

DC29/0015/2017

**THE PROPOSED RESIDENTIAL DEVELOPMENT ON THE
REMAINDER OF PORTION 18 OF THE FARM LOT 69 NO.
917 OF BALLITO**

**DRAFT ENVIRONMENTAL MANAGEMENT
PROGRAMME**

**PREPARED IN TERMS OF SECTIONS 27 - 36
OF REGULATION R543 OF
THE NATIONAL ENVIRONMENT MANAGEMENT ACT
ACT 107 OF 1989**



February 2014

i. DECLARATION

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This information is based on information supplied by the client and his appointed specialists. All information is given in good faith. All effort was made to request and obtain pertinent information for this assessment. Indiflora cc Environmental Services cannot be held accountable or accept responsibility for any inaccuracies or discrepancies in this information or for the disclosure or review of information which has not been presented to the consultant.

ii.

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ACRONYMS

DEA	Department of Environmental Affairs	EMP	Environmental Management Plan
EA	Environmental Authorisation	HOA	Home Owner’s Association
ECO	Environmental Control Officer		
EIA	Environmental Impact Assessment		

1.0 INTRODUCTION

Hulett Development Company is expecting Environmental Authorisation (EA) (Ref no: DC29/0015/2017) by the Department of Economic Development, Tourism and Environmental Affairs (EDTEA) to construct the proposed Residential Development and associated infrastructure.

2.0 BACKGROUND

The developer, Hulett Development Company, is proposing to develop a 36.93 hectare residential estate, including:

- 94 free hold residential sites ranging in size between 1084m² and 2349m²,
- 1 free hold residential site of 6994m²,
- 1 High Density Development site (30 Units/Ha = 88 Units) where three stories will be allowed on 28397m²,
- 3 Medium Density Development sites where 2 stories be allowed, in total 3.258 Ha:
 - 1 Medium Development (15 Units/Ha = 12 Units)
 - 1 Medium Development (15 Units/Ha = 20 Units)
 - 1 Medium Development 15 Units/Ha = 16 Units)
- A Mixed Use Development Site (8980m²) for multi-purpose retail and office
- Public Open Space inclusive of wetland (6.866 hectares)
- Green Belt of 2.249 hectares
- A Clubhouse facility site (4320m²)
- A site for a reservoir (916m²)
- Private roads

All on the remainder of portion 18 Farm lot 69. No 917.

3.0 ROLE PLAYERS AND RESPONSIBILITIES

3.1 THE DEVELOPER:

Company: Hulett Development Company

Contact Persons: Mr I. Deetlefs / Mr G. Botha
Postal Address: P O Box 112,
Salt Rock,
4391
Tel Number: 082 801 6492,
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RESPONSIBILITIES: To ensure the development comply with the requirements of the Environmental Management Act.

3.2 ENVIRONMENTAL CONTROL OFFICER:

RESPONSIBILITY: It is the responsibility of the ECO to oversee all environmental aspects including compliance monitoring and reporting, rehabilitation implementation and landscaping. The ECO should environmentally induct the contractor's leadership into the contents of then EMPr. Conduct monthly audit inspections. Draft a monthly compliance monitoring report to be sent to the client, the contractor, the local and district municipality and the EDTEA.

3.3 Compliance Reports

a) There will be a monthly compliance report which will report on the monitoring compliance during that month. Any aspects of non – compliance, complaints, issues or problems will be highlighted in these reports which will be forwarded to the Department of Economic Development, Tourism and Environment Affairs, iLembe District Municipality, KwaDukuza Municipality Environment Division, The Client and the Contractor.

3.4. Penalty clause for non - compliance

a) Penalties may be imposed on contractors for non – compliance by the developer. These penalties would include:

- The rectification of all transgressions or damage at the contractor's expense.
- The cessation of work until a matter has been investigated, reported on and rectified.
- The reporting of a transgression to the relevant authorities, which may lead to their prosecution in terms of the relevant legislation.
- The Operator has a schedule of fines for non-compliance during the operational phase and they are to be issued after prior warning of non-compliance was issued or issued immediately if the situation warrants it.

4.0 THE STRUCTURE AND CONTENT OF THIS EMPr

The following sections of this EMPr deal with a particular environmental management component associated with the construction project, as follows:

- A. Camp site setup and Construction Phase
- B. Post-construction Phase
- C. Operational Phase

5.0 SIGNIFICANT OR SENSITIVE FEATURES OF THE SITE

Significant or sensitive features are:

1. The wetland on site.
2. The steep gradient of the land in places and the erodibility of the soils.
3. The management of storm water run-off to prevent erosion.
4. The prevention or minimizing of damage to existing indigenous vegetation that does occur on the site.
5. Impacting on the traffic

6.0 SECTION A: SITE ESTABLISHMENT AND CONSTRUCTION PHASE

6.1. Legislation and Permits

The Site owner, Developer, Service Providers, Contractors and Principal Agent should comply with the relevant local and national legislation including:

1. Environment Conservation Act No 73 of 1989.
2. National Environment Management Act No 107 of 1989
3. National Environment Management Waste Act No. 59 of 2008
4. National Water Act No 36 of 1998
5. Water Services Act No 108 of 1997
6. Forestry Act No 84 of 1998
7. Occupational Health and Safety Act No 85 of 1993
8. National Building Regulations and Building Standards Act No 103 of 1977
9. South African Heritage Resources Act No 25 of 1999
10. Relevant regulations as promulgated under the Standards Act No 30 of 1982
11. Local regulations and by-laws.

6.2. Wetland Delineation

No	Activity	Responsible person	When
6.2.1.	The Wetland boundaries should be set out by a surveyor and marked with wooden bollards, standing 1.5 m above ground, painted bottle green and planted every 50m along the wetland boundary.	PA, Surveyor, C, ECO	Prior to any construction activity commencing.
6.3 Bush clearing			
No	Activity	Responsible person	When
6.3.1	<u>Alien plant removal</u>		
	a) All indigenous trees must be tagged and numbered and positioned on a layout plan when the surveyor does the initial tacky	Surveyor, PA, C, ECO	Prior to any construction commencing.

