

Technical / Management Options:

A suitably qualified ecologist and a wetland specialist were used to assess the pre-mining animal life. The General Manager or his appointed representative will ensure that appropriate measures are implemented to ensure that the relevant Red Data species do not suffer loss of life as a result of direct or indirect impacts from the mining and related activities. The Environmental Co-ordinator will monitor the status of the Red Data species present on the site.

Action	Time Schedule
1. Ensure that Red Data animal species present on site do not suffer loss of life as a result of the direct or indirect impacts of the mining and related activities	
Ensure that the Grass Owls (<i>Tyto capensis</i>) that are present on the site do not suffer loss of life as a result of the mining and related activities (this applies particularly to the South Block).	Prior to, and during, the Construction Phase and continuing through Operational Phase.
Confirm whether the Rough-haired Golden Mole is present within the mining area.	Prior to commencement of the Construction Phase
If the Rough-haired Golden Mole is present, the potential habitat for this species will be excluded from the mine plan.	Prior to commencement of the Construction Phase
2. Ensure that loss of animal life (excluding pest species) is minimised.	
Territorial or burrowing mammals, reptiles and amphibians that will not move away automatically will be relocated.	Ahead of Construction Phase activities, and ahead of mining throughout the Operational Phase.
Construction activities will be restricted to pre-determined designated areas.	During the Construction Phase.
The extent of the construction activities will be limited to as small an area as practically possible.	During the Construction Phase.
The environmental awareness programme will be communicated to the Navigation West Section workforce.	During the Construction Phase, and throughout the Operational Phase.
Employees will be educated concerning the preservation of animal life.	During the Construction Phase, and throughout the Operational Phase.
Employee / contractor will be dismissed if employee / contractor is caught poaching.	During the Construction Phase, and throughout the Operational Phase.
Vehicle movement will be restricted to designated areas and to low speeds (40 km/h).	During the Construction Phase, and throughout the Operational Phase.

2.2.8 Surface Water

2.2.8.1 General

Objective	:	To reduce impacts on surface water runoff, and thus loss of MAR within relevant catchments (surface water quantity).
Specific Goals	:	<p>Ensure that the sizes of the dirty water management areas are minimised.</p> <p>Ensure construction of storm water management measures according to the designs, in order to ensure the least possible impact on the surface water runoff patterns, and thus loss of MAR within all relevant catchments.</p> <p>Ensure that the excavation of the initial box-cut has the least possible impact on the surface water runoff patterns, and thus loss of MAR within all catchments.</p> <p>Ensure that the surface water management measures for the Navigation West Section; South Block are designed by a suitably qualified person.</p> <p>Ensure that water quantities at Navigation West Section are accurately managed.</p>

Technical / Management Options:

A suitably qualified civil engineer was used to design the surface water management infrastructure. Implementation of the designs will ensure that the dirty water management area is minimised, as well ensuring that the surface water management infrastructure meets the relevant regulatory requirements. A surveyor will ensure that the all surface water management measures are positioned and constructed according to design specifications. The General Manager or his appointed representative will ensure that the surface water management measures are constructed properly.

Action	Time Schedule
1. Ensure that the sizes of dirty water management areas are minimised.	
Storm water management measures should be implemented to minimise and secure the dirty water area.	During the Construction Phase.
Construct the surface water management infrastructure according to the specifications as contained in the report titled, "A Division of Anglo Operations Ltd. Landau Colliery. Navigation West Block Opencast. Inputs to the Environmental Impact Assessment and Environmental Management Programme for the Landau Colliery EMPR. Surface Water". Report No: IPC/NAVWEST/P1/2006/01, dated August 2006, compiled by Inprocon Consultants cc. (attached the Navigation West Section EIA as Appendix I).	During Construction Phase.
2. Ensure that the construction of surface water management infrastructure has the least possible impact on the surface water runoff, and thus loss of MAR within all catchments.	
Storm water diversion trenches / berms have been designed and will be constructed to separate clean and dirty water on the mine.	Completed prior to Construction Phase.

