

# **AANHANGSELS**

**Aanhangsel A**  
**Weltevreden Stortingsterrein**

# **Aanhangsel A1**

DEAT – Oudit Kommetaar



**DEPARTMENT OF AGRICULTURE  
AND RURAL DEVELOPMENT**

Diamond Corner, 68 Eloff Street,  
(cnr Market St)  
P O Box 8769, Johannesburg, 2000

Telephone: (011) 355-1900  
Fax: (011) 355 1000  
Email: [gdard@gpg.gov.za](mailto:gdard@gpg.gov.za)  
Website: <http://www.gdard.gpg.gov.za>

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Enquiries:	Salphina Bilankulu
Telephone:	(011) 355 1827
E-Mail:	<a href="mailto:Salphina.Bilankulu@gauteng.gov.za">Salphina.Bilankulu@gauteng.gov.za</a>
Reference:	GWM/09-10/0082

The Director Waste Management Service  
Ekurhuleni Metropolitan Municipality  
Solid Waste Management  
P. O. Box 215  
Boksburg  
1460

Attention: Ms. Zandile Khathi

Fax: (086) 630 3025  
Tel: (011) 999 5536

Dear Madam

**COMMENTS ON THE QUARTERLY LANDFILL AUDIT REPORTS; FOURTH  
AUDIT REPORTS FOR 2009 FOR THE EKURHULENI METROPOLITAN  
MUNICIPALITY LANDFILL SITES.**

The above matter has reference.

This letter provides comments on the quarterly audit reports received from Ekurhuleni Metropolitan Municipality (EMM) for the five (5) operational landfill sites i.e. (i) *Simmer and Jack*; (ii) *Ricjfontein*; (iii) *Weltevreden*; (iv) *Platkop* and (v) *Roikraal*.

**I. SIMMER AND JACK LANDFILL SITE.**

1. The windblown litter appears to be a problem since this was also identified during the Department's audit therefore effective measures must be put in place in order to improve the site condition in this regard.

2. There is a great indication for potential off site gas migration on this site. Adequate measures must be implemented to prevent lateral migration of gases generated within the landfill.
3. It has been identified that signage is still a problem and this was also identified during the Department's audit dated 19 March 2009. It is recommended that sufficient signage directing the public to the site and written in official languages must be implemented accordingly.
4. The issue of mud on the access road was also identified in the Department's audit dated 19 March 2009. It is recommended that the access road must be surfaced and maintained to ensure that no mud may be tracked onto public road.

## II. RIETFontein LANDFILL SITE

1. The Department commends the good work done by EMM and encourages continuous improvements for the site.

## III. Weltevreden LANDFILL SITE

1. In order to ensure the occupational and environmental health risks, the two (2) probes reporting explosive gases must be clearly demarcated immediately.
2. Water resources on site must be protected from water pollution resulting from the hydrocarbon contaminated water.
3. A mandatory physical separation between waste and the surface and ground water regimes must be established in order to ensure the prevention of environmental pollution.
4. Adequate cover material must be provided in order to avoid not only nuisance but to reduce windblown litter, the risk of fire and to eliminate odour.
5. General maintenance of equipments and infrastructure on site must be maintained at all times.

## IV. PLATKOP LANDFILL SITE

1. It has twice been reported that the pump at borehole number 4 is broken; the next report must address this issue as this will lead to invalid groundwater monitoring result.
2. The storm water management issue is expected to be addressed in the next audit, as it was indicated in the report that the construction of the new leachate/storm water dam will commence as part of the new cell development, which is expected to start in early 2010.
3. According to the report, the issue of compaction density obtained non-compliance. This is due to unavailability of compaction densities for the site. EMM must ensure that the compaction density figures are available as soon as possible.
4. The site scored 94% on the current audit, a slight decrease from the score of 94.7% received for the previous audit which indicates that there was no improvement in performance. It is therefore recommended that all recommendations provided by the auditor must be implemented in order to improve the site's performance.

## V. ROOIKRAAL LANDFILL SITE

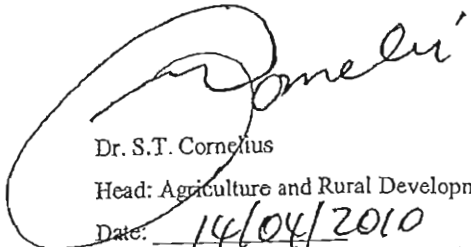
1. It is recommended that gas well 9 be repaired with the upper berm moved to avoid further build up of storm water which causes slumping.
2. The open drain on the diesel tank bund must be plugged immediately and only unplugged to drain accumulated clean storm water out of the bund.

## VI. CONCLUSION

1. All the recommendations and / or requirements stipulated for both the partial and non-compliance issues identified must be implemented so as to achieve continuous improvement.
2. All recommendations by the external auditor must be implemented to enhance the operation of the landfill sites. Also note that all these issues will be audited on this Department's next audit.

Should you have any queries regarding the contents of this letter please contact Ms. Salphina Bilankulu at (011) 355 1827.

Yours faithfully



Dr. S.T. Cornelius  
Head: Agriculture and Rural Development  
Date: 14/04/2010

Cc:

GDARD Compliance Monitoring

Attn: Ms. C. Petlane  
Tel: (011) 355-1993  
Fax: (011) 355-1850

GDARD: General Waste Management

Attn: Ms. L. Vilakazi  
Tel: (011) 355-1354  
Fax: 086 604 2482

Ground Water Monitoring Services

Attn: Mr. S. Gumbi  
Tel: (011) 234 1550  
Fax: (011) 807 7958

## **Aanhangsel A2**

Weltevreden Stortingsterrein Permit

2711 892 4502



DEPARTEMENT VAN WATERWESSE EN BOSBOU  
DEPARTMENT OF WATER AFFAIRS AND FORESTRY



HOEVELDSTREEK  
SDR-sentrum, John Vorsterlaan-Suid,  
Verwoerdburg

HIGHVELD REGION  
CCS Centre, John Vorster Drive South,  
Verwoerdburg

Fax: (012) 672-2885

Privaat Sak X8007  
Private Bag  
Mennonismeer  
0026  
Verwoerdburg

Navres:  
Enquiries  
Verwysing:  
References

D Esterhuizen  
672-2906

B33/2/321/172-S



Direkteur  
Oos Rand Streekdiensteraad  
Privaat Sak 1069  
GERMISTON  
1400

EAST HAND REGIONAL  
SERVICES COUNCIL  
18 NOV 1994  
EAST HAND  
STREEKDIENSTERAAD

1994-11-14

1/2/1/22  
13/5/1/2/2

PERMIT KRAGTENS ARTIKEL 20 VAN DIE WET OP OMGEWINGSBEWARING,  
1989 (WET 73 VAN 1989) VIR DIE BRAKPAN MYNE ALGEMENE VASTE-AFVAL-  
STORTINGSTERREIN : OOS RAND STREEKDIENSTERAAD

*Met vriende*

Vind asseblief aangeheg 'n permit uitgereik aan u vir u inligting en aandag.

Alle kondisies in die permit vervat moet ten alle tye nagekom word om die vaste-afvalstortingsterrein omgewingsvriendelik te bedryf.

Indien daar enige navres is kontak met D Esterhuizen gerus gekontak word.

Die uwe

*C. J. Jansen*

STREEKDIENSTERAAD

4317

003619

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DEPARTEMENT VAN WATERWESE EN BOSBOU  
DEPARTMENT OF WATER AFFAIRS AND FORESTRY  
REPUBLIEK VAN SUID-AFRIKA / REPUBLIC OF SOUTH AFRICA



DW 1

RESIDENSIEGEBOU / BUILDING, SCHOEMANSTRAT 113 SCHOEMAN STREET

Fax: (012) 316-1780  
(012) 323-4472Private Bag X313  
Private Bag  
0001

Name: D. ESTERHUIZEN

Enquiries: 672 2906

Verwysing: B33/2/321/172S  
Reference:

1994-11-10

PERMIT NUMBER: B33/2/321/172/P137  
TYPE: CLASS 2  
WASTE DISPOSAL SITE: BRAKPAN MINES  
LOCATION: REMAINDER OF BENONI 77 IR, DISTRICT OF BRAKPAN.  
PERMIT HOLDER: EAST RAND REGIONAL SERVICES COUNCIL  
ADDRESS: PRIVATE BAG 1069, GERMISTON, 1400.

PERMIT IN TERMS OF SECTION 20 OF THE ENVIRONMENT CONSERVATION ACT,  
1989 (ACT 73 OF 1989)

By virtue of the powers delegated to me by the Minister of Water Affairs and Forestry (hereinafter referred to as "the Minister"), I, Wouter van der Merwe, in my capacity as Manager: Scientific Services in the Department of Water Affairs and Forestry (hereinafter referred to as "the Department"), hereby, in terms of section 20(1) of the Environment Conservation Act, 1989 (Act 73 of 1989), authorise the abovementioned Permit Holder to establish, develop and operate the abovementioned waste disposal site, subject to the conditions specified herein.

PERMIT CONDITIONS

In this Permit, "Regional Director" means the Regional Director: Highveld of the Department who may be contacted at the address below:

Regional Director: Highveld  
Department of Water Affairs and Forestry  
Private Bag X8007  
HENNOPSMEER  
0046

1. LOCATION

1.1 This Permit authorises the establishment, development and operation of a waste disposal site on remainder of Benoni 77 IR, District of Brakpan (hereinafter referred to as "the Site") according to the report G19/94/4317 by Jones & Wagener Consulting Civil Engineers, dated May 1994 (hereinafter referred to as "the Report"), submitted by the Permit Holder.

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The boundaries of the Site shall be as indicated on plan number 4317 dated June 1994 (addition to the Report), submitted by the Permit Holder.

## 2. PERMISSIBLE WASTE

2.1 The Site may be used for the disposal of all waste types, excluding those listed in Annexure I and excluding those where specific control has been established in terms of the Nuclear Energy Act, 1982 (Act 92 of 1982). Waste types controlled in terms of the Minerals Act, 1991 (Act 50 of 1991) and the Electricity Act, 1987 (Act 41 of 1987) are also excluded from disposal on the Site unless written permission has been obtained from the Regional Director.

2.2 The Permit Holder shall take all reasonable steps to ensure that -

2.2.1 no medical waste be disposed of on the Site, unless it has been incinerated at 800°C or higher for at least 1 second; and

2.2.2 no scheduled pharmaceutical products registered in terms of the Medicines and Related Substances Control Act, 1965 (Act 101 of 1965) or associated containers be disposed of on the Site.

## 3. CONSTRUCTION

3.1 The Site or any portion thereof may only be used for the disposal of permissible waste if the Site or any such portion has been constructed or developed according to condition 3 of this Permit.

3.2 Construction and further development within the Site shall be done under the supervision of a suitably qualified person proposed by the Permit Holder and approved by the Regional Director.

3.3 After construction of the Site or further development within the Site, the Permit Holder shall notify the Regional Director before disposal may commence on the Site. The completed construction works of the Site shall be inspected by an official of the Department and the person referred to in condition 3.2. If the Regional Director is satisfied with the construction of the Site or any further development within the Site and has given written permission, the Permit Holder may use the Site or any further development within the Site for the disposal of waste.

3.4 The Permit Holder shall take all reasonable steps, such as suitable zoning and/or written agreements with adjacent landowners, to establish and maintain an unbuilt area or "buffer zone" of 500 metres between the Site and the nearest

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residential and/or light industrial areas during the operative life of the Site. Heavy industries or industries which may create nuisance conditions may be permitted within the buffer zone in terms of the appropriate legislation.

- 3.5 Works shall be constructed and maintained on a continuous basis by the Permit Holder to divert and drain from the Site in a legal manner, all runoff water arising on land adjacent to the Site, which could be expected as a result of the estimated maximum precipitation during a period of 24 hours with an average frequency of once in fifty years (hereinafter referred to as the "estimated maximum precipitation"). Such works shall, under the said rainfall event, maintain a freeboard of half a metre.
- 3.6 Works shall be constructed and maintained on a continuous basis by the Permit Holder to divert and drain from the working face of the Site, all runoff water arising on the Site, which could be expected as a result of the estimated maximum precipitation and to prevent such runoff water from coming into contact with leachate from the Site. Such works shall, under the said rainfall event, maintain a freeboard of half a metre.
- 3.7 Runoff water referred to in condition 3.6 shall comply with the quality requirements of the General Standard, prescribed in terms of section 21(1)(a) of the Water Act, 1956 as published in Government Notice 991 of 18 May 1984, or with such quality requirements as may from time to time be determined by the Minister and shall be drained from the Site in a legal manner.
- 3.8 Runoff water referred to in condition 3.6 which does not comply with the quality requirements applicable in terms of condition 3.7 and all leachate from the Site shall, by means of works which shall be constructed and maintained on a continuous basis by the Permit Holder:
- 3.8.1 be treated to comply with the aforementioned standard and discharged in a legal manner; and/or,
- 3.8.2 with the written approval of the Regional Director be evaporated in dams and/or be evaporated by spraying over those portions of the Site which comply with the requirements set in terms of condition 3.1.
- 3.9 The Site shall be constructed in accordance with recognised civil engineering practice to ensure that it remains stable.
- \* 3.10 The maximum height of the Site above ground level shall not exceed 10 metres.
- 3.11 The slope of the sides of the Site shall be constructed in such a manner that little or no erosion occurs.
- 3.12 The Permit Holder shall make provision for adequate

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sanitation facilities on the Site.

#### 4. ACCESS CONTROL

4.1 Weatherproof, durable and legible notices in the official languages applicable in the area shall be displayed at each entrance to the Site. These notices shall prohibit unauthorised entry and state the hours of operation, the name, address and telephone number of the Permit Holder and the person responsible for the operation of the Site.

4.2 The Site shall be fenced to a minimum height of 1,8 metres, with gates of the same height at all entrances, to reasonably prevent unauthorised entry and curtail the spreading of wind-blown paper and plastic materials.

4.3 The Permit Holder shall take all reasonable steps to maintain service roads in a condition which ensures unimpeded access to the Site for vehicles transporting waste and to keep the roads free of waste.

4.4 The Permit Holder shall ensure that all entrance gates are manned during the hours of operation and locked outside the hours of operation.

4.5 The Permit Holder shall ensure effective access control.

4.6 The Permit Holder shall take all reasonable steps to prevent the disposal of waste on the Site for which the Site has not been approved.

#### 5. OPERATION

5.1 Waste disposed of on the Site shall be compacted and covered on a daily basis with a minimum of 150 millimetres of soil or other material approved by the Regional Director.

5.2 The Permit Holder shall take all reasonable steps to ensure that the Site is operated in a manner that shall prevent the creation of nuisance conditions or health hazards.

5.3 The Permit Holder shall apply sufficient dust control measures to prevent wind-blown dust from causing nuisance conditions or health hazards.

5.4 ~~Waste disposed of on the Site may be reclaimed. The reclamation activity shall not interfere with the daily operational activities of the Site.~~

5.5 The Permit Holder shall keep a record of the volume and nature of the waste materials which are reclaimed and report this on an annual basis to the Regional Director.

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## 6. MONITORING

- 6.1 A monitoring borehole network for the Site shall be established and maintained by the Permit Holder according to the Report, to the satisfaction of the Regional Director so that unobstructed sampling, as required in terms of this Permit, can be undertaken.
- 6.2 Monitoring boreholes shall be equipped with lockable caps. The Department reserves the right to take water samples at any time and to analyse these samples or have them analysed.
- 6.3 Surface water monitoring shall be performed in all stormwater drains on and adjacent to the Site at locations selected in conjunction with the Regional Director and at a frequency as determined by the Regional Director.
- 6.4 Background monitoring
- 6.4.1 Samples from the borehole where the ground water in the borehole is at an expected higher hydraulic pressure level than the hydraulic pressure level of the ground water under the Site, shall be considered as background monitoring. Background ground water monitoring shall be conducted during each monitoring occasion in terms of conditions 6.5, 6.6 or 6.7 for the water quality variables listed in Annexure II.
- 6.5 Detection monitoring
- 6.5.1 Monitoring shall be conducted within 3 days of 15 January and 15 July of each year for the water quality variables listed in paragraph (a) of Annexure III and annually within 3 days of 15 July for the variables listed in paragraph (b) of Annexure III.
- 6.6 Investigative monitoring
- 6.6.1 If, in the opinion of the Regional Director, a water quality variable listed under the detection monitoring programme, as referred to in condition 6.5, shows an increasing trend, the Permit Holder shall initiate a monthly monitoring programme for the water quality variables listed in Annexure II.
- 6.7 Post-closure monitoring
- 6.7.1 Ground water monitoring by the Permit Holder, in accordance with condition 6.5 or 6.6, shall commence immediately upon closure of the site and be maintained for a period of 30 years, or such lesser period as may be determined by the Regional Director.

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## 6.8 Further monitoring

- 6.8.1 The Permit Holder shall keep a record of and update all the information referred to in Annexure IV on an annual basis.

## 7. METHODS OF ANALYSIS

- 7.1 The Permit Holder shall carry out all tests in accordance with methods prescribed by and obtainable from the South African Bureau of Standards (SABS), referred to in the Standards Act, 1982 (Act 30 of 1982), to analyse the samples taken under the monitoring programmes specified in condition 6.

- 7.2 The Permit Holder shall only use another method of analysis if written proof that the method is equivalent to the SABS method, is submitted to the Regional Director.

## 8. RECORDING

- 8.1 The Permit Holder shall record all borehole data and chemical analyses in the format depicted in Annexure V.

## 9. REPORTING

- 9.1 The information required in terms of conditions 6.3 to 6.7 shall be submitted to the Regional Director within a period of 30 days following the analysis of the said samples. The information required in terms of condition 6.8 shall be submitted to the Regional Director within a period of one year from the date of issuing of this Permit and annually thereafter.

