6 August 2020

ENVIRONMENTAL LEGAL COMPLIANCE AUDIT REPORT

TRONOX KZN

FAIRBREEZE MINE

DEA EIA REF: DC28/0036/2010
DMR REF: KZN30/5/1/2/2/123MR

Compiled for

South N2 Toll Road,
Exit Bridge No. 4
Fairbreeze

Compiled by

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Richards Bay,
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ENVIRONMENTAL MANAGEMENT PROGRAMME EXTERNAL AUDIT

August 2020

Fairbreeze mine, KwaZulu-Natal

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Action	Designation	Date	Signature
Compiled by:	**Exigent** Jacolette Adam (Pr. Sci. Nat., EAPASA) MSc, LLM (Environmental Law) Sihle Nkomo (BSocSc)	6 August 2020	
Submitted to:	**Tronox** Isaac Ndhlazi (Manager: Environment) Dinesh Moodley (Environmental Practitioner, SHEQ Fairbreeze Mine)		

EXECUTIVE SUMMARY

Exigent Engineering Consultants CC (hereafter referred to as Exigent) has been appointed by Tronox Pty) Ltd to conduct the environmental legal compliance audit in terms of Regulations 34 of GN326 of 2017, for the Fairbreeze mine

Table 1: Assessment Summary

Client:	Tronox Pty Ltd
Site/Facility:	Fairbreeze mine
Audit Type:	Legal compliance audit reports in line with the requirements of Regulation 34 of GN326 of 2017
Phase:	Operational phase
Audit Specification:	Approved EMPR and other applicable licenses and permits issued
Audit dates:	15 June 2020
Tronox Representative(s):	Isaac Ndlanzi, Dinesh Moodley
Auditor and Representative:	Exigent Engineering Consultants represented by Jacolette Adam, Charleen Smuts and Siphesihle Nkomo
Issues identified:	1. Stormwater management at some areas are inadequate; and are impacting on buffer zones in some areas along service corridor roads. Management at the dams should be reviewed in terms of effective silt and stormwater management. During the audit, we were advised that the Stormwater Management Plan is in process of being updated, and will then be implemented. 2. The rehabilitation plan of Fairbreeze needs to include aspects of rehabilitation research to be used as a guideline during implementation. It needs to address aspects such as topsoil management, buffer area management, the revegetation schedule, final shaping, and then implemented. This plan should include the requirement of record-keeping of alien plant control.
Outstanding information:	1. The SOP for management, storage, and transport and dispensing of hydrocarbons. 2. The approval of the site-specific rehabilitation management plan for C Extension is outstanding. 3. No proof of Regular communication to all forums. 4. Proof that the office septic tank was constructed according to the drawings. 5. The status of the fire management COP. 6. Proof of annual site access induction. 7. Proof of dust reduction to acceptable limits at the Twin streams EC and at the FBC 200. 8. The outcome of the investigation of the June Survey Report reporting of night-time exceedance specific noise from a D9 Dozer. 9. A report stipulating that the light facing the freeway from the RSF shed was altered.

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APPENDICES

1. INTRODUCTION

Exigent Engineering Consultants CC (hereafter referred to as Exigent) has been appointed by Tronox Pty Ltd as an independent environmental consultant to undertake Legal compliance Auditing of the Fairbeeze mine Environmental Management Programme Report (EMPR) and various other licenses. The Auditing will involve the review the conditions of the licenses and permits and determine the level of compliance. Exigent will review the requirements of the EMPR - Construction of Fairbreeze Mine and Related Activities - Update (Dated April 2012).

Regulation 34 of GN. 326 of 2017 stated the following:

(1) The holder of an environmental authorisation must, for the period during which the environmental authorisation and EMPr, and where applicable the closure plan, remain valid—

a) ensure that the compliance with the conditions of the environmental authorisation and the EMPr, and where applicable the closure plan, is audited and
b) submit an environmental audit report to the relevant competent authority.

