



Certificate Of Registration

IN TERMS OF THE NATIONAL NUCLEAR REGULATOR ACT, 1999 (ACT NO. 47
OF 1999)

CERTIFICATE OF REGISTRATION NO. COR-2

Certificate of Registration No. COR-2 is hereby granted by the National Nuclear Regulator (hereinafter referred to as the NNR) in terms of section 22 of the above Act

to

ANGLOGOLD ASHANTI (VAAL RIVER OPERATIONS)

Registration number: 1944/017354/06
Registered address : 11 Diagonal Street
Johannesburg
2001

(hereinafter referred to as the holder)

subject to the terms and conditions set out herein.

M T Magugumela
CHIEF EXECUTIVE OFFICER

**AUTHORISATION CONDITIONS
PART 1: GENERAL CONDITIONS**

1.1 SCOPE

- 1.1.1 The holder is authorised to carry out activities associated with radioactive material as set out, and on the site as identified, in section 2.1 of this Authorisation.

1.2 HAZARD ASSESSMENT

- 1.2.1 Assessments, approved by the NNR, shall be conducted by the holder in respect of all operations and activities involving radioactive material set out in section 2.1 of this Authorisation, which could give rise to a risk of nuclear damage. The assessments must identify and quantify all potential radiation hazards:

1.2.1.1 to persons employed at or visiting the site

and

1.2.1.2 to members of the public.

- 1.2.2 Details of any proposed modification to existing facilities or amendment of any procedure or construction of any facility, which may have an effect on the risk of nuclear damage and which has not been addressed by the hazard assessments identified in section 2.2 of this Authorisation, together with a quantitative assessment of its impact on the risk of nuclear damage, shall be submitted to the NNR by the holder. Such proposals shall be approved by the NNR before being implemented.

1.3 OPERATIONAL LIMITATIONS

- 1.3.1 The limitations pertaining to normal operations and listed in section 2.3 of this Authorisation shall be adhered to.
- 1.3.2 No activities involving the demolition or disposal of any plant used for the processing of radioactive material shall be undertaken prior to approval by the NNR of the radiation hazard assessment and the radiation protection programme for such activities.

1.4 OPERATIONAL RADIATION PROTECTION

1.4.1 WORKFORCE

- 1.4.1.1 Based on the results of the assessments referred to in clause 1.2.1, programmes embodying all aspects as required by NNR documents RD-006: "Requirements for the Control of Radiation Hazards: Mining and

Minerals Processing", and RD-011: "Requirements for Medical Surveillance and Control of Persons Occupationally Exposed to Radiation: Mining and Minerals Processing", in the revisions specified in section 2.4.1, must be established and be submitted to the NNR for approval. These programmes must ensure and demonstrate that radiation doses to persons employed at the site and to visitors to the site are in compliance with the radiation dose limitation system set down in the NNR document RD-010: "Requirements for Radiation Dose Limitation: Mining and Minerals Processing", in the revision specified in section 2.4.1 of this Authorisation. The programmes, as approved by the NNR, shall be implemented by the holder.

- 1.4.1.2 The provisions contained in the revision of documents listed in section 2.4.1 of this Authorisation and submitted in terms of condition 1.4.1.1 of this Authorisation, shall be adhered to.

1.4.2 PUBLIC

- 1.4.2.1 Based on the results of the assessments referred to in clause 1.2.1, programmes embodying all aspects as required by NNR document RD-007: "Requirements for Control over Radioactive Effluent Discharges and Environmental Surveillance: Mining and Minerals Processing", in the revision specified in section 2.4.2 of this Authorisation, must be established and be submitted to the NNR for approval. These must ensure and demonstrate that radiation doses to members of the public are in compliance with the radiation dose limitation system set down in the NNR document RD-010: "Requirements for Radiation Dose Limitation: Mining and Minerals Processing", in the revision specified in section 2.4.1 of this Authorisation. The programmes, as approved by the NNR, shall be implemented by the holder.
- 1.4.2.2 The provisions contained in the revision of documents listed in section 2.4.2 of this Authorisation and submitted in terms of condition 1.4.2.1 of this Authorisation, shall be adhered to.