## 10. REHABILITATION AND CLOSURE OF THE SITE

- 10.1 The Permit Holder shall, at least 60 days prior to the intended closure of the Site, notify the Regional Director by registered mail of such closure and submit final rehabilitation plans for his approval.
- 10.2 Immediately following the cessation of operations with the intention to close the Site, the surface of the Site shall be covered in such a way that -
- 10.2.1 the formation of pools due to rain is prevented;
- 10.2.2 free surface runoff of rain-water is ensured; and
- 10.2.3 no objects or materials which may hamper the rehabilitation of the Site are present.

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10.3 The Permit Holder shall rehabilitate the Site in accordance with a rehabilitation plan which shall be submitted by the Permit Holder and which shall be to the satisfaction of the Regional Director.

11. LEASING AND ALIENATION OF THE SITE

11.1 Should the Permit Holder want to alienate or lease the Site, he shall notify the Regional Director in writing of such an intention at least 60 days prior to the said transaction.

12. GENERAL

12.1 This Permit shall not be transferable.

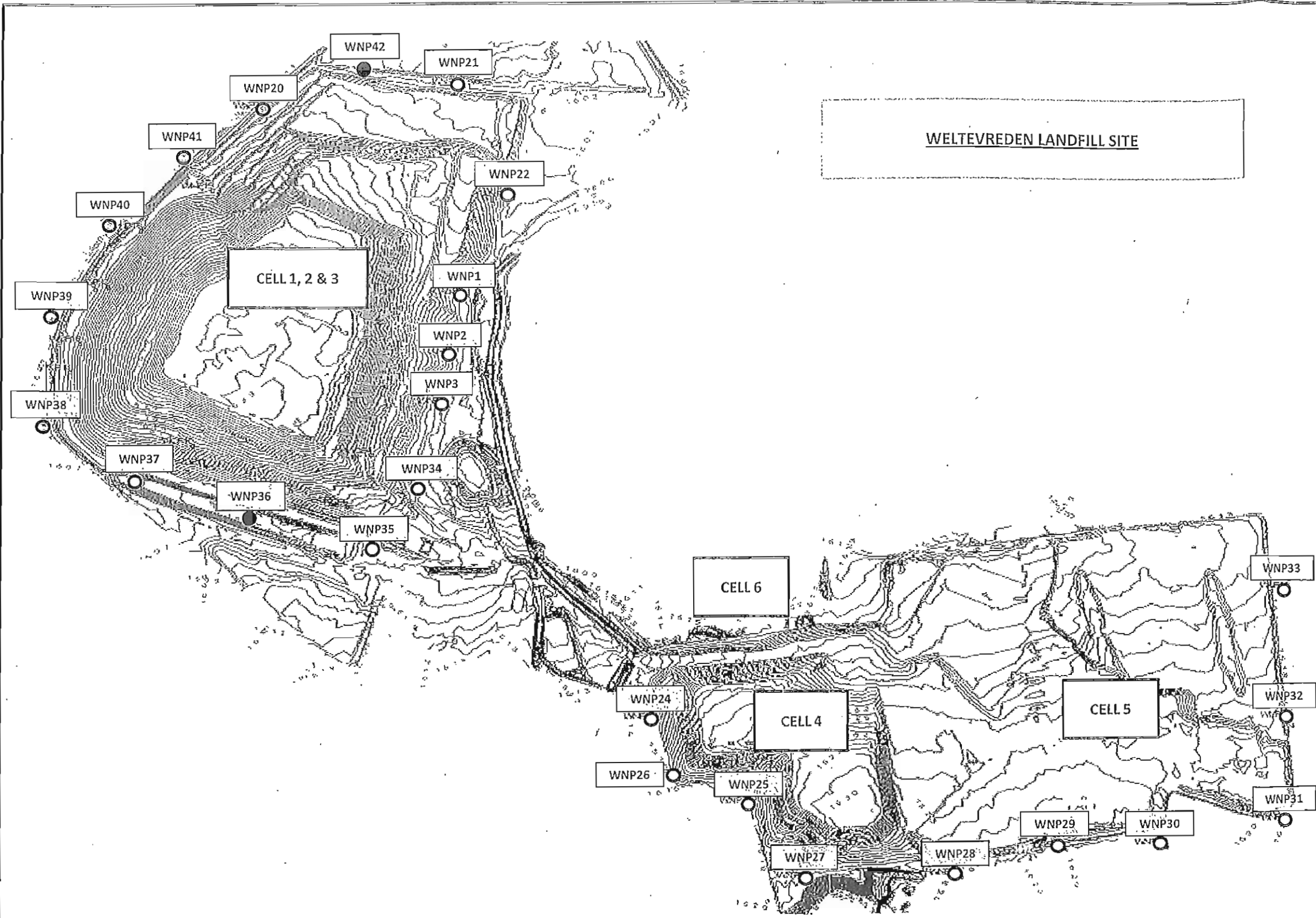
12.2 This Permit shall not be construed as exempting the Permit Holder from compliance with the provisions of the Health Act, 1977 (Act 63 of 1977), the Water Act, 1956 (Act 54 of 1956) or any other applicable act, ordinance, regulation or by-law.

*[Signature]*  
MANAGER: SCIENTIFIC SERVICES  
P.P. MINISTER OF WATER AFFAIRS AND FORESTRY


DATE: 1984.10.07

## **Aanhangsel A3**






Kaart van uitleg van  
Weltevreden Stortingsterrein



**Key:**

**WNP1** Number and position of gas monitoring probe  


**Methane Levels:**

-  Indicates methane level less than 0,5% in probe located within or outside of waste body
-  Indicates methane level between 0,5% and 5% in probe located outside waste body i.e. regular monitoring of boundary required in accordance with DWAF Minimum Requirements (1998)
-  Indicates methane level greater than 5% in probe located outside waste body i.e. permanent venting system required in accordance with DWAF Minimum Requirements (1998)
-  Indicates methane level greater than 0,5% in probe located within waste body i.e. not an indication of gas migration off the landfill
-  Indicates methane level in gas probe is within explosive limits

**Notes:** Plan based on survey supplied by PASCO Waste & Environmental Consulting co

**envitech**  
 solutions  
 Environmental Engineering  
 Technology Specialists

Client: Ekurhuleni Metropolitan Municipality  
 Project: Contract No. A-ED (SWL) 04/2009  
 Title: Landfill Gas Probe Monitoring - February 2010  
 Scale: Not to scale


Ref. No:  
 198-2008

Fig. No:  
 05

## **Aanhangsel A4**

Data verkry vanaf  
Ekurhuleni Munisipaliteit

Opto Africa WinBridge™ - Ekurhuleni Page 1 of 1



**WinBridge™**  
Ekurhuleni

Customer Report:  
WELTEVREDEN site

Customer Report

Log Off


WELTEVREDEN site Customer Report Report for BRAKPAN CUSTOMER CARE CENTRE - WT (LMBR01) between 2010/03/01 and 2010/03/31  
Report generated on 2010/03/31 at 22:35:19

BRAKPAN CUSTOMER CARE CENTRE - WT (LMBR01)			
Waste Category	Transactions	Mass	Amount (ex VAT)
BUILDING RUBBLE	4	28,140 kg	
DOMESTIC REFUSE	516	2,114,130 kg	
GARDEN REFUSE	6	3,120 kg	
INDUSTRIAL REFUSE	4	12,460 kg	
<b>Total</b>	<b>530</b>	<b>2,157,850 kg</b>	

Customer Report

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Opto Africa WinBridge™ - Ekurhuleni Page 1 of 1



**WinBridge™**  
Ekurhuleni

Waste Category Report:  
WELTEVREDEN

Waste Category Report

Log Off

Waste Category Report for WELTEVREDEN between 2010/04/01 and 2010/04/30  
Report generated on 2010/05/01 at 17:41:38

Waste Category	Transactions	Total Qty	Total Amount
ASH COVER MATERIAL	12	86,440 kg	
BUILDING RUBBLE	222	882,760 kg	
DOMESTIC REFUSE	3,031	11,790,690 kg	
GARDEN REFUSE	511	298,420 kg	
INDUSTRIAL REFUSE	1,550	4,631,760 kg	
MIXED RUBBLE	16	67,640 kg	
RECYCLING	32	-24,940 kg	
SOIL COVER MATERIAL	482	3,655,820 kg	
SPECIAL : UNSOUND FOODS	1	990 kg	
TYRES UP TO 110CM DIAMETER (TRUCK)	7	476 (48,620 kg)	
TYRES EXCESS 116CM DIAMETER (EARTHMOVING)	17	347 (123,400 kg)	
TYRES UP TO 70CM DIAMETER (NORMAL CAR)	3	102 (10,140 kg)	
WEIGHING ONLY	4	-7,320 kg	
<b>Sub Total</b>	<b>5,888</b>	<b>21,564,410 kg</b>	
<b>Uncategorised Waste</b>	<b>0</b>	<b>0 kg</b>	
<b>Total</b>	<b>5,888</b>	<b>21,564,410 kg</b>	

Waste Category Report

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WinBridge™ Ekurhuleni

Waste Category Report

Waste Category Report-WELTEVREDEN

Log Off

Waste Category Report for WELTEVREDEN between 2009/12/26 and 2010/01/24

Report generated on 2010/02/16 at 08:43:01

Waste Category	Transactions	Total Qty	Total Amount
ASH COVER MATERIAL	5	31,120 kg	
BUILDING RUBBLE	124	659,720 kg	
DOMESTIC REFUSE	2,927	15,934,199 kg	
FREE DUMPING	1	0 kg	
GARDEN REFUSE	354	250,680 kg	
INDUSTRIAL REFUSE	1,016	3,349,360 kg	
MIXED RUBBLE	32	112,880 kg	
RECYCLING	30	-13,240 kg	
SOIL COVER MATERIAL	181	812,720 kg	
SPECIAL : UNSOUND FOODS	2	19,680 kg	
TYRES UP TO 110CM DIAMETER (TRUCK)	11	661 (49,320 kg)	
TYRES EXCESS 116CM DIAMETER (EARTHMOVING)	15	363 (108,340 kg)	
TYRES UP TO 70CM DIAMETER (NORMAL CAR)	4	470 (20,720 kg)	
WEIGHING ONLY	5	-3,660 kg	
<b>Sub Total</b>	<b>4,707</b>	<b>21,331,839 kg</b>	
<b>Uncategorised Waste</b>	<b>0</b>	<b>0 kg</b>	
<b>Total</b>	<b>4,707</b>	<b>21,331,839 kg</b>	

Waste Category Report

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Waste Category Report

Waste Category Report-WELTEVREDEN

Log Off

Waste Category Report for WELTEVREDEN between 2010/02/01 and 2010/02/28

Report generated on 2010/10/12 at 16:05:37

Waste Category	Transactions	Total Qty	Total Amount
ASH COVER MATERIAL	13	41,320 kg	
BUILDING RUBBLE	240	892,540 kg	
DOMESTIC REFUSE	3,309	15,748,551 kg	
GARDEN REFUSE	757	485,600 kg	
INDUSTRIAL REFUSE	1,534	3,971,820 kg	
MIXED RUBBLE	25	77,380 kg	
RECYCLING	40	-19,280 kg	
SOIL COVER MATERIAL	269	1,125,180 kg	
SPECIAL: UNSOUND FOODS	4	11,880 kg	
TYRES UP TO 110CM DIAMETER (TRUCK)	7	155 (16,640 kg)	
TYRES CUT OR SHREDDED	4	18,900 kg	
TYRES EXCESS 116CM DIAMETER (EARTHMOVING)	7	125 (46,580 kg)	
TYRES UP TO 70CM DIAMETER (NORMAL CAR)	2	275 (9,680 kg)	
WEIGHING ONLY	5	1,000 kg	
<b>Sub Total</b>	<b>6,216</b>	<b>22,427,791 kg</b>	
<b>Uncategorised Waste</b>	<b>0</b>	<b>0 kg</b>	
<b>Total</b>	<b>6,216</b>	<b>22,427,791 kg</b>	

Waste Category Report

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Done

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## **Aanhangsel A5**

Brief van die Munisipaliteit van Ekurhuleni

(Letter of good standing)

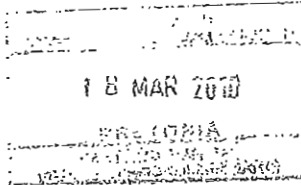
THE OFFICE OF THE COMPENSATION COMMISSIONER

COMPENSATION FUND



The Hon., Prof., Dr., Messrs., Mr., Ms

INTER WASTE PTY LTD  
PO BOX 641  
NORTH RIDING  
2162



YOUR REGISTRATION NUMBER:

0475-917-1711

ATTENTION:

YOUR FAX NUMBER:

DATE ISSUED: 18/03/2010

CERTIFICATE #: 0000693255

## LETTER OF GOOD STANDING

COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993.

With reference to Section 89 of the Act, I hereby certify that

**INTER WASTE PTY LTD**

has complied with the requirements of the above Act and is at present in good standing with the Compensation Fund.

Nature of Business : **SOLIDWASTE TRANSPORT**

Expiry Date : **30/06/2010 (Wednesday, Thirtieth of June, Two thousand and Ten)**

A letter of good standing is hereby issued with expiry date 30/06/2010 (Wednesday, Thirtieth of June, Two thousand and Ten), subject to the following:

**You Complied with the requirements of the act.**

**2009 RETURN OF EARNINGS TO BE SUBMITTED BY 31 MARCH 2010**

**IMPORTANT NOTICE:**

*You make yourself guilty of an offense if you pay any additional fee to obtain this letter.*

The Compensation Commissioner shall at his own discretion institute criminal proceedings against perpetrators who unlawfully alter or deface this letter with intent to defraud or misrepresent facts contained therein.

**\* TO RENEW THIS LETTER FAX YOUR REQUEST 5 WORKING DAYS PRIOR TO EXPIRY DATE.**

Yours faithfully,

*P Tshabalala*

COMPENSATION COMMISSIONER

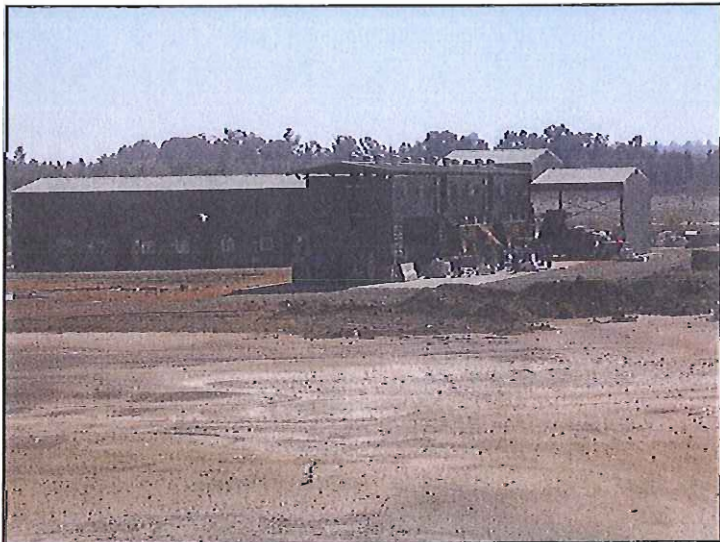
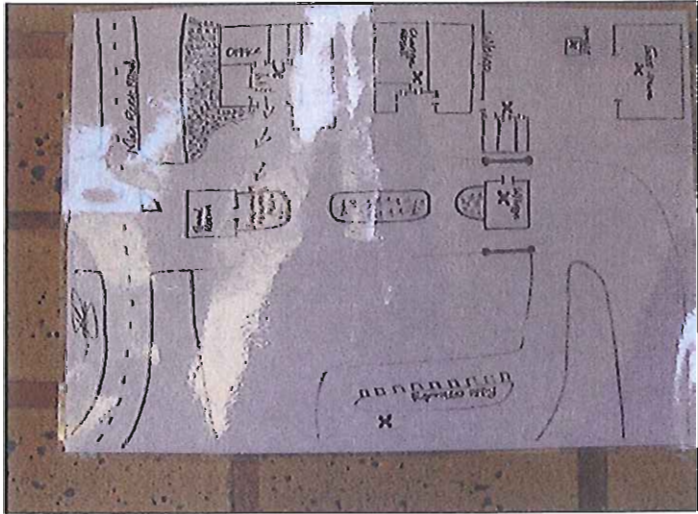
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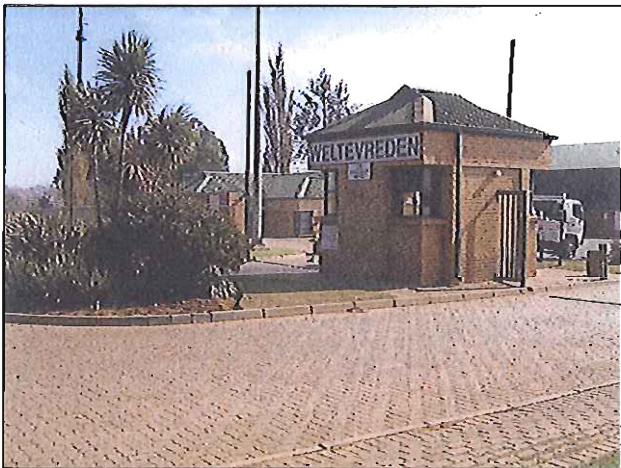
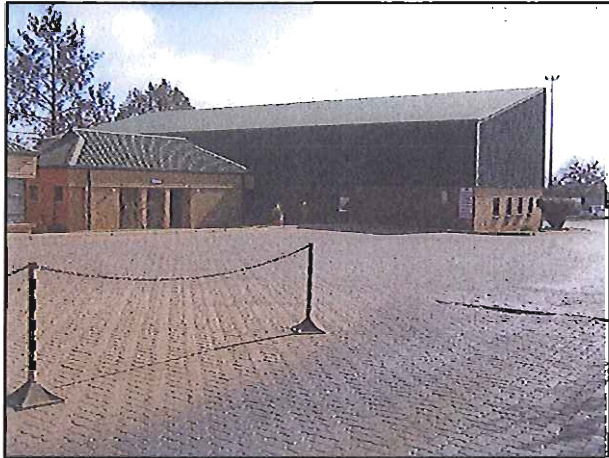
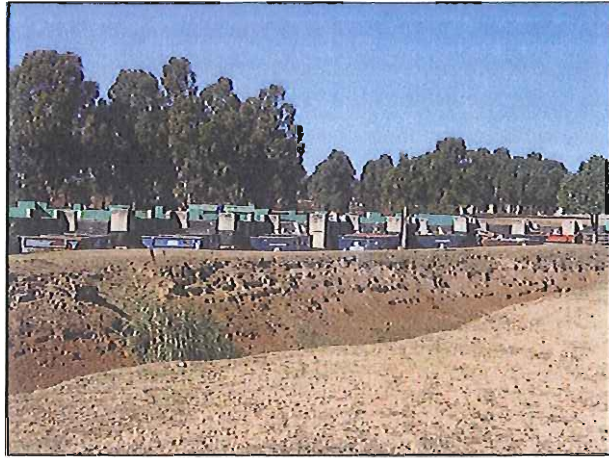
Compensation House, Cnr Hamilton and Soutpansberg Road, P O Box 955, Pretoria, 0001

Fax: (012) 357-1817

Website: <http://www.labour.gov.za>

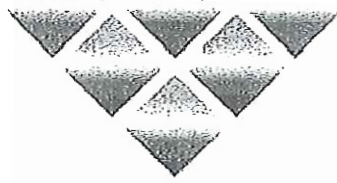
**Aanhangsel A6**  
Ekstra foto's van  
Weltevreden Stortigsterrein  
en die MRF







**Aanhangsel A7**  
Metaan Gas Verslag



Our Ref: Enviro-Fill Monthly Report – January 2010

EMM Environmental Development Division  
 Waste Management: Landfill  
 P. O. Box 215  
 Boksburg  
 1460

For the attention of:  
Ms R. Becker and Mr P. Viljoen

**EKURHULENI METROPOLITAN MUNICIPALITY LANDFILL GAS EXTRACTION AND COMBUSTION 'CLEAN DEVELOPMENT MECHANISM' PROJECT**

**MONTHLY OPERATIONS AND CDM REPORT:**  
**JANUARY 2010**

Attached please find our monthly operations and CDM report for the above-mentioned month of operation.