	<p>survey to be used for planning purposes.</p> <p>b) The alien plants are to be cut down.</p>	PA, C	During the construction phase
6.3.2.	Grassland rehabilitation		
No	Activity	Responsible person	When
	<p>a) The area within the wetland buffer need to be cleared of all alien species.</p> <p>b) The existing grass cover should be mowed with a tractor and slasher mower twice in summer and once in winter.</p>	Client, ECO	During the construction phase
6.4	Access to site		
6.4.1.	<u>Haulage Roads</u>		
No	Activity	Responsible person	When
	<p>a) Planned construction access is to be approved by the Principal Agent and ECO ahead of construction activities.</p> <p>b) Any access road must follow natural contours to reduce storm water erosion and erosion control measures implemented e.g. swales and berms.</p> <p>c) The road must have as little cut and fill as possible.</p> <p>d) No turning maneuvers on neighbouring land.</p> <p>e) Contractors shall construct formal drainage on the temporary haulage road in the form of side drains to prevent erosion and point source discharge of run off.</p>	<p>PA, C</p> <p>PA, C</p> <p>PA, C</p> <p>PA, C</p> <p>PA, C</p>	During site set-up and during construction

	<p>f) Scour check walls must be constructed in the side drains as follows: Gradient of Road/ Scour check spacing</p> <ul style="list-style-type: none"> - less than 4%: Not required. > 5% : 20m > 8% : 10m > 10% : 5m <p>g) Scour checks can be constructed from rocks available or Biddim soil curtains.</p> <p>h) The haulage road must allow for the natural flow of water where required.</p> <p>i) Diagonal berms are to be constructed across the haulage road to divert storm water onto the platforms to prevent over surface flow leading to scour.</p> <p>j) Use existing accesses until new access is complete.</p>	<p>PA, C</p> <p>PA, C</p> <p>PA, C</p> <p>PA, C</p> <p>PA, C</p>	<p>During site set-up and during construction</p>
6.5	Setting up a Construction Camp		
6.5.1	<u>Layout</u>		
No	Activity	Responsible person	When
	<p>a) Choice of the site for the Contractor's camp requires Principal Agent and the ECO's permission, and must take into account location of local neighbours. A site plan must be submitted to the Principal Agent for approval.</p> <p>b) The construction camp could comprise of:</p>	<p>C, PA, ECO</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
	- site office		During site

	<ul style="list-style-type: none"> - parking - ablution facilities - eating area - material storage - fuel storage tank <p>c) Avoid cut and fill where possible during the setting up of the construction camp.</p> <p>d) Adequate parking must be provided for site staff and visitors.</p> <p>e) The Contractor must attend to drainage of the camp site to avoid standing water and / or sheet erosion.</p> <p>f) Fence off the construction camp with Bonnox wire or weldmesh with lockable gates to make the camp secure when there is no staff present.</p> <p>g) The Contractor is to provide security service to protect the camp and its contents.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>set-up and during construction</p>
6.5.2	Ablutions		
No	Activity	Responsible person	When
	<p>a) Temporary chemical toilets must be provided by a company that has been approved by the Principal Agent. Such toilets must be available for all site staff, both at the campsite and the work-front as agreed by the Principle Agent. Toilets should be no closer than 50m from any water bodies. 1 Toilet for every 20 workers on site.</p>	<p>C, PA</p>	<p>During site set-up and during construction</p>

	<p>b) The Contractor must appoint a staff member to clean and sanitise the toilets daily over and above the servicing by the supplier, to ensure the toilets are as pleasant as possible to use to prevent the bush from being used.</p> <p>c) The construction of 'long drop" toilets are forbidden.</p> <p>d) Do not use open areas or the surrounding as toilet facilities.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.5.3	Provision for Waste Disposal		
No	Activity	Responsible person	When
	<p>a) Provide refuse bins and skips at convenient intervals for disposal of waste within the construction camp and the construction site. These must remain within demarcated areas and must be designed to prevent refuse from being blown out by wind. The skip rental company to be contracted to frequently service the skips (weekly or as the skips are full, whichever occurs first).</p> <p>b) Provide separate waste receptacles for different types of waste and encourage recycling.</p> <p>c) Littering on the site is forbidden. Clear the site of all litter at the end of each working day.</p> <p>d) Encourage recycling by providing separate receptacles for different types of waste and making sure that staff are aware of their uses.</p>	<p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>

6.5.4	Eating areas		
No	Activity	Responsible person	When
	a) Provide a safe, clean, shaded area where the staff can rest and eat.	C, PA	During site set-up and during construction
	b) Provide waste receptacles for their waste at this location.	C, PA	
6.6	Material Storage Areas		
6.6.1	<u>General Substances and Materials</u>		
	a) Choice of location for storage areas must take into account prevailing winds, distance to water bodies and general on – site topography. No storage permitted within the 1:100 year floodline.	C, PA C, PA C, PA	During site set-up and during construction
	b) Storage areas must be designated, demarcated and fenced.	C, PA C, PA	
	c) Secure storage areas so as to minimize the risk of crime. They should be safe from access by children and animals.	C, PA C, PA	
	d) Fire prevention facilities must be present at all storage facilities.	C, PA C, PA	
	e) Ensure material is stored on level ground.	C, PA	
	f) Do not stack palettes of material more than 2m high.		
	g) Secure stockpiles of pipes with stakes so that they cannot roll.		
	h) Protect stockpiles of soil, sand and stone from slumping by shoring up the base.		
	i) Stockpiles of topsoil to be left for an indeterminate period of time should be covered or vegetated to minimize dust.		
	j) Stockpiles must not be higher than 3m.		

