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|  Eskom | Instruction | Western Cape Operating Unit |
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1. Introduction

Eskom Distribution WCOU supports government's commitment to sound environmental management in order to protect South Africa's environment as defined in the National Environmental Management Act, Act No. 62 of 2008. One of the overarching principles of this Act is that *pollution and degradation of the environment are avoided, where they cannot altogether be avoided, are minimised and remedied.*

Due to the nature of mineral insulating oil used in Eskom equipment's, effective oil management is required to ensure the prevention of pollution and ecological degradation. Aspects such as usage, handling, storage, transport, disposal and general control of this commodity needs careful management.

Insulating oil and other related hydrocarbon and synthetic compounds can pose a serious pollution problem when released into the environment. Oil can have cumulative effects; particularly on water bodies since one litre of oil has the potential to contaminate in excess of one million litres of water. Oil may rapidly penetrate certain soil types, which may lead to ecological, soil, groundwater and surface water contamination.

Oil spill management has business, legal, financial, social and environmental implications. The clean-up operations may themselves be costly and result in harm to terrestrial and coastal habitats. As a world-class electricity utility, Eskom Distribution WCOU must manage oil spills in a responsible manner through absolute duty of care, remediation of environmental damage and proper disposal.

According to section 28 (1) of NEMA, *duty of care and remediation of environmental damage, state that every person who cause, has caused or may significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing and recurring.*

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

This procedure aims to standardise the way in which oil spills are handled and managed in Eskom Distribution Western Cape Operating Unit. It includes the notification, assessment, investigation, and reporting and response action following an oil spill. The procedure set the minimum requirements for its effective management. It does not relieve any person in any way from any of his/her legal responsibilities in respect of environmentally sound management as set out in relevant National, Provincial and Local legislation.

Annexes are included (not included in 32-95) to enable correct notification, assessment, recording and investigation of oil spill incidents involving Eskom equipment's.

2.1.2 Applicability

This procedure is applicable to all Eskom Distribution Western Cape Operating Unit employees and contractors who in the event of their daily activities may cause or come across an oil spill.

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2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

International document(s):

Stockholm Convention

South African National document(s):

SANS 290:2007 Mineral Insulating Oils - Management of Polychlorinated Biphenyls (PCBs)

SANS 10231:2006 Transport of dangerous goods - Operational requirements for road vehicles

National Environmental Management Act, 107 of 1998

National Environmental Management: Waste Act

Hazardous Substances Act, No.15 of 1973)

Occupational Health and Safety Act, 1993 (Act 85 of 1993)

Eskom National document(s):

PL 32-727: Safety, Health, Environment, and Quality (SHEQ) policy

EPC 32-245: Eskom Waste Management Standard

EPC 32-95: Procedure for the Effective Management of Safety, Health and Environmental related Incidents

EPC 32-249: Environmental Liaison Committee (ELC) Performance Indicator Reporting Procedure

EPC 32-1034: Eskom Procurement and Supply Management Procedure

EST 32-1135: Polychlorinated Biphenyl (PCB) Phase-out Standard

Eskom Divisional documents(s):

DPC 34 – 2200: Distribution Procedure – Part 21: Effective Management of Safety, Health and Environmental Incidents within the Distribution Division

Eskom Western Cape Operating Unit document(s):

WPC007: Environmental Management System in Accordance with ISO14001

WPC020: Environmental Emergency Preparedness and Response Procedure

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2.3 Definitions

| Definition | Explanation |
|---|--|
| Containment | The prevention of dispersal; stop the spread of a spill. |
| Clean up | The act of remediation, this may include soil excavation, bio remediation, solvent soil wash, land farming or electrochemical treatment. |
| Disposal | It is a burial, deposit, discharge, dumping, placing or release of waste into, or onto, a Registered Landfill Site |
| Explosion | A situation which occurs due to the rupture of the electrical equipment as a result of an electrical fault. |
| Hydrocarbon | It is an organic compound consisting of hydrogen and carbon. It has both saturated and unsaturated hydrocarbon consisting of derivatives such as oil, paraffin, wax, liquids, solids, gas and mineral oil. |
| Leak/Drip | A continuous dripping that will result in pooling of oil that will require corrective action as the electrical equipment will have to be topped up. |
| Oil Spill | It is any amount of oil no longer present in its normal container or equipment because of leakage or an explosion, vandalism, nature or any other cause. |
| Remediation | A method of clean up that will ensure a minimum hydrocarbon or synthetic oil presence of 1000ppm or (0, 1%) above the background level. |
| Weep | Where no free running oil is visible but the area is damp with oil. It will be an area where dust is accumulating but no effective loss of oil is evident. |
| Emergency Incident | Any unplanned event, of such nature or magnitude that cannot be coped with as a normal daily activity of the Eskom unit ,which results, or could result, in danger to the health or safety of persons, damage to property, equipment or the environment. |
| PCB | Polychlorinated biphenyls are synthetic liquids with exceptionally high chemical and thermal stability. |
| Environmental Emergency Response Procedure | An immediate threat to human life, health and environment |