Page 1 of the report provides a summary of operational information for the flare compound and calculation of Emission Reductions for each of the four sites, while Page 2 of the report contains any additional comments with respect to operations, maintenance or technical difficulties at the flare compounds for each of the four sites.

Pages 3, 4, 5 and 6 of the report provide a summary of operational information for the gas extraction wells and wellfield at the Rooikraal, Simmer & Jack, Weltevreden and Rietfontein landfill sites respectively.

Finally, summary pages highlighting data relevant to the calculation of greenhouse gas emission reductions for each of the above sites are attached to this report.

We trust that you will find this in order, however should you have any queries in the above regard, please do not hesitate to contact the undersigned.

Regards,

**B. BARRATT**  
**envitech**  
 solutions  
 Environmental Engineering  
 Technology Specialists

Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : FLARE COMPOUND & CDM FOR ALL SITES  
JANUARY 2010

	ROOKRAAL	SIMMER & JACK	WELTEVREDEN	RIETFontein	Notes	
Generator	Running Hours at Month Start (hr)	29	108	3		
	Running Hours at Month End (hr)	29	108	3		
	Running Hours for Month (hr)	0	0	0		
	Next Service Due (hr)	250	250	250	Service due at 250hr or 12 months i.e. February 2010	
Compressor	Fuel Level at Month Start (litres)	1921	2874	16		
	Fuel Level at Month End (litres)	1921	3010	16		
	Fuel Used for Month (litres)	0	206	36	This is the fuel transferred from the diesel tank and is not the fuel consumed by the generator	
	Running Hours at Month Start (Rhr)	8500	2820	2990	955	
	Running Hours at Month End (Rhr)	9020	2890	3490	992	
	Running Hours for Month (Rhr)	520	70	500	37	
	Next Service Due (Rhr)	8000	4000	4000	2000	
	Average CH <sub>4</sub> Content of Gas (%)	45.2	45.0	57.8	N/A	Based on portable analyser readings
	Average CO <sub>2</sub> Content of Gas (%)	40.3	35.2	41.4	N/A	Based on portable analyser readings
	Average O <sub>2</sub> Content of Gas (%)	0.8	2.7	0.6	N/A	Based on portable analyser readings
GDU	Size of Flare (m <sup>2</sup> /hr)	3000	2000	2000	1300	
	Average Gas Flow (m <sup>3</sup> /hr)	800	956	330	N/A	Flow meter at Rietfontein removed. See Page 2 for details.
	Total no. of hours of flare operation (h)	268	237	178	0	Refer to additional comments on Page 2
	Percentage operation of flare during the month (%)	36	32	24	0	Refer to additional comments on Page 2
Electricity	Any Technical Problems (Y/N)	Y	Y	Y	Y	Refer to additional comments on Page 2
	Electricity Meter Reading at Month Start	118157	36636	25255	15275	
	Electricity Meter Reading at Month End	126154	40093	29381	16509	
	Difference in Electricity Meter Reading	8027	3457	4126	1234	
ERS	Electricity Consumed during Month (MWh)	8.0270	3.4570	4.1260	1.2340	Amount of diesel combusted (tonnes) x Emission Factor (= 2, 4)
	Diesel Generator Emissions (tCO <sub>2</sub> )	A	0.494	0.086	0.000	
	Electricity Consumption Emissions (tCO <sub>2</sub> )	B	5.393	6.437	1.925	
	Project Emissions from Flaring (tCO <sub>2</sub> e)	C	62.695	0.061	0.000	0.000
Calculated Emission Reductions (tCO <sub>2</sub> e)	D	774.719	1001.495	328.110	0.000	Provisional
Net Emission Reductions (tCO <sub>2</sub> e)	D-(A+B+C)	740	933	323	-2	Provisional. Refer to attached Summary Pages for calculations.
Cumulative Project ERs since June 2008 (tCO <sub>2</sub> e)	29323	47995	31593	3263	Provisional	



Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : FLARE COMPOUND & CDM FOR ALL SITES

JANUARY 2010

Additional Comments	
ROOIKRAAL	Diesel generator has been commissioned but is on manual control (not automatic). Automatic control will be activated if telemetries indicate frequent mains power interruptions.
	Repair work to wellheads has been carried out by Envitech Solutions but more repair work is required.
	There is a leak on the air line from the compressor to the wellhead, which is causing the compressor to run continuously. Investigation has narrowed down the possible location. Repairs urgently required.
	Removed flow meter on 18th January for replacement of bearings (agent has tried sealed bearings). Flow meter re-installed on 20th January.
	Percentage operation of flare at 36% mainly due to shutdown on 7th January for technical problems with flow meter. Flare only restarted on 20th January.
	Servicing of the fire extinguishers took place on 29th January.
SIMMER & JACK	Diesel generator has been commissioned but is on manual control (not automatic). Automatic control will be activated if telemetries indicate frequent mains power interruptions.
	There seems to be a leak on the main gas line where air is being sucked in, and thus causing the gas quality at the GDU to appear low. However the gas quality at the individual wellheads is generally good. Repairs urgently required.
	Inlet CO analyser appears to have expired - awaiting feedback from supplier to be able to order.
	Exhaust gas analyser faulty. Inspection and repair/replacement required.
	Flow meter removed on 25th January for annual calibration check. Flow meter re-installed on 29th January but flow not being recorded at panel - suspected signal or cable fault (manual flow readings are being used in CDM calcs until resolved).
	Percentage operation of flare at 32% due to several shutdowns inferred to be related to power supply failures (EMM should consider setting gen-set to auto) as well as the flare shut down for flow meter calibration check.
	Servicing of the fire extinguishers took place on 21st January.
WELTEVREDEN	Diesel generator has been commissioned but is on manual control (not automatic). Automatic control will be activated if telemetries indicate frequent mains power interruptions.
	Horizontal wells were shut off on 12th October as the leak on the main gas collector seems to have worsened and is lowering the overall gas quality recorded at the GDU. The air leak on the compressed air line is also preventing the pump in CK5 from functioning.
	Power supply unit experienced a fault around 12th/13th December resulting in the flare shutting down. Without the power supply unit, the datalogger and certain other instrumentation could not function. The battery backup for the datalogger eventually diminished and data could not be retrieved until the power supply problem was resolved on 19th January. The Datalogger was reprogrammed on 20th January whereafter data was recorded again as normal.
	Percentage operation of flare at 24% due to the power supply problem mentioned above.
	Servicing of the fire extinguishers took place on 21st January.
RIETFONTEIN	Diesel generator has been commissioned but is on manual control (not automatic). Automatic control will be activated if telemetries indicate frequent mains power interruptions.
	Flare has not been in operation due to removal of flow meter for assessment and repairs by Organics. Organics have sent the flow meter back for local repair.
	Percentage operation of flare at 0% due to removal of flow meter.
	The Datalogger stopped recording on the 17th October 2009 and has been sent back to the manufacturers for assessment and/or repair.
	Vertical wells dipped to measure leachate levels on 22nd January at the request of EMM.



Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : ROOIKRAAL LANDFILL SITE

JANUARY 2010

Well No.	Leachate				Gas Quality				Notes
	Pump In Well (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Leachate Pumped (litres)	Average CH <sub>4</sub> (%)	Average CO <sub>2</sub> (%)	Average O <sub>2</sub> (%)	Average Well Pressure (mbar)	
WELL 1	N				54.4	41.4	0.2	-9.31	Well performing satisfactorily
WELL 2	Y	116312	116358	20.01					Wellhead damaged; valve closed until repairs are carried out.
WELL 3	N								Gas monitoring point damaged - replacement required
WELL 4	Y	658249	677031	8170.17	54.3	45.2	0.4	-10.38	Well performing satisfactorily
WELL 5	N				55.4	44.1	0.3	-10.15	Well performing satisfactorily
WELL 6	N				51.8	41.7	0.2	-4.43	Well performing satisfactorily
WELL 7	Y	1000413	1025138	10755.38					Repairs to wellhead damaged; valve closed for further repair
WELL 8	N				53.8	42.8	0.4	-1.66	Well performing satisfactorily
WELL 9	Y								Flange on wellhead separated; valve closed until repairs carried out
WELL 10	Y	275604	284816	3973.29	41.8	38.3	0.4	-0.24	Well recovering
WELL 11	N				53.6	42.9	0.3	-2.77	Well performing satisfactorily
WELL 12	Y	956800	984270	11949.45	52.4	42.9	0.4	-6.35	Well performing satisfactorily
WELL 13	Y	490014	520197	13129.61	60.3	39.2	0.4	-0.34	Well performing satisfactorily
WELL 14	N				51.6	42.9	0.4	-9.25	Well performing satisfactorily
WELL 15	Y	303473	326222	9895.62	42.3	41.3	0.3	-1.96	Gas quality a bit low
WELL 16	N				40.1	37.9	0.3	-2.10	Gas quality a bit low
WELL 17	N								Wellhead damaged; valve closed until repairs are carried out.
WELL 18	Y	484108	500333	7057.88					
WELL 19	Y	624572	626889	1007.90					Wellhead damaged; valve closed until repairs are carried out.
WELL 20	Y	930214	955395	10953.74	38.6	37.9	0.4	-3.38	Gas quality poor; valve closed slightly to promote recovery
WELL 21	N				50.4	43.0	0.3	-2.40	Well performing satisfactorily
WELL 22	Y	555048	572478	7582.82	57.0	42.2	0.7	-2.99	Well performing satisfactorily
WELL 23	N				39.4	38.7	0.3	-4.65	Gas quality poor; valve closed slightly to promote recovery
WELL 24	Y	26477	26477	0.00	27.1	31.6	0.3	-2.94	Gas quality poor; valve closed to promote recovery
WELL 25	N				34.4	35.5	0.2	-3.19	Gas quality poor; valve closed slightly to promote recovery
WELL 26	N				65.9	40.0	0.2	1.01	Valve re-opened after recovery
WELL 27	N								Wellhead damaged; valve closed until repairs are carried out.
WELL 28	N				61.3	38.3	0.2	1.13	Valve re-opened after recovery
WELL 29	N				62.5	37.0	0.3	0.71	Valve re-opened after recovery
WELL 30	N				52.5	34.1	0.3	-3.56	Well performing satisfactorily
WELL 31	N				65.9	33.7	0.3	0.20	Valve kept closed to maintain recovery
WELL 32	Y	827463	869056	18092.86	47.4	41.9	0.3	-1.68	Well performing satisfactorily
WELL 33	N				48.3	42.4	0.4	-1.18	Well performing satisfactorily
WELL 34	N				45.3	33.3	0.3	-3.68	Well performing satisfactorily
WELL 35	Y	226	227	0.44	28.9	25.9	2.8	-0.14	Gas quality poor; valve closed slightly to promote recovery
WELL 36	N				65.7	34.4	0.3	-1.57	Well performing satisfactorily
RK 1	N								Gas quality poor; valve less than 10% open
RK 2	N								Gas quality poor; valve less than 10% open
RK 3	N								Gas quality very poor; valve closed
RK 4	N								Gas quality very poor; valve closed
Knockout Pot No.					Condensate				Notes
	Pump In KOP (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Condensate Pumped (litres)					
CK 1	Y	740	746	2.61					
CK 2	Y	26813	27547	319.29					
CK 3	Y	62363	62373	4.35					Problem with pump observed - valve on air line closed - pump requires maintenance
CK 4	Y	78417	78418	0.44					
CK 7	Y	75375	77023	716.88					
CK 8	N								KOP on horizontal gas line; pump to be fitted immediately prior to commissioning of horizontal lines
CK 9	N								KOP on horizontal gas line; pump to be fitted immediately prior to commissioning of horizontal lines
CK 10	N								KOP on horizontal gas line; pump to be fitted immediately prior to commissioning of horizontal lines
SU 1	Y	24054	24766	309.72					
				103942.82	= Approx volume of leachate / condensate pumped during month (litres)				



Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : SIMMER & JACK LANDFILL SITE

JANUARY 2010

Well No.	Leachate				Gas Quality				Notes
	Pump In Well (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Leachate Pumped (litres)	Average CH <sub>4</sub> (%)	Average CO <sub>2</sub> (%)	Average O <sub>2</sub> (%)	Average Well Pressure (mbar)	
WELL 5	N				55.0	44.8	0.3	0.03	Well performing satisfactorily
WELL 6	N				55.1	44.5	0.3	-1.52	Well performing satisfactorily
WELL 7	Y	217	217	0.00					Valve closed due to crack on wellhead - repairs required
WELL 8	N				55.1	44.5	0.3	-1.05	Well performing satisfactorily
WELL 9	Y	23754	23800	20.01	55.3	44.3	0.3	-0.78	Well performing satisfactorily
WELL 14	N				53.8	46.0	0.3	-0.15	Well performing satisfactorily
WELL 15	Y	33000	33878	381.93					Valve closed due to crack on wellhead - repairs required
WELL 16	N				52.7	48.9	0.2	0.68	Well performing satisfactorily
WELL 17	N				55.1	44.6	0.3	0.11	Well performing satisfactorily
WELL 21	N								Valve closed due to crack on wellhead - repairs required
WELL 22	Y	750766	750882	50.46	53.4	46.0	0.3	1.65	Well performing satisfactorily; leachate pump stuck in well.
WELL 23	N				54.1	45.6	0.3	-2.07	Well performing satisfactorily
WELL 24	Y	227	242	6.53	55.3	43.8	0.7	-4.49	Well performing satisfactorily; leachate pump removed and checked - ok.
WELL 27	N				50.4	45.1	0.2	0.46	Well recovering
WELL 28	Y	92530	92530	0.00	53.0	46.8	0.3	-0.26	Well performing satisfactorily; leachate pump removed and checked - ok.
WELL 29	N				54.0	45.7	0.4	0.44	Well performing satisfactorily
WELL 32	N				53.3	46.3	0.3	0.25	Well performing satisfactorily
WELL 35	N								Valve closed due to crack on wellhead - repairs required
WELL 36	N								Valve closed due to crack on wellhead - repairs required
WELL 37	N				55.2	41.7	0.3	-0.32	Well performing satisfactorily
SJ 3	N				56.2	42.8	0.4	0.19	Well performing satisfactorily. New fibreglass manhole cover put on.
Knockout Pot No.	Condensate								Notes
	Pump In KOP (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Condensate Pumped (litres)					
CK 1	Y	381455	393776	5359.64					
CK 2	Y	108348	110051	740.81					
CK 3	Y	21950	21979	12.62					
SU 1	Y	97842	99074	535.92					
				7107.90	= Approx volume of leachate / condensate pumped during month (litres)				



Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : WELTEVREDEN LANDFILL SITE

JANUARY 2010

Well No.	Leachate				Gas Quality				Notes
	Pump In Well (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Leachate Pumped (litres)	Average CH <sub>4</sub> (%)	Average CO <sub>2</sub> (%)	Average O <sub>2</sub> (%)	Average Well Pressure (mbar)	
WELL 1	N				55.0	44.7	0.2	-0.71	Residual gas measured; well performing satisfactorily
WELL 2	N				53.7	45.7	0.3	0.20	Residual gas measured; well performing satisfactorily
WELL 3	N				56.4	43.3	0.2	-16.41	Residual gas measured; well performing satisfactorily
WELL 4	Y	103263	103263	0.00					Valve closed due to crack on wellhead - repairs required
WELL 5	N				56.4	37.0	0.6	-11.92	Residual gas measured; well performing satisfactorily
WELL 6	N				56.0	43.6	0.3	-20.71	Residual gas measured; well performing satisfactorily
WELL 7	Y	304416	304416	0.00	56.8	42.8	0.3	-20.15	Residual gas measured; well performing satisfactorily
WELL 8	N				32.0	29.6	1.0	-7.48	Poor quality gas; Valve closed to promote recovery
WELL 9	Y	349225	349225	0.00	66.1	32.8	0.7	-2.83	Residual gas measured; well performing satisfactorily
WELL 10	N				58.8	40.8	0.3	-19.51	Residual gas measured; well performing satisfactorily
WELL 11	Y	973227	1030236	24798.92	58.3	41.2	0.3	-0.97	Residual gas measured; well performing satisfactorily
WELL 12	N				59.9	39.8	0.2	-18.31	Residual gas measured; well performing satisfactorily
WELL 13	Y	87922	92974	2197.62	63.8	35.9	0.3	-2.04	Residual gas measured; well performing satisfactorily
WELL 14	N				57.8	41.8	0.2	-13.86	Residual gas measured; well performing satisfactorily
WELL 15	Y	322192	341739	8502.95	57.4	42.1	0.4	-11.55	Residual gas measured; well performing satisfactorily
WELL 16	N				59.6	40.0	0.2	-1.52	Residual gas measured; well performing satisfactorily
WELL 17	N				35.7	28.5	4.0	-1.58	Poor quality gas; Valve closed but suction still present
WELL 18	Y	663044	750891	38213.45	58.3	41.1	0.4	-19.59	Residual gas measured; well performing satisfactorily
HW 1	N								
HW 2	N								
HW 3	N								
HW 4	N								Inferred leak on air line causing condensate pump on CK5 to not build up pressure. Therefore condensate blockage apparent at this KOP. Repairs to air line required. In addition, the leak on main gas line allowing air into system seems to have worsened, causing reduction in gas quality at GDU. Horizontal line has thus been shut off until repair work can be carried out.
HW 5	N								
HW 6	N								
WV 1	N								Poor quality gas; Valve closed until further investigation
WV 2	N								Poor quality gas; Valve closed until further investigation
WV 3	N								Poor quality gas; Valve closed until further investigation
Knockout Pot No.	Condensate								Notes
	Pump In KOP (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Condensate Pumped (litres)					
CK 1	Y	6359	6646	124.85					
CK 2	Y	65916	67201	558.98					
CK 3	Y	66986	67495	221.42					
CK 4	Y	100711	102270	678.17					
CK 5	N	8762	8762	0.00					
CK 6	N	21725	21725	0.00					
SU 1	Y	5325	5390	28.28					
				75324.60	= Approx volume of leachate / condensate pumped during month (litres)				



Ekurhuleni Metropolitan Municipality Landfill Gas Extraction & Combustion 'Clean Development Mechanism' Project

MONTHLY REPORT : RIETFONTEIN LANDFILL SITE

JANUARY 2010

Well No.	Leachate				Gas Quality				Notes
	Pump In Well (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Leachate Pumped (litres)	Average CH <sub>4</sub> (%)	Average CO <sub>2</sub> (%)	Average O <sub>2</sub> (%)	Average Well Pressure (mbar)	
WELL 1	N								Flare off due to flow meter fault - no wellhead monitoring
WELL 2	N								Flare off due to flow meter fault - no wellhead monitoring
WELL 3	Y	347	347	0.00					Flare off due to flow meter fault - no wellhead monitoring
WELL 4	Y	17642	192937	7184.46					Flare off due to flow meter fault - no wellhead monitoring
WELL 5	N								Flare off due to flow meter fault - no wellhead monitoring
WELL 6	N								Flare off due to flow meter fault - no wellhead monitoring
WELL 7	Y	75631	60628	2072.78					Flare off due to flow meter fault - no wellhead monitoring
WELL 8	N								Flare off due to flow meter fault - no wellhead monitoring
Condensate									
Knockout Pot No.	Pump In KOP (Y/N)	Cycle Counter at Month Start	Cycle Counter at Month End	Approx Volume of Condensate Pumped (litres)	Notes				
CK 1	Y	19798	20409	265.79					
SU 1	Y	2295	2295	0.00					
				9523.02	= Approx volume of leachate / condensate pumped during month (litres)				

## GREENHOUSE GAS EMISSION REDUCTIONS ACHIEVED BY PROJECT ACTIVITY

PROJECT	Ekurhuleni Metropolitan Municipality Landfill Gas Extraction and Combustion 'CDM' Project			
LANDFILL SITE	ROOIKRAAL			
FIRST DATE OF RECORDED DATA	01 January 2010			
LAST DATE OF RECORDED DATA	31 January 2010			
NO. OF DAYS RECORDED	31			
Parameter	Description	Unit	Amount	
Technical Parameters (as per Annex 13)	Molecular Mass of Methane	kg/kmol	16.04	
	Molecular Mass of Carbon Dioxide	kg/kmol	44.01	
	Molecular Mass of Oxygen	kg/kmol	32.00	
	Molecular Mass of Carbon Monoxide	kg/kmol	28.01	
	Molecular Mass of Hydrogen	kg/kmol	2.02	
	Molecular Mass of Nitrogen	kg/kmol	28.02	
	Atomic Mass of Carbon	kg/kmol	12.00	
	Atomic Mass of Hydrogen	kg/kmol	1.01	
	Atomic Mass of Oxygen	kg/kmol	16.00	
	Atomic Mass of Nitrogen	kg/kmol	14.01	
	Atmospheric Pressure at Normal Conditions	Pa	101325	
	Temperature at Normal Conditions	K	273.15	
	Universal Ideal Gas Constant	Pa.m <sup>3</sup> /kmol.K	8314.472	
	Volume of One Mole of Ideal Gas at Normal Conditions	m <sup>3</sup> /kmol	22.414	
	Volumetric Fraction of Oxygen in Air	-	0.21	
	Density of Methane at Normal Conditions	kg/m <sup>3</sup>	0.716	
	Global Warming Potential of Methane	t CO <sub>2</sub> / t CH <sub>4</sub>	21	
Landfill Gas Flaring Parameters	Actual Volume of Landfill Gas Flared	m <sup>3</sup>	145516	
	Average Methane Content of Landfill Gas	%	46.89	
	Volume of Landfill Gas Flared at Normal Conditions	Nm <sup>3</sup>	113939	
	Average Flare Efficiency	%	99.98	
Project Electricity Consumption Parameters (as per Annex 10)	Default Emission Factor for Grid	t CO <sub>2</sub> / MWh	1.3	
	Average Technical Transmission & Distribution Loss	%	20	
	Electricity Consumed by the Project Activity	MWh	8.027	
Emission Reduction Parameters	Methane Destroyed by the Project Activity	t	36.891	
	Emission Reductions for Methane Destroyed	A t CO <sub>2</sub> e	774.719	
	Project Emissions from Flaring	B t CO <sub>2</sub> e	22.072	
	Project Emissions from use of Diesel Generator	C t CO <sub>2</sub> e	0.000	
	Project Emissions from Electricity Consumption	D t CO <sub>2</sub> e	12.522	
Net Greenhouse Gas Emission Reductions		A-(B+C+D)	t CO <sub>2</sub> e	740.125
SIGNED:		DATE:		

## GREENHOUSE GAS EMISSION REDUCTIONS ACHIEVED BY PROJECT ACTIVITY

PROJECT	Ekurhuleni Metropolitan Municipality Landfill Gas Extraction and Combustion 'CDM' Project			
LANDFILL SITE	SIMMER & JACK			
FIRST DATE OF RECORDED DATA	01 January 2010			
LAST DATE OF RECORDED DATA	31 January 2010			
NO. OF DAYS RECORDED	31			
Parameter	Description	Unit	Amount	
Technical Parameters (as per Annex 13)	Molecular Mass of Methane	kg/kmol	16.04	
	Molecular Mass of Carbon Dioxide	kg/kmol	44.01	
	Molecular Mass of Oxygen	kg/kmol	32.00	
	Molecular Mass of Carbon Monoxide	kg/kmol	28.01	
	Molecular Mass of Hydrogen	kg/kmol	2.02	
	Molecular Mass of Nitrogen	kg/kmol	28.02	
	Atomic Mass of Carbon	kg/kmol	12.00	
	Atomic Mass of Hydrogen	kg/kmol	1.01	
	Atomic Mass of Oxygen	kg/kmol	16.00	
	Atomic Mass of Nitrogen	kg/kmol	14.01	
	Atmospheric Pressure at Normal Conditions	Pa	101325	
	Temperature at Normal Conditions	K	273.15	
	Universal Ideal Gas Constant	Pa.m <sup>3</sup> /kmol.K	8314.472	
	Volume of One Mole of Ideal Gas at Normal Conditions	m <sup>3</sup> /kmol	22.414	
	Volumetric Fraction of Oxygen in Air	-	0.21	
	Density of Methane at Normal Conditions	kg/m <sup>3</sup>	0.716	
	Global Warming Potential of Methane	t CO <sub>2</sub> / t CH <sub>4</sub>	21	
Landfill Gas Flaring Parameters	Actual Volume of Landfill Gas Flared	m <sup>3</sup>	234201	
	Average Methane Content of Landfill Gas	%	39.08	
	Volume of Landfill Gas Flared at Normal Conditions	Nm <sup>3</sup>	179876	
	Average Flare Efficiency	%	99.07	
Project Electricity Consumption Parameters (as per Annex 10)	Default Emission Factor for Grid	t CO <sub>2</sub> / MWh	1.3	
	Average Technical Transmission & Distribution Loss	%	20	
	Electricity Consumed by the Project Activity	MWh	3.457	
Emission Reduction Parameters	Methane Destroyed by the Project Activity	t	47.690	
	Emission Reductions for Methane Destroyed	A t CO <sub>2</sub> e	1001.495	
	Project Emissions from Flaring	B t CO <sub>2</sub> e	62.695	
	Project Emissions from use of Diesel Generator	C t CO <sub>2</sub> e	0.494	
	Project Emissions from Electricity Consumption	D t CO <sub>2</sub> e	5.393	
<b>Net Greenhouse Gas Emission Reductions</b>		<b>A-(B+C+D)</b>	<b>t CO<sub>2</sub> e</b>	<b>932.912</b>
SIGNED:		DATE:		

## GREENHOUSE GAS EMISSION REDUCTIONS ACHIEVED BY PROJECT ACTIVITY

PROJECT	Ekurhuleni Metropolitan Municipality Landfill Gas Extraction and Combustion 'CDM' Project			
LANDFILL SITE	WELTEVREDEN			
FIRST DATE OF RECORDED DATA	20 January 2010			
LAST DATE OF RECORDED DATA	31 January 2010			
NO. OF DAYS RECORDED	12			
Parameter	Description	Unit	Amount	
Technical Parameters (as per Annex 13)	Molecular Mass of Methane	kg/kmol	16.04	
	Molecular Mass of Carbon Dioxide	kg/kmol	44.01	
	Molecular Mass of Oxygen	kg/kmol	32.00	
	Molecular Mass of Carbon Monoxide	kg/kmol	28.01	
	Molecular Mass of Hydrogen	kg/kmol	2.02	
	Molecular Mass of Nitrogen	kg/kmol	28.02	
	Atomic Mass of Carbon	kg/kmol	12.00	
	Atomic Mass of Hydrogen	kg/kmol	1.01	
	Atomic Mass of Oxygen	kg/kmol	16.00	
	Atomic Mass of Nitrogen	kg/kmol	14.01	
	Atmospheric Pressure at Normal Conditions	Pa	101325	
	Temperature at Normal Conditions	K	273.15	
	Universal Ideal Gas Constant	Pa.m <sup>3</sup> /kmol.K	8314.472	
	Volume of One Mole of Ideal Gas at Normal Conditions	m <sup>3</sup> /kmol	22.414	
	Volumetric Fraction of Oxygen in Air	-	0.21	
	Density of Methane at Normal Conditions	kg/m <sup>3</sup>	0.716	
	Global Warming Potential of Methane	t CO <sub>2</sub> / t CH <sub>4</sub>	21	
Landfill Gas Flaring Parameters	Actual Volume of Landfill Gas Flared	m <sup>3</sup>	57116	
	Average Methane Content of Landfill Gas	%	50.07	
	Volume of Landfill Gas Flared at Normal Conditions	Nm <sup>3</sup>	43679	
	Average Flare Efficiency	%	99.98	
Project Electricity Consumption Parameters (as per Annex 10)	Default Emission Factor for Grid	t CO <sub>2</sub> / MWh	1.3	
	Average Technical Transmission & Distribution Loss	%	20	
	Electricity Consumed by the Project Activity	MWh	4.126	
Emission Reduction Parameters	Methane Destroyed by the Project Activity	t	15.672	
	Emission Reductions for Methane Destroyed	A t CO <sub>2</sub> e	329.110	
	Project Emissions from Flaring	B t CO <sub>2</sub> e	0.061	
	Project Emissions from use of Diesel Generator	C t CO <sub>2</sub> e	0.086	
	Project Emissions from Electricity Consumption	D t CO <sub>2</sub> e	6.437	
<b>Net Greenhouse Gas Emission Reductions</b>		A-(B+C+D)	t CO <sub>2</sub> e	322.526
SIGNED:		DATE:		

**Aanhangsel B**  
**Kwaggasrand Stortingsterrein**

## **Aanhangsel B1**

Kwaggasrand Stortingsterrein Permit



DEPARTEMENT VAN WATERWESE EN BOSBOU  
DEPARTMENT OF WATER AFFAIRS AND FORESTRY  
REPUBLIEK VAN SUID-AFRIKA / REPUBLIC OF SOUTH AFRICA



DW 1

RESIDENSIEGEBOU / BUILDING, SCHOEMANSTRAAT 185 SCHOEMAN STREET

Fax: (012) 326-1780  
(012) 323-4472

Privaat Sak X313  
Private Bag  
Pretoria  
0001

Navrae:  
Enquiries:



Verwysing:  
Reference:

J.A. Oelofse  
(012) 672-2946

B33/2/123/7 S

PERMITNOMMER: B33/2/123/7/P183  
KLAS: G:M:B  
AFVALSTORTTERREIN: KWAGGASRAND  
LIGGING: GEDEELTE 293, GEDEELTE VAN GEDEELTE 294  
EN GEDEELTE VAN DIE RESTANT VAN GEDEELTE  
206 VAN DIE PLAAS PRETORIA TOWN EN  
TOWNLANDS 351 JR, DISTRIK PRETORIA.  
PERMITHOUER: STADSRAAD VAN PRETORIA  
ADRES: POSBUS 1409, PRETORIA, 0001.

PERMIT KRAGTENS ARTIKEL 20 VAN DIE WET OP OMGEWINGSBEWARING, 1989  
(WET 73 VAN 1989)

Kragtens die bevoegdheid aan my gedelegeer deur die Minister van Waterwese en Bosbou (hierin na verwys as "die Minister"), verleen ek, Wouter van der Merwe, in my hoedanigheid van Bestuurder: Wetenskaplike Dienste van die Departement van Waterwese en Bosbou (hierna genoem "die Departement"), hiermee, kragtens artikel 20 (1) van die Wet op Omgewingsbewaring, 1989 (Wet 73 van 1989), toestemming aan die Stadsraad van Pretoria vir die bedryf en verdere ontwikkeling van die Kwaggasrand-afvalstortterrein, onderworpe aan die voorwaardes wat in hierdie Permit uiteengesit is.

#### PERMITVOORWAARDES

In hierdie Permit beteken "Streekdirekteur" die Streekdirekteur: Transvaal van die Departement by die volgende adres:

Streekdirekteur: Transvaal  
Departement van Waterwese en Bosbou  
Privaat Sak X7420  
HENNOPSMEER  
0046

#### 1. LIGGING

1.1 Hierdie Permit magtig die bedryf en verdere ontwikkeling van 'n afvalstortterrein op Gedeelte 293, gedeelte van Gedeelte 294 en gedeelte van die Restant van Gedeelte

206 van die Plaas Pretoria Town en Townlands 351 JR, Distrik Pretoria (hierna genoem "die Terrein") in ooreenstemming met die verslag BV 1326/94/02 deur Bergman Raadgewende Ingenieurs en Projekbestuurders, gedateer Julie 1994 (hierna genoem "die Verslag"), deur die Permithouer voorgelê. Die grense van die Terrein sal wees soos aangedui op tekening nommer VKS 1603 gedateer Mei 1994 en soos aangedui deur die koördinate op die permitaansoekvorm, deur die Permithouer voorgelê.

## 2. TOELAATBARE AFVAL

2.1 Die Terrein mag gebruik word vir die storting van alle tipes afval met uitsondering van afval gelys in Aanhangsel I en afval waaroor spesifieke beheer uitgeoefen word kragtens die Wet op Kernenergie, 1982 (Wet 92 van 1982). Afvaltipes waaroor beheer uitgeoefen word kragtens die Minerale Wet, 1991 (Wet 50 van 1991) en die Elektrisiteitswet, 1987 (Wet 41 van 1987) is ook uitgesluit van storting op die Terrein, behalwe waar skriftelike toestemming daarvoor deur die Streekdirekteur verleen is.

2.2 Die Permithouer moet alle redelike stappe doen om te verseker dat -

2.2.1 geen mediese afval op die Terrein gestort word nie; en

2.2.2 geen geskeduleerde farmaseutiese produkte kragtens die Wet op die Beheer van Medisyne en Verwante Stowwe, 1965 (Wet 101 van 1965) of geassosieerde houers op die Terrein gestort word nie.

## 3. KONSTRUKSIE

3.1 Die Terrein of enige gedeelte daarvan mag uitsluitlik vir die storting van toelaatbare afval gebruik word indien die konstruksie of verdere ontwikkeling van die Terrein of enige sodanige gedeelte in ooreenstemming met voorwaarde 3 van hierdie Permit geskied.

3.2 Die verdere ontwikkeling binne die Terrein moet in ooreenstemming met paragrawe 5.9.3 tot 5.9.5 (bladsye 13 tot 15) van die Verslag plaasvind.

3.3 Die konstruksie en verdere ontwikkeling binne die Terrein moet plaasvind onder die toesig van 'n voldoende gekwalifiseerde persoon soos deur die Permithouer voorgestel en deur die Streekdirekteur goedgekeur.