	<p>e) Supply the ECO with a list of hazardous chemicals kept on site monthly</p> <p>f) Ensure the hazardous material is stored in a sealed bund with a capacity of 110% the volume stored.</p> <p>g) Provide mobile bunds e.g. drums cut in half to store hazardous chemical on site when in use on the work front.</p> <p>h) Be aware of the National Fuel Storage Requirements.</p>	<p>C, PA, ECO</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.7	Materials Management		
6.7.1	<u>Source of Materials</u>		
No	Activity	Responsible person	When
	<p>a) Prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners, etc.) and submit these to the Engineer prior to the commencement of any work.</p> <p>b) Obtain signed documents from suppliers of natural materials confirming that they have been obtained in a sustainable manner in compliance with the relevant legislation.</p> <p>c) Provide proof of authorization to utilize borrowed (mined), from the landowner / mineral rights owner and the Department of Minerals and Energy.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.7.2	<u>Risks Associated with Material on Site</u>		
No	Activity	Responsible person	When
	a) Stabilise and secure material stockpiles	C, P	

	<p>or stacks, such as pipes, to avoid collapse and possible injury to workers / local residents b) Store flammable materials as far as possible away from adjacent residents / businesses.</p> <p>c) Firefighting equipment should be present on site at all times as per OHSA</p> <p>d) Obstruction to driver's line of sight due to stockpiles and stacked materials must be avoided, especially at intersections and sharp corners</p> <p>e) Do not store materials in unstable or high risk areas, such as on steep slopes.</p> <p>f) Notify all I & AP's should be in advance of any known potential risks associated with the construction site and activities on it.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.7.3	Fuel storage		
No	Activity	Responsible person	When
	<p>a) Locate the tanks as far as possible away from all environmentally sensitive areas on or near the construction site, such as streams and wetland areas, steep slopes, unstable ground, or residential or other areas where the public occur.</p> <p>b) The tanks must have the appropriate hazard and no smoking signs erected on or near them.</p> <p>c) The tanks must be placed on an impermeable surface such as a concrete slab, and must be bunded by an</p>	<p>C, PA, ECO</p> <p>C</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>

	<p>impermeable wall, such as an internally plastered brick wall, of sufficient height to contain any spillages or tank failures.</p> <p>d) There must be a drip tray used below the filler cap of any machinery, containers or vehicles that is filled from the tanks. Any fuel on the drip tray must be placed in an appropriate container closed for disposal to a waste disposal site.</p> <p>e) The dispenser taps on the tanks should be locked when not in use.</p> <p>f) There must be adequate fire extinguishers located close by in an accessible position to the tanks.</p> <p>g) There must be a container (such as a steel drum) to collect any soil contaminated by spillages. This container should be labelled "contaminated soil", and this container must be emptied as required at a licensed waste disposal site.</p> <p>h) There must be a spill kit with a shovel, mop and rake with some absorbent material (such as Drizit or Peatsorb) and empty bags kept close to the tanks which should be used to mop up any spillage of fuel. This used absorbent material may be placed in the container for contaminated soil, and must also be disposed of to a licensed waste disposal site.</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>
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6.7.4 <u>Stockpile Management</u>			
No	Activity	Responsible person	When
	<p>a) Stockpiles not to obstruct natural water pathways.</p> <p>b) Stockpiles not to exceed 2m in height unless otherwise permitted by the engineer.</p> <p>c) Cover exposed stockpiles against wind or heavy rain, by vegetation, or sheeting, depending on the duration of the project. Stockpiles may be further protected by the construction of berms or low brick walls around their bases</p> <p>d) Keep stockpiles clear of weeds and alien vegetation growth by regular weeding.</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>
6.7.5 <u>Handling of Hazardous Materials</u>			
No	Activity	Responsible person	When
	<p>a) Mix concrete on a designated impermeable surface.</p> <p>b) No washing of concrete transporting vehicles on the site unless in a bunded area provided frequently cleared of cementitious waste.</p> <p>c) No washing of asphalt or any other bituminous transporting vehicles on site.</p> <p>d) No mixing of lime and other powders during excessively windy conditions.</p> <p>e) Store all vehicle maintenance and repair substances in sealed containers until they can be disposed of / removed from the site.</p> <p>f) Transport Hazardous substances /</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>


	<p>materials in sealed containers or bags.</p> <p>g) No spraying of herbicides / pesticides under windy conditions and must comply with OHSA specs and other chemical handling laws.</p> <p>h) The Contractor is to outline a method statement for the dealing with accidents/spillages of hazardous materials. This statement must be handed to the Engineer as well as to DWAF should an incident occur.</p>	<p>C</p> <p>C</p>	<p>During site set-up and during construction</p>
6.8	Waste disposal		
6.8.1	<u>Waste disposal</u> Non – hazardous waste		
No	Activity	Responsible person	When
	<p>a) Remove waste from the site and transport it to an approved landfill site.</p> <p>b) Provide waybills proving disposal for inspection at each site.</p> <p>c) Dispose of construction rubble at pre – agreed, demarcated spoil dumps that have been approved by the Engineer.</p> <p>d) Chemical toilet waste to be disposed of regularly and in a responsible manner by a registered waste contractor. Care must be taken to avoid contamination of soils and water, pollution and nuisance to adjoining areas by using an impermeable layer e.g. plastic sheeting. Communicate this requirement to the service provider.</p>	<p>C</p> <p>C, PA, ECO</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>

