIM	80
1357	CARGO BODY W/HOIST LITTER	80		3382	PERS HST ART W/UTL BODY ELEC 6	50
1983	STENCIL W/PAINT UNIT DIESEL	50		3383	PERSONNEL HOIST W/WORK PLATFOR	50
2321	DUMP BODY W/PLOW	50		3384	TRASH COMPACTOR 16-CY REAR LO	50
2323	DUMP BODY W/PLOW & SPREADER	80		3387	PERSONNEL HOIST ART 50-FT T/TRM	80
2330	UTILITY BODY	50		3390	DIGGER DERRICK W/ UTILITY BODY	80
2338	SIGN INSTALLATION DIESEL	50		3393	LANDSCAPE SPRAY TILT CAB 1000	80
2349	CARGO BODY W/O HOIST 12-FT DIESEL	80		4375	EMULSION DISTRIBUTOR	80
2350	CARGO BODY W/HOIST 12-FT DIESEL	80		4700	TRUCK TRACTOR	50
2355	CARGO BODY MARKER-DOT DIESEL	80		4722	DUMP BODY W/SPREADER	80
2358	CARGO BODY TREE TRIM DIESEL	80		4753	MUD-JACK TENDER W/TANK & CGO B	80
2364	CARGO BDY CREW W/HOIST DIESEL	80		5301	TRUCK TRACTOR W/PLOW	50
2382	PERSONNEL HOIST W/UTIL BDY 35-FT	80		5320	DUMP BODY	50
2383	LANDSCAPE SPRAY 400-GAL.	80		5321	DUMP BODY W/PLOW	50
2387	THERMOPL STENCIL W/MARKER DIESEL	80		5322	DUMP BODY W/SPREADER	50
2549	CARGO BODY 15-FT W/O HOIST	50		5323	DUMP BODY W/PLOW & SPREADER	50
2550	CARGO BODY 15-FT W/HOIST	80		5324	DUMP BODY W/2 PLOWS	50
2551	CARGO BODY 15-FT W/HOIST W/PLOW	80		5325	DUMP BODY W/2 PLOWS & SPREADER	50
2552	CARGO TRUCK 15-FT W/SCISSOR LIFT	80		5349	CARGO BODY W/O HOIST	80
2553	CARGO BODY SCISSOR LIFT W/PLOW	80		5351	CARGO BODY W/PLOW	80
2554	CARGO BODY W/COMPRSR AIR DRILL	80		5356	TENDER THERMOPLASTIC	80
2556	TENDER THERMOPLASTIC W/2 PREHT	80		5358	STRIPER TENDER PAINT	80
2558	CARGO BODY TREE TRIMMER	80		5359	DRILL TENDER W/ INTEG WATER TANK	80
2580	PERSONNEL HOIST 50-FT W/TREE TR	80		5360	STRIPER LOW ENTRY CAB HOT PAINT	80
2582	PERSONNEL HOIST 45-FT W/UTIL BD	80		5370	CATCH BASIN & SEWER LINE CLEAN	80
2587	THERMOPL STENCIL W/PRE HEAT CA	80		5380	TANK SPRAY RIG 3000-GAL	80
2590	DIGGER DERRICK W/UTILITY BODY	80		5382	PERSONNEL HOIST BRIDGE INSPECTION	50
2592	LANDSCAPE SPRAY 500 TO 1000-GAL	80		5383	CATCH BASIN AND SEWER LINE CLEAN	80
2594	DIGGER DERRICK W/SIGN BODY	80		5384	TRUCK LITTER PICKUP	80
2920	DUMP BODY	80		5385	PERSONNEL HOIST W/WORK PLATFORM	100
3300	TRACTOR TRUCK	80		5390	BRIDGE REPAIR	100
3317	DUMP BODY W/LOADER TILT CAB	50		5392	DRILL TRUCK MOUNTED	80
3321	DUMP BODY W/PLOW	50		5395	CRANE SHOP USE	100
3322	DUMP BODY W/SPREADER	50		11151	CARGO BODY W/O HOIST W/PLOW DS	100
3323	DUMP BODY W/PLOW & SPREADER	50		11589	TUNNEL WASHER UNIMOG	80
