







ECO CONSTRUCTION SITE ENVIRONMENTAL CLOSURE REPORT


Project Name:	Upgrade of Klaarstroom Oxidation ponds	Report no	CLOSURE
Main Contractor:	De Jager Loodgieter Kontrakteurs	Date of site visit	8 December 2020
ECO:	Bernard de Witt	Date of report	

ENVIRONMENTAL ASPECT	RATING	FINDINGS & RECOMMENDATIONS
RATING:	1 = EXTREMELY POOR 2 = POOR 3 = AVERAGE 4 = GOOD 5 = EXCELLENT	
1. DEMARCATION Boundaries of “no go” areas, construction sites, -offices, temporary storage areas as well as labourer’s facilities must be demarcated (EMP and ECO requirements) and maintained for the length of the construction period.	5 Comply	All site demarcation material is removed. Site is fenced off and gates are locked 
2. NO-GO AREAS Identified “No-Go Areas,” must be demarcated for protection from construction damage (including secondary impact). <ul style="list-style-type: none"> All areas outside of the demarcated construction site(s) and access road(s) to be regarded as NO-GO areas, including remaining natural veld identified trees. 	4 comply	NO-GO areas were protected due to proper demarcation throughout the construction period. 

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3. SEARCH & RESCUE All flora identified for search & rescue must be removed before any construction take place and re-used in pre-approved way.	4 comply	<p>No plant search & rescue was necessary. One aloe spp and Acacia spp were inside the demarcated area and both could be saved.</p> 
4. VEGETATION & TOPSOIL REMOVAL Before any construction or earthworks, topsoil must be stripped (>150mm) and stockpiled for rehabilitation/landscaping. Stockpiles: <ul style="list-style-type: none"> • must be protected (erosion) and stored separately. • may not be moved further than 50m or mixed with any other soil. • must be convex and should not exceed 2m in height. In addition: <ul style="list-style-type: none"> • Cleared areas must be stabilized. • Burning or burying of cleared vegetation is prohibited (may be used for mulch or slope stabilisation on site). 	Comply 4	<p>Topsoil used for rehabilitation of stormwater berm and trench at the site. Area well rehabilitated Aloes present on site were well looked after and secured</p> 
5. CONSTRUCTION CAMP & SITE OFFICES Must be demarcated,	4 comply	<p>Construction Camp & site offices were properly demarcated throughout the project. Site was cleaned up satisfactory</p>


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organised and free of day-to-day litter (good housekeeping standards).		
6. LABOURER'S FACILITIES Facilities must be of acceptable standards suitably demarcated, well maintained, neat and tidy and with adequate ablution facilities.	Comply 4	Labours facilities are located at site office 
7. ENTRANCE AND HAUL ROADS Only approved entrance and haul roads may be used. No new roads or parking areas may be developed without written approval from the ECO.	Comply 4	Only existing roads were used. All other movement was restricted within the demarcated areas
8. MANDATORY SITE EQUIPMENT Mandatory site equipment must be in place, well maintained and in accordance with EMP and ECO requirements. <ul style="list-style-type: none"> • Sufficient refuse bins well placed and 	Comply 4	Mandatory site equipment was in place and in a clean and working order


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cleaned regularly. • Sufficient fire extinguishers, readily available, maintained, and functional. • Drip trays must be used at all fuel and oil storage and refuelling sites. • Toilets and sanitation facilities must be kept clean neat and hygienic.	Comply 4 comply 4 Comply 4	
9. FUEL STORAGE Fuel storage areas must be situated within the demarcated construction camp site (or an area approved by the ECO). • Larger containers must be bunded (containment of accidental spillages). • Drip trays must be used during refuelling or under stationary refuelling vehicles. • Fuel and oil storage and refuelling sites must be maintained.	Comply 4	Fuel tank is placed in temporary bunding area. Bunding area is lined with builder's plastic and checked for leaks. Bunding area volume is more than 110% of volume of fuel tank. Drip tray is present for when refuelling takes place 
10. STOCKPILING & TEMPORARY STORAGE May only be placed on pre-approved sites, demarcated, stabilised, or organised and neat.	Comply 4	Stockpile area is at the site office. The demarcation of this site is the access road on the one side and the site office/laydown area on the other side 
11. WASTE CONTROL The contractor is expected to control all construction related waste material and	Comply 4	All waste were taken to the municipal solid waste site that is located close to the construction site A "chicken parade was conducted to pick up all cigarette buds and

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<p>general litter on actual construction sites and its immediate surroundings.</p> <ul style="list-style-type: none"> Waste management must be in accordance with the EMP, of acceptable standards, with regular removal of general waste, hazardous waste as well as construction waste (e.g., concrete waste and spoil). 		<p>windblown papers (mainly from municipal dump site)and plastic containers. During the rehabilitation phase a chicken parade was conducted as requested</p> 
<p>12. CEMENT MIXING & BATCHING AREAS</p> <p>Mixing areas must be approved by the ECO, suitably demarcated and may not result in pollution.</p> <ul style="list-style-type: none"> Polluted cement water may only be released into sedimentation ponds. Sedimentation ponds must be maintained and cleaned regularly (and reinstated after use). 	Comply4	<p>Ready mix concrete was used where necessary. Cement mixing for building of chambers was mixed on plastic. All wash water were disposed of inside the evaporation/sedimentation ponds on site</p>
<p>13. CONSTRUCTION VEHICLE MAINTENANCE</p> <p>Construction vehicles must be in good working order and well maintained to prevent oil and fuel leakages and to reduce noise levels.</p>	4	<p>All vehicles were clean and in a good and working order.</p>
<p>14. HEAVY EARTHMOVING EQUIPMENT</p> <p>Construction vehicles</p>	4	<p>All movement were restricted to within the demarcated areas</p>

