



## INTERNAL AUDIT DIVISION

# REPORT 2015/065

---

Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Overall results relating to effective management of waste in the African Union-United Nations Hybrid Operation in Darfur were unsatisfactory. Implementation of three critical and two important recommendations remains in progress

**FINAL OVERALL RATING: UNSATISFACTORY**

26 June 2015

Assignment No. AP2014/634/15

# CONTENTS

	<i>Page</i>
I. BACKGROUND	1
II. OBJECTIVE AND SCOPE	1-2
III. AUDIT RESULTS	2-5
Regulatory framework	2-5
IV. ACKNOWLEDGEMENT	5
ANNEX I      Status of audit recommendations	
APPENDIX I   Management response	

# AUDIT REPORT

## Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

### I. BACKGROUND

1. The Office of Internal Oversight Services (OIOS) conducted an audit of waste management in the African Union-United Nations Hybrid Operation in Darfur (UNAMID).
2. In accordance with its mandate, OIOS provides assurance and advice on the adequacy and effectiveness of the United Nations internal control system, the primary objectives of which are to ensure (a) efficient and effective operations; (b) accurate financial and operational reporting; (c) safeguarding of assets; and (d) compliance with mandates, regulations and rules.
3. Waste management activities in UNAMID were governed by the Departments of Peacekeeping Operations and Field Support (DPKO/DFS) and UNAMID environmental policies and guidelines that required UNAMID sections/units to integrate environmental considerations into the planning, implementation and operation of all Mission activities to minimize adverse impact on the environment and the health of staff and local population.
4. The Water and Environmental Protection Unit of the Engineering and Environmental Protection Section was responsible for UNAMID waste management operations. The Unit was headed by a Chief at the P-4 level and had 21 authorized posts including 5 international and 16 national staff. The budgets for waste management for fiscal years 2012/13 and 2013/14 were \$4.7 million and \$2.4 million respectively.
5. Comments provided by UNAMID are incorporated in italics.

### II. OBJECTIVE AND SCOPE

6. The audit was conducted to assess the adequacy and effectiveness of UNAMID governance, risk management and control processes in providing reasonable assurance regarding the **effective management of waste in UNAMID**.
7. The audit was included in the 2014 risk-based work plan of OIOS due to operational, health and reputational risks relating to the management of waste in field operations.
8. The key control tested for the audit was regulatory framework. For the purpose of this audit, OIOS defined this key control as the one that provides reasonable assurance that policies and procedures: (i) exist to guide waste management in UNAMID; (ii) are complied with; and (iii) ensure the reliability and integrity of financial and operational information.
9. The key control was assessed for the control objectives shown in Table 1.
10. OIOS conducted the audit from November 2014 to January 2015. The audit covered the period from 1 July 2012 to 30 June 2014 and also included the current management of liquid and organic waste. OIOS visited 14 of the 35 operating locations in UNAMID.

11. OIOS conducted an activity-level risk assessment to identify and assess specific risk exposures, and to confirm the relevance of the selected key control in mitigating associated risks. Through observations, interviews and analytical reviews, OIOS assessed the existence and adequacy of internal controls and conducted necessary tests to determine their effectiveness.

### III. AUDIT RESULTS

12. The UNAMID governance, risk management and control processes examined were initially assessed as **unsatisfactory**<sup>1</sup> in providing reasonable assurance regarding the **effective management of waste in UNAMID**. OIOS made five recommendations to address the issues identified. UNAMID implemented an environmental policy and guidelines. To further improve waste management activities, UNAMID needed to: (a) ensure wastewater treatment plants were adequately maintained, and the quality of the treated wastewater was monitored; (b) implement procedures to monitor and enforce the requirement on segregation of solid waste; (c) expedite the acquisition of suitable land from the Government of Sudan to develop landfills; (d) implement procedures to enforce the policy on the handling, storage and disposal of medical waste; and (e) appoint environmental focal points for military and police components to liaise with the Mission Environmental Focal Point on waste management issues.

13. The overall rating is based on the assessment of the key control presented in Table 1. The final overall rating is **unsatisfactory** as implementation of three critical and two important recommendations remains in progress.

**Table 1: Assessment of key control**

Business objective	Key control	Control objectives			
		Efficient and effective operations	Accurate financial and operational reporting	Safeguarding of assets	Compliance with mandates, regulations and rules
Effective management of waste in UNAMID	Regulatory framework	Unsatisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory
<b>FINAL OVERALL RATING: UNSATISFACTORY</b>					

### Regulatory framework

#### Wastewater was not adequately treated and managed

14. The UNAMID environmental policy and guidelines required the Mission to treat wastewater in accordance with World Health Organization standards prior to the water being reused for other purposes such as flushing toilets, car washing and irrigation. The World Health Organization’s guidelines on the treatment of wastewater required UNAMID to sample and analyze effluent discharged from the treatment system at least every two weeks.