1.5 RADIOACTIVE WASTE

- 1.5.1 A radioactive waste management programme embodying all the requirements contained in the NNR document RD-004: "Requirements for Radioactive Waste Management: Mining and Minerals Processing", in the revision specified in section 2.5 of this Authorisation, shall be established and submitted to the NNR for approval.

- 1.5.2 The provisions contained in the revision of documents listed in section 2.5 of this Authorisation and submitted in terms of condition 1.5.1 of this Authorisation, shall be adhered to.

1.6 TRANSPORTATION

- 1.6.1 Transportation of radioactive material or of any equipment or objects contaminated with radioactive material off the site or on roads which are accessible to the public must be carried out in terms of the provisions of the Regulations for the Safe Transport of Radioactive Material of the International Atomic Energy Agency in the revision specified in section 2.6 of this Authorization.
- 1.6.2 An annual report shall be submitted to the NNR detailing the number of consignments made during the preceding year, the radioactive content per consignment, the nature of the packaging and the names of the consignees.
- 1.6.3 The provisions contained in the revision of documents listed in section 2.6 of this Authorisation and submitted with regard to condition 1.6.1 of this Authorisation, shall be adhered to.

1.7 PHYSICAL SECURITY

- 1.7.1 A physical security system, approved by the NNR, which will prevent unauthorized access to areas containing radioactive material and which will prevent the unauthorized removal of such material, shall be in place.
- 1.7.2 The provisions contained in the revision of documents listed in section 2.7 of this Authorisation and submitted in terms of condition 1.7.1 of this Authorisation, shall be adhered to.

1.8 OCCURRENCES

- 1.8.1 An occurrence reporting mechanism, approved by the NNR, shall be established which will ensure that occurrences, including incidents and accidents as defined in the National Nuclear Regulator Act (Act No 47 of 1999), and as identified in the NNR document RD-012: "Notification Requirements for Occurrences: Mining and Minerals Processing", in the revision specified in section 2.8 of this Authorisation, are reported to the NNR by the holder in accordance with the provisions of that document and as specified by NNR document RD-009: "Verbal Emergency Communication with the National Nuclear Regulator: Mining and Minerals Processing", in the revision specified in section 2.8 of this Authorisation.
- 1.8.2 An emergency plan, approved by the NNR, shall be established to make provision for any occurrence involving radioactive material which gives rise to, or has the potential to give rise to, an unplanned exposure to radiation in excess of the respective annual effective dose limits for persons employed on the site,

visitors to the site, and members of the public. This plan shall comply with the requirements contained in NNR document RD-008: "Requirements for Emergency Preparedness: Mining and Minerals Processing", in the revision specified in section 2.8 of this Authorisation.

- 1.8.3 The provisions contained in the revision of documents listed in section 2.8 of this Authorisation and submitted in terms of condition 1.8.1 and 1.8.2, shall be adhered to.

1.9 QUALITY MANAGEMENT

- 1.9.1 All activities carried out within the scope of this Authorisation shall be subject to the requirements contained in the NNR document RD-005: "Quality Management Requirements for Activities Involving Radioactive Material: Mining and Minerals Processing", in the revision specified in section 2.9 of this Authorisation.

- 1.9.2 The provisions contained in the revision of documents listed in section 2.9 of this Authorisation and submitted in terms of condition 1.9.1 of this Authorisation, shall be adhered to.

1.10 SCHEDULE

- 1.10.1 The programme, scheduling the achievement of compliance with the conditions of this Authorisation, as set out in section 2.10 shall be adhered to.

This Certificate of Registration is effective from the date of issue.

Issued at Centurion on the 20TH day of JUNE 2006.