3324	DUMP BODY W/2 PLOWS	50		13323	DUMP BODY W/PLOW & SPREADER	50
3325	DUMP BODY W/2 PLOWS & SPREADER	50		13330	DRILL TENDER W/SERVICE BODY	50
3349	CARGO BODY 15-FT W/O HOIST	80		13390	DRILL RIG	80
3351	CARGO BODY W/PLOW	80		13721	DUMP BODY W/PLOW	50
3352	CARGO BODY W/SCISSOR LIFT	50		13723	DUMP BODY W/PLOW & SPREADER	50
3359	CARGO BODY W/CRANE	80		13724	DUMP BODY W/2 PLOWS	50
3368	TRUCK 4-CY HOOK-LIFT	80		13725	DUMP BODY W/2 PLOWS AND SPREAD	50
3378	PERSONNEL HOIST ART BRIDGE INSPECT	80		15724	DUMP BODY W/2 PLOWS 6-WD	100
3379	PERSONNEL HOIST ART 45-FT UB EL	80		17003	ROTARY SNOWPLOW LDR MTD 1200-T	100

Exhibit 12.02: Diesel/Biodiesel Powered Equipment Off-Road Percentages (cont.)

Maint. Class	Description	Off-Road %		Maint. Class	Description	Off-Road %
17005	ROTARY SNOWPLOW LDR MTD 1400-T	100		39612	KETTLE HT 400-GAL W/BR W/O ENG H	100
17011	ROTARY SNOWPLOW ROLBA 5000-TPH	100		39804	KETTLE EMUL ASPHALT TRANSPUMP	100
17101	ROTARY SNOWPLOW CONV MT 2200-T	100		41514	LOADER 1 1/2-C Y CRAWLER TRAC M	100
17102	ROTARY SNOWPLOW CONV MT 2600-T	100		41802	LOADER SKID STEER	100
17103	ROTARY SNOWPLOW CONV MT 3500-T	100		41832	LOADER FRONT END 1 CY	100
17104	ROTARY SNOWPLOW CHS MT 5000-TPH	100		41846	LOADER FRONT END 1 1/2-CY	100
17105	ROTARY SNOWPLOW CAB OVR 2600-T	100		41864	LOADER FRONT END 2 1/2-CY	100
22000	BOAT FERRY	100		41866	LOADER 2 1/2-CY REMOTE CONTR	100
22024	BOAT NON-TRAILERABLE	100		41870	LOADER FRONT END 3-CY	100
25202	CHIPPER BRUSH	100		41880	LOADER SELF POWRD W/CONVEYR BELT	100
25204	CHIPPER BRUSH DISC ARTICULATIN	100		45501	PAVER ASPHALT SELF PROPELLED	100
25205	CHIPPER BRUSH DIESEL	100		47732	PUMP MUD JACK-GROUTER	100
26103	CLEANER CULVERT 50-GAL TLR MTD	100		47739	PUMP MUD SHAKER TRAILER MOUNT	100
27106	COMPRESSOR AIR 125 CFM TRLR M	100		47740	PUMP GROUT MIX TRAILER MOUNT	100
27108	COMPRESSOR AIR 185 CFM TRLR M	100		49608	ROLLER PNEU TIRE SELF-PROP	100
27112	COMPRESSOR AIR 300 CFM TRLR MT	100		49609	ROLLER PNUEMATIC TIRE DIESEL	100
27114	COMPRESSOR AIR 600 CFM TRLR M	100		49614	ROLLER TANDEM 3 TO 5-TON	100
27120	COMPRESSOR AIR 1200 CFM TRLR	100		49617	ROLLER TANDEM 5 TO 8-TON DIESEL	100
27402	CONVEYOR BELT TRLR MTD	100		49618	ROLLER VIB TANDEM 600 TO 1400-L	100
27412	CONVEYOR BELT W/GRAVEL SCREEN	100		49620	ROLLER VIB TANDEM 3 TO 6-TON	100
27621	CRANE DIESEL SELF PROPELLED 1 TON	100		49621	ROLLER VIBRATORY 2.5 TO 5-TON DSL	100