Action	Time Schedule
3. Ensure that the excavation of the initial box-cut has the least possible impact on the surface water runoff patterns, and thus loss of MAR within all catchments.	
Implement the order of construction of the surface water management measures indicated in the surface water management infrastructure design report titled, "A Division of Anglo Operations Ltd. Landau Colliery. Navigation West Block Opencast. Inputs to the Environmental Impact Assessment and Environmental Management Programme for the Landau Colliery EMPR. Navigation West Opencast (North Block). Surface Water". Report No: IPC/NAWEST/P1/2006/01, dated February 2007, compiled by Inprocon Consultants cc. (attached the Navigation West Section EIA as Appendix I).	During Construction Phase.
Construct of the initial box-cut as per mining plan and soil utilisation guide.	During Construction Phase.
Divert storm water away from the initial box-cut, in accordance with the surface water management infrastructure design report.	During Construction Phase.
4. Ensure that the surface water management measures for the Navigation West Section; South Block are designed by a suitably qualified person.	
A suitably qualified person will be appointed prior to the commencement of the Construction Phase of the Navigation West Section; South Block for the design of appropriate surface water management measures.	Prior to the Construction Phase of the Navigation West Section; South Block.
The surface water management measures for the Navigation West Section; South Block will be designed to comply with legislative requirements.	Prior to the Construction Phase of the Navigation West Section; South Block.
The surface water management measures for the Navigation West Section; South Block will be implemented according to the design specifications.	During the Construction Phase of the Navigation West Section; South Block.
5. Ensure that water quantities at Navigation West Section are accurately managed.	
Ensure that the water balance Navigation West Section reflects the surface water management at Navigation West Section.	During Construction Phase, and throughout Life of Mine.

Objective	: To minimise all potential impacts on surface water quality associated with the surface area of disturbance.
Specific Goals	: The potential to generate contaminated water will be minimised. Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be complied with. Ensure routing of conveyor belt has minimum impact on the surface water quality. Surface water quality will be monitored.

	<p>All water containing waste on the site will be re-used or evaporated.</p> <p>Ensure that the surface water management measures for the Navigation West Section; South Block are designed by a suitably qualified person.</p> <p>Ensure that the impacts on sensitive landscapes such as the wetlands and pan within the Navigation West Section boundary area are managed appropriately.</p>
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Technical / Management Options:

The surface water management infrastructure will be constructed according to the design that was developed in accordance with the requirements of the Regulations GN 704, dated June 1999, under the NWA, 1998 (Act 36 of 1998) by a suitably qualified civil engineer.

All hydrocarbon storage equipment, e.g. the diesel storage tank, will be installed in a manner that will reduce the likelihood of diesel leakages, and other equipment such as oil traps will be kept in good working order.

The General Manager or his appointed representative will ensure that the diversion trenches, and foundation slabs and other surface water pollution management measures are constructed timeously, and that the water-quality monitoring program is initiated.

Action	Time Schedule
1. The potential to generate contaminated water will be minimised.	
Construct hydrocarbon management infrastructure and storage equipment so as to avoid contact between hydrocarbons and storm water or process water.	During Construction Phase.
Fill machinery with diesel at the diesel tank area, within the suitably designed bunded area.	During Construction Phase and throughout Life of Mine.
Dirty water from the diesel tank area will undergo water and diesel separation.	During Construction Phase and throughout Life of Mine.
Hydrocarbon pollution management measures, such as an oil collection system with an oil trap will be designed by a suitably qualified person and implemented in the workshop area.	Prior to Construction Phase.
Close all plugs on the diesel tank bunded area when not in use.	During Construction Phase and throughout Life of Mine.
Conduct inspections on the operation of the diesel tank as well as on the functioning of the oil/water separation equipment.	During Construction Phase and throughout Life of Mine.
Ensure that the Landau Colliery Emergency Procedure is followed in the event of a spillage of hydrocarbons.	During Construction Phase and throughout Life of Mine.
No construction of any water management facilities or roads will be undertaken with any material (such as carbonaceous material) that may cause pollution of water resources.	During Construction Phase and throughout Life of Mine.
Chemical toilets will be provided during the initial stages of the Construction Phase until the planned domestic waste water pipeline	During Construction Phase.