<sup>1</sup> A rating of “**unsatisfactory**” means that one or more critical and/or pervasive important deficiencies exist in governance, risk management or control processes, such that reasonable assurance cannot be provided with regard to the achievement of control and/or business objectives under review.

15. UNAMID was not always treating its wastewater prior to it being reused. For instance, at Kass, Khor Abeche and Masteri team sites, partially treated wastewater was discharged into open fields, farms and open holes at the perimeter of team site compounds. This resulted as many treatment plants were not operational. For example, an inspection of 56 treatment plants at 14 locations indicated that 20 plants were not working due to lack of preventive maintenance and delays in repairs. A review of wastewater analysis reports and laboratory test results also indicated that UNAMID was not: (i) analyzing the quality of its treated wastewater at 33 of its 35 locations; (ii) conducting the required E-Coli analysis in El Fasher and Zalengei; and (iii) taking corrective actions in a timely manner to address instances when treated wastewater did not meet quality standards.

16. The above resulted due to inadequate staffing resources to operate, maintain and monitor the wastewater treatment systems and to conduct laboratory tests of treated wastewater. Also, as at 30 June 2014, the Mission had only 10 trained wastewater treatment plant operators against the requirement of 50. As a result, there was an increased risk of contaminated wastewater entering local streams and underground water sources and exposing the local population to increased health risks, and UNAMID to environmental and reputational risks.

**(1) UNAMID should allocate additional resources to ensure that wastewater treatment plants are adequately maintained, wastewater is properly treated and the quality of treated wastewater is monitored.**

*UNAMID accepted recommendation 1 and stated that it would review existing staffing and make additional efforts to mobilize adequate resources for the proper management of waste including outsourcing of the operation and maintenance of wastewater treatment plant services. Further, a programme for treated wastewater quality monitoring had been developed and was being implemented, including adequate supply of chemical reagents for testing of effluents from wastewater treatment plants. Recommendation 1 remains open pending OIOS verification that wastewater treatment plants are adequately maintained, wastewater is properly treated, and the quality of treated wastewater is monitored.*

Segregation of solid waste at source needed to be improved

17. The UNAMID environmental policy and guidelines required civilian and uniformed personnel to segregate solid waste at points of generation based on its characteristics, and compost kitchen organic waste. Solid waste was to be segregated as bio-degradable for composting and non-bio-degradable for recycling.

18. Visits to all five Mission sectors indicated that personnel at three sectors were not adequately segregating solid waste between bio-degradable for composting and non-bio-degradable for recycling. At one sector, kitchen organic waste was dumped into open pits exposing them to rodents and bugs and the growth of microbial pathogens. This was due to lack of adequate procedures to monitor and enforce the requirement to segregate solid waste at points of generation. As a result, there was an increased risk of health and environmental hazards.

**(2) UNAMID should establish and implement adequate procedures to monitor and enforce the requirement on the segregation of solid waste at points of generation.**

*UNAMID accepted recommendation 2 and stated that it developed standard operating procedures and circulated them, conducted awareness campaigns, and installed bins for segregating types of garbage. The Mission also established a hygiene and sanitation task force to deliberate on enforcement and compliance of environmental issues. Recommendation 2 remains open pending*

OIOS verification that UNAMID is monitoring and enforcing the requirement on the segregation of solid waste at the points of generation.

Inappropriate disposal of solid waste

19. The UNAMID environmental policy and guidelines required disposal of solid waste in approved sanitary landfills or developed tipping sites, which were fenced and controlled to prevent access by local communities and animals. The policy further required that biodegradable solid waste be buried and items such as plastics, cans and bottles be recycled.

20. A review of practices at 7 of the 14 locations visited indicated that UNAMID was disposing solid waste in open fields. At one site, solid waste was deposited in a nearby seasonal river. These practices were adopted because, despite several attempts, the Mission had been unable to secure suitable sites from the government to develop tipping sites and landfills. The government provided land, which was either too far from the Mission’s camps or the local community had not supported the use of the land as dump sites. As a result, the Mission had only one adequately developed dump site in Zamzam, which was used by its headquarters and the Zamzam team site. The dumping of solid waste in open fields and rivers exposed the local population to increased health risks and UNAMID to environmental and reputational risks.

