2010-A11

Metropolitan Council

Program Evaluation and Audit

Environmental Services

Metro Plant Warehouse Review

Metro Plant Warehouse
Empire Plant Storerooms
Regional Maintenance Facility
Storeroom

June 1, 2010

INTRODUCTION

Background

Metropolitan Council Environmental Services (MCES) operates seven waste water treatment plants (WWTP), 61 lift stations, 190 meter stations, 21 rain gauge stations and 600 miles of interceptor pipes throughout the seven county metropolitan area 24 hours a day, seven days a week, 365 days a year. Maintaining equipment is critical to ensure continual operation. In support of these maintenance and operations functions, spare parts and supplies are stocked in a central warehouse and outlying satellite storerooms.

The centralized Metro Plant Warehouse (Warehouse) services MCES operations and maintenance as well as maintaining office supplies and printed document supplies for MCES and Robert Street offices and storage for some Metro Transit printed documents. The Warehouse contains over 28,000 active stock items valued at over $5.9 million.

For those operations and maintenance personnel assigned to the Metro Plant, parts can be obtained from and returned to the Warehouse will-call window. In addition, Warehouse employees, maintenance managers, some operations managers, the general lead employee from each trade group and one subordinate lead employee from each trade group has approved card access into the Warehouse. However, to obtain/return an item, both the requestor and the approved card access employee filling the request must scan their badges. Each bar coded work order and part is also scanned, resulting in a posting of each inventory transaction to the MCES Work and Asset Management (WAM) system.

There are also four satellite storerooms located at the Metro Plant accounting for 417 items valued at $6,018. One is in the Administration Building and contains a variety of office supplies. The other three are located in the Liquids, Solids Maintenance and Solids business units. Operations personnel have access to these storerooms. Employees list inventory items taken or returned on sign-out sheets maintained in each of the storerooms. Once per week a Warehouse employee goes to the storerooms, replenishes inventory, reviews the sign out sheets and enters into the WAM system those items taken from and returned to inventory.

The Warehouse is open 7:00 a.m. – 3:30 p.m. Monday through Friday. At all other times, anyone requiring access to the Warehouse must sign out a “trade access card” on a security log maintained at the facility security office at the west entrance to the Metro Plant. The employee must also list those items taken on a sign-out log maintained at the Warehouse.

Employees can also submit an electronic inventory checkout request/pick ticket that is subsequently used by warehouse personnel to gather and issue the requested items. The items are either handed to the requestor or sent by courier if the requestor is located at another facility. A third party courier service is used to deliver items to Metropolitan Council (Council) offices in St. Paul, the Regional Maintenance Facility (RMF) and the Seneca Plant daily, Monday through Friday. The RMF storeroom is staffed by a

Warehouse employee during the day. It contains about 6,500 items valued at about $664,000 and is protected from unauthorized access through the use of card access readers, steel fencing and security cameras.

Three satellite card access controlled storerooms (mechanical, electrical and operations) have been established at the Empire Plant. These storerooms, none of which is staffed by a Warehouse employee, contain 2,418 inventoried items valued at over $174,000. All Empire Plant trade and operator personnel have access to these storerooms. Employees list inventory items taken or returned on sign-out sheets maintained in each of the storerooms. On Tuesday and Friday of each week, a Warehouse employee travels to the Empire Plant, replenishes inventory, reviews the sign out sheets and enters those items taken from and returned back to inventory into the MCES Work and Asset Management (WAM) system.

The Oracle Utilities Work and Asset Management (WAM) System, implemented in 1999, consists of interactive computer software designed to provide integrated inventory control, inventory management, work order management and time reporting among other accounting and asset management systems. The Warehouse and all satellite storerooms use WAM to control and account for parts and supplies used in MCES operations. In addition, the work order system within WAM is used to identify the exact items needed to maintain a piece of equipment, and as an inventory reduction tool, to pull obsolete parts from inventory for disposition when a piece of equipment is decommissioned.

Employees at the remaining four WWTP (Blue Lake, Eagles Point, Hastings and St. Croix Valley) receive many of their maintenance supplies from the Warehouse via electronically submitted checkout requests. When the checkout request is received, a Warehouse employee fills the order and sends the parts/supplies to the appropriate WWTP via the courier service. Deliveries are made on Monday, Wednesday and Friday of each week. In addition, some items are obtained via purchase requisition/purchase order, blanket purchase orders and credit card. The long term plan calls for erecting small storerooms at Eagles Point, Hastings and St. Croix Valley and large storerooms at Seneca and Blue Lake (which is currently in the process of expanding).