3.4 Sodra 'n nuwe gedeelte binne die Terrein ontwikkel is, moet die Permithouer die Streekdirekteur in kennis stel en die persoon na wie in voorwaarde 3.3 verwys word, moet die Streekdirekteur voorsien van 'n sertifikaat of alternatiewelik 'n brief dat die konstruksie van die

betrokke gedeelte van die Terrein soos deur die Permithouer voorgestel en deur die Streekdirekteur goedgekeur, gedoen is ooreenkomstig erkende siviele ingenieurspraktyk voordat enige afval op daardie gedeelte van die Terrein gestort mag word. Die voltooide konstruksiewerk van die betrokke gedeelte van die Terrein sal deur 'n beampte van die Departement en die persoon na wie in voorwaarde 3.3 verwys word, geïnspekteer word. Indien die Streekdirekteur tevrede is met die verdere ontwikkeling binne die Terrein en skriftelike toestemming verleen het, mag die Permithouer daardie gedeelte van die Terrein vir die storting van afval gebruik.

- 3.5 Die Permithouer moet alle redelike maatreëls tref, soos byvoorbeeld geskikte sonering en/of die aangaan van skriftelike ooreenkomste met die omliggende grondeienaars, om 'n buffersone van 800 meter tussen die Terrein en die naaste woon- en/of ligte nywerheidsgebied gedurende die bedryf van die Terrein te vestig en in stand te hou. Swaar nywerhede of nywerhede wat self 'n oorlas mag veroorsaak, kan kragtens toepaslike wetgewing in die buffersone toegelaat word.
- 3.6 Werke moet deur die Permithouer opgerig en gereeld in stand gehou word om alle afloopwater wat aanliggend tot die Terrein kan ontstaan en wat verwag kan word as gevolg van die beraamde maksimum reënval wat gedurende 'n tydperk van 24 uur mag voorkom met 'n gemiddelde frekwensie van een in vyftig jaar (hierna genoem die "beraamde maksimum reënval"), van die Terrein weg te keer en op 'n wettige manier af te voer. Onder die genoemde maksimum reënval moet die werke 'n minimum vryboord van 'n halwe meter handhaaf.
- 3.7 Werke moet deur die Permithouer opgerig en gereeld in stand gehou word om alle afloopwater wat op die Terrein kan ontstaan en wat as gevolg van die beraamde maksimum reënval verwag kan word, van die werkfront van die Terrein weg te keer en af te voer en te verhoed dat die afloopwater met loog in aanraking kom. Onder die genoemde maksimum reënval moet die werke 'n minimum vryboord van 'n halwe meter handhaaf.
- 3.8 Afloopwater waarna in voorwaarde 3.7 verwys word, moet voldoen aan die gehaltevereistes van die Algemene Standaard, soos voorgeskryf ingevolge artikel 21(1)(a) van die Waterwet, 1956 (Wet 54 van 1956) soos gepubliseer in Algemene Kennisgewing 991 van 18 Mei 1984 of vereistes wat van tyd tot tyd deur die Minister vasgestel mag word en moet op 'n wettige manier afgevoer word.
- 3.9 Afloopwater waarna in voorwaarde 3.7 verwys word, wat nie aan die gehaltevereistes in voorwaarde 3.8 voldoen nie, moet deur middel van werke wat deur die Permithouer opgerig is en deurlopend deur hom in stand gehou word -

- 3.9.1 behandel word om aan bogenoemde standaard te voldoen en op 'n wettige manier afgevoer word; en/of,
- 3.9.2 met die skriftelike toestemming van die Streekdirekteur opgevang en behou word vir verdamping in verdampingspanne en/of verdamp word deur besproeiing slegs op die gedeeltes van die Terrein wat voldoen aan vereistes in voorwaarde 3.1 gestel.
- 3.10 Die Terrein moet ooreenkomstig erkende siviele ingenieurspraktyk opgerig word om die stabiliteit daarvan te verseker.
- 3.11 Die maksimum hoogte van die Terrein bokant grondvlak mag nie 32 meter oorskry nie.
- 3.12 Die helling van die Terrein moet so ontwikkel word dat weinig of geen erosie plaasvind nie.
- 3.13 Die Permithouer moet voorsiening maak vir toereikende sanitasiegeriewe op die Terrein.

#### 4. TOEGANGSBEHEER

- 4.1 Weerbestande, duursame en duidelik leesbare kennisgewings, in drie amptelike tale soos van toepassing in die gebied, moet by elke toegangspunt tot die Terrein aangebring word. Hierdie kennisgewings moet ongemagtigde toegang verbied en moet die bedryfsure, die naam, adres en telefoonnommer van die Permithouer en van die persoon in beheer van die Terrein aantoon.
- 4.2 Die Terrein moet doeltreffend omhein word met 'n heining van ten minste 1,8 meter hoog en hekke by toegangspunte met dieselfde hoogte ten einde ongemagtigde toegang redelikerwys te voorkom en die rondwaai van papiere en plastiek te beperk.
- 4.3 Die Permithouer moet alle redelike stappe doen om dienspaaie in 'n toestand te onderhou wat onbelemmerde toegang tot die Terrein sal verseker vir voertuie wat afval vervoer en om paaie van afval skoon te hou.
- 4.4 Die Permithouer moet verseker dat alle toegangspunte gedurende bedryfsure beman en na ure gesluit word.
- 4.5 Die Permithouer moet doeltreffende toegangsbeheer toepas.
- 4.6 Die Permithouer moet alle redelike stappe doen om te verseker dat slegs toelaatbare afval waarna in voorwaarde 2 verwys word, op die Terrein gestort word.

## 5. BEDRYF

- 5.1 Die Permithouer moet die Terrein in ooreenstemming met paragrawe 5.7 tot 5.9 (bladsye 9 tot 11) van die Verslag bedryf.
- 5.2 Alle afval wat op die Terrein gestort is, moet aan die einde van elke werksdag gekompakteer en met 'n laag grond (of ander materiaal wat deur die Streekdirekteur goedgekeur is) van ten minste 150 millimeter dik bedek word.
- 5.3 Die Permithouer moet alle redelike maatreëls tref om te verseker dat die Terrein so bedryf word dat geen oorlas of gesondheidsgevaare ontstaan nie.
- 5.4 Die Permithouer moet verskuifbare heinings gebruik om afval wat deur die wind versprei word, te beheer.
- 5.5 Die Permithouer moet voldoende stofbeheermaatreëls toepas om oorlastoestande en gesondheidsgevaare wat veroorsaak kan word deur stof wat deur die wind versprei word, te voorkom.
- 5.6 Afval wat op die Terrein gestort is, mag nie herwin word nie. NB

## 6. MONITERING

- 6.1 'n Boorgatmoniteringstelsel vir die Terrein moet in ooreenstemming met paragrawe 5.10 tot 5.10.3 (bladsye 15 tot 18) van die Verslag deur die Permithouer tot die tevredenheid van die Streekdirekteur ingestel en in stand gehou word sodat monsters, soos in die Permit vereis, ongehinderd geneem kan word. C
- 6.2 Moniteringsboorgate moet voorsien word van sluitbare deksels. Die Departement behou die reg voor om te eniger tyd monsters te neem en te analiseer of te laat analiseer.
- 6.3 Oppervlakwatermonitering moet vir alle stormwaterafloop op en aanliggend tot die Terrein uitgevoer word op plekke wat in oorleg met die Streekdirekteur bepaal is en teen 'n frekwensie soos deur die Streekdirekteur bepaal.
- 6.4 Agtergrondmonitering
- 6.4.1 Monsters verkry vanaf 'n boorgat, waar die grondwater in die boorgat by 'n verwagte hoër hidrouliese drukvlak geleë is as die hidrouliese drukvlak van die grondwater onder die Terrein word as agtergrondmonitering beskou. Agtergrondmonitering vir grondwater moet tydens elke moniteringsgeleentheid kragtens voorwaardes 6.5, 6.6 of 6.7 uitgevoer word vir die watergehalteveranderlikes

soos in Aanhangsel II gelys.

#### 6.5 Waarnemingsmonitering

6.5.1 Monitering moet binne 3 dae vanaf 15 Januarie en 15 Julie elke jaar uitgevoer word vir die watergehalteveranderlikes gelys in paragraaf (a) van Aanhangsel III en jaarliks binne 3 dae vanaf 15 Julie vir die veranderlikes in paragraaf (b) van Aanhangsel III.

#### 6.6 Ondersoekingsmonitering

6.6.1 Indien, na die mening van die Streekdirekteur, 'n watergehalteveranderlike, wat onder die waarnemingsmoniteringsprogram (voorwaarde 6.5) gelys is, 'n stygende tendens toon, moet die Permithouer met 'n maandelikse moniteringsprogram vir die watergehalteveranderlikes gelys in Aanhangsel II begin.

#### 6.7 Monitering na sluiting

6.7.1 Grondwatermonitering deur die Permithouer, in ooreenstemming met voorwaarde 6.5 of 6.6, moet onmiddellik na sluiting van die Terrein 'n aanvang neem en vir 'n tydperk van 30 jaar volgehou word, of vir 'n korter tydperk soos deur die Streekdirekteur bepaal.

#### 6.8 Verdere monitering

6.8.1 Die Permithouer moet rekord hou van alle inligting waarna in Aanhangsel IV verwys word en dit jaarliks opdateer.

### 7. METODES VAN ANALISE

7.1 Die Permithouer moet alle toetse uitvoer ooreenkomstig die metodes voorgeskryf deur en verkrygbaar by die Suid-Afrikaanse Buro vir Standaarde (SABS), vermeld in die Wet op Standaarde, 1982 (Wet 30 van 1982), om die monsters te ontleed wat geneem is tydens die moniteringsprogramme soos in voorwaarde 6 voorgeskryf.

7.2 Die Permithouer mag slegs van ander metodes van analise gebruik maak indien daar skriftelike bewys aan die Streekdirekteur gelewer word dat die metode ekwivalent is aan die SABS-metode.

### 8. REKORDHOUDING

8.1 Die Permithouer moet alle boorgatdata en chemiese analyses in die formaat soos beskryf in Aanhangsel V, aanteken.

## 9. VERSLAGDOENING

- 9.1 Die inligting soos ingevolge voorwaardes 6.3 tot 6.7 vereis, moet aan die Streekdirekteur gestuur word binne 'n tydperk van 30 dae nadat die analise van die genoemde monsters gedoen is. Die inligting soos ingevolge voorwaarde 6.8 vereis, moet binne een jaar ná die datum van uitreiking van hierdie Permit aan die Streekdirekteur gestuur word en jaarliks daarna.

## 10. FINALE REHABILITASIE EN SLUITING VAN DIE TERREIN

- 10.1 Die Permithouer moet ten minste 60 dae voor die beoogde sluiting van die Terrein, die Streekdirekteur per geregistreeerde pos in kennis stel van die beoogde sluiting en finale, opgedateerde rehabilitasieplanne vir sy goedkeuring indien.
- 10.2 Onmiddellik nadat werksaamhede by die Terrein gestaak is met die doel om die Terrein te sluit, moet die oppervlak van die Terrein bedek word sodat -
- 10.2.1 geen poelvorming as gevolg van reën kan plaasvind nie;
- 10.2.2 die vrye oppervlakafloop van reënwater verseker word; en
- 10.2.3 geen voorwerpe of materiale op die Terrein voorkom wat die rehabilitasie daarvan kan belemmer nie.
- 10.3 Die Permithouer moet die Terrein ooreenkomstig die rehabilitasieplan VKS 1603, paragraaf 4.14 van die verslag BV 1326/94/03 deur Bergman Raadgewende Ingenieurs en Projekbestuurders, gedateer Julie 1994 en tot die tevredenheid van die Streekdirekteur rehabiliteer.

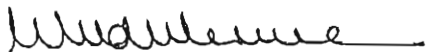
## 11. VERHURING EN VERVREEMDING VAN DIE TERREIN

- 11.1 Indien die Permithouer die Terrein aan 'n ander persoon wil verhuur of vervreem, moet die Streekdirekteur ten minste 60 dae voor sodanige transaksie daarvan in kennis gestel word.

## 12. ALGEMEEN

- 12.1 Die Permithouer moet binne 'n tydperk van 60 dae ná die datum van uitreiking van hierdie Permit aansoek doen vir die hersonering van die Terrein vir stortdoeleindes. Indien die Permithouer onsuksesvol sou wees met die hersonering van die Terrein vir stortdoeleindes binne 'n tydperk van 2 jaar ná die datum van uitreiking van hierdie Permit, moet 'n skriftelike motivering aan die Streekdirekteur verskaf word waarin die redes uiteengesit word waarom die hersoneringsaansoek onsuksesvol was. Die Streekdirekteur sal hierna 'n paslike besluit neem oor die toekoms van die Terrein.

- 12.2 Die storting van afval op Gedeeltes 293 en 294 van die Plaas Pretoria Town en Townlands 351 JR mag slegs geskied nadat die Permithouer eiendomsreg van die betrokke eiendomme verkry het.
- 12.3 Hierdie Permit is nie oordraagbaar nie.
- 12.4 Hierdie Permit moet nie op so 'n wyse vertolk word dat dit vrystelling verleen van voldoening aan die bepalings van die Wet op Gesondheid, 1977 (Wet 63 van 1977), die Waterwet, 1956 (Wet 54 van 1956) of enige ander toepaslike wet, ordonnansie, regulasie of verordening nie.



BESTUURDER: WETENSKAPLIKE DIENSTE  
p.p. MINISTER VAN WATERWESE EN BOSBOU

DATUM: 1995.06.06

AANHANGSEL ILYS VAN GEVAARLIKE EN TOKSIESE STOWWE WAT SLEGS OP 'N KLAS H  
TERREIN GESTORT MAG WORD

Sure en Alkalië  
Antimoon en antimoonverbindings  
Arseenverbindings  
Asbes (stowwerige asbes en los vesels)  
Bariumverbindings  
Berillium en berilliumverbindings  
Biododers en fitofarmaseutiese stowwe  
Boorverbindings  
Kadmium and kadmiumverbindings  
Chroomverbindings  
Koperverbindings  
Gevaarhoudende heterosikliese organiese verbindings bevattende suurstof, stikstof of swael  
Gevaarhoudende suurstof-, stikstof- en swaelverbindings van koolwaterstowwe  
Anorganiese sianiede  
Anorganiese halogeen-bevattende verbindings  
Anorganiese swael-bevattende verbindings  
Laboratorium chemikalieë  
Loodverbindings  
Mediese afval (weefsels, bloed, deppers, naalde, ens)  
Kwikverbindings  
Nikkel en nikkelverbindings  
Organiese halogeenverbindings, met uitsondering van inerte polimeriese stowwe  
Verwe en verfslik  
Peroksiede, chlorate, perchlorate en asiede  
Plaagdoders en insekdoders  
Farmaseutiese en veeartsenykundige verbindings  
Fosfor en fosforverbindings  
Selenium and seleniumverbindings  
Silwerverbindings  
Teeragtige stowwe van raffinering en teerorblyfsels van distillering, insluitende petroleum produkte  
Tellurium en telluriumverbindings  
Tallium en talliumverbindings  
Vanadiumverbindings  
Sinkverbindings  
Afval met 'n flitspunt, soos gemeet met die geslote houer metode, laer as 60°C

AANHANGSEL IIWATERGEHALTEVERANDERLIKES WAT VEREIS WORD VIR  
AGTERGRONDMONITERING EN ONDERSOEKINGSMONITERING :  
VOORWAARDES 6.4 EN 6.6

Alkaliniteit (P.Alk)	Vrye- & gebonde ammoniak (as N) ( $\text{NH}_4\text{-N}$ )
Kalsium (Ca)	Boor (B)
Chroom (Totaal) (Cr)	Magnesium (Mg)
Chroom (heksavalent) ( $\text{Cr}^{6+}$ )	Kadmium (Cd)
Chemiese suurstof eis (CSE)	Chloriede (Cl)
Sianied (CN)	Kwik (Hg)
Lood (Pb)	pH
Nitraat (as N) ( $\text{NO}_3\text{-N}$ )	Natrium (Na)
Fenol verbindings (Phen)	Elektriese geleidingsvermoë (EG)
Kalium (K)	Sulfaat ( $\text{SO}_4$ )
Totale opgeloste vaste stowwe (TOS)	

AANHANGSEL IIIWATERGEHALTEVERANDERLIKES WAT VEREIS WORD VIR  
WAARNEMINGSMONITERING: VOORWAARDE 6.5

- (a) Alkaliniteit (P.Alk)  
Chemiese suurstof eis (CSE)  
pH  
Totale opgeloste vaste stowwe (TOS)  
Chloriede (Cl)  
Nitrate (NO<sub>3</sub>-N)  
Kalium (K)
- (b) Jaarliks vir elektriese geleidingsvermoë (EG), kalsium (Ca), magnesium (Mg), natrium (Na), sulfaat (SO<sub>4</sub>) en fluoriedes (F).

AANHANGSEL IV

INLIGTING WAT JAARLIKS VERSKAF MOET WORD: VOORWAARDE 6.8

J J J J M M D D

NAAM VAN TERREIN: \_\_\_\_\_ DATUM VAN VERSLAG 

--	--	--	--	--	--	--	--

1. Geregistreeerde eienaar(s) van eiendom waarop stortterrein geleë is:  
 Naam.....  
 Posadres..... Telefoonkode & No .....  
 ..... Fakskode & No .....  
 ..... Poskode ..... Teleks No .....

2. Naam van Operateur in beheer van stortterrein:  
 .....  
 Telefoonkode & nommer ..... Na-ure .....  
 Identiteitsnommer.....  
 Opvoedkundige kwalifikasies (\*). st 6 


 diploma 


  
 st 8 


 hoër diploma 


  
 matriek 


 graad 


  
 ander (spesifiseer).....