2. METHODOLOGY

2.1. Environmental auditor

Exigent was requested by Tronox (Pty) Ltd to conduct the external audit of the Fairbreeze Mine, located just outside Mtunzini, KZN. Jacolette Adam from Exigent conducted the audit and was supported by Charleen Smuts and Siphesihle Nkomo. The CVs are included in Appendix A and a summary of experience included below:

AUDITOR	QUALIFICATION	EXPERIENCE
Ms Jacolette Adam Pr. Sci. Nat Environmentalist and Team Leader	MSc LLM in Environmental Law	20 years of professional experience in the environmental sector and has been a certified Professional Natural Scientist since 2002 (400088/02). She is also a Fellow member of the Water Institute of South Africa (WISA), the International Association for Impact Assessment South Africa (IAIASA) and has successfully completed numerous environmental assessments and closure provisions throughout South Africa and Internationally for a wide range of clients.
Charleen Smuts	Pri. Sci. Nat. MSc	Charleen has 7 years' experience in the environmental field and is registered as a Professional Natural Scientist (Reg No 115412) in the Botanical Science field of study and is a member of the IAIASA, the South Africa Wetland Society. She has obtained her BSc in 2005 and has since gained a MSc from the University of Pretoria. She has been involved in a wide range of projects, including mixed-use housing developments, pipelines, large scale developments, land use change projects, low cost housing developments, golf estate developments and numerous linear activities.
Siphesihle Nkomo	BSocSc	Siphesihle has 1 year of professional experience in the environmental sector and has a BSocSc in Environmental Management she has also been actively involved with numerous legislated environmental processes. she is also a member of the IAIASA.

2.2. Audit methodology

Exigent has provided a proposed findings category for use during the audit. These findings are listed in Table 1.

Table 1. Audit Findings categories

Rating	Finding
1	Non-compliant
2	Partially compliant
3	Compliant
4	Not applicable

These above described ratings were applied to all the conditions of the EMPR.

A summary of the total list of ratings and findings and a summary of the audit outcome findings are listed in Table 3.

Table 2: Audit of the Fairbreeze Environmental management programme (EMPR)