To ensure timely, cost-effective maintenance of MCES facilities, spare/repair parts and supply items are stored at the Warehouse and at satellite storerooms. Keeping items on site is required and critical to operations, but presents challenges for accurate and continuing control of parts when manual systems and satellite storerooms are involved. As a result, storerooms have been viewed by MCES and Program Evaluation and Audit (Audit) as relatively high risk. In addition, MCES management personnel requested that Audit include a review of Warehouse operations in its 2010 Audit Plan.

Assurances

This audit was conducted in accordance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing* and the U. S. Government Accountability Office's *Government Auditing Standards*.

Scope

The Warehouse review was broad in scope to include a review of Warehouse operations and internal controls regarding the safeguarding and accounting for inventory items used by MCES throughout its operations. It included an assessment of controls over satellite storeroom operations at remote facilities throughout the seven county metropolitan area. It did not include a review of the four Metro Plant remote storerooms for the amount of the material stored therein is immaterial. In addition, a review of policies and procedures and formal MCES Work Instructions was conducted to include the effect they have on maintaining control over inventory variances. Finally, the method used to disburse parts and supplies to remote facilities was reviewed for efficiency.

Methodology

After eliminating inventory items with zero extended costs, Audit selected a statistically significant, random sample with a 95% level of confidence and a 5% error rate plus a judgmental sample of the highest extended value items. Universe and sample stratification data based on average unit cost is included at Exhibit I. Audit physically verified the count of the selected inventory items and compared that count to the quantity stated in the WAM inventory system. The following methods of inquiry were also used:

- Differences were noted and discussed with Warehouse personnel.
- Findings and results were recorded and summarized.
- The status of prior audit recommendations was reviewed.
- Inventory Management policies and procedures were evaluated.
- Physical security of the Warehouse and satellite storerooms was assessed.
- Efficiency of the third party courier service was analyzed.

OBSERVATIONS

Inventory Audits

On March 12, 16, and 23, 2010 physical inventory counts were performed at the Metro Plant Warehouse and subsidiary storerooms at the Empire Plant and the Regional Maintenance Facility, respectively. The following statistical data summaries are included as Exhibits at the end of this report:

- Exhibit I: Universe & Sample Stratification Data for the three storerooms.
- Exhibit II: Preliminary Statistical Data Summary. This represents the initial data gathered at the time of physical inventory count.
- Exhibit III: Adjusted Statistical Data Summary. This represents revised data based upon further review by warehouse personnel subsequent to the time of the count.

In addition, the following observations were made:

Metro Plant Warehouse

Audit randomly sampled 254 items valued at $628,985, initially finding six variances representing a shortage of ($4,327). Extrapolating this to the $5,210,238 random sample universe, Audit estimates a net shortage of ($14,114) and an absolute variance including both overages and shortages of $15,050. Audit also judgmentally sampled the 10 items with the highest value totaling $714,978, resulting in one variance representing an overage of $47,617. Combining the judgmental and random samples, Audit estimates a net overage of $33,502 and an absolute variance of $62,666 from the $5,925,216 total Metro Plant Warehouse inventory.

The Assistant Business Unit Manager – Warehouse (Manager) responsible for the Metro Plant warehouse and ancillary storerooms reviewed the preliminary random sample results of audit and provided documentation explaining the following variances:

- An Inventory Technician incorrectly processed a disbursal of 54 grinder cutters as a return, changing an initial (2,695) shortage into an actual overage of $612.
- Twenty foot laminated construction wood flights are stored in a Pole Barn away from the Warehouse. Machinists who used six of them had forgotten to tell Warehouse personnel, resulting in a shortage of ($1,606).
- Fuel oil is measured quarterly and maintained for emergency uses in extremely cold weather when Excel Energy cuts service. By error, the tank reading identified during audit was thought not to have included 2010 receipts of 28,000 gallons when in fact it had. None of the fuel oil inventory has been used in 2010 due to the mild winter. A new reading was made three days after the audit resulting in a reduced overage of 11,084 gallons or $18,954.

Adjusting for the first two items above, Audit found five variances representing a net projected overage of just $78 from the random sample universe. Adding the third adjustment above from the judgmental sample, Audit found a total of six variances representing a net overage of $19,032 and an absolute variance of $23,354 from the total $5,925,216 Metro Plant Warehouse inventory.