**(3) UNAMID should take adequate and effective measures to expedite the acquisition of suitable land from the Government of Sudan to develop standard tipping sites or landfills.**

*UNAMID accepted recommendation 3 and stated that it acquired additional land next to team sites for the development of waste disposal sites. UNAMID would also use the land already provided at other sites to develop temporary disposal areas, and continue to engage the government to get parcels of land for development of waste disposal sites. Recommendation 3 remains open pending receipt of evidence that UNAMID has acquired land and developed sufficient tipping sites and landfills for disposal of its waste.*

Handling, storage and disposal of medical waste needed improvement

21. The UNAMID environmental policy and guidelines required the Chief Medical Officer, after consultation with the Director of Mission Support and in coordination with the Environmental Focal Point Officer, to establish procedures and take necessary measures to ensure that all medical waste was segregated at the point of generation, properly labelled, bagged and/or containerized and incinerated.

22. Visits to 18 of the 59 medical facilities indicated that at four facilities: (i) medical waste was not stored in the required storage containers; (ii) containers were left uncovered; and (iii) in some cases, containers were kept in unrestricted and open places outside of clinics. At two contingent level-one clinics, medical waste was not segregated and was disposed of together with general waste. UNAMID had not provided incinerators to six of the locations visited.

23. The above resulted as the Mission had not established and implemented adequate procedures to enforce the policy on the proper handling, storage and disposal of medical waste. As a result, health care workers, waste handlers and other staff were exposed to increased health risks.

**(4) UNAMID should establish and implement adequate procedures to enforce the policy on the handling, storage and disposal of medical waste at all medical facilities.**

*UNAMID accepted recommendation 4 and stated that it procured medical waste storage bags, and 45 medical waste incinerators of which 21 were operational and 12 were being installed, and the remaining ones would be deployed to other locations mission-wide. UNAMID was conducting in-house training to personnel handling medical waste, and a task force on sanitation and hygiene monitoring was established to ensure compliance. Recommendation 4 remains open pending receipt of evidence that UNAMID has fully installed sufficient incinerators at Mission locations and is enforcing the policy on the handling, storage and disposal of medical waste.*

Environmental considerations were not adequately integrated in the operations of uniformed personnel

24. The UNAMID environmental policy and guidelines required the Joint Special Representative to take measures to ensure UNAMID personnel were integrating environmental considerations into their respective operations. The policy required the Force Commander and Police Commissioner to monitor waste management activities of their respective components and designate focal points to coordinate with the Mission's Environmental Focal Point Officer to ensure compliance with environmental guidelines and standard operating procedures.

25. The Mission Support Division implemented procedures on the handling of waste generated by civilian personnel. A review of waste management reports and discussions with officials of the military and police components indicated that in 2012, UNAMID had appointed two environmental focal points for the military and police components. However, due to management oversight, UNAMID had not replaced the officers when they left the Mission. As a result of the absence of these officers, the Force Commander and Police Commissioner were not monitoring waste management activities of their respective components. Visits to 14 areas of operation for uniformed personnel indicated: (i) inappropriate handling, storage and disposal of medical waste by contingent clinics; and (ii) inadequate segregation of solid waste at the points of generation in 40 of the 41 operating locations. This created unmitigated health and environmental risks to UNAMID personnel.

**(5) UNAMID should appoint focal points for the military and police components to liaise with the Mission's Environmental Focal Point Officer on waste management issues and ensure uniformed personnel comply with the environmental policy and guidelines on waste management.**

*UNAMID accepted recommendation 5 and stated that the military and police components were taking action to enforce the requirements of the environmental policy and guidelines henceforth to ensure continued presence of environmental focal points for military and police components. Recommendation 5 remains open pending confirmation that military and police focal points for environmental issues have been appointed and are working in collaboration with the Mission's Environmental Focal Point Officer to ensure compliance with the environmental policy and guidelines on waste management.*

#### **IV. ACKNOWLEDGEMENT**

26. OIOS wishes to express its appreciation to the Management and staff of UNAMID for the assistance and cooperation extended to the auditors during this assignment.

