



Audit of Operations and Maintenance's Inventory Processes and Procedures

Project # 09-28

**Prepared by
Office of Inspector General**

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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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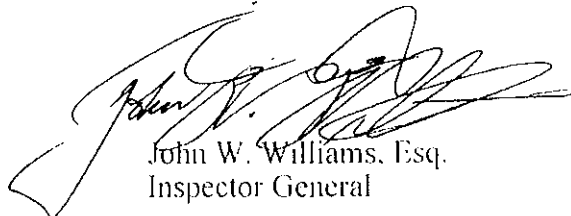
Audit and Finance Committee Members:

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Eric Buermann, Esq., Member
Mr. Joe Collins, Member
Glenn J. Waldman, Esq., Member

Re: Audit of Operations &
Maintenance's Inventory Processes
and Procedures
Project No. 09-28

This audit was performed pursuant to the Inspector General's authority set forth in Chapter 20.055, F.S. The objectives focused on assessing whether Operations and Maintenance's internal controls over consumable inventory are adequate and functioning properly. This report was prepared by Tim Beirnes and Jankie Bhagudas.

Sincerely,



John W. Williams, Esq.
Inspector General

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BACKGROUND

In accordance with the Office of Inspector General's Fiscal Year 2009 Audit Plan, we conducted an Audit of Operations and Maintenance's Inventory Processes and Procedures. It should be noted that this audit did not include fuel inventory as our Office conducted a separate review (*Review of Internal Controls over Fuel Inventory, Audit No. 08-09*) that evaluated the internal controls over purchasing, receiving and dispensing of fuel used for District pumps and field station operations. In addition, this audit did not include inventory controls at the SCADA and Instrumentation Management Division as our recent *Audit of SCADA Implementation and Operations, Audit No. 09-07*, and an inventory conducted by Operations and Maintenance revealed control issues that are being addressed by Operations and Maintenance.

The District's Operations and Maintenance Resource Area is responsible for the eight field stations located in Clewiston, Fort Lauderdale, Homestead, St. Cloud, Miami, Okeechobee, West Palm Beach, and Big Cypress Basin. The field stations operate and maintain structures, gates, pump stations, canals and levees in their geographic area. In addition, the field stations are essentially operational bases for District staff involved in maintaining and operating the systems, machinery, and lands associated with the District's regional water management systems.

Field stations are authorized to make certain purchases and maintain an inventory of materials and supplies required for operation and maintenance functions.¹ Storekeepers or other designated staff at the field stations are responsible for receiving, issuing, and stocking materials, supplies and equipment ordered for specific jobs; or restocking materials, supplies, and equipment returned from jobs.

Inventory items consist primarily of chemicals that are used for managing nuisance and invasive exotic vegetation within the District's boundaries. Inventory items also include spare parts and some supplies. It should be noted that in the past inventory items were stored at the pump stations, however; all inventory items are now stored centrally at the field stations.

¹ Inventory is stated at average cost and consists of fuel, chemicals, and supplies held for consumption. The cost is recorded as expenditure at the time individual items are consumed.

The Materials Management module of SAP, the District's financial system, contains master data for all material purchases and includes information such as purchase order number, price, quantity, and storage location. Inventory data is maintained within this module. Based on our review of SAP, the inventory activity for Fiscal Year 2009 is illustrated in the following table.

Fiscal Year 2009 Inventory Activity Based on SAP Data					
Field Station	Beginning Inventory	Net Receipts	Net Disbursements	Other Adjustments²	Ending Inventory³
Clewiston	\$189,305	\$906,567	\$989,733	\$7	\$105,119
Fort Lauderdale	328,359	172,861	122,804	6,007	385,023
Homestead	34,169	52,392	59,275	0	27,137
St. Cloud	75,097	76,549	100,221	(23,761)	27,682
Miami	16,438	124,734	128,241	0	12,756
Okeechobee	102,180	217,143	204,203	15,058	130,992
West Palm Beach	445,876	108,464	93,632	(442)	460,265
Big Cypress Basin	42,886	149,162	153,219	(489)	38,457
Total	\$1,234,310	\$1,807,872	\$1,851,328	(\$3,620)	\$1,187,431

It should be noted that \$1,674,251 of the \$1,807,872 (93%) of the Fiscal Year 2009 purchases (net receipts) were for chemicals.