M T Magugumela
CHIEF EXECUTIVE OFFICER

**AUTHORISATION CONDITIONS
PART 2: SPECIFIC CONDITIONS**

CONTENTS

DOCUMENT CONTROL TABLE

SECTION 2.1 :	SCOPE
SECTION 2.2 :	HAZARD ASSESSMENT
SECTION 2.3 :	OPERATIONAL LIMITATIONS
SECTION 2.4.1:	OPERATIONAL RADIATION PROTECTION - WORKFORCE
SECTION 2.4.2:	OPERATIONAL RADIATION PROTECTION - PUBLIC
SECTION 2.5 :	RADIOACTIVE WASTE
SECTION 2.6 :	TRANSPORTATION
SECTION 2.7 :	PHYSICAL SECURITY
SECTION 2.8 :	OCCURRENCES
SECTION 2.9 :	QUALITY MANAGEMENT
SECTION 2.10 :	SCHEDULE

DOCUMENT CONTROL TABLE
10 January 2006

{PRIVATE }		REVISION												
SECTION	PAGE	0	1	2	3	4	5	6	7	8	9	10	11	12
2.1	3	X												
2.2	4	X												
2.3	6	X												
2.4.1	7	X												
2.4.2	8	X												
2.5	9	X												
2.6	10	X												
2.7	11	X												
2.8	12	X												
2.9	13	X												
2.10	14	X												

SECTION 2.1: SCOPE

2.1.1 The authorised site is:

The surface and underground areas depicted by the colour legend of the diagram "Scope of Vaal River Operations" annexed to the Controlled Copy 1 and Controlled Copy NNR of this authorisation.

- 2.1.2 The holder may, subject the conditions in Part 1 of this authorisation, use, possess, produce, store and process radioactive material at and convey, cause to be conveyed and disposed of radioactive material from the site as described in 2.1.1.
- 2.1.3 On the authorised sites listed in 2.1.2 above, the holder, may subject to the conditions in Part 1 of this authorisation, carry out activities associated with repair and refurbishment of equipment contaminated with radioactive material and originating from the authorised site listed in 2.1.1.

SECTION 2.2: HAZARD ASSESSMENT

2.2.1	48B0011	(Rev 0)	Radiation Hazard Assessment Survey: Afrikaner Leases Shafts.
2.2.2	EWVR/REP003	(Rev 0)	Hazard Assessment Report for Destranding Plant.
2.2.3	EWVR/REP004	(Rev 0)	Hazard Assessment Report for Central Workshop Complex.
2.2.4	EWVR/REP005	(Rev 0)	Hazard Assessment Report for East Workshops.
2.2.5	EWVR/REP006	(Rev 0)	Hazard Assessment Report for West Workshops.
2.2.6	EWVR/REP008	(Rev 0)	Hazard Assessment Report for Timber Reconditioning Plant.
2.2.7	MNVR/REP005	(Rev 0)	North Gold Plant No. 1 Radiation Hazard Assessment.
2.2.8	MNVR/REP006	(Rev 0)	South Gold Plant No. 8 Radiation Hazard Assessment.
2.2.9	MNVR/REP007	(Rev 0)	South Gold Plant No. 9 Radiation Hazard Assessment.
2.2.10	MNVR/REP008	(Rev 0)	South Uranium Plant Hazard Assessment.
2.2.11	MNVR/REP009	(Rev 0)	Radiation Hazard Assessment Report for the Demolition of the Ethanol Elution and Carbon Regeneration Section at the North Metallurgical Works.
2.2.12	NMVR/REP001	(Rev 0)	Follow-up on Radiation Hazard Assessment Report Survey for 6 Shaft.
2.2.13	NMVR/REP002	(Rev 0)	Follow-up on Radiation Hazard Assessment Survey for 7 Shaft.