The net result is within an acceptable range for both the revised random sample and the revised combined random/judgmental sample. The absolute variance for both samples is also within an acceptable range. In addition, only six of the 264 sampled items varied from their stated inventory value, a variance rate also within the acceptable range. See Exhibits II and III for additional statistical information.

Empire Plant Storerooms

Audit randomly sampled 99 items valued at $39,623, initially finding eight variances representing a shortage of ($35). Extrapolating this to the $130,927 random sample universe, Audit estimates a net shortage of ($878) and an absolute variance including both overages and shortages of $1,622. Audit also judgmentally sampled the five items with the highest value totaling $44,489, resulting in two variances representing a net overage of $4,094. Combining the judgmental and random samples, Audit estimates a net overage of $3,216 and an absolute variance of $5,716 from the $175,416 total Empire Plant storerooms inventory.

The Manager reviewed the preliminary random sample results of audit and provided documentation explaining the following variance:

- Contractors working at the Empire plant left behind two IEC non-reversing VAC coils and one submersible chopper pump cutter plate. Trade personnel subsequently placed them in the storeroom without notifying a Warehouse employee or listing them on the sign-out/return log. This resulted in an overage of $4,094.

Adjusting for the two separate items identified above, Audit found eight variances representing a shortage of ($35). Extrapolating these revised results to the $175,416 Empire Plant storerooms inventory, Audit estimates a net shortage of ($878) and an absolute variance of $1,622.

The net result is within an acceptable range for both the revised random sample and the revised combined random/judgmental sample. The absolute variance for both samples is also within an acceptable range. However, the results fall outside the acceptable range for number of variances. An acceptable number would be five rather than the eight experienced. See Exhibits II and III for additional statistical information.

Regional Maintenance Facility Storeroom

Audit randomly sampled 150 items valued at $153,427, initially finding five variances representing an overage of $75. Extrapolating this to the $531,158 random sample universe, Audit estimates a net overage of $3,117 and an absolute variance, including both overages and shortages, of $5,019. Audit also judgmentally sampled the five items with the highest value totaling $131,051, resulting in one variance representing an overage of $1,413. Combining the judgmental and random samples, Audit estimates a net overage of $4,529 and an absolute variance of $6,431 from the $662,209 total Regional Maintenance Facility storeroom inventory.

The Manager and storeroom personnel reviewed the preliminary sample results and provided documentation explaining the following variances:

- Carbon is stored in 250 pound drums, 56 of which were issued to workers on 2/11/10. Five drums were not used and returned to storage without notifying the stockkeeper, resulting in an overage of $1,413.
- The stockkeeper forgot to record issuing a case of paper roll towels, resulting in a shortage of $22.

Adjusting for the two items identified above, Audit found four variances representing an overage of $97. Extrapolating these revised results to the $662,209 Regional Maintenance Facility storeroom inventory, Audit estimates a net overage of $4,018 and an absolute variance of $4,118.

The net result is within an acceptable range for both the revised random sample and the revised combined random/judgmental sample. The absolute variance for both samples is also within an acceptable range. In addition, only four of the 155 sampled items varied from their stated inventory value, a variance rate also within the acceptable range. See Exhibits II and III for additional statistical information.

Inventory Audits Summary

Combining the results of the random samples for the Metro Plant warehouse and satellite Empire Plant and Regional Maintenance Facility storerooms, Audit found a total of 18 variances representing an overage of $648. Extrapolating these results and adding the results from the judgmental samples to the entire $6,762,842 consolidated inventory under the management of the Metro Plant warehouse Manager, Audit estimates a net overage of $22,172 and an absolute variance of $29,094.

The net results are within an acceptable range for both the revised random sample and the revised combined random/judgmental sample. The absolute variance for both samples is also within an acceptable range. In addition, only 18 of the 523 sampled items varied from their stated inventory value, a variance rate well within the acceptable range. See Exhibits II and III for additional statistical information.

The layout of the Warehouse and satellite storerooms is similar, using a similar bin/row/isle numbering scheme. That made it easy to move from one inventory area to another, understand where parts would be located and efficiently conduct the audits. Such a set-up is also an efficient way for Warehouse and storeroom employees to move from one site to another without having to learn a new cataloging system.

Courier Service

The courier service used by Warehouse personnel to move parts and supplies from the Metro Plant to the Robert Street Office Building and the four WWTP not serviced by a storeroom cost MCES $35,294 in calendar year 2009. Monthly costs averaged $2,941, ranging from $1,002 in April to $5,734 in December. This is less than it would cost MCES if the function was staffed by an MCES employee driving a Council vehicle.