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
Aspect: Topography						
Minimise change in topography due to mining	1	The pre-mining landscape will be surveyed to record topography. All dunes mined will be rehabilitated to the original shaping of natural topography (slope, landform and orientation) on the basis of the pre-mining survey.	**3**	Pre-mining landscape was surveyed and serves as baseline for planning. The information is available at the following intraweb location: *FBR-Public (\\kznsands.local) (F:)/Data/Mining Technical/Survey/Hillendale A drive - do not alter!/Fairbreeze/Contours* A Rehabilitation Plan is contained in the EMPR (Sect 9.2.6 Pg232) *Construction of Fairbreeze Mine and Related Activities (April 2012) Drafted by Exigent.*	Same findings	N/A
	2	Existing farm roads will be used where possible.	**3**	Pre-mining roads serve non-mining areas whilst new service roads have been constructed to serve the ore body being mined, the RSF, service corridor, as well as the Return Water Dam. A new service corridor has been established in accordance with prescripts to serve the mining of the C-Ext ore body.	Same findings	N/A
Aspect: Soil						
Minimise the loss of a soil resource	B1	A road network will be established that conforms to the newly shaped landscape and designed with a view to minimising erosion potential by utilising retained topsoil and shaping the roads according to accepted engineering standards.	**1**	High usage roads are regularly graded. It was however observed that no standard procedure is being followed and that drains are graded close and cut-off drains established are graded away on a regular basis. Some storm water management structures have been established in respect of mining operations although impacts into buffer zones are evident as a result of high rainfall events.	Stormwater management along the services corridor needs attention as silt build-up washes into the buffer zones. Stormwater management structures must be put in place to avoid impacts on the buffer zones.	Improved stormwater management actions as per comment.
	B2	Topsoil storage will only be carried out for the first ore body excavation and for soil removed from the RSF. After that removed topsoil and *Eucalyptus* harvesting residues will be moved onto	**3**	Not Assessed	Topsoil is added to the topsoil stockpile at the FBCX mining area. Records of topsoil storage must be kept on record and	Improve topsoil record-keeping.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		backfilled areas from areas due to be mined in a sequential manner.			managed according to the EMP.	
	3	Emphasis will be placed on preserving the topsoil for future use. Topsoil storage will be undertaken according to scientific principles and actively managed by re-vegetating and periodical tillage (ripping/ploughing) to ensure its beneficial properties are retained. The specific guidelines for this process are currently being developed by the Rehabilitation Research Programme.	**3**	Topsoil Register Survey reports (*SurveyReport_Recon_2018_Final* see Surveyor database) are done on a monthly basis as part of the Surveyor Report which in turn informs and maintain the Topsoil Balance Register. Topsoil stockpiles have been mapped. The LONG-term Stockpile has been created at the RSF whilst the short term-stockpile is located at the mine front. The topsoil management strategy is contained in Sharepoint Ref #FP_C_Topsoil_Strategy_Vert_20 Jan 2016. Management of stockpiles is informed by the following report: Maintaining Soil Productivity in Stockpiles at Fairbreeze, Dr. C. Smit, 11 November 2013. The current MSRSF stockpile is vegetated although a management decision was taken not to plant trees, as recommended in the above report, as the stockpile is destined for incorporation into the Everglades RSF extension. The establishment of the C-Ore Ext Stockpile is currently underway. Concern has been expressed that the stockpile well exceeds the stipulated 3m height restriction. It was observed that the topsoil stockpile to the east of the Eskom sub-station, as previously reported, is still used as a materials laydown area. It was reported that this was not viewed as standard practice.	Topsoil is added to the topsoil stockpile at the FBCX mining area. The material that was placed on the topsoil stockpile to the east of the Eskom sub-station is almost complete. ECO11/19. Topsoil height levels must adhere to the recommendations.	N/A
	4	Only areas within the ore bodies, servitudes and infrastructure footprints will be disturbed. The areas to be disturbed will be kept as small as possible. Buffer zones and no-go areas will be demarcated to prevent	**2**	It is of great importance that disturbances to sensitive areas, whether allowed by the overall license or not, be kept to that which is necessary for effective mining. It was noted that some unnecessary clearing took place during the preparation of the Core Ext area.	Levelling of topsoil in the FBCX is encroaching sensitive areas.	Rehabilitation plan to be reviewed in light of topsoil management and final shaping.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		disturbances (see 10.3.3.2).				