² Other Adjustments include material transfer between field stations, inventory adjustments, and write-offs.

³ Ending Inventory = Beginning Inventory + Net Receipts – Net Disbursements + Net Adjustments. Ending Inventory amounts are based on information maintained in SAP and there is a net difference of \$197 when the actual formula is applied. We considered the differences between the SAP and actual amounts immaterial and did not perform a detailed examination.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objectives focused on assessing whether Operations and Maintenance's internal controls over consumable inventory are adequate and functioning properly.

To accomplish our objectives we obtained an understanding of the inventory process and procedures by interviewing key personnel in Operations and Maintenance and reviewing relevant policies and procedures. We also reviewed the internal controls in place over the purchasing, receiving and dispensing of materials in inventory. In addition, on September 29, 2009, we accompanied an Accounting Division staff to three field stations to observe the annual physical inventory count. We also analyzed inventory records to determine whether inventory levels were adequate and whether utilization of inventory items were being monitored.

We conducted this performance audit 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.

AUDIT RESULTS

Executive Summary

Overall, we found that Operations and Maintenance's internal controls over inventory are adequate and reasonable to ensure compliance with the District's policies and procedures. Specifically, inventory levels appear adequate and there are adequate controls in place in SAP, the District's financial system, that ensure certain functions are performed by authorized individuals and purchases and disbursements are linked to purchase orders and work orders. In addition, each year Operations and Maintenance's Business Services' staff conduct unannounced physical inventory counts and the Accounting Division's staff conduct year-end physical inventory counts at each field station.

However, certain inventory management practices could be improved to further strengthen internal controls. Our review disclosed that items included in inventory vary among the different field stations. Further, there are no written policies in place detailing what specific items and dollar thresholds of items that should be considered inventory. In addition, the Clewiston and the St. Cloud Field Stations' inventory records are incomplete.

We also found that as of December 28, 2009, certain chemicals, lubricants, and oils in stock at the Clewiston, Fort Lauderdale, St. Cloud, Okeechobee, West Palm Beach, and Big Cypress Basin Field Stations totaling \$19,401 were not used anywhere from 284 working days to 930 working days. These items included 450 pounds of chemical, herbicide fluridone sonar, valued at \$12,189. It should be noted that 300 pounds of this chemical was at the West Palm Beach Field Station and there has been no usage since November 26, 2008 (no usage for 284 working days), and 150 pounds was at Big Cypress Basin and there has been no usage since April 15, 2008 (no usage for 445 working days). This chemical is not currently being used by any other field stations. Therefore, appropriate action should be taken to determine whether it can be returned to the vendor, can be used by another agency, or is obsolete.

In addition to un-utilized chemicals, lubricants, and oils, we also found that there were other costly materials in large quantities that were not being utilized. Some of these materials have not been used for at least three and a half years, for example, there are 49 bearing rods valued at \$21,675 in stock at the West Palm Beach Field Station that have not been used between May 25, 2006 and December 28, 2009.

Inventory Records Need to be Updated

Our review disclosed that all chemical purchases by field stations are inventoried. In addition, inventory items include spare parts and a small amount of supplies. According to Operations and Maintenance's Business Services staff, inventory items stored at the pump stations were transferred to the field stations in an effort to centralize inventory storage and improve controls; however, this process has not been completed. During the Fiscal Year 2009 year-end physical inventory count, Accounting Division staff noted that some pump station materials transferred to the Clewiston Field Station were not included in inventory. Our discussion with Clewiston Field Station staff confirmed that there are numerous items yet to be inventoried. In addition, certain items at the St. Cloud Field Station were not included in inventory. As a result, Operations and Maintenance's current inventory amounts are not totally accurate. Operations and Maintenance's Business Services staff acknowledged that some items initially stored at the pump stations have not been recorded as inventory in SAP and explained that this issue will soon be addressed.

Criteria for Inventory Items Need to be Developed

Our review disclosed that items included in inventory vary among the different field stations. Further, there are no written policies in place detailing what specific items and dollar thresholds of items that should be considered inventory. Examples of materials purchased in Fiscal Year 2009 and included in inventory are illustrated in the following table.

