

**Performance Audit 18-05:
Fuel Key Inventory Management**

March 2019

City Auditor

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OFFICE OF INTERNAL AUDIT

Stan Sewell, City Auditor

March 22, 2019

To: Mayor Andy Berke
City Council Members

Re: Fuel Key Inventory Audit (Report #18-05)

Mayor Berke and City Council Members:

The attached report contains the results of our audit of the Fleet Services Division fuel key inventory. Our audit found that internal controls over vehicle and equipment fuel keys generally align with applicable regulatory requirements and standards. However, we identified potential areas of vulnerability, as well as opportunities to improve the Fleet Services Division internal control framework.

In order to address the noted areas for improvement, we recommended actions to: a) establish a comprehensive policy and operational procedures; b) improve segregation of duties; and c) strengthen controls to reduce the risk of theft, fraud and abuse.

We would like to take this opportunity to thank the management and staff of the Fleet Services Division for their courtesy, cooperation and assistance during this audit.

Sincerely,

Stan Sewell, CPA, CGFM, CFE
City Auditor

Attachments

cc: Audit Committee Members
Jim Arnette, Tennessee Local Government Audit
Stacy Richardson, Chief of Staff
Maura Sullivan, Chief Operating Officer
Daisy Madison, Chief Financial Officer
Justin Holland, Public Works Administrator
Gary Franks, Director of Fleet Services
Lurone Jennings, YFD Administrator

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AUDIT PURPOSE

This audit was conducted in accordance with the Office of Internal Audit's 2018 Audit Agenda. The objective of this audit was to determine if the Fleet Services Division maintains comprehensive controls over vehicle and equipment fuel keys to prevent unauthorized use and reduce the risk of theft, fraud and abuse.

BACKGROUND

The Fleet Services Division ("Fleet") operates as an Internal Service Fund (ISF), providing maintenance and fuel services for City vehicles and equipment. Fleet allocates monthly fuel charges to each department based on fuel consumption, plus a ten (10) percent surcharge per gallon of fuel.

Fleet utilizes two (2) different software programs, Phoenix 3.1 and Gasboy, to manage fuel inventory and track fuel consumption. Fleet fueling stations¹ are equipped with fuel island readers, or "kiosks", that collect and transmit fuel transaction data to the Phoenix and Gasboy systems.

City vehicles are assigned a programmable fuel card, or "fuel key", for refueling. Fuel keys are also assigned to non-vehicle equipment, *e.g.*, fuel storage containers. Fleet personnel are responsible for programming and issuing new fuel keys for the Phoenix and Gasboy systems. Only one (1) fuel key is activated per vehicle or asset. If a fuel key is lost or stolen, a new fuel key is issued and the old fuel key is deactivated from the system(s).

Fuel keys must be scanned or inserted into the kiosk to begin the refueling process. This allows the Phoenix and Gasboy systems to record the transaction, identify which vehicle is being refueled, and prevent unauthorized use of fuel keys. The fuel pump automatically shuts off, and the transaction terminates, once the pump has dispensed the maximum gallons of fuel assigned to the particular vehicle.

Only authorized employees can dispense fuel with an assigned vehicle fuel key. The Phoenix and Gasboy systems each maintain a database of employees authorized to use fuel keys. If an employee's name and identification number is not in the database, the system will not

¹ Fleet operates three (3) fueling stations located at Amnicola, Moccasin Bend, and 12th Street.

recognize that employee and no fuel will be dispensed, even with a valid fuel key.

Fleet uses Ron Turley Associates (RTA) software to generate department billing and fuel management reports. Fleet personnel are responsible for exporting fuel transaction data from the Phoenix and Gasboy systems into the RTA system. Any variance between the Phoenix and Gasboy data and the volumetric data from the Veeder-Root² fuel tank monitoring system is documented in the RTA system and displayed on the RTA report. Fleet is responsible for reconciling any reported variances.

Fleet has three (3) mobile trucks that are used to fuel heavy-duty commercial trucks, equipment, storage tanks and containers on a daily basis. Mobile trucks obtain bulk fuel directly from the City's fuel vendor, and have assigned fueling schedules for City vehicles, equipment and fuel storage containers. Bulk fuel dispensed from the mobile trucks is manually recorded on journals maintained by the drivers and the transactions are reconciled daily by Fleet personnel.