(Signed) David Kanja  
Assistant Secretary-General for Internal Oversight Services

## STATUS OF AUDIT RECOMMENDATIONS

## Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Recom. no.	Recommendation	Critical <sup>1</sup> / Important <sup>2</sup>	C/ O <sup>3</sup>	Actions needed to close recommendation	Implementation date <sup>4</sup>
1.	UNAMID should allocate additional resources to ensure that wastewater treatment plants are adequately maintained, wastewater is properly treated and the quality of treated wastewater is monitored.	Critical	O	OIOS verification that wastewater treatment plants are adequately maintained, wastewater is properly treated, and the quality of treated wastewater is monitored.	30 December 2015
2.	UNAMID should establish and implement adequate procedures to monitor and enforce the requirement on the segregation of solid waste at points of generation.	Important	O	OIOS verification that UNAMID is monitoring and enforcing the requirement on the segregation of solid waste at the points of generation.	29 April 2015
3.	UNAMID should take adequate and effective measures to expedite the acquisition of suitable land from the Government of Sudan to develop standard tipping sites or landfills.	Critical	O	Receipt of evidence that UNAMID has acquired land and has developed sufficient tipping sites and landfills for disposal of its waste.	31 March 2015
4.	UNAMID should establish and implement adequate procedures to enforce the policy on the handling, storage and disposal of medical waste at all medical facilities.	Critical	O	Receipt of evidence that UNAMID has fully installed sufficient incinerators at Mission locations and is enforcing the policy on the handling, storage and disposal of medical waste.	29 April 2015
5.	UNAMID should appoint focal points for the military and police components to liaise with the Mission's Environmental Focal Point Officer on waste management issues and ensure uniformed personnel comply with the environmental policy and guidelines on waste management.	Important	O	Confirmation that military and police focal points for environmental issues have been appointed and are working in collaboration with the Missions' Environmental Focal Point Officer to ensure compliance with the Mission's environmental policy and guidelines on waste management.	8 June 2015

<sup>1</sup> Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.

<sup>2</sup> Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

<sup>3</sup> C = closed, O = open

<sup>4</sup> Date provided by UNAMID in response to recommendations.



# **APPENDIX I**

## **Management Response**

AFRICAN UNION

الاتحاد الأفريقي



UNITED NATIONS

الأمم المتحدة

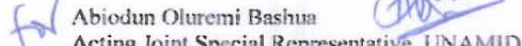
UNAMID

**African Union – United Nations Hybrid Operation in Darfur**

*Office of the Acting Joint Special Representative*

07 June 2015

**To:** Ms. Eleanor T. Burns, Director  
Internal Audit Division, OIOS

**From:**  Abiodun Oluremi Bashua  
Acting Joint Special Representative, UNAMID

**Subject:** Draft report on an audit of waste management in the African Union-United Nations Hybrid Operation in Darfur (Assignment No. AP2014/634/15)

1. With reference to your memorandum of 26 May 2015, on the captioned-subject matter, please find attached UNAMID's response (Appendix I) to the draft report for your consideration.
2. Portfolio of evidences to recommendations #2, #3, #4 and #5 have been communicated to the office of the Chief Resident Auditor for verifications.
3. I further confirm on the factual accuracy of the report.

Thank you.

**cc:** Mr. Rakesh Malik, Director, Mission Support Division, UNAMID  
Lt. Gen. Paul Mella, Force Commander, UNAMID  
Ms. Hester Paneras, Police Commissioner, UNAMID  
Mr. Khalid Kassab, Officer-in-Charge, Supply Chain Management, UNAMID  
Mr. Emmanuel Mollel, Chief, Water and Environment Protection Unit, UNAMID  
Mr. Yonas Araia, Officer-in-Charge, Engineering and Environmental Protection Section, UNAMID  
Mr. Bolton Tarleh Nyema, Chief, Peacekeeping Audit Service, IAD, OIOS  
Mr. Prances Sooja, Chief Resident Auditor, Internal Audit Division, OIOS  
Mr. Velayutham Gopal, Audit Focal Point, UNAMID  
Ms. Cynthia Avena-Castillo, Professional Practices Section, Internal Audit Division, OIOS

## Management Response

## Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Rec. no.	Recommendation	Critical <sup>1</sup> / Important <sup>2</sup>	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
1.	UNAMID should take action to ensure that wastewater treatment plants are adequately maintained, wastewater is properly treated and the quality of treated wastewater is monitored.	Critical	Yes	Chief, Water & Environmental Protection Unit (CWEP)	30 December 2015	<p>Revision of staffing in conjunction with the governing bodies of the organization through its budgeting system for 2015/16 is on-going with a view to address the staffing deficits.</p> <p>Parallel with this activity, preparation of and dissemination of Expression of Interest (EOI) to outsource operation and maintenance of Wastewater Treatment Plants services (WWTPs) has been concluded. A contract for the delivery of the said services with an interested and competent company/ies is expected to be concluded by December 2015.</p> <p>In the meantime, a program for treated wastewater quality monitoring, has been developed and being implemented, including adequate supply of chemical reagents for testing of effluents from WWTPs using the limited staffing assigned to this task.</p>
2.	UNAMID should establish and implement adequate procedures to monitor and enforce the requirement on the segregation of solid waste at points of generation.	Important	Yes	Chief, Water & Environmental Protection Unit (CWEP)	29 April 2015	<p>An SOP for waste management has been developed and circulated. Flyers and posters for waste segregation prepared and broadcasted. Weekly awareness training is being done for new arrivals at the Mission. A total of 2,365 bins of three different colours have been procured, labelled and deployed for solid waste</p>

<sup>1</sup> Critical recommendations address significant and/or pervasive deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance cannot be provided regarding the achievement of control and/or business objectives under review.