6.8.2	Waste disposal Hazardous Wastes		
	<p>a) Approved waste contractor must dispose of Hazardous waste at a registered Hazardous Waste Site and provide waybills for inspection.</p> <p>b) Create a sump (earth or other) for concrete waste. De-sludge it regularly. Remove cement waste to a tip site. Provide a waybill for inspection.</p>	<p>C, PA, ECO</p> <p>C</p>	<p>During site set-up and during construction</p>
6.9	Education of site staff on general and environmental conduct		
6.9.1	<u>Environmental Education and Awareness</u>		
	<p>Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval. Topics covered should include:</p> <ul style="list-style-type: none"> - What is meant by environment - Why the environment needs to be protected and conserved - How construction activities can impact on the environment - What can be done to mitigate against such impacts - Awareness of emergency and spill response provisions. - Social responsibility during construction e.g. being considerate to local residents <p>It is the contractor's responsibility to provide the site foreman with no less than one hour's environmental training and ensure that the foreman has sufficient understanding to pass this information onto the construction staff.</p>		
No	Activity	Responsible person	When
	<p>a) Use translators where necessary.</p> <p>b) The Principle Agent/ Environmental Control Officer to explain more difficult / technical issues and to answer questions.</p>	<p>C</p> <p>C, PA, ECO</p>	<p>During site set-up and during construction</p>

	<p>c) Use pictures and real – life examples is encouraged as these tend to be more easily remembered.</p> <p>d) Make use of environmental awareness posters.</p> <p>e) Make construction workers aware that they are not to make excessive noise (e.g. shouting / hooting) when the site is near to commercial / residential areas.</p> <p>f) Explain the ‘clean site” policy to construction workers.</p> <p>g) Environmentally induct all contractors, sub-contractors and their staff.</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>During site set-up and during construction</p>
6.10	Dust / Air Pollution		
6.10.1	Controlling dust		
No	Activity	Responsible person	When
	<p>a. Vehicles travelling must adhere to speed limits when travelling along the access road to avoid creating excessive dust.</p> <p>b. Mitigate for dust generated during site clearance and the construction phase through dust control measures which should include damping with water, maintenance of vegetation, on the boundaries of the site or spraying Reverseal SS100.</p> <p>c. Cover stock piles of topsoil or plant it with abortive crops such as Tef or Rye grass to reduce dust.</p> <p>d. Make alternative arrangements (other than fires) for cooking and / or heating</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>

	requirements. LP gas cookers may be used provided that all safety regulations are followed.		
6.11	Soil Erosion		
No	Activity	Responsible person	When
	<p>a) Minimize the time that stripped areas are left open to exposure wherever possible. Care should be taken to ensure that lead times are not excessive.</p> <p>b) Undertake wind screening and storm water control to prevent soil loss from the site by securing it with a row of sandbags, or strips of instant lawn, or Geojute rolls or mats or the placement of brushwood across slope.</p> <p>c) Conserve topsoil during the set up phase and the construction phase of the project, i.e. topsoil is to be conserved while providing access to the site and setting up of camp.</p> <p>d) Re-vegetate areas cleared of alien vegetation by seeding the area with a sacrificial crop of grass commercially available grass seed: (<i>Eragrostis tef</i> @ 5 kg/ha) is to be spread by hand at a rate of 3 g/m². Once the seed is spread it is to be lightly raked into the soil and irrigated.</p> <p>e) Create sand bag berms or compacted earth berms along the outer boundary of the platform to prevent erosion onto the</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>

	neighbouring sites. f) Lay strip sods of lawn grass across the slope at 2m intervals on cut and fill banks as soon it is shaped to its final level to minimize the erosion risk	C, PA	
6.12	Storm water management		
	Refer to the Storm Water Management Plan prepared by UWP Consulting (Pty) Ltd dated July 2016 for more required activities to minimize the impact from storm water.		
No	Activity	Responsible person	When
	a) Prevent storm water damage from the increase in storm water run-off resulting from construction activities by estimating and assessing the drainage system accordingly. A temporary drainage plan must be submitted to the Engineer for approval. b) Construct temporary cut off drains and berms required to slow the storm water down. c) Lay sandbags, Geojute, or strips of instant lawn or Biddim soil curtains across the slope to slow the flow of the water down, trap the silt but allow the water to move through. d) Prevent silt loaded run-off from reaching the wetland. e) Create formal drain outlets at the low points on platforms so that accumulated rain water can drain to the lower level by laying a brick spillway, or lay temporary	C, PA C, PA C, PA C, PA	During site set-up and during construction

	<p>drain pipes, on top of the soil, down the face of the bank secured with sandbags at the top, middle and bottom. The water coming out the pipe should spill onto sandbag or rock or blocks to break the energy and spread the flow.</p>  <p>An example of making use of bricks to drain water from one platform to another</p>		<p>During site set-up and during construction</p>
6.13	Water Quality		
No	Activity	Responsible person	When
	<p>a) Bund storage areas that contain hazardous substances with and approved impermeable liner.</p> <p>b) Clean up spills in bunded areas, remove and dispose of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity.</p> <p>c) No area is to be set aside for vehicle washing and maintenance. Where vehicles breakdown and are in need of field repair adequate provision must be made to contain hazardous material by laying down plastic sheeting to protect the soil.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>

	<p>Materials caught in this bunded area must be disposed of to a suitable waste site or as directed by the engineer.</p> <p>d) Make provision for all polluted run-off during set up to be treated to the Engineer's approval before being discharged into the storm water system. (This will be required for the duration of the project).</p>	C, PA	
6.14	Conservation of Natural Environment		
6.14.1	<u>Fauna and Flora</u>		
No	Activity	Responsible person	When
	<p>a) Take care to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material).</p> <p>b) Minimize disturbance of birds, animals and reptiles and their habitats wherever possible.</p> <p>c) Hunting or trapping of any wildlife is not permitted and anyone caught doing so will be charged criminally.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.14.2	Wetlands		
No	Activity	Responsible person	When
	<p>a) Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the contractor must be aware of weather</p>	C, PA	<p>During site set-up and during construction</p>