Financial Information

Exhibit 1. Fleet Fuel Revenues & Expenses (2016-2018)

Fuel Revenue	2016	2017	2018
Moccasin Bend	\$0.7M	\$0.6M	\$0.8M
Amnicola & 12 th Street	\$1.6M	\$1.6M	\$1.8M
Total	\$2.3M	\$2.2M	\$2.6M
Fuel Expense⁽¹⁾	2016	2017	2018
Moccasin Bend	\$0.6M	\$0.5M	\$1.0M
Amnicola & 12 th Street	\$1.4M	\$1.5M	\$1.4M
Total	\$2.0M	\$2.0M	\$2.4M

⁽¹⁾ Includes fuel cost minus ten (10) percent surcharge

Source: FY2019 CABR

FINDINGS AND RECOMMENDATIONS

Establish Policies and Procedures for Fuel Management Operations

Fleet does not maintain a formal policy or procedures governing fuel key transactions or inventory. Both state law and the City Code establish requirements for policies and procedures related to inventory.

² Veeder-Root TLS-350 fuel tank monitoring systems electronically measure the T/C volume (gallons of fuel) in the underground storage tanks, which is used to determine the total amount of fuel on hand at each facility.

Although there are no specific regulatory requirements for fuel key inventory management, the Government Finance Officers Association (GFOA) recommends “[e]very government [organization] should document its accounting policies and procedures”.³ Moreover, well-designed policies and procedures for inventory management enhance organizational accountability and consistency, and significantly reduce the risk of inventory mismanagement and misappropriation.⁴

Fleet’s oversight, management and control of the fuel key inventory is largely informal and based primarily on institutional knowledge of staff. Additionally, there is a significant risk of discontinuity and/or inconsistent practices among employees that is likely to increase in the event of staffing changes or turnover.

Recommendation 1:

We recommend Fleet establish written policies and procedures for fuel key inventory management. The policy and procedures should be published on the City’s Employee Portal website (“ePortal”), and clearly establish the process and controls for fueling motor vehicles and equipment using a City fuel card.

***Auditee Response:** We concur with the audit finding and recommendation.*

**Improve
Segregation of
Duties**

We found an insufficient segregation of fuel key management duties. Fleet has two (2) employees (an Inventory Coordinator and Inventory Technician) with overlapping responsibilities for the majority of fuel management functions.

Both employees have administrative rights to the fuel management systems, which includes reconciling, recording, processing, and reviewing fuel transactions, as well as encoding/programming fuel keys. The current desegregation of duties is partially due to these employees working in different locations.

Segregation of duties ensures that no single individual has the authority to execute two (2) or more transactions across the inventory process without suitable checks and balances. We recognize that staffing limitations may present a challenge for Fleet to implement a complete segregation of duties. However, without some level of segregation, fraud and error risks are less manageable, which could result in inventory loss or misappropriation. Segregation of duties also

³ <http://www.gfoa.org/policies-and-procedures-documentation>

⁴ Tennessee Comptroller Internal Control Compliance Manual for Governmental Entities (12/2015 edition).

reduces the likelihood of employees bypassing established controls, or concealing errors and irregularities, while performing their job functions.

Recommendation 2:

We recommend that job tasks be divided between the Fleet services staff as much as practical to reduce the risk of employee error or omission, whether intentional or unintentional. Furthermore, we recommend the use of compensating controls such as having the Fleet Deputy Director periodically review fuel key transactions. For example, the Deputy Director should review and approve management overrides and other material changes made in the fuel management systems, such as mileage adjustments, *etc.*

Auditee Response: *We concur with the audit finding and recommendation.*

Strengthen Controls to Reduce Inherent Fraud Risks

Fleet's system of internal controls generally align with applicable regulatory requirements and standards. However, our analysis of industry best practices revealed that some controls require improvement to effectively reduce the risk of theft, fraud and abuse:

Phoenix and Gasboy fuel key user databases. The fuel key user databases are not regularly updated. Our testing revealed examples where terminated employees, or employees who no longer have permission to use a fuel key, remained in the database(s) as authorized users. For example, we discovered 456 fuel transactions totaling \$13,959.00 during the audit period where YFD staff members (who were not authorized fuel key users) obtained fuel by using the employee identification number of a former employee who retired in September 2017.⁵

Unauthorized vehicle fueling or "side fueling". Fuel pumps are programmed to automatically shut-off once the pump dispenses the maximum gallons assigned to a vehicle. However, this control doesn't eliminate the risk of someone refueling more than one vehicle, or asset, using the same fuel key. Our discussions with Fleet personnel revealed that an employee could pump twenty gallons of fuel into a truck, and pump the remaining 20 gallons into another vehicle (or storage container) in a single transaction using the same fuel key.⁶ Surveillance cameras are installed to reduce this risk, but cameras at

⁵ In September 2014, the Office of Internal Audit reported a similar practice to the YFD Administrator, along with a recommendation that the department establish a policy prohibiting the use of another employee's identification number when fueling.