2.2.14 VRMW-AAQ-93-15	(Rev 0)	Report on the Radiological Screening Survey of North Metallurgical Works, West Uranium Plant.
2.2.15 MNVR/REP004	(Rev 1)	North Gold Plant No. 2 Radiation Hazard Assessment.
2.2.16 NMVR/REP017	(Rev 0)	Radiation Hazard Assessment Survey for 3 Shaft.
2.2.17 NMVR/REP009	(Rev 1)	Radiation Hazard Assessment Survey for 2 Shaft.
2.2.18 EWVR/009	(Rev 0)	Hazard Assessment Report for the Demolition of the Old West Gold Plant.
2.2.19 VRUNDHAZASS	(Rev 0)	Vaal River Underground Worker Safety Assessment.

SECTION 2.3: OPERATIONAL LIMITATIONS

- 2.3.1 Radioactive waste with a specific alpha (U-238, U-234, Th-230, Ra-226, Po-210, Th-232 and Th-228) activity exceeding 1000 Bq/g shall be stored in a facility approved by the NNR.
- 2.3.2 Arrangements for the transportation of waste material, excluding objects contaminated to levels below 4 Bq/cm² beta-gamma and 0.4 Bq/cm² alpha, arising from the 1994 West Acid Plant maintenance shutdown to the storage facility at the East Acid Plant must be approved prior to transportation.

SECTION 2.4.1: RADIATION PROTECTION PROGRAMME - WORKFORCE

2.4.1.1	RD-006	(Rev 1)	Requirements for the Control of Radiation Hazards: Mining and Minerals Processing.
2.4.1.2	RD-010	(Rev 0)	Requirements for Radiation Dose Limitation: Mining and Minerals Processing.
2.4.1.3	RD-011	(Rev 0)	Requirements for Medical Surveillance and Control of Persons Occupationally Exposed to Radiation: Mining and Minerals Processing.
2.4.1.4	VRMWSG8FDEM	(Rev 0)	Proposal for the Decontamination of South Gold Plant No. 8 Filtration Section.
2.4.1.5	VRMW-EG1-CDEM	(Rev 0)	Proposal for the Rehabilitation of the East Gold Plant No. 1 Ore Washing, Crushing and Milling Plants.
2.4.1.6	48CA0010 (4/03/94)	(Rev 0)	Medical Surveillance and Control of Persons Occupationally Exposed to Radiation.
2.4.1.7	VREAPSD	(Rev 0)	Radiation Hazard Assessment and Radiation Protection Programme for the Annual East Acid Plant Maintenance Shutdown.
2.4.1.8	VRMW-OPMP	(Rev 0)	Metallurgical Works Operating Procedures Manual.
2.4.1.9	MWVR-BFDEM	(Rev 0)	Proposal for the Rehabilitation of the Gold Plant No. 2 Redundant Belt Filter Section.
2.4.1.10	INSPEQUP	(Rev 0)	Surveillance, Inspection and Periodic Testing of Radiation Protection Related Equipment and Systems.
2.4.1.11	VRRPP	(Rev 0)	Vaal River Radiation Protection Procedures Manual.
2.4.1.12	VRRPFUNC	(Rev 0)	Anglogold Vaal River Radiation Protection Function.

SECTION 2.4.2: RADIATION PROTECTION PROGRAMME - PUBLIC

- | | | | |
|---------|--------------|---------|---|
| 2.4.2.1 | RD-007 | (Rev 0) | Requirements for the Control over Radioactive Effluent Discharges and Environmental Surveillance: Mining and Minerals Processing. |
| 2.4.2.2 | EWVR/OPS 001 | (Rev 1) | Unrestricted Release of Equipment Off-Site for Refurbishment and Repair. |
| 2.4.2.3 | EMVR/OPS 002 | (Rev 0) | Restricted Release of Equipment Off-Site for Refurbishment and Repair. |