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2.4 Abbreviations

| Abbreviation | Explanation |
|--------------|---|
| CNC | Customer Network Centre |
| DEA | Department of Environmental Affairs |
| DWA | Department of Water Affairs |
| EERP | Environmental Emergency Response Plan |
| EM | SHEQS Environmental Management |
| H:H | High Hazard |
| NWA | National Water Act |
| NEMA | National Environmental Management Act |
| OHD | Occupational Health Dashboard |
| PCB | Polychlorinated biphenyl |
| PPB | parts per billion |
| PPM | parts per million |
| SAP EHS | System Application and Products Environmental Health and Safety |
| WCOU | Western Operating Unit |
| RCAT | Root Cause Analysis Technique |
| ELC | Environmental Liaison Committee |
| LC | Legal Contravention |
| INO | Initial Notification Occurrence |

2.5 Roles and Responsibilities

- 2.5.1 Plant Management:** It shall be accountable for managing oil spills for all transformers that are in commission, strategic spares and mobile substations under storage.
- 2.5.2 Project Execution:** It shall be responsible for all managing oil spills for all pre-commissioned transformers for projects.
- 2.5.3 Asset Disposal Management:** It is responsible for managing oil spills for decommissioned transformers and during the process of disposal.
- 2.5.4 Warehouse and Logistics:** It shall be responsible for managing oil spills for storage transformers and in transit units until handed over to the respective custodian.
- 2.5.5 Zone Management:** It shall be responsible for inspection, preventing, mitigating, reporting any deviations, oil spills, clean-up, financial implications of cleaning up, remediation/rehabilitation and disposal of oil related waste for all in-commissioned transformers.

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2.5.6 Land Development: It shall be responsible for advising on oil spills that occurs during projects construction and other areas of business operation where it is directly involved. It is also responsible for facilitating and assisting with an investigation should an oil spill incident lead to legal contravention, especially for projects.

2.5.7 Environmental Management SHEQS: It shall be responsible for advising the business on the best practices to prevent and manage oil spills, capture incidents on SAP EHS and distribute the generated Flash Reports to the business. It is responsible for initiating investigations of an oil spill whether it lead to an environmental event, legal contravention or legal contravention affecting OHD.

2.6 Related/Supporting Documents

This document supersedes Oil Spill Clean Up and Rehabilitation standard reference number ESKASABT0.

3. Requirements

Hydrocarbon spills are classified as being **hazardous to the health and well-being of humans and the environment**. Impacts can either be immediate or accumulate over a period of time. Oil spills can be categorised by volume, age, source, property and priority. However, immediate identification and response actions are essential to **clean-up and prevent all spills**.

3.1 Prevention and Mitigation

Eskom has put procedures and control measures in place to prevent and minimize spillages as far as possible. However, there are spillages that cannot be prevented as they are beyond Eskom control i.e. vandalism, cable stealing, faulty transformer and natural causes such as lightening. However there are some **practical prevention measures that** can be implemented:

Handling:

- Conduct regular equipment checks to detect oil spills
- Ensure oil containing materials are handled properly and with care when loading and offloading

Mitigation:

- Do not store oil containing equipment or material near water resources or storm water drains
- Label contents accordingly, e.g. PCB or non-PCB
- Have an **oil spill kit on hand in the event of an oil spill**, e.g. in the store, substation or in the Light Duty Vehicle or truck.

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- **Drip trays must always be used** if the oil containing equipment has the potential to leak or are leaking oil. Conduct **regular check-ups and inspections** in and around the substations, pole-mounted transformers and any other areas with oil containing equipment.

Containment

- Booms are floating, physical barriers that made of plastic, absorbent or impermeable, metal or other material that can be used to slow the spread of oil and keep it contained.
- Use the booms to deflect oil away from sensitive environment. This can be used across narrow entrances to storm-water inlet, rivers, stream, wetland and marshland – to prevent oil from reaching this.
- Other oil spill containment can be used such as Flexible and other available Pallets. Large oil spill container can also be used to contain oil in the event of oil spill