Action	Time Schedule
is in operation.	
The pollution control pond and evaporation pond will be constructed according to the design as contained in to contain contaminated water within the dirty water management system.	During Construction Phase.
2. Regulations GN 704, titled " <i>Regulations on use of water for mining and related activities aimed at the protection of water resources</i> ", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be complied with.	
Ensure that clean runoff is not allowed to come into contact with dirty water management areas, and is diverted around the site.	During Construction Phase.
Prevent the damming of clean water next to the dirty water management areas.	During Construction Phase.
Construct the storm water diversion trenches / berms according to the surface water management infrastructure design to separate clean and dirty water on the mine.	During Construction Phase.
Adjust the Navigation West Section mine plan to ensure that no infrastructure is constructed within 100 m of a watercourse, or within the 1:100 year flood line of a watercourse, or alternatively apply for Exemption from GN 704, dated 1999, as well as a Water Use Licence for a Section 21(i) Water Use, i.e. changing the beds, banks, course or characteristics of a watercourse, prior to the implementation of any activities within 100 m of the watercourse or within the 1:100 year flood line of the watercourse.	Prior to commencement of Construction Phase.
Discharge of affected water into the adjacent streams will not be allowed more than once in 50 years.	During Construction Phase and throughout Life of Mine.
Construct the dirty water containment facilities (Pollution Control Pond, Evaporation Pond and In-pit hold impoundments) in such a manner as to ensure that sufficient capacity is available to contain the 1:50 year rainfall event while maintaining a 0.8 m freeboard over and above the maximum required operational volume, in accordance with the specifications contained in the surface water management infrastructure design report, titled, " <i>A Division of Anglo Operations Ltd. Landau Colliery. Navigation West Block Opencast. Inputs to the Environmental Impact Assessment and Environmental Management Programme for the Landau Colliery EMPR. Navigation West Opencast (North Block). Surface Water</i> ". Report No: IPC/NAVWEST/P1/2006/01, dated February 2007, compiled by Inprocon Consultants cc. (attached the Navigation West Section EIA as Appendix I).	During Construction Phase.
3. Ensure routing of conveyor belt has minimum impact on the surface water quality (if applicable).	
Design the conveyor belt route to avoid crossing any surface water stream (if applicable).	Prior to the Construction Phase.
Construct conveyor belt as per design specifications (if applicable).	During Construction Phase.



Action	Time Schedule
4. Surface water quality will be monitored.	
Implement the surface water quality monitoring program.	Prior to, and during, the Construction Phase, and continuing throughout Life of Mine.
5. All water containing waste on the site will be re-used or will be evaporated.	
Implement and operate all surface water management infrastructure according to the designs contained in the surface water management infrastructure design report, titled, "A Division of Anglo Operations Ltd. Landau Colliery. Navigation West Block Opencast. Inputs to the Environmental Impact Assessment and Environmental Management Programme for the Landau Colliery EMPR. Navigation West Opencast (North Block). Surface Water". Report No: IPC/NAVWEST/P1/2006/01, dated February 2007 compiled by Inprocon Consultants cc. (attached the Navigation West Section EIA as Appendix I).	During construction, and throughout Life of Mine.
No surface water impacts will be allowed to affect any downstream water users due to the Construction Phase activities.	During the Construction Phase, and throughout Life of Mine.
Excess water at Navigation West Section will be pumped to the existing Navigation Plant for treatment and re-use.	During Construction Phase and throughout Life of Mine.
6. Ensure that the surface water management measures for the Navigation West Section; South Block are designed by a suitably qualified person.	
A suitably qualified person will be appointed prior to the commencement of the Construction Phase of the Navigation West Section; South Block for the design of appropriate surface water management measures.	Prior to the Construction Phase of the Navigation West Section; South Block.
The surface water management measures for the Navigation West Section; South Block will be designed to comply with legislative requirements.	Prior to the Construction Phase of the Navigation West Section; South Block.
The surface water management measures for the Navigation West Section; South Block will be implemented according to the design specifications.	During the Construction Phase of the Navigation West Section; South Block.
7. Ensure that the impacts on sensitive landscapes such as the wetlands and pan within the Navigation West Section boundary area are managed appropriately.	
The management measures stipulated in Section 2.2.11 will be stringently implemented.	During Construction Phase and throughout Life of Mine.



Objective	:	To comply with the requirements of the NWA, 1998 (Act 36 of 1998) and Regulations GN 704, dated June 1999, there under.
Specific Goals	:	The requirements of the National Water Act (NWA, 1998 (Act 36 of 1998) will be

complied with.