	<p>forecasts.</p> <p>b) Construction activities must be scheduled to minimise the duration of exposure to bare soils on site, especially on steep slopes.</p> <p>c) The full length of works must NOT be stripped of vegetation prior to commencing with other activities.</p> <p>d) The contractor must submit a clearing and earthworks plan to the ECO for approval prior to construction commencing.</p> <p>e) This plan must indicate how clearing and earthworks are going to progress across the site in a phased manner.</p> <p>f) The contractor must submit a construction stormwater management plan to the ECO for approval prior to construction commencing.</p> <p>g) The unnecessary removal of groundcover from slopes must be prevented, especially on steep slopes.</p> <p>h) A combination of sandbags and silt fences must be established along the edge of all bare and exposed surfaces above the wetland buffers and un-kerbed roads.</p> <p>i) The berms, sandbags and/or silt fences must be monitored for the duration of the construction phase and repaired immediately when damaged.</p> <p>j) The berms, sandbags and silt fences must only be removed once vegetation cover has successfully re-colonised the</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>embankments.</p> <p>k) Once shaped, all exposed/bare surfaces and fill embankments must be vegetated immediately.</p> <p>l) Embankments steeper than 1:3 must be vegetated using strip sods established at regular intervals (50-100 cm) down the bank and hydro-seeding in between.</p> <p>m) Embankments with a slope less than 1:3 must be hydro-seeded and the temporary erosion control measures removed only once re-colonisation is successful. In the winter months, the newly grassed areas must be watered daily until re-colonisation is successful. During the wet months, the grassed surfaces must be monitored for erosion until re-colonisation is successful.</p> <p>n) If re-vegetation of exposed surfaces cannot be established immediately due to phasing issues, rows of straw, hay or cut bundles of vegetation should be dug into the soil in contours and/or sand bags or silt fences must be established along the contours at regular intervals to slow runoff and capture eroded soil.</p> <p>o) All platforms above buffer zones must have a slight back-fall to divert runoff away from the fill embankments. Platform runoff must be diverted away from the platforms via some sort of diversion structure, preferably an open drain. This runoff must be diverted into the formal storm water</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	has re-colonised the rehabilitated area.		
6.15	Waste Management Procedures		
No	Activity	Responsible person	When
	<p>a) The excavation and use of rubbish pits on site is forbidden.</p> <p>b) Burning of waste is forbidden.</p> <p>c) Allocate a fenced area for waste sorting and disposal. It should be covered to prevent the wind from blowing the waste around.</p> <p>d) Provide individual skips for different types of waste (e.g. “household” type refuse, building rubble, etc.).</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
6.16	Social Impacts – Visual and Noise		
6.16.1	<u>Public Participation</u>		
No	Activity	Responsible person	When
	<p>a) Make contact with those people that are Interested or Affected by the development (I & AP’s) during the set up phase of the project.</p> <p>b) The I & AP’s can be identified as those who either:</p> <ul style="list-style-type: none"> ○ Live close by the project. ○ Work close by the site. ○ Will have their services / infrastructure affected by the project. ○ Have a general interest in the project. ○ The Councillor for the ward in which 	<p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>

	the construction is taking place.		
6.16.2	<u>Noise Impacts</u>		
No	Activity	Responsible person	When
	a) Fit construction vehicles with standard silencers prior to the beginning of construction. b) Use equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) as per operating instructions and maintained properly during site operations.	C, PA C, PA	During site set-up and during construction
6.16.3	<u>Visual Impacts</u>		
No	Activity	Responsible person	When
	a) Locate storage facilities, elevated tanks and other temporary structures that they have as little visual impact on local residents as possible. b) Screen with shade cloth or other suitable material areas where the visual environment is particularly important (e.g. along commercial / tourism routes), prior to the beginnings of construction. c) Screen highly reflective materials on site.	C, PA C, PA C, PA	During site set-up and during construction
6.17	Cultural Environment		
No	Activity	Responsible person	When
	Inform all staff prior to commencement of construction, what possible	C, PA	During site set-up and

	archaeological or historical objects of value may look like, and to notify the PA should such item be uncovered		during construction
6.18	Security and Safety		
6.18.1	<u>Fencing</u>		
No	Activity	Responsible person	When
	a) Secure each sub-development and the contractors' camp site in order to reduce the opportunity for criminal activity in the locality of the construction site. b) Demarcate potentially hazardous areas such as trenches and clearly mark them.	C, PA C, PA	During site set-up and during construction
6.18.2	<u>Lighting</u>		
No	Activity	Responsible person	When
	Set lighting out on site to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residents or businesses.	C, PA	During site set-up and during construction
6.19	Construction of Infrastructure		
6.19.1	Pipeline crossing design and alignment recommendations:		
No	Activity	Responsible person	When
	<ul style="list-style-type: none"> Unavoidable sewer and water pipe crossings should be located across the narrowest portions of the wetland units to minimise wetland disturbance. Where possible, the alignment of the sewer pipe crossings should be located where the wetland units have 	C, PA C, PA	During site set-up and during construction

	<p>already been disturbed or proposed to be disturbed i.e. along existing or planned road crossings.</p> <ul style="list-style-type: none"> The sewer and water pipes must be routed so that the wetland is crossed at right angles to the direction of flow. Sewer line crossings must not be aligned parallel or near parallel to flow. Wherever possible, pipe bridge crossings should be favoured over trenched crossings to minimise wetland disturbance. 	C, PA	During site set-up and during construction
6.19.2	Construction and rehabilitation recommendations for trenched crossings		
No	Activity	Responsible person	When
	<ul style="list-style-type: none"> Due to the highly erodible nature and steepness of the topography, construction should be undertaken between the months of April and August (winter months). Disturbance to the wetland and stream/riparian zone soils along the pipeline route should be restricted to an established construction right-of-way (ROW) corridor. The width of the ROW corridor within the wetlands and riparian zones should be as narrow as practically possible and should be demarcated and fenced off during the site setup phase to the satisfaction of the ECO. 	C, PA	During site set-up and during construction