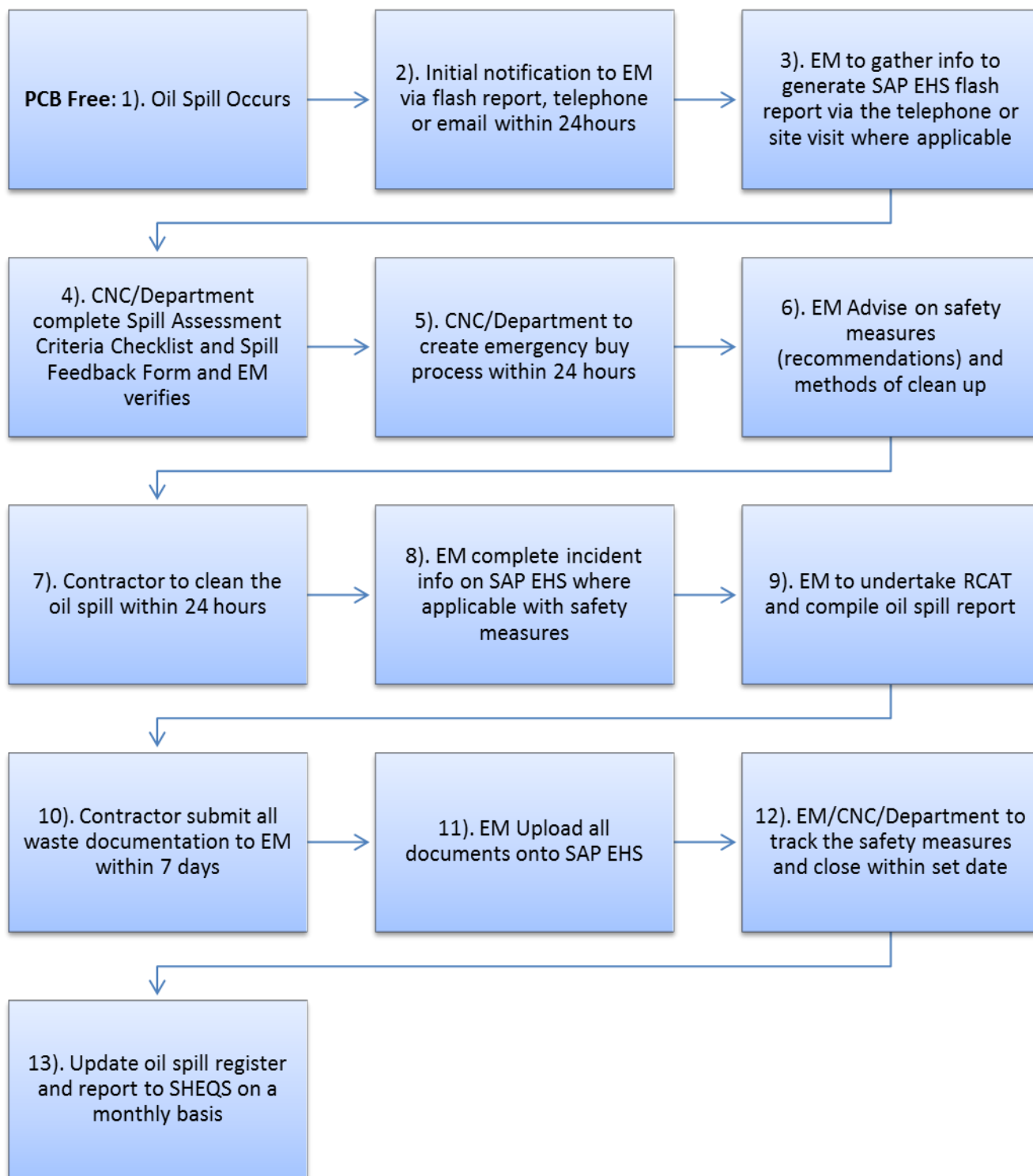
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3.2 Notification, Reporting, Investigation and Recommendation of an Oil Spill