27631	CRANE SELF PROPELLED 12-TON	100		49623	ROLLER VIBRATORY 5 TO 8-TON DIESEL	100
27651	BARRIER TRANSFER UNIT DIESEL	100		54408	SHOVEL POWER 1 CY	100
28508	CUTTER STUMP	100		54801	SIGN PASS SEQUENTIAL ARROW 4-FT	100
31702	DRILL RIG HORIZ CRAWLER TRC MTD	100		54830	SIGN RADAR SPEED MONITOR TRL MTD	100
31704	DRILL RIG CONCRETE TRLR MOUNTED	100		55180	SNOW VEHICLE PASSENGER	100
31707	DRILL RIG TR MTD EARTH CONCRETE	100		55308	SPRAY 300-GAL SKID MOUNTED	100
35008	FORKLIFT 2-TON	100		55310	SPRAY 300-GAL TRAILER MOUNTED	100
35009	FORKLIFT 2-TON TOWABLE	100		55315	SPRAY 500-GAL SKID MOUNTED	100
35012	FORKLIFT 3-TON	100		55316	SPRAY 500-GAL TRAILER MOUNTED	100
35030	FORKLIFT 7 1/2-TON	100		55505	SCREENING PLANT TOWABLE	100
35702	GENERATOR 5-KW W/FLOOD LIGHT	100		55513	SPREADER CHIP SELF PROPELLED	100
35720	GENERATOR ELECTRIC 126 TO 175	100		55525	SPREADER HOPPER TYPE 4-CY	100
36102	GRADER TANDEM DRIVE 130	100		55528	SPREADER HOPPER TYPE 8-CY	100
36301	GRADER 6-WHL DR W/ PLOW 150	100		55530	SPREADER HOPPER TYPE 10-CY	100
36401	GRADER 6-WHL DR W/2 PLOWS 175-H	100		56500	SCRUBBER LANE & FLOOR RIDEABLE	100
36550	GRINDER ASPHALT W/O CONVEYR 14	100		56501	SWEEPER TURF	100
36563	GRINDER ASPHALT W/CONVEYOR 42I	100		56504	SWEEPER ROTARY TOWED SELF-POW	100
36564	GRINDER ASPHALT W/CONVEYOR 60I	100		56505	SWEEPER ROTARY TOWED DIESEL	100
36601	GUARD RAIL STRAIGHTENER	100		56507	SWEEPER ROTARY TOWED/SLF PROP	100
39607	KETTLE HEAT TRANSFER DBL BOILER	100		56702	SWEEPER LOT 48-IN	80
39608	KETTLE HEAT TRANSFER 400-GAL	100		56704	SWEEPER LOT 54-IN	80
39610	KETTLE HEAT 301 TO 400-GAL W/SP	100		56808	SWEEPER CONV 3 TO 4-CY DIESEL	100

Exhibit 12.02: Diesel/Biodiesel Powered Equipment Off-Road Percentages (cont.)

Maint. Class	Description	Off-Road %
59001	EXCAVATOR 20-TON	100
59004	TRACTOR CRAWLER W/DOZER 75-H	100
59006	TRACTOR CRAWLER W/DOZER 105	100
59010	TRACTOR CRAWLER W/DOZER 165	100
59206	TRACTOR WHEEL 20-HP W/ROT MOW	100
59209	TRACTOR WHEEL 4000 TO 4999 LBS	100
59215	TRACTOR WH W/ARM MOUNTED MOWER	100
59216	TRACTOR WHEEL DIESEL W/REAR MOWER	100
59217	TRACTOR WH 75-HP SIDE OR REAR MOWER	100
59218	TRACTOR WHEEL 120 HP W/2 MOWER	100
59220	TRACTOR WH W/BACKHOE AND/OR LDR A	100
59222	TRACTOR WHEEL W/BOOM MT MOWER	100
59806	LINE REMOVER RIDE ON VACUM	100
60203	TRAILER EQUIPMENT 1 TON TILT	100