	5	Vegetation will be removed from an area no longer than 45 days prior to scheduled mining or disturbance of the area.	**3**	Within the Mining area topsoil was removed in excess of 45 days prior to operations commencing.	Same findings.	Rehabilitation plan to be reviewed in light of topsoil management and final shaping.
	7	Replacement of reconstituted soil and addition of topsoil will be undertaken with a view to restoring soil fertility and structure appropriate for the intended land-use. Specific guidelines for the management of this medium, including the principles of re-vegetation, reforestation and regeneration of soil fertility and structure will be guided by the Rehabilitation Research Programme and consideration of the latest mine rehabilitation technology.	**3**	Various Hillendale research reports (Viz. *Rehabilitation options for the Fairbreeze mine; Dr. C. Smith; 5 July 2017)* inform the rehabilitation approach for Fairbreeze. Rehabilitation will commence upon completion of the MSRSF walls and when tailings have been placed in the C-extension ore body void. *See 1.* The necessary management plans are in place. At the MSRF experimental sodding along the north-eastern wall was undertaken. It was reported that "reconstituted soil" will not be used as part of the rehabilitation process.	Same Findings	Rehabilitation plan to be reviewed in light of topsoil management and final shaping.
	B3	A protocol for monitoring and measuring soil fertility and soil quality will be developed during the Rehabilitation Research Programme. These will provide soil chemical and physical measures and norms as indicators of the success of the rehabilitation process.	**1**	Not Assessed	Testing of soil fertility has not been conducted during 2019.	Review of rehabilitation plan.
Prevent or minimise erosion of soils	8	Topsoil stockpiles will be placed in suitable locations and away from within the 1:100-year flood line of any watercourse. Topsoil stockpiles will be protected from surface water flows by diversion berms.	**3**	Topsoil locations are placed well away from flood lines. Topsoil berms have also been created around the MSRSF. No diversion berms have been observed at the established stockpiles.	No evidence has been noted that the topsoil stockpiles are protected from surface water flows, in areas of risk, by diversion berms. ECO11/19	Review of rehabilitation plan.
	B4	Since layering takes place during the replacement of the reconstituted soil,	**2**	It must be note that the stipulated tillage and the application of reconstituted soils are not in	Rehabilitation recommendations show	Review of rehabilitation plan.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		deep tillage behind a grader of bulldozer on the contour will be carried out to homogenize the soil and break up compacted layers when the soil is at a suitable water content		accordance with latest research findings. The latest research suggests that soil covered with topsoil is the preferred method of rehabilitation.	that reconstituted soils will not be used for rehabilitation.	
	9	The maximum open, active mining area will not exceed 0.65 km^2 at any one time. Intermediate revegetation will be undertaken at a pace similar to mining such that the area requiring revegetation also does not exceed 0.65 km^2.	**1**	The active mining area C-Ore and C-Ore Ext, as reported during October 2018 was 64.51ha in extent.	A total of 68ha's was "disturbed" (open) which exceeds the allowable amount. *(ECO 11/19)*. Revegetation must occur in areas where mining is complete.	Maintain revegetation schedule.
	10	Revegetation of disturbed areas will commence within 60 days of removal of the disturbing factor. Intermediate revegetation will aim to establish at least 30% basal cover within 60 days of planting. Revegetation of backfilled and shaped areas, per area, will commence within 60 days of completion of the placement of soil medium. Revegetation will aim to establish at least 30% basal cover within 90 days of planting. (Rehabilitation will be done on the basis of information derived from the Rehabilitation Research Programme).	**3**	The mine holds the opinion that the total mining of a specific ore body constitutes the disturbing factor. No Rehabilitation activities has yet commenced at the time of inspection, although it was reported that intermediate re-vegetation may commence shortly at C-Ore Body southern portion. Topsoil stockpiles are still being developed at the new mining area of the C-Orebody Extension.	Some areas within the FBC body have been temporarily grassed, *(ECO 11/19)*	Maintain revegetation schedule as per updated rehabilitation plan.