Field Station	# of Materials Purchased as Inventory in FY 2009	Types of Materials Inventoried
Clewiston	24	Mostly chemicals, grease cartridges, oils (10w30 and 15w40), and gloves
Fort Lauderdale	168	Chemicals, plus about 150 different items purchased from E-Bay
Homestead	15	Mostly chemicals, transmission fluid, chain and cable lubricant, and oil (10w30 and 15w40)
St. Cloud	13	Mostly chemicals, grease cartridges, lubricant, oil (10w30), and flags
Miami	12	Mostly chemicals, dye, and a life vest
Okeechobee	170	Chemicals and various items, for example, life vests, caps, aerosol paint, air filters, fuel filters, auto batteries, and alkaline batteries
West Palm Beach	11	Mostly chemicals, mechanical seals, bearings, propeller, and pump wear ring
Big Cypress Basin	7	Only chemicals

We concluded that that purchases vary among field stations. However, there were several instances where the same materials were purchased by different field stations, however; inclusion in inventory varies from field station to field station, for example, 15w40 oil was purchased by the Homestead Field Station as an inventory item; this same item was purchased by the St. Cloud Field Station; however, not as an inventory item. In another instance, AA alkaline batteries were purchased by the Okeechobee Field Station as an inventory item; however, this same item was purchased by the West Palm Beach Field Station and not included in inventory. The Accounting Division also made this observation during its Fiscal Year 2009 physical inventory count. There needs to be some consistency among field stations regarding the items considered inventory. Operations and Maintenance's Business Services staff stated that field station staff may not be consistently utilizing material numbers on purchase requisitions when procuring

inventory items. The material number is one of the required fields of information in SAP for a material to be classified as inventory.

In addition, a dollar threshold has not been established regarding the cost of items that should be included in inventory. Currently, there are bolts valued \$0.02 each and nuts valued at \$0.03 in inventory.

Further, Operations and Maintenance's Business Services staff acknowledged that inventory policies and procedures detailing what specific items should be included as inventory need to be developed and stated that this issue will be addressed shortly.

Inventory Turnover Analysis should be Routinely Performed

Chemicals, Lubricants, and Oils

Overall, inventory levels of chemicals, lubricants, and oils appear adequate. However, our review disclosed that as of December 28, 2009, certain stocked chemicals, lubricants, and oils at the Clewiston, Fort Lauderdale, St. Cloud, Okeechobee, West Palm Beach, and Big Cypress Basin Field Stations totaling \$19,401 were not used anywhere from 284 working days to 930 working days (refer to APPENDIX I for the detailed listing of all items). A further review disclosed that certain unused chemicals at one field station may be in use at another field station; however, it appears that field station staff do not check District-wide inventory availability in SAP and communicate with each other in instances where stocked materials are not being utilized for possible material transfers between field stations.

Our review revealed that the inactive materials consist primarily of the following:

- 450 pounds of herbicide fluridone sonar valued at \$12,189 – It should be noted that 300 pounds of this chemical was at the West Palm Beach Field Station and there has been no usage since November 26, 2008 (no movements for 284 working days), and 150 pounds was at Big Cypress Basin without any usage since April 15, 2008 (no movement for 445 working days). This chemical is not used by any other field stations. Therefore, appropriate action should be taken to determine whether it can be returned to the vendor, used by another agency, or is

obsolete. It should be noted that the Vegetation Management Division uses this chemical to treat hydrilla.

- 125 gallons of adjuvant spreader valued at \$1,236 – This chemical was in stock at the West Palm Beach Field Station and was last used on September 19, 2008 (no usage for 332 working days). We found that this chemical is being actively used by the Homestead Field Station. A District-wide inventory search and utilization analysis could have resulted in a transfer of this chemical from the West Palm Beach Field Station to the Homestead Field Station.
- 222 gallons of herbicide 2, 4-D valued at \$1,984 – This chemical was in stock at the St. Cloud Field Station and was last used on May 6, 2008 (no usage for 430 working days). It should be noted that on October 10, 2009, the Okeechobee Field Station purchased 480 gallons of this chemical and used it on November 6, 2009. In this instance, the 222 gallons could have been transferred to the Okeechobee Field Station.