3. (a) Nuutste geskatte lewensduur van stortterrein ..... jaar  
 (b) Dui die toepaslike tipe afval en hoeveelhede wat gedurende die jaar gestort is aan:

Tipe afval	Hoeveelheid (m <sup>3</sup> per jaar)	Gekompakteer(G)	Ongekompakteer(O)						
<u>Nie-gevaarlike afval</u>									
Huishoudelike afval .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
Tuinafval .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
Bourommel .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
Industriële afval (nie-gevaarlik) - (spesifiseer).....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
TOTAAL .....									
<u>Gevaarlike afval</u>									
- Ontvlambare vloeistowwe .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- Ontvlambare vastestowwe .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- Oksideermiddels .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- Giftige stowwe .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- Bytende stowwe .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- Hospitaal afval en smetstowwe - (spesifiseer).....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
- .....		<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			
TOTAAL .....									

\* Dui aan met 'n X

4.(a) Dui die metode van afvalstorting aan (\*). Landopbouing  Landvulling

(b) Dui die huidige afmetings van die terrein aan in meter.

Hoogte/diepte .....  
 Lengte .....  
 Breedte .....

5. Dui die afvaltipes en hoeveelhede aan wat gedurende die jaar herwin is. (\*)

Geen herwinning is onderneem nie

Tipe	Hoeveelheid(m <sup>3</sup> )	Tipe	Hoeveelheid(m <sup>3</sup> )
<input type="checkbox"/> Papier/houtvesel	.....	<input type="checkbox"/> Rubber	.....
<input type="checkbox"/> Plastiek	.....	<input type="checkbox"/> Tekstiele	.....
<input type="checkbox"/> Glas	.....	<input type="checkbox"/> Yster	.....
<input type="checkbox"/> Koper	.....	<input type="checkbox"/> Aluminium	.....
<input type="checkbox"/> Sink	.....	<input type="checkbox"/> Lood	.....
<input type="checkbox"/> Fosfogips	.....	<input type="checkbox"/> Poeierkoolas	.....
<input type="checkbox"/> Afval vir kompostering	.....	<input type="checkbox"/> Voedselreste	.....
<input type="checkbox"/> Brandbare gasse	.....	Ander	.....
Ander	.....	Ander	.....
Ander	.....	Ander	.....

6. Dui die tipes, bronne en beraamde hoeveelhede beskikbare bedekkingsmateriaal aan (\*).

Tipe	Bronne	Hoeveelheid (m <sup>3</sup> )
<input type="checkbox"/> Grond	.....	.....
<input type="checkbox"/> Sand	.....	.....
<input type="checkbox"/> As	.....	.....
<input type="checkbox"/> Gruis	.....	.....
<input type="checkbox"/> Klei	.....	.....
<input type="checkbox"/> Bourommel	.....	.....
Ander (spesifiseer)	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

\* Dui aan met 'n X

Handtekening .....  
 Hoedanigheid .....  
 Plek ..... Datum .....

## AANHANGSEL V: VORM OM CHEMIESE INLIGTING TE RAPPOORTEER; VOORWAARDES 6 EN 8

Naam van terrein: \_\_\_\_\_ Boorgat/monsterpunt naam/nommer \_\_\_\_\_

Datum van monster             Tyd   h   Metode : Skep  Pomp

Tyd na aansit van pomp   h   Monsterdiepte       m

Datum van analise             Laboratorium

## Algemene chemie

pH	<input type="text"/>	EG (EC)	<input type="text"/>	mS/m	TOS (TDS)	<input type="text"/>	mg/l
Ca	<input type="text"/>	Mg	<input type="text"/>	mg/l	Na	<input type="text"/>	mg/l
K	<input type="text"/>	P. Alk	<input type="text"/>	mg/l	Cl	<input type="text"/>	mg/l
SO <sub>4</sub>	<input type="text"/>	NO <sub>3</sub> -N	<input type="text"/>	mg/l	F	<input type="text"/>	mg/l
As	<input type="text"/>	B	<input type="text"/>	mg/l	Cd	<input type="text"/>	mg/l
CN	<input type="text"/>	Cr	<input type="text"/>	mg/l	Cu	<input type="text"/>	mg/l
Mn	<input type="text"/>	Pb	<input type="text"/>	mg/l	CSE (COD)	<input type="text"/>	mg/l
Phen.	<input type="text"/>	PO <sub>4</sub>	<input type="text"/>	mg/l	TOC	<input type="text"/>	mg/l
S-	<input type="text"/>	NH <sub>4</sub> -N	<input type="text"/>	mg/l	TOX	<input type="text"/>	µg/l
Ba	<input type="text"/>	Hg	<input type="text"/>	mg/l	Cr <sup>6+</sup>	<input type="text"/>	mg/l

## **Aanhangsel B2**

Data verkry vanaf Tshwane Munisipaliteit

## Algemene inligting van verskillende stortingssterreine van Tshwane

Stortings terrein	Adres	Stortingsterrein in hektar	Klassifikasie	Huishoudelike afval %	Tuinafval %	Bouafval %	Industriële afval %
1 Kwaggasrand	Maunda rd Pretoria Wes	27.2	GMB-	60	20	10	10
2 Valhala	Stefanus Schoemanstraat Valhala	11.7	GMB-	60	20	10	10
3 Garstkloof	Rigellaan Suid (Delmas pad)	43.6	GMB-	1	60	38	1
4 Deredepoort	H/v Zambesi en Molotto Straat	12.4	GSB-	5	60	30	5
5 Onderstepoort	R566 Roslynne - Onderstepoort	51.82	GMB-	70	20	10	10
6 Hatherley	Hans Strydom Noord Nelmapuis	96	GLB-	60	20	10	10
7 Ga-Rangkuwa	Lucas Mangopestraat Ga-Rangkuwa	41.9	GMB-	60	10	10	20
8 Soshanguve	H/v Soutpan en Lucas Mongopestraat	39.17	GMB-	80	10	5	5
9 Temba	Makapan Stadstraat	3.7	GSB-	70	10	10	10

# Waste composition on C O T disposal sites

Landfill	Building %	Garden %	Household %	Industrial %
Hatherley	10	10	75	5
Garstkloof	35	60	1	4
Kwaggasrand	10	15	70	5
Onderstepoort	10	20	50	20
Valhalla	5	15	75	5
Ga-Rankuwa	10	10	60	20
Soshanguve	5	10	80	5
Temba	10	10	70	10
Derdepoort	20	70	5	5

## Summary Waste Categories

Category	JAN	FEB.	MARCH	APRIL	MAY	JUNE	Total
DOMESTIC LOOSE	15699492						181897834
DOMESTIC COMPACT	37917010						173112329
GARDEN REFUSE	51537774						299907522
BUILDERS RUBBLE	4533000						60723958
COMMERCIAL WASTE	9674188						81651145
NOTIFIABLE WASTE	428425						3394058
TYRES	156774						628401
UNCOVERED	438000						4156197
COVER MATERIAL	43026000						297608523
LEGAL DUMPING	15378120						112520540
BUILDERS RUB. FREE	3611000						41058637
E-WASTE	0						1610470
TOPSOIL PAYABLE	0						189181509
RESIDUALS	210000						39265000
	139359761		0	0	0	0	1408136123

TSHWANE LANDFILL SITES ANNUAL REPORT FOR 2002/2003

SITE	JUL	AUG	SEPT	OCT	NOV	DES	04-Jan	FEBR	MARC	APRIL	MAY	JUNE	TOTALS
Derdepoort	14727	14727	14727	14727	14727	14727	14727	14727	14727	14727	14727	14727	176724
Garstkloof	19090	19090	19090	19090	19090	19090	19090	19090	19090	19090	19090	19090	229080
Ga-Rankuwa	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	9363	112356
Hatherley	11975	11975	11975	11975	11975	11975	11975	11975	11975	11975	11975	11975	143700
Kwaggasrand	14091	14091	14091	14091	14091	14091	14091	14091	14091	14091	14091	14091	169092
Onderstepoort	17440	17440	17440	17440	17440	17440	17440	17440	17440	17440	17440	17440	209280
Soshanguve	7747	7747	7747	7747	7747	7747	7747	7747	7747	7747	7747	7747	92964
Temba	4364	4364	4364	4364	4364	4364	4364	4364	4364	4364	4364	4364	52368
Valhalla	17743	17743	17743	17743	17743	17743	17743	17743	17743	17743	17743	17743	212916
SUB.TOTAL	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>116540</u>	<u>1398480</u>

TSHWANE LANDFILL SITES ANNUAL REPORT FOR 2001/2002

SITE	JUL	AUG	SEPT	OCT	NOV	DES	05-Jan	FEBR	MARC	APRIL	MAY	JUNE	TOTALS
Derdepoort	17245	15242	15398	14291	15037	13000	15396	14992	18420	19314	21341	20147	199823
Garstkloof	35524	62470	65813	55136	66835	46841	42472	36957	30509	36429	40325	32148	551459
Ga-Rankuwa	10741	12330	7648	9026	12658	12272	22242	10842	13588	13041	9475	12604	146467
Hatherley	10635	11115	9975	10039	11884	10105	12750	11045	9360	9879	10656	10449	127892
Kwaggasrand	9145	10544	12035	11988	12050	7595	11795	12004	11414	13440	10756	12068	134834
Onderstepoort	12070	11443	11989	12235	10995	8843	12993	12080	14624	18129	11960	13685	151046
Soshanguve	6774	6487	8088	7339	7007	5516	4565	7228	8126	6160	9890	7867	85047
Temba	15147	11484	9782	10704	11984	10211	11710	11245	18097	19804	11630	12714	154512
Valhalla	38946	39868	39579	35921	37820	36171	32540	42814	30180	33649	37427	36253	441168
SUB.TOTAL	<u>177261</u>	<u>180983</u>	<u>180307</u>	<u>166679</u>	<u>186270</u>	<u>150554</u>	<u>166463</u>	<u>159207</u>	<u>154318</u>	<u>169845</u>	<u>163460</u>	<u>157935</u>	<u>1992248</u>

**TSHWANE LANDFILL SITES ANNUAL REPORT FOR 2007/2008 Waste Received per Kg**

SITE / 2007	JUL	AUG	SEPT	OCT	NOV	DES	8-Jan	FEBR	MARCH	APRIL	MAY
Derdepoort	10,865,909	7,980,909	11,611,364	12340636	11737545	13030090	6912364	35980727	35810181	32740727	43170000
Ga-Rankuwa	9,199,000	8,466,000	11,810,000	9079000	12700636	14136636	10853909	12526000	15136000	16440454	12667000
Garskloof	14,015,000	10,683,900	15,963,000	14078000	14294000	15589300	110708000	16374000	17117000	12486000	12811300
Hatherley	16,095,560	24,728,640	23,953,600	19034620	22425740	25117540	11573140	27055900	25766190	13488221	10708218
Kwaggasrand	28,420,427	29,488,127	34,635,318	31206263	34996527	33239290	26472464	34756327	26917818	29147909	26920209
Onderstepoort	71,160,727	77,264,363	58,392,727	55635909	51740545	52887999	35435818	62752364	92319090	44664364	39491636
Soshanguve	16,709,000	15,743,273	16,846,727	12650000	13584818	14305000	9140636	11858818	9600364	9202909	7866909
Temba	2,427,000	2,450,000	2,289,000	2376000	2484000	2307000	1964000	2984909	5656000	4463000	4682000
Valhalla	25,658,000	29,567,000	29,622,000	36839000	44391000	43772000	40764000	22061000	40792000	45740000	42258000
<b>SUB.TOTAL</b>	<b>194550623</b>	<b>206372212</b>	<b>205123736</b>	<b>193239428</b>	<b>208334811</b>	<b>214384855</b>	<b>153824331</b>	<b>226350045</b>	<b>269114643</b>	<b>208373584</b>	<b>200575272</b>

LANDFILL YEARLY WASTE VOLUMES RECEIVED: 2001/2- 2007/8

SITE / 2007	2001/2 Ton	2002/3 Ton	2003/4 Ton	2004/5 Ton	2005/6 Ton	2006/7 Ton	2007/8 KG
Derdepoort	199823	176724	475618	413158	431573	251947	235579,634
Garskloof	551459	229080	695481	315366	267721	233730	149751,635
Ga-Rankuwa	146467	112356	79009	42248	96077	126961	168730,800
Hatherley	127892	143700	157719	183646	230953	288054	232020,780
Kwaggas.Rand	134834	169092	366416	405663	403755	310984	373053,888
Onderstepoort	151046	209280	335824	331556	473511	683521	705058,360
Soshanguve	85047	92964	113159	97478	96995	197673	145419,800
Temba	154512	52368	25872	22871	63556	41331	39704,909
Valhalla	441168	212916	494085	363490	271102	267639	449714,600

# Summary Waste Categories

Category	JULY	AUGUST	SEPT	1 Quarter	OCT	NOV	DES	2 Quarter
1 DOMESTIC LOOSE	43604751	6597000	56436572	112548323	19303057	16217437	17129525	52650019
2 DOMESTIC COMPACT	10445694	0	5096169	15541863	40289007	39847446	39387003	119623456
3 GARDEN/REFUSE	43288602	822000	51199764	95310366	47850844	49229699	55978839	153059382
4 BUILDERS RUBBLE	9594416	438000	8624074	18656490	11520964	11369820	14643684	37534468
5 COMMERCIAL WASTE	12051982	1021000	1223000	25904364	1698192	1698192	1698192	46142615
6 NOTIFIABLE WASTE	347114	67000	488991	903105	683731	850250	468547	2002528
7 TYRES	90860	0	98310	189170	45447	108420	128590	282457
8 UNCOVERED	231800	0	410870	642670	848907	1152620	1074000	3075527
9 COVER MATERIAL	43097190	2202000	42414912	87714102	45673190	50151231	71044000	166868421
11 ILLEGAL DUMPING	15563030	6540000	18989890	41092920	17065010	23018310	15966180	56049500
12 BUILDERS RUB. FREE	2746070	0	6047540	8795610	6579477	11106550	10976000	28662027
13 E-WASTE	1036000	0	227000	1263000	0	347470	0	347470
14 TOPSOIL PAYABLE	188099509	1082000	0	189181509	0	0	0	0
10 RECLAIMERS	5279000	6110000	5221000	17600000	6623000	7191000	5423000	19245000
TOTAL	133099509	17597000	202865474	406561983	203907118	220385449	242905303	666297870

Explanation of information from the charts

Code	Category of Waste	Vol kg	
2	Domestic Waste/ House Hold refuse	37,947,010	+
3	Garden Refuse	51,537,774	=
5	Industrial Waste	5,507,786	
11	Illegal Dumping	15,378,120	
10	Reclaimers- Recycling	2,410,000	

- 1,000 kg = 1 Ton
- 10,000 kg = 10 Ton
- 100,000kg = 100 ton

# What is the situation since we were in 2003/4

<u>Financial year: 1 July-30 June</u>	<u>Tonnage Land filled</u>	<u>Reclaimed Volumes reduced to Landfill</u>	<u>Estimate on only a 3% growth rate to be Land filled if not reduced</u>
2003/4	2 743 183	Started reclaiming	2 743 183
2004/5	2 175 467	567 716	2 825 478
2005/6	2 335 243	574 999	2 910 242
2006/7	2 401 840	595 909	2 997 549
<b><u>3.75 Years: TOTAL</u></b>	<b><u>9 655 733</u></b>	<b><u>1 738 624</u></b>	<b><u>11 476 453</u></b>

# Data on the current status of Waste in CoT

Landfill site	Use	2003/4	2004/5 Recycling program	2005/6	2006/7	2007/8
Derdepoort	Garden refuse	475 618	413 158	431 573	251 947	222 180
Garskloof	Garden refuse	695 481	315 366	267 721	233 730	166 601
Hatherley	General Waste	157 719	183 646	230 953	288 054	2231 542
Kwaggasrand Rand	General Waste	366 416	405 663	403 755	310 984	371 267
Onderstepoort	General Waste	335 824	331 556	473 511	683 521	673559
Valhalla	General Waste	494 085	363 490	271 102	267 639	443088
Soshanguve	General Waste	113 159	97 478	96 995	197 673	144 411
Ga-Rankuwa	General Waste	79 009	42 248	96 077	129 961	150 212
Temba	General Waste	25 872	22 871	63 556	41 331	39 533
Gross Totals		<u>2 743 183</u>	<u>2 175 476</u>	<u>2 335 243</u>	<u>2 401 840</u>	<u>2 443 957</u> <sup>3</sup>

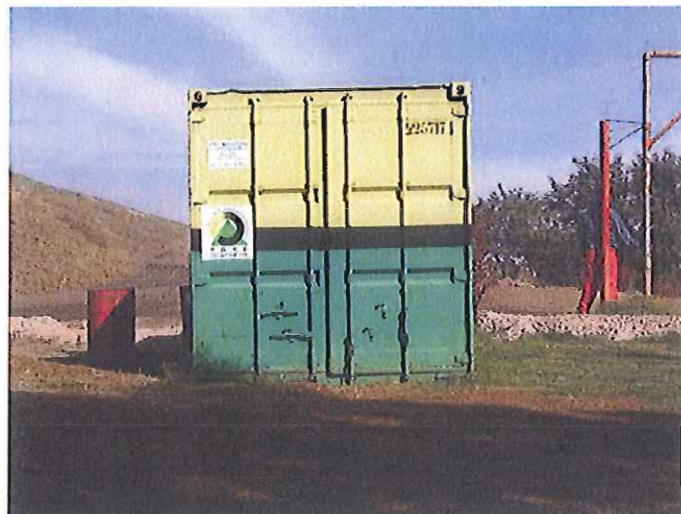
# **Aanhangsel B 3**

Foto's

Foto's van die afval wat gevind is op Kwaggasrand stortingssterrein



Die is afgeneem binne een van die afdaltrouke wat by die terrein aangekom  
het



Die plek waar hulle die olie berg



Die tenk van die ROSE foundation



Nog elektroniese afval wat buite die houer voorkom



Die afval binne die houer. Daar kom meer as net elektroniese afval voor



Die informele nedersetting by die terrein. Die pyl wys na die dam wat by die terrein voorkom.