3.2.1 How to deal with a **PCB free oil spill**

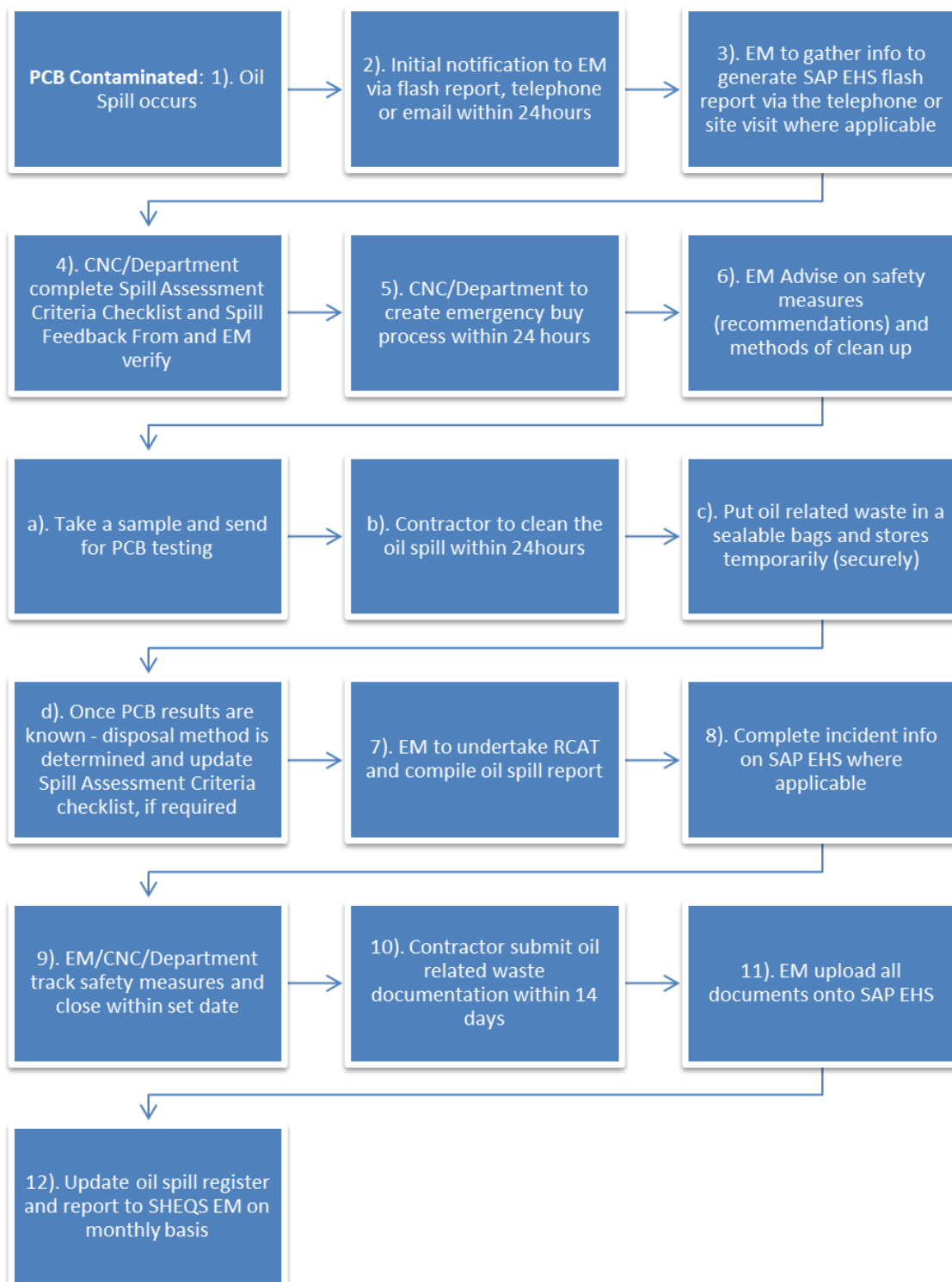


***Note: If the step is not applicable skip to the next one.**

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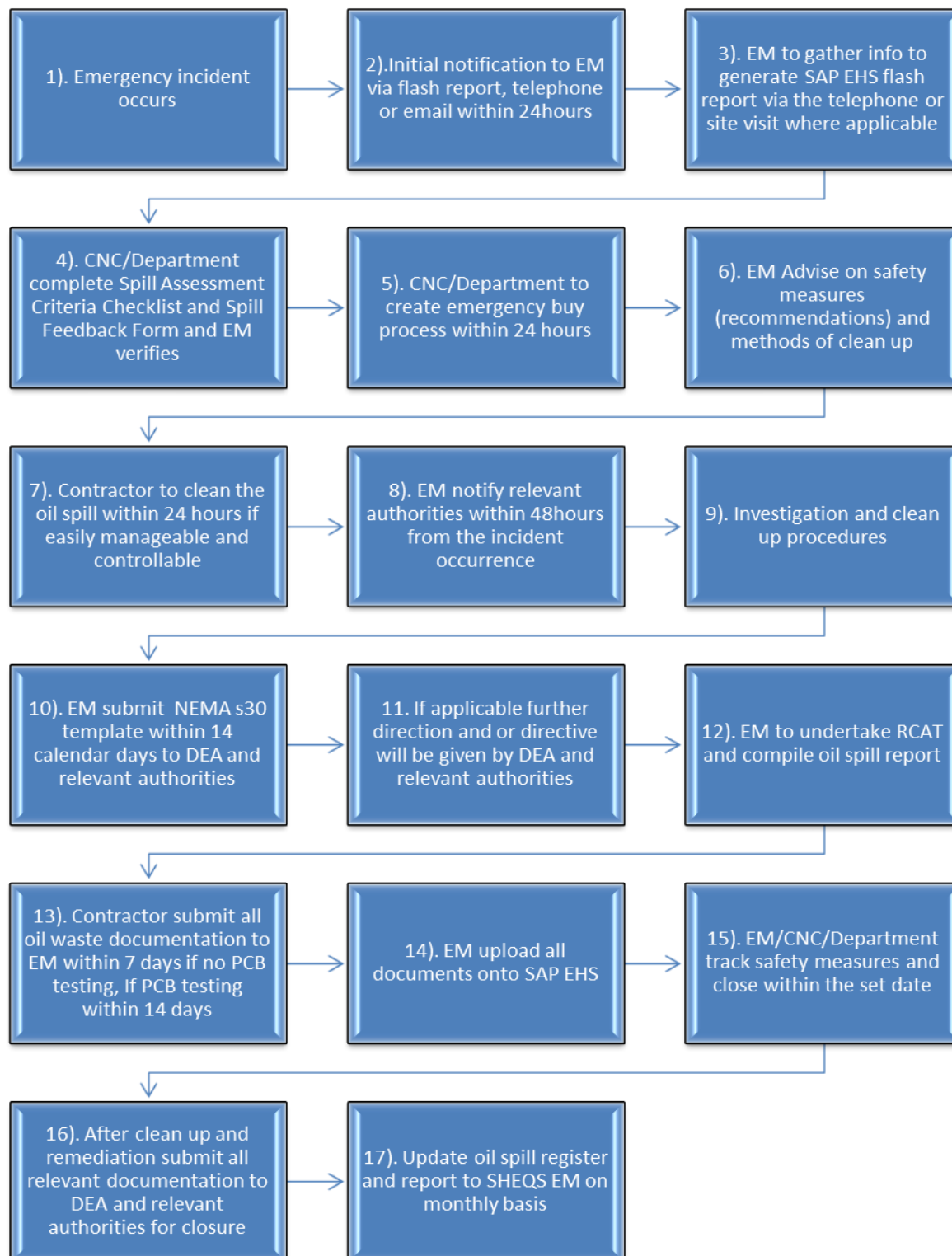
3.2.2 How to deal with a **PCB Contaminated** Oil Spill