Movements of chemicals, lubricants, and oils should be closely monitored since they may have a limited shelf life. Analyses of material utilization are simple to determine in SAP; thus, Operations and Maintenance staff should closely monitor utilization of stocked materials.

Other Materials and Spare Parts

In addition to un-utilized chemicals, lubricants, and oils, we also found that there were other costly materials in large quantities that were not being utilized. Some of the materials were initially stored at pump stations and transferred to the field stations in order to centralize and better control inventory. Our review disclosed that some of these materials have not been used for at least three and a half years. Examples of these materials are listed in the table following:

Examples of Non-Utilized Materials in Stock

Material (Material #)	Field Station	Quantity	Value	Conclusion re: Purchase and /or Utilization Movements (as of 12/28/2009)
Bearing rod – 16701708 (<i>Material #100396</i>)	Fort Lauderdale	10	\$3,884	Purchased on 8/8/2008. No utilization since purchase date.
	West Palm Beach	49	\$21, 675	
Upper connecting rod (<i>Material #100297</i>)	West Palm Beach	8	\$25,573	In stock since at least 5/25/2006 (date items were transferred from the District’s legacy financial system to SAP) and there has been no utilization activity as of 12/28/2009. It is very likely that these items have been in stock prior to 5/25/2006 and were inactive.
Main bearing – M16603841 (<i>Material #100345</i>)		18	\$7,335	
Lower connecting rod and cap (<i>Material #100537</i>)		6	\$19,743	
Main bearing – 16603841 (<i>Material #100430</i>)	Fort Lauderdale	24	\$12,259	
	West Palm Beach	28	\$14,302	

In addition to the examples illustrated in the table above, we noted several instances where there are large quantities of less costly items in stock. Listed below are some examples:

- As of January 8, 2010, a total of 327 ring compressions (material #100497) valued at \$5,932 were in stock at the West Palm Beach Field Station and a total of 175 of this same item valued at \$3,175 were in stock at the Clewiston Field Station. More importantly, our review disclosed that during the period May 25, 2006 to January 8, 2010, only one ring compression has been used by the West Palm Beach Field Station and 28 have been scrapped due to rust by the Clewiston Field Station.

- As of January 8, 2010, a total of 68 piston ring scrapers (material #100268) valued at \$3,190 were in stock at the West Palm Beach Field Station and a total of 284 of this same item valued at \$13,322 were in stock at the Clewiston Field

Station. Our review disclosed that during the period May 25, 2006 to January 8, 2010 (a total of 947 working days), there has been no usage of this item at either field station. Further, it should be noted that the Fort Lauderdale Field Station's inventory included 126 piston ring scrapers valued \$1,913, 96 of which were purchased in June 2009. According to Operations and Maintenance's Business Services staff, the scrapers were purchased from EBay at a bargain price. We noted that the Fort Lauderdale Field Station has used only one scraper since the June 2009 purchase.

According to Operations and Maintenance's Business Services staff, some of the parts are pump station spare parts that may be needed for future to replace or repair worm parts. Nevertheless, Operations and Maintenance should evaluate its inventory to ensure that items are not excessive or obsolete.

Recommendations

- 1. Ensure that the Clewiston and St. Cloud Field Stations' inventory records are updated to reflect those materials, observed by the Accounting Division, that were not included in inventory.**

Management Response: Clewiston Field Station's inventory was appropriately counted and documented. The parts and materials observed by accounting staff were pump station parts that had been expensed and were not part of the inventory. More than 4 years ago Accounting had requested that O&M reduce the inventory, and the parts observed were some of those that had been expensed. Presently we are bringing these items back into inventory with the partnership of Procurement and Accounting. In the St. Cloud Field Station, all of the materials have been received into inventory.

Responsible Department: Field Stations along with O&M Business Services, Procurement and Accounting Departments

Estimated Completion: September 30, 2010

- 2. Develop and implement written guidelines detailing what items should be included in inventory. Guidelines should address materiality of items to be included as inventory. Further, ensure that field station staff have a clear understanding of the guidelines and consider monitoring compliance periodically.**

Management Response: Operations and Maintenance is currently working on guidelines detailing what should be included in inventory. As part of these guidelines, staff is researching establishment of a benchmark for value for what should be included as inventory.