Regulations GN 704, titled "*Regulations on use of water for mining and related activities aimed at the protection of water resources*", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be complied with.

Technical / Management Options:

The General Manager or his appointed representative will ensure that Navigation West Section will be included in the existing Landau Colliery Integrated Water Use Licence Application (IWULA), and that the amended / updated IWULA will be submitted to the DWAF for approval prior to the commencement of any water use activities during the Construction Phase.

Action	Time Schedule
1. The requirements of the National Water Act (NWA, 1998 (Act 36 of 1998)) will be complied with.	
The existing Landau Colliery Integrated Water Use Licence Application (IWULA) will be updated to include Navigation West Section.	Prior to commencement of Construction Phase.
The updated Landau Colliery (mentioned above) will be submitted to the DWAF for approval.	Prior to commencement of Construction Phase.
2. Regulations GN 704, titled " <i>Regulations on use of water for mining and related activities aimed at the protection of water resources</i> ", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be complied with.	
The surface water management infrastructure for Navigation West Section was undertaken by a suitably qualified person, and was designed taking the requirements of Regulations GN 704, dated June 1999, under the NWA, 1998 (Act 36 of 1998) into account.	Prior to commencement of Construction Phase.
An audit of the surface water management infrastructure in terms of Regulations GN 704, dated June 1999, under the NWA, 1998 (Act 36 of 1998) will be undertaken by a suitably qualified person as soon as the construction of the surface water management facilities has been completed.	During Construction Phase.
As built plans of the surface water management infrastructure will be submitted to the DME and the DWAF once construction of the surface water management infrastructure has been completed.	Prior to the commencement of the Operational Phase.

2.2.8.2 Flood Events

The construction of the surface water management infrastructure according to the designs will enable a 1:50 year flood to be contained, and thus will reduce the potential impacts of flood events.

Should an event greater than a 1:50 year flood event occur, water may accumulate in the opencast mine pit and may prevent the safe continuation of mining activities. If it is necessary for the mine to discharge contaminated water, emergency authorisation from the DWAF will be applied for prior to the

commencement of such discharge. Monitoring of the surface water quality within the receiving water bodies will take place following such discharge, and the integrity of the surface water management infrastructure will be inspected and repaired immediately, where necessary. If the data from the monitoring of affected water bodies following an extreme event greater than a 1:50 year storm event indicates that the impacts of the discharge of contaminated water from Navigation West Section are significant, the discharge will immediately be discontinued and suitable rehabilitation and remediation action will be taken as soon as possible after the flood to mitigate any damage that may have been caused as a result of the discharging of contaminated water.

2.2.8.3 Dewatering and Discharge

Management of the surface water in accordance with the surface water management system (designed by a suitably qualified person) will ensure that no discharges or uncontrolled flow will take place. Should there be a need to discharge in future, no water will be released into the surrounding environment without the required authorisations.

The potential need to dewater the pan may arise during the Construction Phase. The management of this activity has been described in Section 2.3, under the Operational Phase, as it is more likely that this activity will take place during the Operational Phase. This activity will be included in the updated Landau Colliery IWULA, and submitted to the DWAF for approval prior to the commencement of such activity.

Refer to Section 2.2.9 regarding groundwater management (including dewatering).

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2.2.9 Groundwater

Objective	: To minimise the impacts on the groundwater quantity and quality as far as practicable.
Specific Goals	: Ensure that the Construction Phase activities do not impact on groundwater quality or quantity (availability) of any legitimate groundwater users. Minimise seepage, implement separation of clean and dirty water management areas, and recycle contaminated water optimally. Contain all contaminated water for re-use and evaporation. Minimise the extent of disturbance of the aquifer as far as practical. Prevent the degeneration of groundwater quality as far as possible. Manage the anticipated impacts associated with the inflow of groundwater to the box-cut area.

Technical / Management Options:

A qualified groundwater specialist was used to determine the potential impacts of the proposed Navigation West Section on the groundwater regime. The General Manager or his appointed representative will ensure that the groundwater management measures are implemented properly. The Environmental Co-ordinator will ensure that the groundwater monitoring programme is

Technical / Management Options:

implemented.