***Note: If the step is not applicable skip to the next one.**

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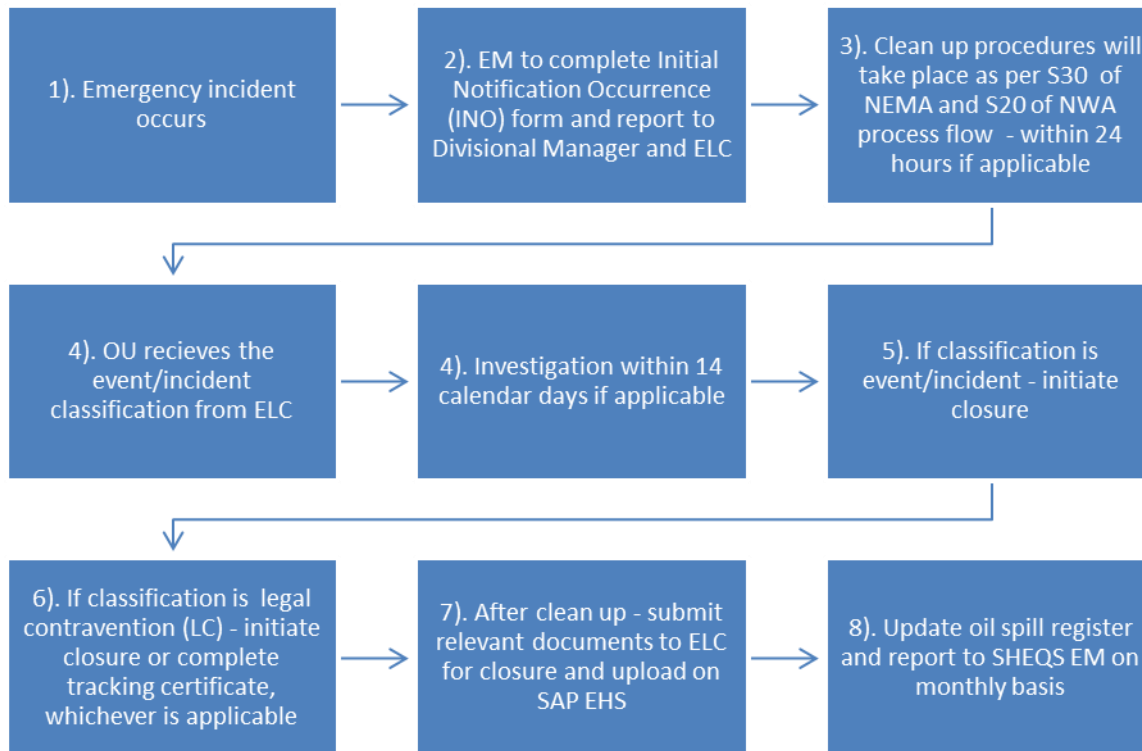
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3.2.3 Section 30 of NEMA and Section 20 of NWA emergency procedure to deal with oil spill**CONTROLLED DISCLOSURE**

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3.2.4 How to deal with oil spill according to ELC Procedure - EM is responsible for this process (for further detailed process see the procedure)



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3.3 Disposal

- All oil contaminated material, absorbents, soil and vegetation affected and used during the clean-up process shall be disposed of at a **registered Hazardous Waste Disposal Facility**.
- Ensure that the following documentation are obtained from the waste disposal facility after disposal: **waste manifest, safety disposal certificate, weighbridge certificate, letter and or any other documentation related to the disposal**.

3.4 Remediation (Bio-remediation)/Rehabilitation

- Oil remediation chemicals should be kept at the CNC in the event of an oil spill.
- Bio-remediation may be used by approved Eskom oil spill Contractors to ensure total remediation of a non-PCB contaminated site.
- In the event that bio-remediation is performed, the following shall be made available:
 - Dated verification letter
 - Product details
 - All laboratory reports if applicable
 - Hydrocarbon quantities
 - Monitoring reports e.g. photos
 - Final invoice by the contractor

3.5 PCB Testing

- If the PCB levels of the oil are not known through prior testing, the spill shall be treated as a PCB spill, until such time that analysis proves otherwise.
- The oil spill contractor will carry out the PCB test and provide results to CNC/Department and or Environmental Management within 14 days.
- The PCB testing will be conducted as per SANS290: 2007 Mineral Insulating Oils - management of polychlorinated biphenyls (PCBs).

3.6 Financial Implications and Responsibility

- The **supervisor or manager in control of the oil containing asset shall be responsible for the correct management of the oil spill, including financial costs of clean up.**
- The responsible manager shall follow EPC 32-1034: Eskom Procurement and Supply Management Procedure process.

Some examples of responsible parties:

- Oil spill at a new substation/**line construction site - Project Coordinator at Project Execution**
- Lightning strike pole-mounted transformer - Senior Supervisor at the relevant CNC

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3.7 Oil Spill Kits

- It is mandatory for all Eskom sites and vehicles to have a recommended basic oil spill kit. This will include those handling, transporting and maintaining equipment or material which contains oil.
- The oil spill kits should be replenished regularly especially after usage.
- The oil spill kit should meet the basic requirements for the volume of oil that is being dealt with. For a detailed list of the contents of the basic oil spill kit see Annexure 5.