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and equipment may only operate <u>within</u> the demarcated site boundaries (and approved access roads), especially heavy earthmoving vehicles.		
15. DUST CONTROL Adequate control measures must be in place to prevent dust nuisance or pollution (entrance-, haul roads and exposed surfaces). <ul style="list-style-type: none"> • Areas of concern must be watered regularly during construction AND periods of strong winds BUT must take water saving into account. 	4	Dust on site and access roads were controlled by water truck on daily basis or when needed. Water was sourced from the municipality
16. EROSION CONTROL Erosion resulting from works must be controlled. <ul style="list-style-type: none"> • Temporary and permanent drainage areas must be maintained. • Erosion damage and damage in drainage courses must be reinstated. 	4	In Order
17. NOISE CONTROL Effective noise control measures must be in place and acceptable working hours must be kept (deviations must be approval by the ECO).	4	In order

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18. ARCHAEOLOGICAL & HERITAGE FINDS Should any archaeological or heritage remains be exposed during excavations or any activity on site, these must immediately report to the site agent/engineer, the ECO HWC or SAHRA.	4	Comply
19. METHOD STATEMENTS Method statements must be submitted and approved before commencement of the works. Possibly Required: <ol style="list-style-type: none"> 1. Demarcation & No-Go Areas (Map) 2. Clearing of vegetation & topsoil conservation 3. Stockpiling & temporary storage 4. Construction camp & site offices 5. Labourer's facilities 6. Mandatory site equipment 7. Fuel storage 8. Entrance & haul roads 9. Waste management 10. Cement/Concrete mixing 11. Dust control 12. Erosion control 13. Noise control 14. Rehabilitation 	4	Comply Method statements were kept and was available in the Environmental file on site. Some method statements double up in the Health and Safety file
20. ENVIRONMENTAL CONDUCT Environmental conduct of construction	5	Environmental conduct was good throughout the construction period. Contractor Environmental Site agent check all works daily and take remedial action as and when required

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personnel must be acceptable (e.g., no burning or burying of refuse; no littering and no cement bags or other construction waste material lying around).		
21. ENVIRONMENTAL CHECKLIST The contractor must ensure that the weekly environmental checklist is completed at the end of each week, and it must be available at the site offices.	4	Weekly site checklist was checked and signed by the ECO
22. REHABILITATION On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO with emphasis on the following: <ul style="list-style-type: none"> • Site offices must be removed, and the areas rehabilitated or reinstated to the satisfaction of the ECO. • Labourer's facilities must be removed, and the areas rehabilitated or reinstated to the satisfaction of the ECO. • All construction site areas must be rehabilitated or reinstated to the satisfaction of the 	4	<p>The temporary sludge drying area still to be rehabilitated. Samples were sent away for testing to guide in disposing of dried sludge. The results indicated that the sludge can be disposed of at the municipal dump site. The municipality will remove the sludge once it is completely dry.</p>  <p>The rest of the rehabilitation was completed satisfactory. Construction site office, labourers' facilities and stockpile areas were clean and rehabilitated to the ECO's satisfaction. All demarcation was removed. All remaining construction material was removed, and area rehabilitated to satisfaction of ECO.</p>

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<p>ECO.</p> <ul style="list-style-type: none"> • All temporary fencing and demarcation must be removed, and the areas reinstated to the satisfaction of the ECO. • Temporary storage areas must be rehabilitated or reinstated to the satisfaction of the ECO. • All remaining construction material must be removed, and the areas rehabilitated or reinstated to the satisfaction of the ECO. • Any additional disturbed areas must be rehabilitated or reinstated to the satisfaction of the ECO. 		
<p>23. SPOT FINES & PENALTIES</p> <p>Spot fines and penalties must be recorded and documented by the ECO (in accordance with the EMP).</p>	N/A	No spot fines or penalties were issued
<p>24. FIXED POINT PHOTO</p>	4	Photos taken by ECO. Available on request

ECO COMMENTS

Site was overall rehabilitated satisfactory and to the ECO instructions. Site was left in a good and clean state.

Sludge drying pond: Sludge to be removed by Municipality to the Municipal waste disposal site when it is completely dried.



The pond for the reed bed could not be planted as there is not sufficient water at this stage for the survival of the reeds. This will take place once the water reaches the final pond.



The WWTW ponds were constructed properly and rehabilitated to the satisfaction of the ECO



End of report

A handwritten signature in black ink, appearing to be 'B. J. M.' or similar, enclosed in a circular loop.

ECO Signature