	11	Ensure road construction (including culverts, run-off channels, etc.) using accepted engineering methods, as well as regular maintenance of roads.	**2**	High usage roads are regularly graded. Service corridor stormwater management insufficient and culverts are not being maintained It was noted that the cut-off drains created along the service corridor road are not being maintained. Storm water management structures have been	The services corridor stormwater management is inadequate. A draft stormwater management plan (SWMPlan) has been drawn and requires	Implement updated SWMPlan after approval.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
				upgraded in respect of mining operations which intends to channel water back into the mining area.	implementation. It is also reported that an engineer has been commissioned to make recommendations regarding the maintenance of the service corridor road. Final SWMplan was not been available during audit.	
	12	The RSFs starter wall will be vegetated with stoloniferous grasses and legumes to prevent surface erosion. Vegetation must achieve 80% dust control efficiency. (Rehabilitation will be done on the basis of information derived from the Rehabilitation Research Programme).	**3**	The outer berm has naturally seeded whilst it was also grassed. It was noted that a portion of the eastern starter-wall was and is being grassed with sods as a cost experiment. The remainder of the inner dam walls are still actively being constructed and can therefore not be grassed during this phase.	Grassing of the RSF starter wall is complete, shaping is currently taking place to finalize the height of the wall.	Maintain revegetation schedule as per updated rehabilitation plan.
	13	All disturbed areas, areas undergoing rehabilitation, the RSF walls and all water management structures will be inspected after every major storm event and repaired as necessary.	**3**	Mine slopes are inspected daily and repaired as is required during high rainfall events. It was observed that plant equipment is driving on the topsoil berm surrounding the RSF, it is unclear whether this is in accordance with the mine's SOP for the management of topsoil stockpiles. It was also observed that a large volume of tailings was spilled into the toe-drain at the starter-wall dredging site. It appears as though an effort was made to speed up the dredging of the tailings resulting in material spilling over the topsoil berm into the drain. Although a repair was implemented, the spill was not yet cleaned, nor could any evidence that the incident was reported, at the time of audit, be provided It was further observed that a second large volume of tailings was spilled into the toe-drain and onto the topsoil berm as a result of a pipe failure. Although	The Mine slopes are inspected daily. The MSRSF Perimeter Sand Wall construction methodology is deemed as non-compliant.	Implement updated rehabilitation plan.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
				repair was implemented to the pipe, the spill was not yet cleaned, nor could any evidence of an incident report submitted be provided at the time of audit.		
	14	Toe (or catchment) paddocks will be constructed below the RSF walls and maintained.	**2**	Toes have been constructed below the RSF walls. See comment above	The topsoil berm and toe paddocks along the north-western portion of the RSF had wash-away which resulted in uncontrolled flow *(ECO 11/19)* The topsoil berm and toe paddocks need to be maintained.	Implement updated SWMPlan after approval.
	15	Linear infrastructure (roads and pipelines) will be inspected on a monthly basis to check that the associated water management infrastructure is effective in controlling erosion.	**2**	Infrastructure *inter alia* consists of Bulk water pipeline, services corridor, 11kVa powerline, and fixed storm water infrastructure. Roads exists on mine owned as well as on mine leased properties.	During observation it was noted that when the road is being graded to manage mud on the surface, the mud is graded into the stormwater discharge points. The cute off drains along the FBC service corridor, that were graded away, need to be replaced. (ECO 11/19)	Implement updated SWMPlan after approval.
	16	Construction of surface water management infrastructure from soil (berms, canals and bunds) and advised by engineer.	**3**	A suitably qualified Resident Engineer is permanently onsite to advise on construction and repairs.	Same findings	N/A
	17	Energy dissipaters will be constructed at points where there are concentrated discharges of water to the environment	**1**	Energy dissipaters have been constructed at the Valley Dam spillway and Pollution Control Dam overflow.	No energy dissipators were visible in long storm water channels and at road storm	Implement updated SWMPlan after