Die geriewe wat aangebring is vir die inwoners



Elektroniese afval op die terrein



Elektroniese afval

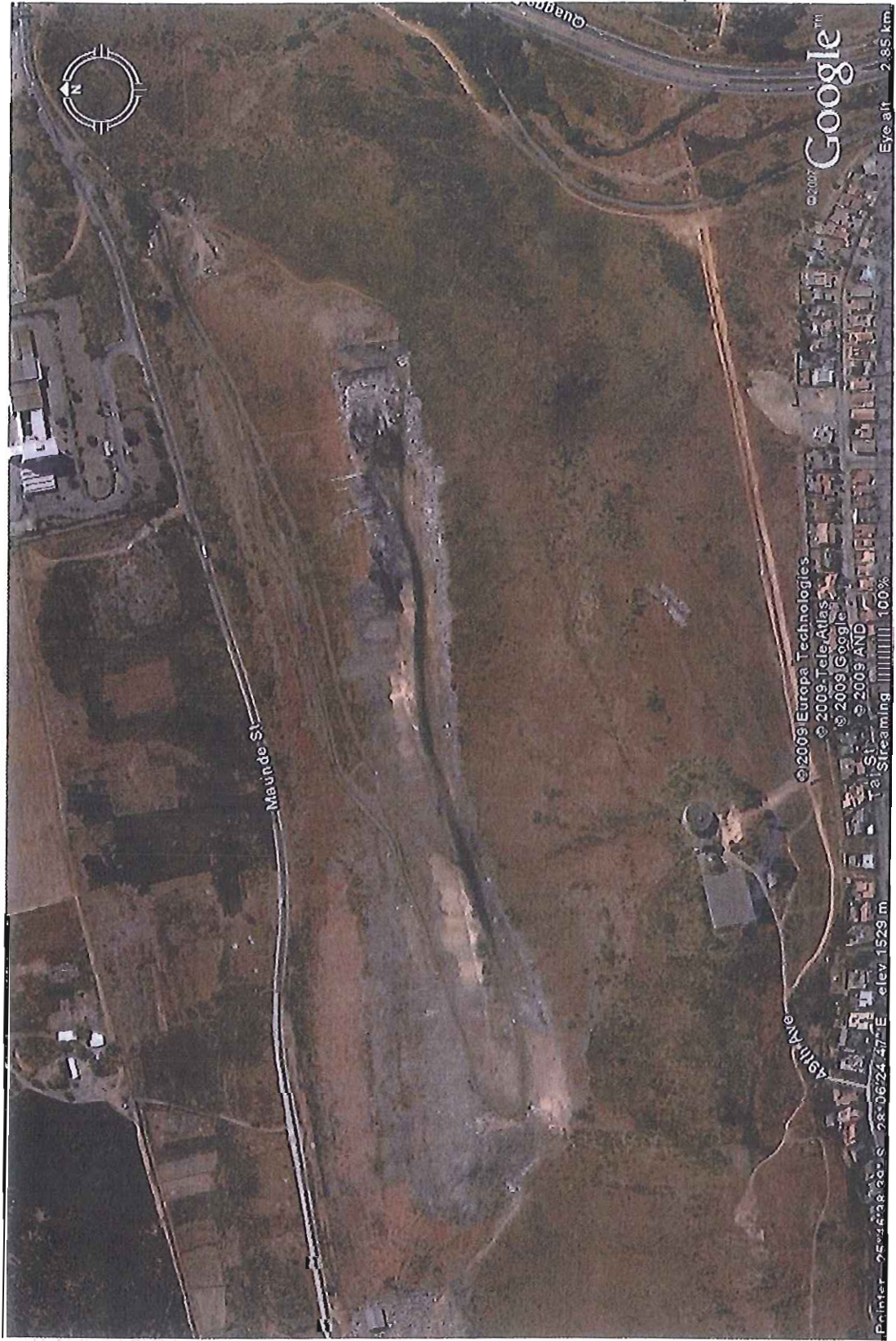


Elektroniese afval

## **Aanhangsel B4**

Lugfoto van Kwaggasrand Stortingsterrein

# Kwaggasrand



# **Aanhangsel C**

Oudit verslae

## **Aanhangsel C1**

Kopie van Interwaste se Interne Oudit  
Verslag  
(Interwaste Holdings)

	<b>INTER-WASTE HOLDINGS (PTY) LIMITED</b>  PO Box 641 Northriding 2162    Web page: <a href="http://www.interwaste.co.za">www.interwaste.co.za</a> Tel: +27 (0)11 792 9330    Fax: +27 (0)11 792 8998	Doc. No. _____  Revision No.            1
	<b>Internal Audit Report</b>	Date            2009.02.06

## INTERNAL AUDIT REPORT

Audit Date: 2010 / /

Site/Depot:

**Division:**

Interwaste   
  Enviro-Fill   
  Earth2Earth   
  MRC

**Audit Scope:**

Health & safety  
 Legal  
 Environmental  
 Quality

**AUDITOR:**

**AUDITEE:**

**CLASSIFICATION/PERMIT NUMBER:**

**STAKEHOLDER:**

**OPERATOR:**

**PRESENT DURING AUDIT:**

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## INTRODUCTION

Waste disposal auditing is a Minimum Requirement. The Department prescribes to the permit holder to introduce an internal or external audit system for their waste disposal facility as well as the frequency thereof.

In order for any audit to be successful, it is important to have the commitment and co-operation from the permit holder.

Auditing of a waste disposal operation is a tool:

- That can be used to ensure not only compliance to permit conditions but also to give assurance to the business community and waste generators that waste disposal is properly controlled
- Used to assess the impact of waste disposal on site environment
- To determine the effectiveness, in meeting operational objectives
- To determine the conformity or non-conformity of the management system with specified requirements

The audit system is based on operational compliance and not on a points system. The process will start at the point of waste acceptance and followed through to the point of final disposal.

### Summary and Notes:

-

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<b>1. Site Access</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1.1 Entrance functional and effective?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>1.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1.2 Gate house clean and secure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>1.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1.3 Signage in place, relevant and legible?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>1.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1.4 Emergency contact numbers and procedures in place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>1.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
1.5 Waste acceptance document being used and kept up to date?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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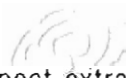
1.	YES	NO	N/A
1.6 Visitors register presented?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

1.	YES	NO	N/A
1.7 Gatekeeper aware of the type of waste allowed into the site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>2. Site Security:</b>	YES	NO	N/A
2.1 Entrance gate locked after hours?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

2.	YES	NO	N/A
2.2 Perimeter fence general condition acceptable?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

2.	YES	NO	N/A
2.3 Any evidence of illegal entrance through the fence?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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<b>2.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
2.4 Is the site security company SIRA accredited?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>2.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
2.5 Guard on duty?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>3. Site Internal Access:</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
3.1 Road to the workface in good condition?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>3.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
3.2 Any unauthorised internal access into the site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>3.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
3.3 Road signs in place?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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3.	YES	NO	N/A
3.4 Roads defined and marked?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Findings:			
Recommendations:			
Action By:			

3.	YES	NO	N/A
3.5 Any dangerous situations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Findings:			
Recommendations:			
Action By:			

4. Equipment on Site:	YES	NO	N/A
4.1 Equipment on site suitable to manage waste volumes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Findings:			
Recommendations:			
Action By:			

4.	YES	NO	N/A
4.2 General condition of equipment on site acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Findings:			
Recommendations:			
Action By:			

4.	YES	NO	N/A
4.3 Hooters, reverse alarms and lights installed and in working order?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Findings:			
Recommendations:			
Action By:			

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<b>4.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
4.4 Is there a functional pressure washer for the plant?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>5. Water Management on Site</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
5.1 Free standing water in disposal cells?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>5.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
5.2 Free standing water on landfill?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>5.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
5.3 Any ponding elsewhere on site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>5.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
5.4 Drainage systems in place to divert water away from cells?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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5.	YES	NO	N/A
5.5 Drainage canals of sufficient size to accommodate storm water flow?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

5.	YES	NO	N/A
5.6 Drainage canals kept free of debris and excess vegetation?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

5.	YES	NO	N/A
5.7 Evidence of erosion on or around the site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

6. Operations on Site:	YES	NO	N/A
6.1 Site have an operations/disposal plan?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

6.	YES	NO	N/A
6.2 Are operations being done according to this plan?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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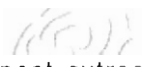
6.	YES	NO	N/A
6.3 Waste managed according to the correct compaction methods?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

6.	YES	NO	N/A
6.4 Is Windblown litter managed?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

6.	YES	NO	N/A
6.5 Any evidence of flies on site, if so, are fly traps in place?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

6.	YES	NO	N/A
6.6 Any evidence non-permissible waste being disposed of?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

7. Monitoring Infrastructure:	YES	NO	N/A
7.1 Monitoring Boreholes on site in good condition?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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7.	YES	NO	N/A
7.2 Monitoring Boreholes locked and surrounding vegetation cleared?			
Findings:			
Recommendations:			
Action By:			

7.	YES	NO	N/A
7.3 Are piezometers marked and in a good condition?			
Findings:			
Recommendations:			
Action By:			

7.	YES	NO	N/A
7.4 Survey beacons undisturbed and well marked?			
Findings:			
Recommendations:			
Action By:			

<b>8. Rehabilitation on Site:</b>	YES	NO	N/A
8.1 Site sloped to allow water to drain out of the site?			
Findings:			
Recommendations:			
Action By:			

8.	YES	NO	N/A
8.2 Side slopes worked off to the correct gradient as per final profile?			
Findings:			
Recommendations:			
Action By:			

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8.	YES	NO	N/A
8.3 Cover thickness in accordance with the MR specifications?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

8.	YES	NO	N/A
8.4 Is invader vegetation managed?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

8.	YES	NO	N/A
8.5 Is there a rising 'green wall' and operations taking place behind it?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

8.	YES	NO	N/A
8.6 Grass on/around the site periodically cut?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

8.	YES	NO	N/A
8.7 Height of the site restricted to the design height?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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8.	YES	NO	N/A
8.8 Any cracking or erosion evident on site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

9. Personnel Issues:	YES	NO	N/A
9.1 Personnel on site trained and familiar with operations?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

9.	YES	NO	N/A
9.2 Are all H&S appointments in place and valid?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

9.	YES	NO	N/A
9.3 All personnel on site wearing protective clothing as prescribed?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

9.	YES	NO	N/A
9.4 Any personnel residing on site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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<b>9.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
9.5 Is H&S communicated regularly to the personnel?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>9.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
9.6 Are there regular meetings with the personnel? (minimum one per month)			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>9.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
9.7 Any complaints from personnel on site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>9.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
9.8 Are personnel familiar with ISO 14001 standards?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>10. Record Keeping:</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
10.1 Proper records kept of waste entering the site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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10.	YES	NO	N/A
10.2 Any problems encountered on the weighbridge?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

10.	YES	NO	N/A
10.3 Are any complaints recorded in the complaints register?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

10.	YES	NO	N/A
10.4 Are the fire extinguisher and first aid registers up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

10.	YES	NO	N/A
10.5 Are all PPE issues recorded?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

10.	YES	NO	N/A
10.6 Are all incidents/accidents recorded and up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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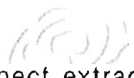
<b>11. Environmental Considerations:</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11.1 Are the diesel/oil stores bunded and contained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>11.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11.2 Evidence of oil or diesel spills on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>11.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11.3 Are all firebreaks in place and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>11.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11.4 Evidence of fires on or around the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>11.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11.5 Unacceptable odours on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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11.	YES	NO	N/A
11.6 Evidence of unacceptable dust on site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12. Database Audit:	YES	NO	N/A
12.1 System in place where all relevant documentation is stored?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.2 Documentation up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.3 Record of all internal documents up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.4 Meteorological records up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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<b>12.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
12.5 Incidents/accidents reported and acted upon?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>12.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
12.6 Fire extinguishers serviced and in a good condition?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>12.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
12.7 Weekly/monthly checklists completed and filed by the Site Supervisor?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>12.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
12.8 Any complaints registered in the book from I & AP/s?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>12.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
12.9 Complaints followed up and resolved?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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12.	YES	NO	N/A
12.10 Groundwater monitoring been done and the results available for inspection?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.11 Any instructions or operations changes from the client?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.12 The Landfill design and final profile adhered to?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.13 Any letters/documents received from authorities and available for inspection?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

12.	YES	NO	N/A
12.14 Are daily back-ups done and rotated i.e. Mon, Tues, Wed, Thurs, Fri and computer back-ups stored off site on a weekly basis?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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<b>13. Management Audit</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.1 Has the supervisor/depot manager been appointed as a 16(2) representative?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.2 Supervisor familiar with the requirements of the Operations Plan?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.3 Supervisor in good control of the site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.4 Supervisor keep the responsible persons informed of site developments?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.5 Supervisor pro-active in identifying and resolving problems promptly?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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13.	YES	NO	N/A
13.6 Regional manager in control of the operations and is he kept up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

13.	YES	NO	N/A
13.7 Are all site NCR's and CAR's dealt with timeously and effectively?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

13.	YES	NO	N/A
13.8 Responsible persons see to it that records are kept up to date?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

13.	YES	NO	N/A
13.9 Responsible person report regularly to the Operations Director regarding site?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

13.	YES	NO	N/A
13.10 Is this reporting done in writing?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

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<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.11 Regional manager visiting the site regularly?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>13.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
13.12 Any constraints which make it difficult for the company to adhere to the requirements of the Operations Plan?			
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>14. General/Other</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>14.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

<b>14.</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
<b>Findings:</b>			
<b>Recommendations:</b>			
<b>Action By:</b>			

## **Aanhangsel C2**

Ideale Stortingsterrein

Terrein: Ideale Stortingsterrein			
	JA	NEE	NVT
<b>Toegang tot die terrein</b>			
Is die Ingang effektief en funksioneel?	JA		
Is die hek kontrole kamer skoon en veilig?	JA		
Is die aanwysings borde in plek, relevant en duidelik?	JA		
Is al die noodnommers en prosedures in plek?	JA		
Word die afval aanvaardings dokument gebruik en is dit op datum?	JA		
Is die besoekers register teenwoordig?	JA		
Is die hekwag bewus van die tipe afval wat op die terrein toegelaat word?	JA		
<b>Terrein sekuriteit</b>			
Word die ingangshek na-ure gesluit?	JA		
Is die buitengrens heining in 'n goeie toestand?	JA		
Is daar enige tekens van onwettige ingang in die heining?		NEE	
Is die sekuriteit maatskappy wat op die terrein werk geakkrediteer by SIRA	JA		
Is daar 'n wag op diens?	JA		
<b>Interne terrein toegang</b>			
Is die pad wat na die werksarea toe gaan in 'n goeie toestand?	JA		
Is daar enige onwettige toegang tot die interne terrein?		NEE	
Is al die padtekens in plek?	JA		
Is die paaie goed gemerk?	JA		
Is daar kanse vir enige gevaarlike situasie?		NEE	
<b>Toerusting op die terrein</b>			
Is die toerusting in staat om die hoeveelheid afval per dag te hanteer?	JA		
Is die algemene toestand van die toerusting in 'n goeie kondisie?	JA		
Is die toeter, trurat alarm en ligte geïnstalleer en in 'n werkende toestand?	JA		
Is daar effektiewe druk vir die wasser vir die aanleg?	JA		
<b>Water bestuur op die terrein</b>			
Is daar vry staande water in die stortings selle?		NEE	
Is daar vry staande water op die terrein?		NEE	
Kom daar enige ander plekke voor waar water opdamp?		NEE	
Is daar 'n dreinerings stelsels in plek om die water van die terrein af te verwyder?	JA		
Is die dreinerings stelsel in staat om die storm water afloop te hanteer?	JA		
Word die kanale skoon van enige puin en plate groei?	JA		
Is daar enige tekens van erosie op en om die terrein?		NEE	
<b>Bedryfsaamhede van die terrein</b>			
Het die terrein 'n bedryfs/stortings plan?	JA		
Word die werkings volgens die plan gedoen?	JA		
Word die afval volgens die korrekte kompakterings metodes gedoen?	JA		

Word die rommel wat deur die wind verwaai word bestuur?	JA		
Is daar enige tekens van vlieë op die terrein, indien so, is daar vlieë vangtoestelle in plek?		NEE	
Is daar enige tekens van afval wat volgens die permit nie daar mag wees nie?		NEE	
<b>Monitor infrastruktuur</b>			
Is die moniterings boorgate in 'n goeie toestand?	JA		
Word die boorgate gesluit en die plante groei rondom dit verwyder?	JA		
Is die drukmeters gemerk en in 'n goeie toestand?	JA		
Is die opname bakens onversteurd en goed gemerk?	JA		
<b>Rehabilitasie op die terrein</b>			
Is die terrein so ontwerp om water uit die terrein te laat dreineer?	JA		
Is die helling so ontwerp volgens die korrekte gradiënt volgens die finale profiel?	JA		
Is die dikte van die dekkings materiaal in ooreenstemming met die MR spesifikasies?	JA		
Word uitheemse plante groei beheer?	JA		
Is daar 'n verhoogde groenstrook en is die werksaamhede agter dit?	JA		
Word die gras in en om die terrein instand gehou?	JA		
Is die hoogte van die terrein beperk tot die hoogte wat ontwerp is?	JA		
Is daar tekens van krake of erosie op die terrein?		NEE	
<b>Personeel</b>			
Is die personeel wat op die terrein werk opgelei en bekend met die bestuur en werking van die terrein?	JA		
Is al die H&S aanwysings in plek en geldig?	JA		
Dra al die werkers beskermde klere soos voorgestel??	JA		
Is daar enige personeel wat op die terrein bly?		NEE	
Word daar klem gele op die H&S?	JA		
Is daar gereelde vergaderings met die personeel?	JA		
Is daar enige klagtes van die personeel op die terrein?		NEE	
Is enige van die personeel bekend met die ISO 14001 standarde?	JA		
<b>Rekord hou</b>			
Word die regte rekords gehou van die afval wat die terrein binne kom?	JA		
Is daar enige probleme by die weegbrug?		NEE	
Is daar enige klagtes in die klagte boek?		NEE	
Is die brand blusser en noodhulp registers op datum?	JA		
Is al die PPE sake aangemeld?			NVT
Is daar enige ongelukke/voorvalle aangeteken en is die register op datum?			NVT
<b>Omgewings beskouings</b>			
Is die diesel/olie store omhein en onder dak?	JA		
Is daar enige olie of diesel gemors op die terrein?		NEE	
Is al die voorbrande in plek en word dit onderhou?	JA		
Is daar enige tekens van vure rondom die terrein?		NEE	