Action	Time Schedule
1. Ensure that the Construction Phase activities do not impact on groundwater quality or quantity (availability) of any legitimate groundwater users.	
Monitoring of groundwater boreholes (indicated in Figure 2.3.1-1 of the report titled, "Landau Colliery Navigation West Project Report on Geohydrological Investigation as part of the EMPR", with Reference Number 400385/04, dated February 2007, compiled by Clean Stream Groundwater Services – included as Appendix B of the Navigation West Section EIA) for water level and quality aspects should be undertaken to verify the predicted impacts on the groundwater.	During the Construction Phase and throughout Life of Mine.
Should it be found by a suitable qualified specialist that the yield and quality of surrounding users are affected due to the proposed Construction Phase activities; measures will be implemented to mitigate the impact. Should the mitigation measures not be effective, an alternative supply of water equal to the quality and quantity lost will be provided to replace the loss.	During Construction Phase.
2. Minimise seepage, implement separation of clean and dirty water management areas, and recycle contaminated water optimally	
The drains and cut-off trenches (storm water management system) around the proposed initial box-cut should be implemented before commencing with pit development.	Completed during Construction Phase, prior to development of the initial box-cut.
Wastage of coal-bearing material outside the allocated dirty water management area will be prevented.	During Construction Phase and continued throughout Life of Mine.
Haul roads and other compacted surfaces will be kept free of carbonaceous material by regular cleaning of spillages, thereby reducing the infiltration of contaminated water.	During Construction Phase and continued throughout Life of Mine.
Surfaces on which infrastructure such as the workshop and tip areas will be constructed will be compacted to reduce infiltration of contaminated water to the groundwater regime.	During Construction Phase.
Some of the existing information and supporting reports used in the compilation of the Navigation West Section EIA document refer to the presence of an old adit in the Navigation West Section mine boundary area. The presence of the mentioned adit will be confirmed, as this could affect the groundwater quality and quantity. Should such an adit be present, suitable measures will be developed to ensure that the potential impacts on the groundwater are	During Construction Phase.

Action	Time Schedule
appropriately mitigated.	
3. Contain all contaminated water for re-use and evaporation.	
Refer to Part 2.2.8 of this EMP.	During Construction Phase.
4. Minimise the extent of disturbance of the aquifer as far as practical.	
The size of compacted areas must be minimised to as small as practical.	During Construction Phase and throughout Life of Mine.
The extent of the drawdown towards the mining area in terms of groundwater related impacts will be managed to some extent by limiting the size of the box-cut area.	During Construction Phase and throughout Life of Mine.
Should any adjacent or nearby underground mining be undertaken by either Landau or Greenside Collieries, the possible impacts thereof on the groundwater regime of Navigation West Section will be assessed by a suitable qualified specialist and mitigation measures proposed for implementation, if required.	During Construction Phase and throughout Life of Mine.
5. Prevent the degeneration of groundwater quality as far as possible.	
Ensure that no construction of any water management measures, such as the storm water management berms, and the haul roads, is undertaken with any material that may cause pollution of water resources (such as carbonaceous material).	During the Construction Phase and throughout Life of Mine.
Contain the dirty water in the fit-for-purpose designed facilities, which will limit infiltration of contaminated water to the groundwater.	During the Construction Phase and throughout Life of Mine.
Prepare and compact the foundation layer for the low grade- and hard rock stockpile areas with the purpose of limiting infiltration of contaminated water to the groundwater.	During the Construction Phase.
It should be verified that no impacts on any legitimate water users occur due to the initial groundwater related impacts that will commence during the Construction Phase.	During the Construction Phase and throughout Life of Mine.
An assessment to quantify the possible groundwater related impacts due to the possible backfill of coal discard into the open-pit areas will be undertaken, and suitable mitigation measures recommended.	During the Construction Phase and throughout Life of Mine.
6. Manage the anticipated impacts associated with the inflow of groundwater to the box-cut area.	
Water accumulating in the in-pit water holding facility in the initial box-cut should be pumped to the Pollution Control Pond when sufficient capacity is available, and from there to the existing Navigation Section for treatment and possible re-use in the Plant, to limit the quality related impacts.	During Construction Phase and throughout Life of Mine.

2.2.10 Air Quality

Objective : To minimise the potential impacts on local air quality.