<sup>2</sup> Important recommendations address important deficiencies or weaknesses in governance, risk management or internal control processes, such that reasonable assurance may be at risk regarding the achievement of control and/or business objectives under review.

## Management Response

## Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Rec. no.	Recommendation	Critical <sup>1</sup> / Important <sup>2</sup>	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
						<p>segregation. Task force for Hygiene and Sanitation formed, which meets weekly to deliberate on enforcement of SOP compliance among others. Approved constitution of the Sanitation and Hygiene Task Force and minutes of the Task Force meetings, including its membership, are attached as portfolios of evidence to Mission's compliance to the recommendations.</p> <p>In this regard, UNAMID considers that the recommendation has been fully addressed and requests for its closure.</p>
3.	UNAMID should take adequate and effective measures to expedite the acquisition of suitable land from the Government of Sudan to develop standard tipping sites or landfills.	Critical	Yes	Mission Support Center (MSC) and Water & Environmental Protection Unit (WEPU)	31 March 2015	<p>Three super camps and eight team sites have acquired parcels of lands, while nine sites are under development. Considering that the Mission has already been granted lands to develop team sites, within which there are adequate spaces which can be used for the safe disposal of wastes, such spaces shall be used for the development of control tipping sites, particularly where there are delays in getting lands outside the team sites. Controlled tipping sites for four team sites (Menawashi, Graid, Tullus and Kass) having area coverage of at least 640,000 m<sup>2</sup>, are being developed within these team sites.</p> <p>In tandem with the above, UNAMID continues to engage the Government of Sudan at Tripartite level, to get parcels of lands for development of waste disposal sites when spaces inside team sites have been exhausted.</p> <p>Having taken these adequate and effective measures to develop wastes disposal sites, UNAMID requests the closure of this recommendation.</p>

## Management Response

## Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Rec. no.	Recommendation	Critical <sup>1</sup> / Important <sup>2</sup>	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
4.	UNAMID should establish and implement adequate procedures to enforce the policy on the handling, storage and disposal of medical waste at all medical facilities.	Critical	Yes	Chief, Water & Environmental Protection Unit (CWEP) and Chief Medical Officer (CMO)	29 April 2015	<p>The establishment of the Task Force on Sanitation and Hygiene, together with the promulgation and enactment of the SOP on wastes management, with guidelines on management of medical wastes, adequately addresses the recommendation.</p> <p>Copy of the Task Force TOR is attached as evidence of actions taken by the Mission to enforce the policy on medical wastes management.</p> <p>The 45 incinerators procured by the Mission of which 21 are operational and 12 being installed, with additional 6 being deployed mission-wide, further testifies the Mission's resolve and compliance to the recommendation. In-house training is being conducted to all personnel handling medical wastes from points of generation up to final disposal. Twenty four trainers have been trained on the operation and maintenance of incinerator (from 24 to 30 April 2015). In this regard, UNAMID requests that this recommendation should be closed.</p>
5.	UNAMID should appoint focal points for the military and police components to liaise with the Mission Environmental Focal Point on waste management issues and ensure uniformed personnel comply with the Mission's Environmental Policy and	Important	Yes	Chief, Water & Environmental Protection Unit (CWEP)	08 June 2015	<p>Memorandum from the Director of Mission Support (DMS) to the Force Commander and the Police Commissioner for the appointment of the Environmental focal points officials from their respective components to work with Mission's Environmental Focal point officer have been signed and issued to the Military and Police components to effect the appointment on or before 8 June 2015.</p> <p>In this regard, the Mission, having complied fully</p>

Management Response

Audit of waste management in the African Union-United Nations Hybrid Operation in Darfur

Rec. no.	Recommendation	Critical <sup>1</sup> / Important <sup>2</sup>	Accepted? (Yes/No)	Title of responsible individual	Implementation date	Client comments
	Guidelines on waste management.					with this recommendation, requests that it should be closed.