3.8 Oil Storage

- All facilities where oil is used or stored must have the necessary liquid-tight flooring and bund walls to prevent land and water contamination.
- Oil holding facilities (bunds or sumps) and oil dams must be drained regularly, more frequently in the event of heavy rains to ensure that the holding facility is able to cope with overflows.
- Ensure that all transformers are stored in a bund wall to avoid leakages into or onto the environment (wetland or water drains).
- Damaged transformers that may leak should be stored in a suitable bunded area or drip tray.
- The oil separators must be maintained to ensure that there is no contamination of the storm water drains.
- Stored oil containing equipment must be labelled accordingly. Ensure that the area has adequate ventilation and proper fire-fighting equipment on hand.

3.9 Oil spill clean and remediation contractors

- WCOU has a comprehensive list of approved oil spill contractors that should be used in the event of major oil spills (or those threatening sensitive natural environment regardless of the amount).
- When and where clean-up is required, the CNC/Department must make use of the list and contact the nearest oil spill contractor (all paperwork needs to be in place before calling the nearest oil spill contractor). See Annexure 3 for the list of oil spill contractors.
- After the oil spill has been cleaned up, where contractor is used the onus lies on the Eskom to ensure that the required information is correctly filled out on the waste manifest.
- **The contractor shall provide the following documents;**
 - A detailed and comprehensive oil spill report shall be compiled

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- It must be submitted to the responsible person as part of the investigation report i.e. Environmental Management, Senior Supervisor, Departmental Head or Manager.
- The **contractor** should produce a safe disposal certificate, weigh-bridge certificate and final invoice to the responsible person.
- If the responsible person is not an Environmental Practitioner, all copies must be submitted Environmental Management Department.
- The relevant CNC/Department shall be responsible for the account payable.

3.10 Transportation

- All **damaged transformers transported** from the CNC to the Warehouse must be drained **on site prior to transportation.**
- All transformers that are to be transported must be **properly secured.**
- The oil containing tools or equipment must be transported with the correct mode of transport. Ensure that the oil containing equipment's are **sealed properly.**
- The driver of the vehicle to adhere to the **maximum traveling speed limit** when transporting the oil containing equipment. The driver to adhere to **SANS 10231:2006 Transport of dangerous goods - Operational requirements for road vehicles**
- The driver of the vehicle to have **nominal empty packaging certificate as per SANS 10231:2006.**
- The **vehicles check sheet** (or paperwork) including the **emergency plan with contact details** must be in the vehicle transporting the equipment.
- Oil related waste will be transported in accordance with the obligations imposed on the **"operator" and "driver" by GN R 225 to the National Road Traffic Act of 1996,** including the associated **SANS 10228,10229,10231,10406 and 10206 Codes of Practice.**
- Contractors transporting hazardous waste will be required to provide Eskom with the necessary documents as a proof that they are permitted to handle and transport the waste.

3.11 Capturing of Oil Spill Incidents

- Environmental Management will capture all oil spills on the OUs Oil Spill register monthly.
- The monthly Oil Spill Register will be filed and maintained by Environmental Management. It will contain the following information as a minimum:
 - a) Date of spill
 - b) Date of clean-up
 - c) Brief description of the incident
 - d) Event type
 - e) SAP EHS incident reference number
 - f) Status on SAP EHS
 - g) Total safety measures
 - h) Total safety measures open vs closed

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- i) Classification/Oil Spill Assessment rating (value)
- j) Location of spill (Network, substation, CNC or Sector Area)
- k) Relevant legislation affected e.g. NEMA, NWA
- l) Root cause/Repeat incidents
- m) Rating in terms of time taken to clean up, e.g. 100% if clean-up occurred within 30 days of incident, 90% if clean-up occurred within 60 days, etc.
- See Annexure 6 for the oil spill register form.

3.12 EM must capture the following details on SAP EHS

- a) Capture all oil spills on SAP EHS within 24 hours
- b) Generate sap flash and distribute to the business within 24 hours
- c) Capture additional details after the clean such as event classification, upload photos, oil spill report and any other information such as safe disposal certificate, waste manifest, weigh-bridge report and or contractors report.
- d) Capture safety measures (recommendations) and assign the relevant Senior Supervisor/Departmental Manager to action.
- e) Safety measures to be closed on SAP EHS as soon as possible but not longer than 3 months (calendar days)
- f) Any other additional documentation/information after the closure of the safety measure/s to be captured on SAP EHS

3.13 Training

- All personnel preventing, containing, handling, transporting, disposing and in general control of oil activities on a regular basis shall attend an approved Oil Spill Management Training.
- Supervisors must ensure that relevant staff is appropriately trained to manage the identified oil related risk adequately.
- The oil spill training certificate shall be valid for 5 years and refresher or practical on job training may be provided where is deemed necessary.