Work Instructions

When WAM was adopted, all users were instructed regarding what data input was required for inventory transactions. In addition, all forms that may be required for a transaction are available on WAM. However, with the exception of MCES Work Instruction 501.02.07, *Tools/Supplies Procedures,* which was implemented in order to better control the tools given to new trade employees, formal operational Work Instructions do not exist.

Physical Security

Access to the Warehouse is controlled by employee badges and is recorded by cameras located throughout the storage facility recording movements through all access points and also internal isle spaces. The three Empire plant storerooms are accessible using employee ID cards and all access is recorded by security cameras. Regional Maintenance Facility storeroom access is also recorded by a security camera and is secured by steel fencing from an adjacent open area in which trades personnel store their equipment.

CONCLUSIONS

1. *Metro Plant Warehouse – Internal controls are adequate to assure accurate inventory reporting and proper safeguarding of assets, although controls over cold weather fuel oil inventory can be strengthened.*

Audit identified six variances estimated to be a net overage of $19,032 and an absolute variance of $23,354 from the $5,925,216 total Metro Plant Warehouse inventory. As a result, all five variance indicators tracked by Audit came well within their acceptable ranges. See Exhibits II and III for additional statistical information.

Due to the high dollar value ($5.9 million) of the Metro Plant Warehouse inventory, the substantial fuel oil reserve variance did not have a significant affect on the resulting variances. However, the fuel oil overage represents a variance of 12 percent of this one item and by itself would not meet any of the variance goals.

2. *Empire Plant Storerooms – Most internal controls are adequate to assure accurate inventory reporting and proper safeguarding of assets. However, the unrestricted access by trade and operation personnel along with the manual system for logging inventory receipts and returns has resulted in a high number of items with variances.*

Audit identified eight variances estimated to be a net shortage of ($878) and an absolute variance of $1,622 from the $175,416 total Empire Plant storerooms inventory. As a result, four of five variance indicators tracked by Audit came well within their acceptable ranges. However, the eight variances exceed by three the number that is acceptable. See Exhibits II and III for additional statistical information. The absence of a Warehouse employee and the need for trade and operator personnel to manually log the items taken and brought back when not used has resulted in a high number of items varying from that stated in WAM.

The Empire storerooms were just established in December 2009, however, there has been sufficient time for employees to learn and practice the prescribed method for obtaining and returning inventory items.

3. *Regional Maintenance Facility Storeroom – Current internal controls appear to be adequate to assure accurate inventory reporting and proper safeguarding of assets. However, additional measures could be taken to assure greater control over inventory in the future.*

Audit identified four variances estimated to be a net overage of $4,018 and an absolute variance of $4,118 from the $662,209 total Regional Maintenance Facility storeroom inventory. As a result, all five variance indicators tracked by Audit came well within their acceptable ranges. See Exhibits II and III for additional statistical information.

4. *Courier Service - The courier service used by Warehouse personnel to transport parts and supplies to small outlying facilities is an efficient and effective manner for meeting operational needs.*

The courier service used by the Warehouse to move parts and supplies from the Metro Plant to the Robert Street Office Building and the four WWTP not serviced by a storeroom cost MCES less than if the function was staffed by an MCES employee driving a Council vehicle. This appears to be an efficient use of Council resources.

5. *Work Instructions – Internal controls are adequate to assure accurate inventory reporting and proper safeguarding of assets under the current employee and management structure. However, most practices are not formalized and codified with other operating practices as MCES Work Instructions.*

MCES adopted WAM in 1999 at which time users were instructed regarding inventory transaction data input. In addition, all forms that may be required for a transaction are available in WAM. However, with the exception of MCES Work Instruction 501.02.07, *Tools/Supplies Procedures*, formal Warehouse operating policies and procedures do not exist.

6. *Physical Security – Physical security for the Warehouse and satellite storerooms is adequate to control unauthorized access and to assist in the identification thereof in case of a breech.*

Access to the Warehouse and the satellite storerooms is controlled by employee badges and structured walls and/or steel fencing. In addition, if a breech were to occur, it would be digitally recorded through security cameras situated to record all entering and exiting activity.