Specific Goals :	<p>Ensure that impacts from dust and diesel fumes generated by machinery on local air quality are minimised.</p> <p>Ensure that impacts from dust generated by blowing wind on local air quality are minimised.</p> <p>Ensure that impacts from dust generated by blasting, on local air quality are minimised.</p> <p>Ensure that monitoring of air quality commences during Construction Phase.</p>
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Technical / Management Options:

The Environmental Coordinator will ensure that all machinery are maintained and in good repair.

The Environmental Coordinator will ensure that dust suppression is undertaken as per the prescribed stipulations, as contained in the table below.

Action	Time Schedule
1. Ensure that impacts from dust and diesel fumes on local air quality is minimised.	
All machinery employed on site will be in good condition, and well maintained.	During Construction Phase and throughout Life of Mine.
All machinery will be fitted with the correct exhaust systems, which will be maintained and in good repair.	During Construction Phase and throughout Life of Mine.
2. Ensure that impacts from dust generated by blowing wind on local air quality is minimised.	
Dust suppression will be undertaken during the Construction Phase. Dust suppression will be undertaken by water cart.	Twice daily throughout LOM mine, increase frequency if necessary.
Water for dust suppression purposes will initially be obtained from the existing Navigation Plant (treated water will be used), and once the Evaporation pond and / or the Pollution Control Pond has been constructed, water for dust suppression will be obtained from the mentioned dirty water containment facilities. All water used for dust suppression will be retained within the dirty water management area of Navigation West Section.	During Construction Phase and throughout Life of Mine.
The size of exposed areas subject to dust generation will be minimised.	During Construction Phase and throughout Life of Mine.
Movement of vehicles will be restricted to areas where dust suppression will be undertaken, as far as practical.	During Construction Phase and throughout Life of Mine.
Dust suppression will be implemented on the access and haul roads and all exposed surfaces within the dirty water management areas.	During Construction Phase and throughout Life of Mine.
Contaminated water will be re-used for dust suppression within isolated dirty water management areas. Where this is ineffective, alternative dust suppression methods will be investigated and implemented, such as environmentally-safe chemical dust	During Construction Phase and throughout Life of Mine.

Action	Time Schedule
suppressants.	
The local conditions will be taken into account to avoid excessive dust suppression, which would lead to ponding and infiltration of contaminated water to the groundwater.	During Construction Phase and throughout Life of Mine.
3. Ensure that impacts from dust generated by blasting on local air quality is minimised.	
Blasting holes will be stemmed to ensure that minimal dust is produced.	During Construction Phase and throughout Life of Mine.
4. Ensure that monitoring of air quality commences during the Construction Phase.	
A highly effective and accurate air quality monitoring programme will be developed and implemented, which will include data collection, modelling and emission measurements. The results of the air quality monitoring programme will be measured against applicable air quality criteria.	Commencing prior to Construction Phase, continuing throughout Life of Mine.

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2.2.11 Sensitive Landscapes

Objective	: To minimise the potential impacts on Red Data plant and animal species that may be associated with the wetlands forming part of the Navigation West Section.
Specific Goals	: Verify whether any Red Data or protected plant or animal species are present in the wetland areas within the Navigation West Section boundary area, prior to the commencement of the Construction Phase. Ensure that impacts of mining at Navigation West Section do not result in loss of animal life. Ensure that monitoring of the flora and fauna located within sensitive habitats (e.g. rocky grassland and riparian wetland) adjacent to the mining area commences during the Construction Phase. In return for destroying the pan at Navigation West Section, a sensitive landscape in the local area (either on- or off-site) will be conserved.

Technical / Management Options:

A suitably qualified ecologist will conduct a Red Data scan prior to the commencement of construction to establish whether or not Red Data species (floral and / or faunal) are present within the planned area of surface disturbance, as well as to determine the course of action to be taken in the event that such Red Data or protected species are present within the study area.

The Environmental Coordinator will ensure that monitoring of all animal species inhabiting area adjacent to the planned mining and surface land use areas of Navigation West Section commences during the Construction Phase.