Is daar onaangename reuk op die terrein?		NEE	
Is daar tekens van onaanvaarbare stof op die terrein?		NEE	
<b>Databasis oudit</b>			
Is daar 'n sisteem waar die relevante dokumentasie gestoor word in plek?	JA		
Is al die dokumente op datum?	JA		
Is die rekord van interne dokumente op datum?	JA		
Is die meteorologiese rekords op datum?	JA		
Is daar dokumentasie van voorvalle en ongelukke wat aangemeld is en opgetree is teenwoordig?	JA		
Is die brandblussers gedien en in 'n goeie toestand?	JA		
Word die weeklikse/maandelikse lysie voltooi en gebere by die terrein se bestuurder?	JA		
Is daar enige klagtes in die geregistreer in die boek vir die I&AP's?		NEE	
Is die klagtes op geneem en opgelos?			NVT
Word daar grond water monitering gedoen en is die rekords beskikbaar vir ondersoek?	JA		
Is daar enige instruksies/werkings wat verander is deur die klient?		NEE	
Word daar na die stortings terrein ontwerp en finale profiel veragsaam?	JA		
Is daar enige dokumentasie wat vanaf die Departement ontvang is teenwoordig en is dit beskikbaar vir ondersoek?	JA		
Is daar enige sekondere geheue wat gemaak word en word dit op 'n ander plek as die terrein gestoor?	JA		
<b>Bestuursoudit</b>			
Is die bestuurder aangestel as 'n 16(2) verteenwoordiger?	JA		
Is die bestuurder bekend met die vereistes van die werkings plan?	JA		
Is die bestuurder in beheer van die terrein?	JA		
Hou die bestuurder die verantwoordelike persone ingelig oor die terrein ontwikkelings?	JA		
Is die bestuurder pro-aktief in die herkenning en oplossing van probleme?	JA		
Is die area bestuurder in beheer van die terrein en word hy op datum gehou?	JA		
Word die terrein se NCR's en CAR's effektief mee gewerk?	JA		
Sorg die verantwoordelike persoon dat alle dokumente op datum gehou word?	JA		
Rapporteer die verantwoordelike persoon gereeld aan die werkings direkteur gaande die terrein?	JA		
Word die verslaggewing in opskrif gedoen	JA		
Besoek die area bestuurder gereeld die terrein?	JA		
Is daar enige beperkings wat die vir die maatskappy moeilik maak om volgens die werkingsplan te werk?		NEE	

## **Aanhangsel C3**

Weltevreden Stortingsterrein

**Terrein: Weltevreden Stortingsterrein**

	JA	NEE	NVT
<b>Toegang tot die terrein</b>			
Is die ingang effektief en funksioneel?	JA		
Is die hek kontrole kamer skoon en veilig?	JA		
Is die aanwysings borde in plek, relevant en duidelik?	JA		
Is al die noodnommers en prosedures in plek?	JA		
Word die afval aanvaardings dokument gebruik en is dit op datum?	JA		
Is die besoekers register teenwoordig?	JA		
Is die hekwag bewus van die tipe afval wat op die terrein toegelaat word?	JA		
<b>Terrein sekuriteit</b>			
Word die ingangshek na-ure gesluit?	JA		
Is die buitengrens heining in 'n goeie toestand?	JA		
Is daar enige tekens van onwettige ingang in die heining?		NEE	
Is die sekuriteit maatskappy wat op die terrein werk geakkrediteer by SIRA	JA		
Is daar 'n wag op diens?	JA		
<b>Interne terrein toegang</b>			
Is die pad wat na die werksarea toe gaan in 'n goeie toestand?	JA		
Is daar enige onwettige toegang tot die interne terrein?		NEE	
Is al die padtekens in plek?	JA		
Is die paale goed gemerk?	JA		
Is daar kans vir enige gevaarlike situasie?		NEE	
<b>Toerusting op die terrein</b>			
Is die toerusting in staat om die hoeveelheid afval per dag te hanteer?	JA		
Is die algemene toestand van die toerusting in 'n goeie kondisie?	JA		
Is die toeter, trurat alarm en ligte geïnstalleer en in 'n werkende toestand?	JA		
Is daar effektiewe druk vir die water vir die aanleg?	JA		
<b>Water bestuur op die terrein</b>			
Is daar vry staande water in die stortings selle?	JA		
Is daar vry staande water op die terrein?		NEE	
Kom daar enige ander plekke voor waar water opdamp?		NEE	
Is daar 'n dreinerings stelsels in plek om die water van die terrein af te verwyder?	JA		
Is die dreinerings stelsel in staat om die storm water afloop te hanteer?	JA		
Word die kanale skoon van enige puin en plate groei?	JA		
Is daar enige tekens van erosie op en om die terrein?	JA		
<b>Bedryfsaamhede van die terrein</b>			
Het die terrein 'n bedryfs/stortings plan?	JA		
Word die werkings volgens die plan gedoen?	JA		
Word die afval volgens die korrekte kompakterings metodes gedoen?	JA		

Word die rommel wat deur die wind verwaai word bestuur?	JA		
Is daar enige tekens van vlieë op die terrein, indien so, is daar vlieë vangtoestelle in plek?		NEE	
Is daar enige tekens van afval wat volgens die permit nie daar mag wees nie?		NEE	
<b>Monitor infrastruktuur</b>			
Is die moniterings boorgate in 'n goeie toestand?	JA		
Word die boorgate gesluit en die plante groei rondom dit verwyder?	JA		
Is die drukmeters gemerk en in 'n goeie toestand?	JA		
Is die opname bakens onversteurd en goed gemerk?	JA		
<b>Rehabilitasie op die terrein</b>			
Is die terrein so ontwerp om water uit die terrein te laat dreineer?	JA		
Is die helling so ontwerp volgens die korrekte gradiënt volgens die finale profiel?	JA		
Is die dikte van die dekkings materiaal in ooreenstemming met die MR spesifikasies?	JA		
Word uitheemse plante groei beheer?	JA		
Is daar 'n verhoogde groenstrook en is die werksaamhede agter dit?		NEE	
Word die gras in en om die terrein instand gehou?	JA		
Is die hoogte van die terrein beperk tot die hoogte wat ontwerp is?	JA		
Is daar tekens van krake of erosie op die terrein?		NEE	
<b>Personeel</b>			
Is die personeel wat op die terrein werk opgelei en bekend met die bestuur en werking van die terrein?	JA		
Is al die H&S aanwysings in plek en geldig?	JA		
Dra al die werkers beskermde klere soos voorgestel??	JA		
Is daar enige personeel wat op die terrein bly?		NEE	
Word daar klem gele op die H&S?	JA		
Is daar gereelde vergaderings met die personeel?	JA		
Is daar enige klagtes van die personeel op die terrein?		NEE	
Is enige van die personeel bekend met die ISO 14001 standaarde?	JA		
<b>Rekord hou</b>			
Word die regte rekords gehou van die afval wat die terrein binne kom?	JA		
Is daar enige probleme by die weegbrug?		NEE	
Is daar enige klagtes in die klagte boek?		NEE	
Is die brand blusser en noodhulp registers op datum?	JA		
Is al die PPE sake aangemeld?	JA		
Is daar enige ongelukke/voorvalle aangeteken en is die register op datum?		NEE	
<b>Omgewings beskouings</b>			
Is die diesell/olie store omhein en onder dak?	JA		
Is daar enige olie of diesel gemors op die terrein?		NEE	
Is al die voorbrande in plek en word dit onderhou?	JA		
Is daar enige tekens van vure rondom die terrein?		NEE	

Is daar onaangename reuk op die terrein?		NEE	
Is daar tekens van onaanvaarbare stof op die terrein?		NEE	
<b>Databasis oudit</b>			
Is daar 'n sisteem waar die relevante dokumentasie gestoor word in plek?	JA		
Is al die dokumente op datum?	JA		
Is die rekord van interne dokumente op datum?	JA		
Is die meteorologiese rekords op datum?	JA		
Is daar dokumentasie van voorvalle en ongelukke wat aangemeld is en opgetree is teenwoordig?	JA		
Is die brandblussers gediens en in 'n goeie toestand?	JA		
Word die weeklikse/maandelikse lysse voltooi en gebere by die terrein se bestuurder?	JA		
Is daar enige klagtes in die geregistreer in die boek vir die I&AP's?		NEE	
Is die klagtes op geneem en opgelos?			NVT
Word daar grond water monitering gedoen en is die rekords beskikbaar vir ondersoek?	JA		
Is daar enige instruksies/werkings wat verander is deur die klient?		NEE	
Word daar na die stortings terrein ontwerp en finale profiel veragsaam?	JA		
Is daar enige dokumentasie wat vanaf die Departement ontvang is teenwoordig en is dit beskikbaar vir ondersoek?	JA		
Is daar enige wat gemaak word en word dit op 'n ander plek as die terrein gestoor?	JA		
<b>Bestuursoudit</b>			
Is die bestuurder aangestel as 'n 16(2) verteenwoordiger?	JA		
Is die bestuurder bekend met die vereistes van die werkings plan?	JA		
Is die bestuurder in beheer van die terrein?	JA		
Hou die bestuurder die verantwoordelike persone ingelig oor die terrein ontwikkelings?	JA		
Is die bestuurder pro-aktief in die herkenning en oplossing van probleme?	JA		
Is die area bestuurder in beheer van die terrein en word hy op datum gehou?	JA		
Word die terrein se NCR's en CAR's effektief mee gewerk?	JA		
Sorg die verantwoordelike persoon dat alle dokumente op datum gehou word?	JA		
Rapporteer die verantwoordelike persoon gereeld aan die werkings direkteur gaande die terrein?	JA		
Word die verslaggewing in opskrif gedoen?	JA		
Besoek die area bestuurder gereeld die terrein?	JA		
Is daar enige beperkings wat die vir die maatskappy moeilik maak om volgens die werkingsplan te werk?	JA		

## **Aanhangsel C4**

Kwaggasrand Stortingsterrein

Terrein: Kwaggasrand Stortingsterrein			
	JA	NEE	NVT
<b>Toegang tot die terrein</b>			
Is die ingang effektief en funksioneel?		NEE	
Is die hek kontrole kamer skoon en veilig?	JA		
Is die aanwysings borde in plek, relevant en duidelik?		NEE	
Is al die noodnommers en prosedures in plek?		NEE	
Word die afval aanvaardings dokument gebruik en is dit op datum?			NVT
Is die besoekers register teenwoordig?		NEE	
Is die hekwag bewus van die tipe afval wat op die terrein toegelaat word?		NEE	
<b>Terrein sekuriteit</b>			
Word die ingangshek na-ure gesluit?	JA		
Is die buitengrens heining in 'n goeie toestand?		NEE	
Is daar enige tekens van onwettige ingang in die heining?	JA		
Is die sekuriteit maatskappy wat op die terrein werk geakkrediteer by SIRA	JA		
Is daar 'n wag op diens?	JA		
<b>Interne terrein toegang</b>			
Is die pad wat na die werksarea toe gaan in 'n goeie toestand?		NEE	
Is daar enige onwettige toegang tot die interne terrein?		NEE	
Is al die padtekens in plek?	JA		
Is die paaie goed gemerk?		NEE	
Is daar kanse vir enige gevaarlike situasie?	JA		
<b>Toerusting op die terrein</b>			
Is die toerusting in staat om die hoeveelheid afval per dag te hanteer?	JA		
Is die algemene toestand van die toerusting in 'n goeie kondisie?	JA		
Is die toeter, trurat alarm en ligte geïnstalleer en in 'n werkende toestand?	JA		
Is daar effektiewe druk vir die wasser vir die aanleg?			NVT
<b>Water bestuur op die terrein</b>			
Is daar vry staande water in die stortings selle?		NEE	
Is daar vry staande water op die terrein?	JA		
Kom daar enige ander plekke voor waar water opdamp?	JA		
Is daar 'n dreinerings stelsels in plek om die water van die terrein af te verwyder?	JA		
Is die dreinerings stelsel in staat om die storm water afloop te hanteer?	JA		
Word die kanale skoon van enige puin en plate groei?		NEE	
Is daar enige tekens van erosie op en om die terrein?	JA		
<b>Bedryfsaamhede van die terrein</b>			
Het die terrein 'n bedryfs/stortings plan?			NVT
Word die werkings volgens die plan gedoen?			NVT
Word die afval volgens die korrekte kompakterings metodes gedoen?	JA		

Word die rommel wat deur die wind verwaai word bestuur?		NEE	
Is daar enige tekens van vlieë op die terrein, indien so, is daar vlieë vangtoestelle in plek?	JA	NEE	
Is daar enige tekens van afval wat volgens die permit nie daar mag wees nie?	JA		
<b>Monitor infrastruktuur</b>			
Is die moniterings boorgate in 'n goeie toestand?		NEE	
Word die boorgate gesluit en die plante groei rondom dit verwyder?		NEE	
Is die drukmeters gemerk en in 'n goeie toestand?		NEE	
Is die opname bakens onversteurd en goed gemerk?		NEE	
<b>Rehabilitasie op die terrein</b>			
Is die terrein so ontwerp om water uit die terrein te laat dreineer?	JA		
Is die helling so ontwerp volgens die korrekte gradiënt volgens die finale profiel?	JA		
Is die dikte van die dekkings materiaal in ooreenstemming met die MR spesifikasies?	JA		
Word uilheemse plante groei beheer?		NEE	
Is daar 'n verhoogde groenstrook en is die werksaamhede agter dit?		NEE	
Word die gras in en om die terrein instand gehou?		NEE	
Is die hoogte van die terrein beperk tot die hoogte wat ontwerp is?		NEE	
Is daar tekens van krake of erosie op die terrein?	JA		
<b>Personeel</b>			
Is die personeel wat op die terrein werk opgelei en bekend met die bestuur en werking van die terrein?	JA		
Is al die H&S aanwysings in plek en geldig?		NEE	
Dra al die werkers beskermde klere soos voorgestel??		NEE	
Is daar enige personeel wat op die terrein bly?	JA		
Word daar klem gele op die H&S?		NEE	
Is daar gereelde vergaderings met die personeel?		NEE	
Is daar enige klagtes van die personeel op die terrein?			NVT
Is enige van die personeel bekend met die ISO 14001 standaarde?		NEE	
<b>Rekord hou</b>			
Word die regte rekords gehou van die afval wat die terrein binne kom?		NEE	
Is daar enige probleme by die weegbrug?			NVT
Is daar enige klagtes in die klagte boek?			NVT
Is die brand blusser en noodhulp registers op datum?			NVT
Is al die PPE sake aangemeld?			NVT
Is daar enige ongelukke/voorvalle aangeteken en is die register op datum?			NVT
<b>Omgewings beskouings</b>			
Is die diesel/olie store omhein en onder dak?		NEE	
Is daar enige olie of diesel gemors op die terrein?		NEE	
Is al die voorbrande in plek en word dit onderhou?		NEE	
Is daar enige tekens van vure rondom die terrein?	JA		

Is daar onaangename reuk op die terrein?	JA		
Is daar tekens van onaanvaarbare stof op die terrein?	JA		
<b>Databasis oudit</b>			
Is daar 'n sisteem waar die relevante dokumentasie gestoor word in plek?		NEE	
Is al die dokumente op datum?		NEE	
Is die rekord van interne dokumente op datum?		NEE	
Is die meteorologiese rekords op datum?		NEE	
Is daar dokumentasie van voorvalle en ongelukke wat aangemeld is en opgetree is teenwoordig?		NEE	
Is die brandblussers gedien en in 'n goeie toestand?		NEE	
Word die weeklikse/maandelikse lysse voltooi en gebere by die terrein se bestuurder?		NEE	
Is daar enige klagtes in die geregistreer in die boek vir die I&AP's?			NVT
Is die klagtes op geneem en opgelos?			NVT
Word daar grond water monitering gedoen en is die rekords beskikbaar vir ondersoek?		NEE	
Is daar enige instruksies/werkings wat verander is deur die klient?			NVT
Word daar na die stortings terrein ontwerp en finale profiel veragzaam?	JA		
Is daar enige dokumentasie wat vanaf die Departement ontvang is teenwoordig en is dit beskikbaar vir ondersoek?		NEE	
Is daar enige sekondere geheue wat gemaak word en word dit op 'n ander plek as die terrein gestoor?		NEE	
<b>Bestuursoudit</b>			
Is die bestuurder aangestel as 'n 16(2) verteenwoordiger?		NEE	
Is die bestuurder bekend met die vereistes van die bedryfsplan?		NEE	
Is die bestuurder in beheer van die terrein?	JA		
Hou die bestuurder die verantwoordelike persone ingelig oor die terrein ontwikkelings?	JA		
Is die bestuurder pro-aktief in die herkenning en oplossing van probleme?	JA		
Is die area bestuurder in beheer van die terrein en word hy op datum gehou?		NEE	
Word die terrein se NCR's en CAR's effektief mee gewerk?		NEE	
Sorg die verantwoordelike persoon dat alle dokumente op datum gehou word?		NEE	
Rapporteer die verantwoordelike persoon gereeld aan die werkings direkteur gaande die terrein?		NEE	
Word die verslaggewing in opskrif gedoen?		NEE	
Besoek die area bestuurder gereeld die terrein?		NEE	
Is daar enige beperkings wat die vir die maatskappy moeilik maak om volgens die bedryfsplan te werk?			NVT