Responsible Department: Operations and Maintenance Department Directors, Operations and Maintenance Business Services, Field Stations, and Procurement Department

Estimated Completion: September 30, 2011

- 3. Perform inventory turnover analyses on a routine basis and take appropriate action to address overstocked and obsolete items.**

Management Response: This process is currently done manually. Each group with inventory is currently responsible to appropriately scrap any obsolete items according to the established process. Storekeepers and Electronic Logistic Techs are responsible for monitoring inventory and communicating to their management when inventory has been in the warehouse for a long period of time, and seek guidance on appropriate disposition. Staff will review the existing inventory SOP's and, in conjunction with accounting and industry standards, will set some benchmarks and reporting to guide this review. Some spare parts are long lead time items and are kept because some of our engine manufactures do not produce these parts any longer. At present we are also looking into the capabilities of the Material Requirements Planning in SAP to help us build and track min max level per field station needs.

Once Material Requirements Planning is implemented this will be done more efficiently and effectively.

Responsible Department: Field Stations, Operations and Maintenance Business Services, Procurement Department, and the SAP Solution Center

Estimated Completion: March 30, 2011; Material Requirements Planning implementation and utilization to be determined.

4. Instruct field station staff to utilize SAP to check District-wide inventory before procuring materials not used frequently.

Management Response: This process has been started and storekeepers have been instructed to use SAP to inquire regarding available quantities across storage and field station locations, and transfer parts across field stations when necessary. During our next Storekeeper meeting this topic will be re-emphasized, and our standard operating procedure for inventory will be updated as needed.

Responsible Department: Field Stations

Estimated Completion: September 30, 2010

APPENDIX 1
Listing of Stocked Chemicals, Lubricants, and Oils
Without Any Movements for an Extensive Period

Field Station	Material #	Material Description in SAP	FY 2009 Quantities	Dollar Value	Last Movement Date	# of Work Days from Last Movement Date to 12/28/09
Clewiston	100041	Adjuvant antifoaming	7 pints	\$30.80	06/21/07	658
Fort Lauderdale	100052	Herbicide glyphosate +2,4 D	7.5 gals	160.35	07/25/07	634
	100112	Adjuvant polymer	31.8 gals	501.90	09/19/08	332
	100824	Adjuvant dye	4 gals	66.00	10/30/07	565
St. Cloud	100104	Herbicide glyphosate aquatic	60 gals	955.38	07/18/08	377
	100108	Herbicide triclopyr aquatic	6.25 gals	359.13	12/13/07	533
	100085	Herbicide 2,4-D	222 gals	1,983.68	05/06/08	430
	100099	Adjuvant sticker	8.75 gals	227.50	08/22/08	352
Okeechobee	100018	Lubricant chain & cable	12 cans	107.63	04/11/08	447
	100055	Herbicide triclopyr wetland	7.5 gals	444.75	03/05/08	474
	100139	Adjuvant MSO	75 gals	576.75	06/13/08	402
West Palm Beach	100025	Hydraulic tractor oil	6 cans	156.42	08/02/07	628
	100029	Oil - 15W40 engine oil	26 quarts	47.84	06/06/06	930
	100036	Oil - 15W40 (can) premium grade	4 quarts	7.16	08/02/07	628
	100038	Oil - 10W30	3 quarts	7.41	03/17/08	466
	100043	Adjuvant spreader (Non-ionic)	125 gals	1,236.25	09/19/08	332
	100061	Herbicide fluridone sonar pr	300 lbs	8,193.00	11/26/08	284
Big Cypress Basin	100017	Lubricant open gear	4 cans	24.80	01/18/08	507
	100038	Oil - 10W30	7 quarts	17.29	07/13/07	642
	100041	Adjuvant antifoaming	3 pints	13.20	09/22/08	328
	100057	Adjuvant inverting oil	28.5 gals	287.56	03/03/08	476
	100061	Herbicide fluridone sonar pr	150 lbs	3,996.00	04/15/08	445
TOTAL				\$19,400.80		