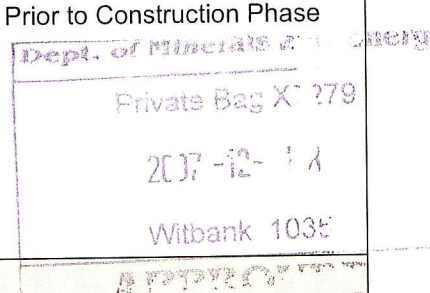
Action	Time Schedule
1. Assess whether any Red Data or protected plant or animal species are present within the wetland areas, prior to the commencement of the Construction Phase.	
A suitably qualified ecologist will conduct a Red Data scan prior to the commencement of construction to establish whether or not Red Data species (floral and / or faunal) are present within the planned area of surface disturbance, as well as to determine the course of action to be taken in the event that such Red Data or protected species are present within the study area.	Prior to the commencement of Construction Phase.
2. Ensure that impacts of mining at Navigation West Section do not result in loss of animal life.	
If any Red Data plant or animal species are identified within the planned area of surface disturbance or within adjacent sensitive habitats (e.g. rocky grassland and riparian wetland), these species will be relocated to suitable habitat elsewhere, in conjunction with the relevant authorities.	Prior to the commencement of Construction Phase.
3. Ensure that monitoring of the flora and fauna located within sensitive habitats (e.g. rocky grassland and riparian wetland) adjacent to the mining area commences during Construction Phase.	
A monitoring programme will be designed by a suitably qualified person to ensure that monitoring of all sensitive plant and animal species within or in close proximity to the planned area of surface disturbance.	Prior to, and during, the commencement of Construction Phase, as well as throughout the remaining Life of Mine.
The monitoring programme will include the monitoring of those sensitive species that will be relocated to suitable habitat elsewhere, in conjunction with the relevant authorities.	Prior to, and during, the commencement of Construction Phase, as well as throughout the remaining Life of Mine.
4. In return for destroying the pan at Navigation West Section, a sensitive landscape in the local area (possibly on- or off-site) will be conserved.	
Clewer Nature Reserve (including the associated wetlands and springs), located adjacent to the west of the Navigation West Section; North Block, will be conserved by the mine. However, an alternative wetland / pan site may be conserved instead, if agreed to in writing by the relevant Government Departments.	During Construction Phase and throughout Life of Mine. 2007-12-14 Witbank 1035
A conservation management plan will be developed for Clewer Nature Reserve (including the associated wetlands and springs), or an agreed alternative wetland / pan site, which will be conserved by the mine.	Prior to the commencement of construction.
The implementation of the conservation management plan for Clewer Nature Reserve (including the associated wetlands and springs), or an agreed alternative wetland / pan site, will commence.	During Construction Phase.

2.2.12 Noise and Vibration

Objective	: To minimise the impacts of noise and vibrations on the health of people and the environment.
Specific Goals	: <ul style="list-style-type: none"> Ensure that noise impacts on machine operators and / or residences are minimised. Ensure that the process design is such that noise production is lessened. Ensure that operational noise is minimised. Ensure that noise impacts in buildings are minimised Ensure that noise is controlled along the transmission path. Ensure transport noise impacts are minimised. Ensure impacts from noise generated during blasting are minimised.

Technical / Management Options:

The Mine Safety officer will ensure that earplugs are issued to machine operators and other mine employees, and will ensure that the earplugs are used. The General Manager or his appointed representative will conduct structural surveys, in consultation with the relevant landowners, and collect a photographic record, prior to the onset of the Construction Phase. The General Manager or his appointed representative will, in conjunction with the Blaster, inform Interested and Affected Parties of blasting times, and ensure that all blasting is conducted correctly.

Action	Time Schedule
1. Ensure that noise impacts on machine operators and / or residences are minimised	
Machine operators will be issued with earplugs, and instructed how to use them	During Construction Phase and throughout Life of Mine
Ensure that all noise emitting machinery and vehicles are well-maintained to reduce noise at source.	During Construction Phase and throughout Life of Mine
2. Ensure that the process design is such that noise production is lessened	
Factors that will be taken into consideration prior to the commencement of Construction Phase will include screening mounds and fences, location of the crusher and tip area as well as maintenance areas, location of pumps and any other equipment operated at night, and location of the haul road both on-site and the distance of the proposed Navigation West Section from the public road.	Prior to Construction Phase 
3. Ensure that operational noise is minimised	
Select equipment that is to be used on site taking into consideration the potential for reduction in environmental noise production	During Construction Phase and throughout Life of Mine
Formulate and implement a buying policy for all equipment at Navigation West which takes environmental noise production into account	During Construction Phase and throughout Life of Mine