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4. Acceptance

This document has been seen and accepted by:

| Name | Designation |
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| A October | SHEQS Environmental Manager |
| C du Toit | Asset Disposal Officer |
| J van der Westhuizen | Portfolio Manager |
| K Mahunonyane | Portfolio Manager |
| Bongani Mandla | Garden Route Sector Manager |
| Keineetse Rankunyane | Khayelitsha Sector Manager |
| Richard Mali | Helderberg Sector Manager |
| Bruce Titus | Tableview Sector Manager |
| Clayton Pillay | Boland Sector Manager |
| Beryl Swano | West Coast Sector Manager |
| Clayton Pillay | Overberg Sector Manager |

5. Revisions

| Date | Rev. | Compiler | Remarks |
|---------------|------|------------|----------------|
| February 2014 | 0 | MD Matjuda | Original Issue |
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Annexure 1: Oil Spill Assessment (240- 47176039)

Using your judgment and facts available, allocate relevant points (1, 3 or 5) to each of the following and add together. The accumulative score will dictate the appropriate corrective action.

| CONDITION | | 1 | 3 | 5 |
|---|--|---|---|---|
| Source of the spill | Weep | | Drip/Leak | Explosion/Incident |
| Age of spill | Historic | | Happened recently - spill still moist | Happened within last 24 hours |
| Threat to any water body | No threat | | Threat with rain | Access to waterway |
| Containment | Leak is minor -can be controlled, contained and plugged with oil spill kit | | Leak is moderate - cannot be successfully managed with spill kit. | Leak is serious, containment is impossible |
| Life threatening | Not at all | | Moderate (Environmental or health risk only) | Serious (Explosion, fire, health and major environmental) |
| Weather conditions | Good weather and will prolong till spill is cleared | | Moderate, but may change suddenly to weather conditions which will hamper containment | Raining |
| Properties affected | None | | On-site (Only Eskom's property is affected) | Off-site (Eskom's neighbouring properties and public roads) ≥25 points |
| Public relations threat | Small | | Medium | Large |
| Soil types | Clay or compacted ground | | Loose or loam soil | Sandy soil and Gravel |
| Traffic implications | Not on any road | | Public road | Road closed |
| PCB presence* | None | | Less than 50 ppm in the oil | Over 50 ppm in the oil will automatically get ≥25 points |
| TOTAL SCORE <input type="text"/> | SUB TOTAL | | SUB TOTAL | SUB TOTAL |

SIGNATURE: _____ NAME: _____ DATE: _____

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| Minor spill ≤ 12 points | Moderate Spill 13 – 24 points | Major Spill ≥ 25 points |
|--|---|--|
| Clean-up must be performed and a report issued to the relevant Environmental coordinator | Contain and call in the assistance of the Environmental coordinator | Contain, call on contracted emergency response team and call Environmental coordinator |

*If the PCB levels of the oil are not known through prior testing, the spill will be treated as a PCB spill, until such time that analysis proves otherwise.

Annexure 2: Oil Spill Feedback Form (240 - 47176095)

Please attach additional notes if necessary or if the space supplied is not sufficient

| | | |
|----|---|--|
| 1. | Give a short description of the oil spill incident. | |
| 2. | Give a short description on the following: -What was done immediately after the spill was discovered -Could it be contained and how -Was an emergency team involved and was it a contracted team -Was free oil evident, how was this removed and what happened to this oil -Has final remediation begun and what is being done -Was PCB test results available and during which phase was this established? | |
| 3. | Which role did you fulfil within the process? | |
| 4. | How many litres of oil were involved? | |
| 5. | How big was the area that was polluted? | |
| 6. | Did any water pollution occur in the following areas? -trap dam -river -dam (water supply) -streams -underground | |
| 7. | How would you describe the incident – major or minor? | |

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| | | |
|-----|--|--|
| 8. | Were there any other hazards or issues that needed attention? | |
| 9. | What was the weather conditions like? -wind -temperature -precipitation e.g. rain or fog | |
| 10. | What were the causes - please explain? -human -technical -physical -organizational | |
| 11. | What was affected? -installation - describe -establishment -off-site local -off site regional | |
| 12. | How many people were affected? -staff -locals Describe the possible risks. | |
| 13. | What were the ecological effects? -pollution/contamination/damage -residential area -common wild fauna/flora -water catchment areas -land -marine or other fresh water | |
| 14. | What were the material losses (in Rands)? -material (costs to Eskom) -response -clean-up -restoration | |
| 15. | Was any community life disrupted? | |

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| | | |
|-----|--|--|
| 16. | Was any utility such as electricity, sewage or water interrupted? | |
| 17. | Was there significant public concern? | |
| 18. | Who was notified within Eskom? | |
| 19. | Who was notified outside of Eskom? | |
| 20. | What lessons were learnt from this? -measures to prevent recurrence -measures to mitigate consequences -useful references | |
| 21. | Did you experience a lack of: -guidance -expertise -standards -directives -reference material -Eskom assistance -Outside assistance | |
| 22. | Any recommendations | |
| 23. | Any other comments | |