⁶ Example is for a 40 gallon-limit vehicle.

some fueling stations do not function properly and are rarely monitored.⁷

Management overrides. Neither the Phoenix nor Gasboy software offers audit trail capabilities to document management decisions to override system controls.⁸ The Gasboy system has the capability to generate exception reports, including fuel usage and reconciliation reports. However, many of these valuable reporting tools are inoperable because Gasboy is not linked to the Veeder-Root and RTA systems.

Reconciliation of fuel inventory variance. Variances between the Phoenix and Gasboy data and the Veeder-Root readings are appropriately documented in the RTA system. However, Fleet does not have established reconciliation procedures, and there is no established threshold to determine an acceptable variance.

Employee training. Fleet employees have not been trained on the Gasboy software; nor have they received training materials or manual(s) illustrating how to operate the Gasboy system.

Identity management. The Phoenix software doesn't have security or access-control features. Virtually anyone can access the Phoenix system without providing identification, authentication, or authorization credentials.⁹ The absence of security or access-control approvals increases the risk of unauthorized fuel usage going undetected.

Recommendation 3:

We recommend Fleet consider implementing the following strategies to strengthen controls to prevent theft, fraud and abuse:

- a) Fleet should immediately remove terminated employees from the fuel key user databases. Fleet should also work with Human Resources to obtain a monthly listing of terminated employees, and send an active fuel key user list to each department for review and approval on a bi-annual basis.

⁷ New surveillance cameras were recently installed at the Moccasin Bend station. However, one camera at the 12th Street station, and the all cameras at the Amnicola stations, do not function properly.

⁸ Fleet has no procedures for documenting the reason(s) for management overrides.

⁹ The Gasboy system, on the other hand, includes an identity management tool that uniquely identifies approved users so unauthorized users cannot access the system.

Reported concerns or inconsistencies should be handled appropriately.

- b) Fleet should develop and distribute fuel key procedures to all departments, clearly defining user expectations, responsibilities, and decision point roles. (See Recommendation 1).
- c) Fleet should implement procedures for documenting the reason(s) for overriding fuel system controls. (See Recommendation 1)
- d) Exception reports, fuel variances, and reconciliation reports should be regularly reviewed and approved by Fleet management. (See Recommendation 2).
- e) Using the cost/benefit approach, Fleet should investigate the feasibility of integrating the fuel management systems with the Veeder-Root and RTA systems.
- f) Fleet should consider upgrading the current version of the Phoenix software to a newer version with security features to prevent unauthorized system access.

Auditee Response: *We concur with the audit findings and recommendations. We are working with Human Resources to obtain a monthly report of terminated employees that will be sent to our Deputy Director. We will also work with the IT department to ensure surveillance cameras at all Fleet fueling stations function properly. We will implement formal reconciliation procedures for inventory variances. Because we are considering a replacement for the Gasboy system, we will not be investing in training in the immediate future. We will consider upgrading the Phoenix software to include security features designed to prevent unauthorized access. However, it is important to note that only authorized Fleet personnel have access to the computers that use the Phoenix software.*

APPENDIX A: SCOPE, METHODOLOGY AND STANDARDS

Based on the work performed during the preliminary survey and the assessment of risk, the audit covers Fleet fuel key management operations from January 1, 2018 to February 1, 2018. When appropriate, the scope was expanded to meet the audit objectives. Source documentation was obtained from Fleet and Oracle. Original records as well as copies were used as evidence and verified through physical examination.

To develop our recommendations, we interviewed Fleet personnel and conducted a detailed analysis of regulatory criteria and industry best practices.

The sample size and selection were statistically generated using a desired confidence level of 90 percent, expected error rate of 5 percent, and a desired precision of 5 percent. Statistical sampling was used in order to infer the conclusions of test work performed on a sample to the population from which it was drawn and to obtain estimates of sampling error involved. When appropriate, judgmental sampling was used to improve the overall efficiency of the audit.

To achieve the audit's objectives, reliance was placed on computer-processed data contained in the Phoenix, Gasboy, Ron Turley Associates and Oracle systems. We assessed the reliability of the data contained in these systems and conducted sufficient tests of the data. Based on these assessments and tests, we concluded the data was sufficiently reliable to be used in meeting the audit's objectives.

We conducted this performance audit from December 2018 to February 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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