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		that can cause significant erosion. Where necessary, energy dissipaters will also be placed within water channels to slow the speed of water (for example in the clean water diversions).		No evidence was found of energy dissipaters in long storm water channels and at road storm water concentrated discharge points. Silt curtains have been installed down slope of the mine water discharge points where mobile silt, as a result of rain, has been problematic.	water concentration discharge points. *(ECO 11/19)*	approval.
	18	Energy dissipaters will be placed in footpaths where there are signs of erosion.	**4**	Formal footpaths established within the PWP area has been hardened and formalised. Footpaths within the mining area are limited to temporary paths which are demarcated.	There are no footpaths outside of the mining area. Within the mining area footpaths are generally limited and demarcated with no evidence found erosion *(ECO 11/19)*	N/A
Aspects: Land Capability						
Minimise loss of land with arable capability/agricultural potential	B5	Management will focus efforts on creating a well-aerated rooting environment free of excessive compaction and layering in the reconstituted soil by employing suitable land preparation methods. These methods will be guided the Rehabilitation Research Programme.	**3**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020 when backfilling and rehabilitation operations will commence.	A Rehabilitation Research Plan needs to be established	N/A
	B6	Existing topsoil will be utilised as far as possible as a means for restoring soil fertility and soil structure. Emphasis will be placed on utilising the existing topsoil in combination with the forest floor and harvesting residues (bark, branches, leaves, treetops and chipped stumps) that will be available after clear-felling of the Eucalyptus.	**3**	Topsoil Stockpiles have been created which includes organic and plant material. Soil fertility will be restored when rehabilitation commences in future.	Same findings	Implement updated rehabilitation plan.
	B7	Management of the reconstituted soil (i.e. depth of application and specific clay: sand ratio), topsoil/harvesting	**4**	Specialist research undertaken by Dr. Smith at Hillendale and which is contained in various guideline reports will inform future rehabilitation activities at	Same findings	Implement updated rehabilitation plan.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		residue mix, incorporation of the latter within the reconstituted soil and further amelioration will be determined by the Rehabilitation Research Programme and consideration of the latest mine rehabilitation technology		Fairbreeze Mine. See Report: *Four-Year Assessment of the Hillendale Eucalyptus Rehabilitation Trail. Dr C. Smith. 20 December 2016. Rehabilitation Options for the Fairbreeze Mine. Dr. C. Smith. 5 July 2017.* It must be noted that the latest rehabilitation recommendations indicate that reconstituted soils will not be created and used.		
	B8	Topsoil storage will only be carried out for the first ore body excavation. After that removed topsoil and Eucalyptus harvesting residues will be moved onto backfilled areas from areas due to be mined in a sequential manner.	**1**	Topsoil has been removed and stockpiled from the C-Orebody currently being mined and the C-Ore Ext being prepared for mining. No backfilled areas have yet been prepared for areas where mining has been completed and no "sequential" mining was observed.	Topsoil is being stored at the C-orebody and C-extension	Implement updated rehabilitation plan.
	B9	Once reforested, growth of the re-established forest plantation will be monitored and compared to growth expectations from Mondi's growth and yield models for the species/clone/hybrid in question	**4**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020 when backfilling and rehabilitation operations will commence. It must be noted that no commercial afforestation is planned for C-Ore and C-Ore Ext mine areas.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation	Implement updated rehabilitation plan.
	B10	Since the establishment of forest plantations will contribute to improving the fertility and structure of soils, the time taken between re- vegetation and establishment of tree crops will be minimized	**3**	See previous comments regarding rehabilitation and commercial afforestation.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation	Implement updated rehabilitation plan.
	19	As per the rehabilitation/closure procedure (Section 10.6, the soil structure will be restored during the final stages of residue deposition. The restoration will be appropriate to the agreed post-mining land capability (sugarcane, plantations, and natural areas). (Rehabilitation will be done on the basis of information derived from	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented when backfilling and rehabilitation operations will commence.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation	Implement updated rehabilitation plan.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		the Rehabilitation Research Programme).				
	21	Following backfilling, the landform will be shaped to the extent where it will be possible to practise the agreed land use on the area. The post mining topography will be modelled on the pre-mining landscape survey.	**3**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020 when backfilling and rehabilitation operations will commence.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation and backfilling	Implement updated rehabilitation plan.
	22	Ensure that the topsoil coverage is as even as possible, with no compaction, and that natural drainage has been re-established (no wet spots or obstructed drainage ways)	**3**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020 when backfilling and rehabilitation operations will commence.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation and backfilling	Implement updated rehabilitation plan.
	24	An appropriate indigenous vegetation seed mixture, as determined by the Rehabilitation Research Programme/Biodiversity Forum, will be used over areas to be returned to a natural land cover. The revegetation will aim to ensure at least 30% vegetative cover is established with 3 months. Vegetation establishment will be monitored quarterly for 3 years after planting, or until monitoring indicates that a suitable, self-sustaining natural land cover has been achieved.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation.	Implement updated rehabilitation plan.
	25	Ensure that the vegetation coverage is as even as possible, and if uneven coverage occurs, soil conditions will be checked and rectified.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020 when backfilling and rehabilitation operations will commence.	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation	Implement updated rehabilitation plan.
Aspect: Land use						
Prevent long term changes in land use	27	The post-mining land use will be agriculture, specifically sugar cane and	**2**	It is intended at C extension to re-establish natural grass veld instead of sugar cane as approved by the	Same findings	Implement updated