RECOMMENDATIONS

Program Evaluation and Audit recommendations are categorized according to the level of risk they pose for the Council. The categories are:

- **Essential** – Steps must be taken to avoid the emergence of critical risks to the Council or to add great value to the Council and its programs. Essential recommendations are tracked through the Audit Database and status is reported twice annually to the Council's Audit Committee.
- **Significant** – Adds value to programs or initiatives of the Council, but is not necessary to avoid major control risks or other critical risk exposures. Significant recommendations are also tracked with status reports to the Council's Audit Committee.
- **Considerations** – Recommendation would be beneficial, but may be subject to being set aside in favor of higher priority activities for the Council, or may require collaboration with another program area or division. Considerations are not tracked or reported. Their implementation is solely at the hands of management.
- **Verbal Recommendation** – An issue was found that bears mentioning, but is not sufficient to constitute a control risk or other repercussions to warrant inclusion in the written report. Verbal recommendations are documented in the file, but are not tracked or reported regularly.

1. (Significant) Warehouse personnel should introduce additional controls to ensure that reserve fuel oil inventory is accurately recorded.

Fuel oil is measured quarterly and maintained for emergency uses in extremely cold weather when Excel Energy cuts service. The current fuel oil overage represents a variance of 12 percent of this one item and by itself would not meet any of the variance goals. Monitoring tank levels more often can provide additional information to identify when and why variances occur and provide a more accurate inventory level for when the fuel oil may be need.

Management Response: *The Warehouse Manager will monitor the Fuel Oil tank levels on a monthly basis, and work with one of the Engineers to determine whether or not an automated measuring system can be added to the tank to monitor levels.*

Staff Responsible: *Warehouse Manager*

Timetable: *Beginning July 1, 2010*

2. **(Significant) Warehouse personnel should post written Work Instructions at the three Empire Plant storerooms and periodically remind trade and operating personnel regarding the authorized manner for manually recording the receipt and return of inventory items.**

The Metro Plant Warehouse and the Regional Maintenance Facility storeroom are staffed by Warehouse employees whereas the three Empire Plant storerooms are not. Only the Empire Plant inventory locations did not fall within the acceptable item variance measure established by Audit. Absent the physical presence of a stockkeeper, it is even more important to post written Work Instructions and periodically remind employees regarding their responsibilities in maintaining accurate inventory controls.

Management Response: *Warehouse personnel will post written procedures at the three Empire Plant storerooms, and will meet with the trade and operating personnel at least twice per year to remind them of the procedures.*

Staff Responsible: *Warehouse Personnel*

Timetable: *Written procedures will be posted by 6/18/10*

3. **(Significant) Warehouse personnel should develop formal written Work Instructions to document the internal controls that are in place and to provide guidance for employees when questions arise regarding accounting for and safeguarding MCES inventory assets.**

Internal controls currently exist within the Warehouse operation to properly account for and safeguard MCES inventory within the current management structure. However, formal Work Instructions add strength to other controls by providing employees a common understanding of those controls and how they operate. In addition, as the MCES workforce continues to age and retirements become more frequent, the need for formalizing those controls in codified Work Instructions increases.

Management Response: *The Warehouse Manager will work with Warehouse personnel to develop written Work Instructions.*

Staff responsible: *Warehouse Personnel*

Timetable: *Work Instructions will be written and approved by June 1, 2011*

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Environmental Services Inventories – March 12, 16, & 23, 2010

Exhibit I: Universe and Sample Stratification Data

Metro Plant Warehouse (March 12, 2010)

Average Extended Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $450	15,897	73	$1,359,723	$ 5,813
$451 to $1,500	1,681	70	1,334,471	53,821
$1,501 to $5,000	519	64	1,311,399	152,228
$5,001 to $20,000	134	47	1,204,645	417,123
Sub-Total	**18,231**	**254**	**$5,210,238**	**$ 628,985**
100% Judgmental Sample				
$20,001 and above	10	10	714,978	714,978
Total	**18,241**	**264**	**$5,925,216**	**$1,343,963**

Empire Plant Storerooms (March 16, 2010)

Average Extended Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $500	1,797	70	$ 68,078	$ 2,648
$501 to $5,000	49	29	62,849	36,975
Sub-Total	**1,846**	**99**	**$130,927**	**$39,623**
100% Judgmental Sample				
$5,001 and above	5	5	44,489	44,489
Total	**1,851**	**104**	**$175,416**	**$84,112**

Regional Maintenance Facility Storeroom (March 23, 2010)