	<p>wetland/riparian zones in designated stockpiles areas. An effort must be made not to sever the rooting systems of the vegetation. These turfed topsoil stockpiles must be regularly wetted to ensure that the clayey soils remain moist. The location of these topsoil stockpiles must be agreed upon by the ECO prior to construction commencing.</p> <ul style="list-style-type: none"> ○ In areas that require bog-mats, the topsoil must not be stripped. The bog-mats must be laid on top of the topsoils and cut vegetation. No excavator must enter a semi-permanent to permanent wetland zone prior to the establishment of bogmats. ● Once the ROW is established, all wetland areas outside of the demarcated ROW must be considered no-go areas. This also includes the access ROW's. ● All pipes and equipment must be stored outside of the wetland and riparian areas in a stockpile area approved by the ECO. ● The environmental control officer must be present during all excavation 	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>activities within the wetland.</p> <ul style="list-style-type: none"> • Once the pipe is laid into the trench, the subsoils should be reinstated in the same order/sequence they were excavated. Once the trench has been filled-in, the running track (if in a wetland/riparian zone) and subsoil stockpile corridor must be removed in a systematic manner moving outwards from the wetland and riparian areas. The subsoil corridor should be moved by hand. • Thereafter, the running track and subsoil corridors should be ripped to a minimum depth of 30cm and 10-20cm respectively moving outwards. • Where bog-mats are used, they should be carefully pulled up making an effort not to disturb the underlying topsoils and vegetation. • Once the excavators have moved out of the ripped ROW, no heavy machinery is allowed to enter the ROW. • Once the topsoil has been reinstated, the bare areas must be re-vegetated using the broadcasting method with a fast growing and vigorous indigenous plant seed mix is sufficient provided that the composition of the seed mix is formally approved by the ECO. • The disturbed area should be monitored for erosion once a month during the first 	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>The construction ROW should comprise the following:</p> <ul style="list-style-type: none"> o a one-way running track of a maximum width of 2m. o a pipeline trench zone of a maximum width of 1m. o an up-slope subsoil stockpile corridor of a maximum width of 1m. • Notwithstanding the above, every effort should be made to utilise the existing roads and associated embankments as trench locations and/or running tracks for the establishment of the pipe bridges. • The running track should not be established within the central lowest lying portions of the wetland and/or stream channels and banks where no piers are proposed. In this regard, the running tracks must extend into the wetland and riparian zone from each valley side to the furthest pier construction site, thus avoiding the crossing of the central wet or channelled areas. • The construction ROW should comprise the pipe bridge pier construction zones and a narrow one-way running track only. • The ROW should be established as follows: <ul style="list-style-type: none"> o Firstly, the indigenous wetland and riparian vegetation along the construction ROW must be cut by hand (not stripped). o Thereafter, a wetland specialist must 	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>construction ROW must be walk the cut ROW to identify any excessively wet areas that may require bog-mats for the running track.</p> <ul style="list-style-type: none"> o In areas that do not require bog-mats, topsoil along the stripped and stored outside of the wetland/riparian zones in designated stockpiles areas. These stripped topsoil stockpiles must be regularly wetted to ensure that the clayey soils remain moist. o Excavated soil must not be stockpiled within the wetland or riparian zone. The location of topsoil and subsoil stockpile areas must be agreed upon by the ECO prior to the construction of the bridge commencing. o In areas that require bog-mats, the topsoil must not be stripped. The bog-mats must be laid on top of the topsoils and cut vegetation. No excavator must enter a semi-permanent to permanent wetland zone prior to the establishment of bogmats. • Excavations within the wetland and riparian should be undertaken by hand. If this is unfeasible for sound reasons, a small excavation vehicle may be 	<p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>used.</p> <ul style="list-style-type: none"> • The environmental control officer must be present during all excavation activities within the wetland. • Once the pipe bridge is completed, the running track must be removed by hand wherever possible. • Compacted wetland and riparian soils along the running track must be ripped to a depth of 30cm. • Compacted wetland and riparian soils along the subsoil corridor must be ripped to a depth of 10-20cm. • Once the compacted soils are ripped, topsoil from that particular area must be reinstated within the wetland and riparian areas along the running track by hand to the satisfaction of the ECO. • Once the topsoil has been reinstated, the bare areas must be re-vegetated using the broadcasting method with a fast growing and vigorous indigenous plant seed mix is sufficient provided that the composition of the seed mix is formally approved by the ECO. • The disturbed area should be monitored for erosion once a month during the first wet season after construction. • The re-instated wetland and riparian areas must be monitored for a year post-construction by a suitably qualified wetland specialist on a bi-monthly basis. 	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	<p>During site set-up and during construction</p>
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	<p>During this time, the measures to manage and control alien vegetation in the wetland rehabilitation and management plan must be applied to the re-instated ROW.</p> <ul style="list-style-type: none"> • Method statements for all activities within the wetlands and riparian zones must be submitted to the ECO by the contractor for approval prior to construction commencing. 	C, PA	During site set-up and during construction
6.20	Traffic management		
No	Activity	Responsible person	When
	<p>a) Erect road signage to warn motorists of construction activities</p> <p>c) Use flagmen to warn traffic of construction vehicles working</p> <p>d) Install safety barriers to keep traffic away from work areas.</p>	<p>C, PA</p> <p>C, PA</p> <p>C, PA</p> <p>C, PA</p>	During site set-up and during construction

7.0 SECTION B: POST- CONSTRUCTION PHASE

When the infrastructure construction process is complete and the contractor is preparing to move off site the following activities should take place:

7.1 Construction Camp			
No	Activity	Responsible person	When
	a) All structures comprising the construction camp are to be remove from the site.	C, PA	During site set-up and during construction
	b) The Contractor must arrange the cancellation of any temporary services.	C, PA	
7.2 Land Rehabilitation			
No	Activity	Responsible person	When
	a) All surfaces hardened due to construction activities are to be ripped and imported materials thereon removed.	C, PA	During site set-up and during construction
	b) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, diesel, etc. and these should be cleaned up.	C, PA	
	c) All rubble is to be removed from the site to an approved disposal site. Burying rubble on the site is prohibited.		
	d) The site is to be cleared of all litter.		
	e) Surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared in a manner approved by the Engineer.		
	f) All embankments are to be trimmed, shaped and replanted to the satisfaction		

	of the Engineer. g) The Landscape plan must be implemented as per the approved plan.	C, PA	During site set-up and during construction
7.3	Material and Infrastructure		
No	Activity	Responsible person	When
	a) Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the Engineer. b) All residual stockpiles must be removed to spoil or spread on site as directed by the Engineer. c) All leftover building materials must be returned to the depot or removed from the site. d) The Contractor must repair any damage that the construction works has caused to neighbouring properties.	C, PA C, PA C, PA	During site set-up and during construction
7.4	General		
No	Activity	Responsible person	When
	a) A meeting is to held on site between the Engineer, EO and the Contractor to approve all remediation activities and ensure that the site has been restored to a condition approved by the Engineer. b) All areas where temporary services were installed are to be rehabilitated to the satisfaction of the Engineer.	C, PA C, PA	During site set-up and during construction

8.0 SECTION C: OPERATIONAL MANAGEMENT PHASE

8.1	HOME OWNER's ASSOCIATION (HOA):		
No	Activity	Responsible person	When
	<p>a) Carry the Operational phase of the EMPr over from the Developer to the HOA to be incorporated into their conditions of establishment and is to be upheld by them for perpetuity.</p> <p>b) The OEMPr is a living document and must be kept current by having an environmental consultant review it from time to time.</p>	Developer	When the HOA is formed
8.2	Wetland		
8.2.1	Storm Water Impacts		
No	Activity	Responsible person	When
	<ul style="list-style-type: none"> All storm water runoff onsite must be directed into open, grass-lined channels/swales and stone-filled infiltration ditches rather than into underground piped systems or concrete V-channels. This will encourage infiltration across the site, provide for the filtration and removal of urban pollutants (e.g. hydrocarbons), provide some attenuation by increasing the time runoff takes to reach low points, and reduce the energy of storm water flows within the 	Developer, HOA, Municipality	At all times during operation

	cleaning materials should be used where the storm water runoff from the mixed use site could be affected e.g. washing/spraying down shop floors etc. This must be written into all relevant contractual agreements and codes of conduct.		At all times during operation
8.2.2	Sewage and Water Infrastructure Impacts		
No	Activity	Responsible person	When
	<ul style="list-style-type: none"> • Maintain flap-gates above the wetland to ensure that blockages are confined to areas outside (upstream) of the wetland. • Maintain the gully trap at or before the connection to the sewer manholes onsite and downstream of the various components of the retail development with the main/street line through the development to reduce the risk of surcharging. This gully trap block foreign objects from entering the main internal line of the site and isolate blockage problems at the source. • All future owners and employees of the retail development must be provided with a set of rules and prohibitions regarding the correct use of the toilets and kitchen sinks. • In the case of blockages and overflowing manholes, it is the responsibility of the retail owners and employees to inform the municipal 	<p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p>	At all times during operation

	<p>sanitation department immediately.</p> <ul style="list-style-type: none"> If the Municipality take a long time to respond, it is the responsibility of the owners/employees to inform the Department of Water and Sanitation (DWS) of the delay. The contractor appointed to maintain the sewer line crossings must have a proven track record with respect to sewer line construction. 	<p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p>	<p>At all times during operation</p>
8.2.3	Road Crossings		
No	Activity	Responsible person	When
	<ul style="list-style-type: none"> Erosion protection measures (e.g. Reno-mattresses) must be maintained below the box culverts. 	<p>Developer, HOA, Municipality</p>	<p>At all times during operation</p>
8.2.4	Operational Disturbance		
No	Activity	Responsible person	When
	<p>The wetland and riparian areas and buffers should be maintained as public conservation servitudes within the proposed development. The conservation servitudes must be clearly demarcated for the benefit of all owners and users, and conservation signs should be established along the edge of the conservation servitude boundaries (wetland buffer edges) to inform all occupiers/users of the wetland conservation areas, their value to society and certain prohibitions regarding the use of the wetland areas.</p>	<p>Developer, HOA, Municipality</p>	<p>At all times during operation</p>
8.2.5	Positive Rehabilitation		

No	Activity	Responsible person	When
	<ul style="list-style-type: none"> • Arrest and repair human induced erosion damage (head-cuts, rills and gullies). • Plug gullies that are lowering local wetland water tables. • Eradicate and control alien plants 	Developer, HOA, Municipality	At all times during operation

8.3 Storm Water Management			
No	Activity	Responsible person	When
	<p>a) The HOA and Municipality is to ensure the storm water management system is able to cope with the storm water generated by inspecting the kerb inlets, piped systems and embankments and to have them cleared or repaired as necessary.</p> <p>b) The HOA is to ensure any signs of erosion is immediately brought under control and revegetated after the source of the erosion has been dealt with.</p> <p>c) Monitor the sub-surface water at least once every six months of possible pollution sources as a pro-active measure.</p> <p>d) Carry out any maintenance work through routine work, restoration work or rehabilitation work.</p>	<p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p> <p>Developer, HOA, Municipality</p>	At all times during operation
8.4 Landscaping			
No	Activity	Responsible person	When
	a) The Developer, HOA and or Municipality is to maintain a 100% indigenous and endemic philosophy throughout the estate at all times.	Developer, HOA, Municipality	At all times during