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		Eucalyptus sp. Plantations or natural vegetation.		DEDTEA. See EIA/4187/AMEND/2013: *Amendment of Environmental Authorization for the operation of mine to extract mineral bearing sand near Mtunzini.*		rehabilitation plan.
Minimise loss of land currently used for wilderness/wetlands	A1	Buffer zone management will be conducted as specified as per biodiversity monitoring programme (Section 10.3.3.2).	**1**	It was reported that the Buffer Zone is not actively monitored, and that management is done in response to actions required in terms of that inferred from the *Instream Biomonitoring Programme*. It was further reported that no deterioration of the Buffer zone has yet been detected. It was also reported that the assessment of vegetation has recently commenced as part of the *Habitat Integrity Assessment* programme. The Biodiversity monitoring programme has been replaced with a bio-monitoring plan, see Appendix 5, Pg. 211 of the approved EMPR dated April 2012 drafted by Exigent. ENVASS has been appointed as contractor to conduct the Bio-monitoring (C04931).	The riparian zone in the Sabeka River crossing has been affected by the sugarcane cultivation. Downstream systems have been affected by a flow impediment because of a road crossing. ENVASS has been appointed to conduct the quarterly biomonitoring	ENVASS to review biomonitoring results and provide recommendations for mitigation measures to be implemented in the riparian zone to ensure that it is not impacted.
	29	Details of the post closure land use for each ore body will be agreed with stakeholders, in particular the landowner (Mondi) and relevant regulatory authorities (DME, DWAF, DAEARD).	**3**	Stakeholders were informed as part of the original stakeholder engagement process. A documented agreement has been concluded prior to mining commencing, whereby after 4 years of mining C and A Ore would be returned to commercial trees, whilst C ext. becomes a formal conservation area (land ownership transfer, for off-set, currently in progress) and B has not yet been determined. Various regulatory authority agreements are contained in relevant approvals and documents.	Same findings	N/A
Aspect: Fauna, flora, wetlands and aquatic						
Minimise loss of vegetation due to the Fairbreeze Mine	30	The identified natural vegetation areas will be declared no-go areas with respect to mining equipment and protected against disturbances. Buffer zones will be adhered to as stipulated in 10.3.3.2.	**2**	*See 4.* An "Environmental Features Map" drafted which reflects buffer zones, servitudes and infrastructure footprints require updating. Buffer zones and no-go areas have been demarcated and sign posted.	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
	31	Revegetation of disturbed areas will be undertaken as soon as possible and will commence within 60 days of removal of the disturbing factor. This will be measured against the commitment of maximum open areas (0.65km2) at any time as well as rehabilitation/closure procedures	**3**	*See 9.* The active mining area as at September 2018 was 64.51 ha in extent and below the stated maximum of 65 hectares. It must be noted that the mine does not view the service corridors, RSF, and plant area as part of the "disturbed area". Mining, as the disturbance factor, will continue for some time and re-vegetation can therefore not commence within the stipulated timeframe. Re-vegetation has been completed as far as practicably possible at the MSRF, Valley Dam, and PWP once construction was completed.	A Rehabilitation approach and timeframes should be included in the rehabilitation research plan. (ECO 11/19).	Implement updated rehabilitation plan.
	48	All Eskom pylons to be constructed outside the delineated wetland area.	**3**	Not assessed	No Eskom Pylons have been constructed in the wetland areas.	N/A
	49	Routes for vehicles transporting heavy machinery during the construction phase must be restricted to approved roads, turning sites and stockpile areas to minimize soil compacting and vegetation destruction. If soil is compacted, it must be loosened again by ripping or ploughing of these compacted areas during rehabilitation process (as per Specifications in Ref B4.	**1**	Routes for large plant used during mining operations are demarcated and restricted to formal roads.	The road that leads from pump station 2 towards the exit gate still experiences significant heavy plant traffic. This road falls within the buffer zone and is outside of the designated mining area. Soil is building up at the edge of the road as a result of the road being graded and during rain events this gets washed downstream. The road running adjacent to and upslope of the stream towards the FBCX western gate poses a threat to the adjacent buffer and stream due as a result of loose	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
					material being graded over the edge of the road. (ECO 11/19).	