NAME: _____

SIGNATURE: _____

DATE: _____

SITE: _____

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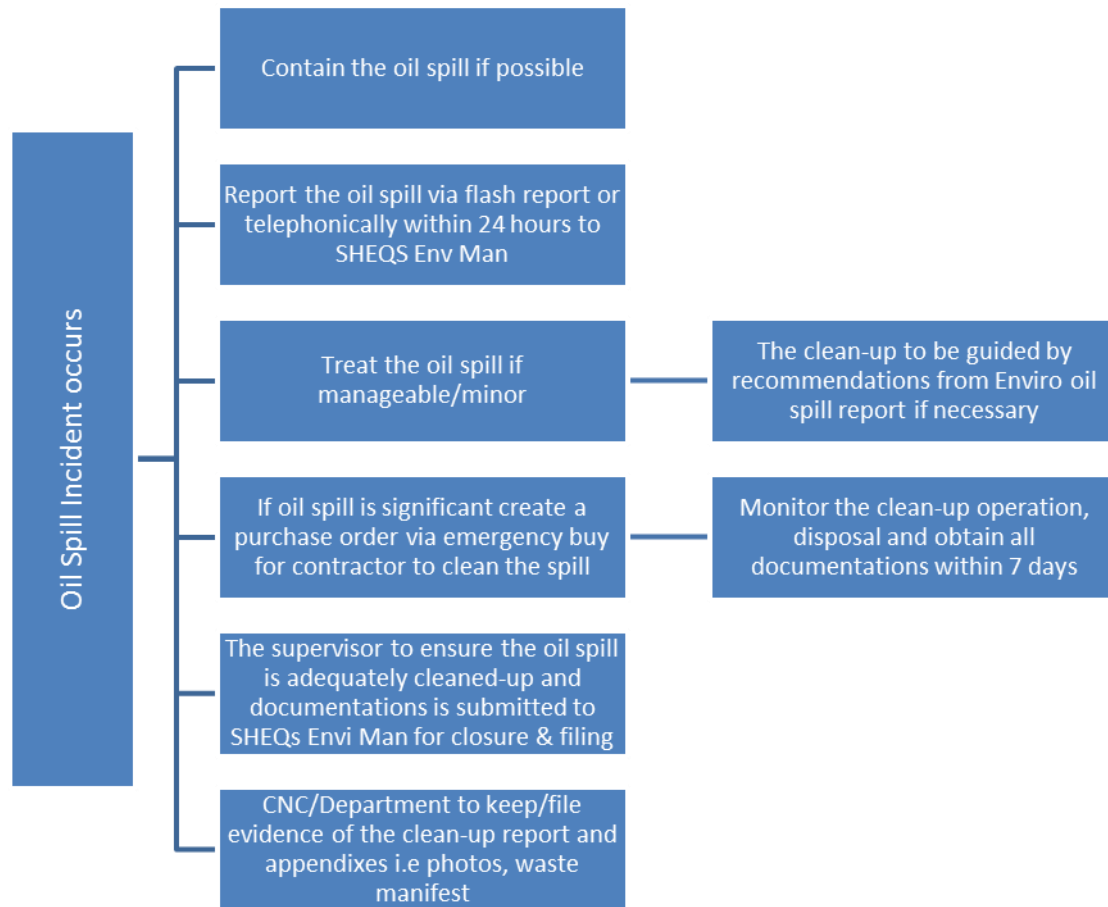
Annexure 3: Eskom Approved oil spill vendor list

| Oil Management Contractor | Contact details |
|---|---|
| Enviroserve Waste Management | 24 Hour spill response industrial cleaning, spillkits, Dept. LAB |
| | Contact: Piet Joubert |
| | (T) 021 9518420 |
| | (M) 082 447 4447 |
| | Contact: Mr Whitehead |
| | (T) 021 9518420 |
| | (M) 082 7796290 |
| Drizit Environmental | Oil spill management or clean-ups. |
| | Contact: Dave Stone (Manager) |
| | (T) 021 510 7010 |
| | (M) 083 448 8366 |
| | (F) 021 510 6597 |
| | Contact: Paul Nel |
| | (T) 021 510 7010 |
| | (M) 083 281 1691 |
| 24 hour spill control (Under Drizit) | Oil spill management |
| | Contact: |
| | (T) 021 674 7277 |
| | (M) 0766422385 |
| Millennium Waste Management | Oilspill management |
| | Contact: |
| | (T) 021 951 8420 |
| Pineland Environmental Technology | Provide oils spill demonstration or training and oil spill clean ups |
| | Contact: Chris Davidson |
| | (T) 021 531 3749 |
| | (M)082 464 1074 |

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Annexure 4: Customer Network Centre/Department's Responsibilities after an oil spill incident**Annexure 5: List of the contents of the Basic Oil spill kit**

1. 1 x 100l Biozorb Peat Fibre
2. 2 x 2m Oilsep Socks
3. 1 x 4m Oilsep Boom
4. 2 x Oilsep Cushions
5. 20 x 200g Oil Absorbent Pads
6. 1 x Pair Gloves & Dust Mask
7. 1 x Pair Anti-Mist Goggles
8. 1 x Spark proof Shovel & Broom
9. 5 x Heavy Duty Disposal Bags & Ties
10. 1 x Instruction Sheet

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Annexure 6: Western Cape Operating Unit Oil Spill Register Template

| No. | Incident Date | Date Reported | Date Mitigated | Location | Brief Description | Weight | Roll Ave | Relevant Law | Type of Incident | Root Cause | Repeat Incident | Classification | SAP EHS Ref no | Status on SAP EHS | Total no of safety measures | Total open | % overdue safety measures of env incidents on SAP EHS | Reason/ Comments |
|------------------|---------------|------------------------------|----------------|----------|-------------------|--|----------|--------------|------------------|------------|-----------------|----------------|----------------|-------------------|-----------------------------|------------|---|------------------|
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| NB: Rules | | Target 90% closed < 2 months | | | | Weighting: 0-30=100; 31-60=90; 61-90=80;>91=60 | | | | | | | | | | | | |

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