	<p>b) The Developer, HOA and Municipality is to ensure the lawned areas and flower bed areas are kept well maintained and enriched with mature organic compost enriched with bio-enzymes.</p> <p>c) The HOA is to supplement the organic compost with inorganic fertiliser to flower beds and pastures as may be required from time to time</p>	Developer, HOA, Municipality	operation
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8.5	Alien Invader Plants		
No	Activity	Responsible person	When
	<p>a) The HOA and or Municipality is to ensure that alien vegetation does not become established in the rehabilitated areas and in private gardens.</p> <p>b) Ensure all property owners maintain their sites alien plant free.</p>	<p>HOA, Municipality</p> <p>HOA, Municipality</p>	At all times during operation

9.0 SECTION E: CONTACT NUMBERS

9.1. General Numbers	
Department of Water Sanitation	No 031 3683636 (will ask for code: 4674) Cell: 082808 9916 or Water Quality Division 031 3362761 (office hrs)
Abzorbit (24hr response to oil and chemical spills on land or water, bioremediation, distributors of PEAT SORB)	24hr Emergency Response Toll Free 0800303303 Doug: 083 269 8790 Gerald : 083 2536618
PRUNIT (Plant resources project run by DSW Contacted for clearing indigenous plants not required on site for use elsewhere)	Lindsay Strachan: 031 2631372 Richard Wynn : 082 415 8093
FFS Refineries (for free collection of used lubricating oil)	031 465 1466
ROSE Foundation (For free collection of used lubricating oil)	0800 107 107

10 SECTION F: SPILL RESPONSE PLAN

CLEAN-UP PROCEDURES

Spilled chemicals must be effectively and quickly contained and cleaned up. Employees must clean up spills themselves only if properly trained and protected. Employees who are not trained in spill clean-up procedures must report the spill to the relevant emergency staff (both internal and external), warn other employees and the Contractor, and leave the area.

The following general guidelines must be followed for evacuation, spill control, notification of proper authorities, and general emergency procedures in the event of an incident in which there is potential for a significant release of hazardous materials.

a) Evacuation

Persons in the immediate vicinity of a spill must immediately evacuate the premises (except for employees with training in spill response). If the spill is of “medium” or “large” size, or if the spill seems hazardous, immediately notify emergency response personnel.

b) Spill Control Techniques

Once a spill has occurred, the employee must inform the Contractor who must inform the project manager, the ECO and the necessary authorities who needs to decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response must attempt to contain or clean up a spill.

NOTE: If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and clean-up materials as hazardous waste.

Spill control equipment must be located wherever significant quantities of hazardous materials are received or stored. MSDSs, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers, and “caution-keep out” signs are common spill response items.

c) Spill Response and Clean-up

Chemical spills are divided into three categories: Small, Medium and Large. Response and clean-up procedures vary depending on the size of the spill.

Small Spills:

Any spill where the major dimension is less than 50cm in diameter. Small spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department teams.

- Quickly control the spill by stopping or securing the spill source. This could be as simple as up-righting a container and using floor-dry or absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary.
- Put spill material and absorbents in secure containers if any are available.
- Consult with the OH&S representative and the MSDS for spill and waste disposal procedures.
- In some instances, the area of the spill should not be washed with water. Use Dry Clean-up Methods and never wash spills into the natural environment.
- Both the spilled material and any absorbent must be considered hazardous waste and must be disposed of in compliance with municipal and DWA regulations.

Medium Spills:

Spills where the major dimension exceeds 50cm, but is less than 2m. Outside emergency response personnel (police and fire department teams) must be called for medium spills. Common sense, however, will dictate when it is necessary to call them.

- Immediately try to help contain the spill at its source by simple measures only. This means quickly uprighting a container, or putting a lid on a container, if possible. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, or once you have quickly determined you cannot take any brief containment measures, leave the area

and alert emergency response personnel (police and fire department teams). Give personnel accurate information as to the location, chemical, and estimated amount of the spill.

- Evaluate the area outside the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise emergency response personnel on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency response personnel by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency response personnel have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDSs and questions about the facility. Emergency response personnel or trained personnel with proper personal protective equipment will then clean up the spill residue. Do not re-enter the area until the emergency response personnel in charge gives the all clear. Be prepared to assist these persons from outside the spill area with MSDSs, absorbents, and containers.
- Reports must be filed with proper authorities. It is the responsibility of the spiller to inform both his/her supervisor and the emergency response personnel as to what caused the spill. The response for large spills is similar to the procedures for medium spills, except that the exposure danger is greater.

Large Spills:

Any spill involving flammable liquid where the major dimension exceeds 6 feet in diameter; and any “running” spill, where the source of the spill has not been contained or flow has not been stopped.

- Leave the area and notify emergency response personnel. Give the operator the spill location, chemical spilled, and approximate amount.
- From a safe area, attempt to get MSDS information for the spilled chemical for the emergency response personnel to use. Also, be prepared to advise

emergency response personnel as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise emergency response personnel of any absorbents, containers, or spill control equipment that may be available. This may need to be done from a remote area, because an evacuation that would place the spiller far from the scene may be needed. Use radio or phone to assist from a distance, if necessary.

- Only emergency response personnel, in accordance with their own established procedures, must handle spills greater than 2m in any dimension or that are continuous. Remember, once the emergency response personnel are on the job cleaning up spills or putting out fires, the area is under their control and no one may re-enter the area until the emergency response personnel in charge gives the all clear.
- Provide information for reports to supervisors and emergency response personnel, just as in medium spills.

d) Reporting spills

All chemical spills, regardless of size, must be reported as soon as possible to the supervisor/contractor. These people will determine whether the spill has the potential to affect the environment outside of the facility and must be reported to emergency response personnel. Examples of spills that could affect the outside environment include spills that are accompanied by fire or explosion and spills that could reach nearby water bodies.