Average Extended Cost	Size of Universe	Size of Sample	Value of Universe	Value of Sample
$0 to $500	3,411	71	$200,199	$ 4,802
$501 to $2,000	186	52	175,272	51,136
$2,001 to $10,000	44	27	155,687	97,489
Sub-Total	**3,641**	**150**	**$531,158**	**$153,427**
100% Judgmental Sample				
$20,001 and above	5	5	131,051	131,051
Total	**3,646**	**155**	**$662,209**	**$284,478**

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Exhibit II: Preliminary Statistical Data Summary

	Metro Plant Warehouse	Empire Plant Stockroom	Regional Maintenance Facility Stockroom	Total
Random Sample				
Shortages	5	5	2	12
Overages	1	3	3	7
Value of Sample Shortages	($4,329)	($49)	($23)	(4,401)
Value of Sample Overages	$2	$14	$98	$114
Net Sample Variance Value	($4,327)	($35)	$75	($4,287)
Sampled Inventory Shortage %	-0.69%	-0.12%	-0.01%	-0.54%
Sampled Inventory Overage %	0.0003%	0.036%	0.06%	0.01%
Total Random Sample Inventory				
Value of Estimated Shortages	($14,582)	($1,250)	($951)	($16,783)
Value of Estimated Overages	$468	$372	$4,068	$4,908
Net Projected Variance	($14,114)	($878)	$3,117	($11,875)
Net Projected Variance%	-0.27%	-0.67%	0.59%	-0.20%
Absolute Variance	$15,050	$1,622	$5,019	$21,691
Absolute Variance %	0.29%	1.24%	0.94%	0.37%
Judgmental Sample				
Shortages	0	0	0	0
Overages	1	2	1	4
Value of Sample Shortages	$0	$0	$0	$0
Value of Sample Overages	$47,617	$4,094	$1,413	$53,124
Random & Judgmental Combined				
Value of Estimated Shortages	($14,582)	($1,250)	($951)	($16,783)
Value of Estimated Overages	$48,084	$4,466	$5,480	$58,030
Net Projected Variance	$33,502	$3,216	$4,529	$41,247
Net Projected Variance %	0.57%	1.83%	0.68%	0.61%
Absolute Variance	$62,666	$5,716	$6,431	$74,813
Absolute Variance %	1.06%	3.26%	0.97%	1.11%
Total Variance Items	7	10	6	23
Variant Item Number Ratio	2.65%	9.62%	3.87%	4.40%
Acceptable # of Variance Items	13	5	8	26
Acceptable Variant Item Ratio	5.00%	5.00%	5.00%	5.00%

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Exhibit III: Adjusted Statistical Data Summary

	Metro Plant Warehouse	Empire Plant Stockroom	Regional Maintenance Facility Stockroom	Total
Random Sample				
Shortages	3	5	1	9
Overages	2	3	3	8
Value of Sample Shortages	($28)	($49)	($1)	(78)
Value of Sample Overages	$614	$14	$98	$726
Net Sample Variance Value	$586	($35)	$97	$648
Sampled Inventory Shortage %	0.005%	-0.120%	-0.001%	-0.009%
Sampled Inventory Overage %	0.098%	0.036%	0.060%	0.088%
Total Random Sample Inventory				
Value of Estimated Shortages	($2,161)	($1,250)	($50)	($3,461)
Value of Estimated Overages	$2,239	$372	$4,068	$6,679
Net Projected Variance	$78	($878)	$4,018	$3,218
Net Projected Variance%	0.002%	-0.670%	0.760%	0.055%
Absolute Variance	$4,400	$1,622	$4,118	$10,140
Absolute Variance %	0.084%	1.240%	0.780%	0.173%
Judgmental Sample				
Shortages	0	0	0	0
Overages	1	0	0	1
Value of Sample Shortages	$0	$0	$0	$0
Value of Sample Overages	$18,954	$0	$0	$18,954
Random & Judgmental Combined				
Value of Estimated Shortages	($2,161)	($1,250)	($50)	($3,461)
Value of Estimated Overages	$21,193	$372	$4,068	$25,633
Net Projected Variance	$19,032	($878)	$4,018	$22,172
Net Projected Variance %	0.32%	-0.50%	0.61%	0.33%
Absolute Variance	$23,354	$1,622	$4,118	$29,094
Absolute Variance %	0.39%	0.92%	0.62%	0.43%
Total Variance Items	6	8	4	18
Variant Item Number Ratio	2.27%	7.69%	2.58%	3.44%
Acceptable # of Variance Items	13	5	8	26
Acceptable Variant Item Ratio	5.00%	5.00%	5.00%	5.00%