SECTION 2.5: RADIOACTIVE WASTE

- | | | | |
|-------|-----------|---------|--|
| 2.5.1 | RD-004 | (Rev 0) | Requirements for Radioactive Waste Management: Mining and Minerals Processing. |
| 2.5.2 | VRMW/RW1 | (Rev 0) | Radioactive Material and Waste Handling. |
| 2.5.3 | VRMW/RW2 | (Rev 0) | Interim Radioactive Materials Store. |
| 2.5.4 | EWVR/RW | (Rev 0) | Radioactive Materials Handling Procedures Manual. |
| 2.5.5 | EWVR/TPT1 | (Rev 1) | Procedure on the Transportation of Radioactively Contaminated Scrap Metal from Vaal Reefs to Licensed Scrap Processing and Melting Facilities. |
| 2.5.6 | 48AA0082 | (Rev 0) | North #2 Acid Plant Maintenance Shutdown 1997 – Replacement of Weak Acid Stripper Tower. |

SECTION 2.6: TRANSPORTATION

- 2.6.1 TS-R-1 (ST-1, Revised) Regulations for the Safe Transport of Radioactive Material 1996 Edition (Revised).
- 2.6.2 MWVRPTP (Rev 0) Procedure for Transport of Pyrite from Gold Plant No. 8 to East and West Acid Plants.

SECTION 2.7: PHYSICAL SECURITY

2.7.1

(Rev 0)

Physical and Administrative Security
Systems at Vaal Reefs.

CONTROLLED COPY

SECTION 2.8: OCCURRENCES

2.8.1	RD-012	(Rev 0)	Notification Requirements for Occurrences: Mining and Minerals Processing.
2.8.2	RD-009	(Rev 0)	Verbal Emergency Communication with the National Nuclear Regulator: Mining and Minerals Processing.
2.8.3	RD-008	(Rev 0)	Requirements for Emergency Preparedness: Mining and Minerals Processing.
2.8.4	VRMW/ORN1	(Rev 0)	Occurrence Reporting and Notification.
2.8.5	VRMW/ORN2	(Rev 0)	Emergency Plan.

SECTION 2.9: QUALITY MANAGEMENT

- 2.9.1 RD-005 (Rev 0) Quality Management Requirements for Activities Involving Radioactive Material: Mining and Minerals Processing.
- 2.9.2 QAVR (Rev 0) Radiation Quality Management Programme.
- 2.9.3 VRQMP (Rev 0) Vaal River Radiation Protection Quality Management Programme.

SECTION 2.10: SCHEDULE**1 SCOPE**

Issue	Action	Completion
Authorised site - coordinates	Submission	Completed

2 SAFETY ASSESSMENT**2.1 Workforce**

Issue	Action	Completion
Safety Assessment for Surface Operations-Normal operations	Submission	July 2006
Safety Assessment for underground Operations-Normal operations	Submission	Completed
Safety Assessment for Surface & underground Operations-including decommissioning	Submission	August 2006

2.2 Public

Issue	Action	Completion
Safety Assessment Methodology	Submission	Completed
Safety Assessment Report	Submission	Completed

4.1 Workforce

Issue	Action	Completion
RP Programme, including maintenance activities	Submission	May 2006
Monthly dose reports for SCM mines	Submission	End of every month
Quarterly dose reports for all underground operations	Submission	End of April End of July End of October End of January (include summary for year)
6 Monthly dose reports for surface operations	Submission	End of July End of January (include summary for year)
SCM progress report	Submission	November 2006

4.2 Public

Issue	Action	Completion
RP Programme	Submission	Completed

5 INTEGRATED RADIOACTIVE WASTE MANAGEMENT PROGRAMME

Issue	Action	Completion
Integrated radioactive waste management programme	Submission	August 2006
Quarterly waste reports	Submission	End of April End of July End of October End of January (include summary for year)

8 OCCURRENCES

Issue	Action	Completion
Occurrence Report	Submission	As appropriate

9 QUALITY MANAGEMENT

Issue	Action	Completion
Quality Management Programme	Submission	August 2006
Self-Inspection Schedule and plan	Submission	Completed