	50	Rehabilitation, to the pre-disturbance conditions, needs to be initiated as soon as each section of the pipeline construction has been completed.	**3**	Pipelines within the Services Corridor are maintained and will not be rehabilitated during the life of the mine although regular maintenance take place and erosion control measures has been implemented. The Bulkwater pipeline from Hillendale to Fairbreeze was rehabilitated immediately as construction was completed and visual evidence suggest that rehabilitation was successful in all habitats disturbed.	The bulk water pipeline that lies along the sensitive areas has stabilised and rehabilitated to an acceptable level; no erosion is taking place along the pipeline route. *(ECO 11/19)*	N/A
Ensure management of staff in terms of environmental aspects sensitive to the Fairbreeze Mine project	32	Strict management of access control to the site, control of movement of the labour force within the mine property and prevention of disturbance to vegetation or animals will be practised.	**3**	Access control and fences have been established at C-Ext, PWP, and MSRSF.C-ore body has been fenced although pedestrian access control from the N2 is limited. Sporadic theft of equipment (electrical cables at the mine front) and cutting of fences at the PWP has been reported.	Security is provided at all access points including roving security at the mining areas and PWP. ECO11/19	N/A
	33	All mine personnel will be provided with annual environmental awareness and job specific training. This will include specific aspects of Red data species, connectivity of natural habitats, species recognition, migration corridors, stipulated buffer zones, etc. This training will also be supplemented via posters on site.	**3**	See 155 A basic environmental presentation was provided to shift staff during 2018. A focused and comprehensive environmental induction was developed for presentation to all shift staff. It was reported that it was the mine's intention to present this induction to shift staff during 2018. No evidence was found of environmentally related posters on site.	Environmental awareness is part of the annual site access induction that is conducted annually.	Tronox must provide proof of annual site access induction.
Minimise effects of habitat fragmentation	34	Disturbances to identified areas of natural vegetation or corridors between these areas will be prevented. Where disturbances are approved, the restoration of the connectivity will be prioritised. Infrastructure through or between areas of natural vegetation or corridors will be implemented with	**2**	Buffer Zones have been established and are being maintained. Connectivity is restored through various means if impacted upon. Cognisance must be taken of the fact that the primary corridors runs in a north south direction which will not be impacted upon and that the N2 freeway divides the mine area in an eastern and western portion.	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		provision for the passage of fauna. Buffer zones will be adhered to as stipulated in relevant map included in report (see Figure 10.1).				
Minimise impact on terrestrial and aquatic fauna and flora due to dust, light, erosion and sedimentation	44	Mining-associated traffic will be restricted on the roads to the west of the swamp forest at FBCX, and any other areas as identified by the ECO.	**3**	No roads have been established west of the FBCX stockpile area and traffic is restricted to areas well west of the swamp forest.	A new road has been established for heavy vehicles. The road running adjacent to and upslope of the stream towards the FBCX western gate is only used by the security personnel.	N/A
	45	The tree barrier adjacent to Mtunzini (see Ref 87) will be maintained to provide a faunal corridor. This barrier will remain in place until such time as the property is finally handed over to KZN Wildlife, as per the offset agreement, after which it will be managed as per the offset contract	**3**	An indigenous tree barrier / corridor has been established with a visual Eucalyptus barrier on the C extension side. The buffer is managed and maintained. It must be noted that the required indigenous tree barriers do not grow as fast as what the mining activities area undertaken. The indigenous barriers therefore provide no visual barrier.	The indigenous tree barrier is acting as a visual barrier, and is maintained. Three rows of Eucalyptus have been planted to act as a visual/noise barrier for the C orebody.	N/A
	51	See Ref 17 to 26 (water quality) Water quality and flow monitoring (see Ref 53 and 54) will be used to calculate sediment loads within each water course/ estuary.	**3**	Flow monitoring is captured by DWS at the two weirs on a daily basis, SRK (C05634 2017-2019) incorporates all monitoring data, rainfall and flow records to update the hydrological model for the monthly report. Water quality is being monitored on a monthly basis by ENVASS (C04931) and is reported on a quarterly basis. See below.	Water quality is being monitored on a monthly basis by ENVASS (C04931) and is reported on a quarterly basis.	N/A
	52	A biomonitoring programme will be implemented on the estuarine and freshwater parts of the aquatic system. This will cover: Fish (freshwater and estuarine); Water Quality (estuarine and freshwater); Sediment composition	**3**	Biomonitoring is being undertaken by ENVASS (C04931) as part of the Water quality monitoring. The most recent Biomonitoring Report provided for the wet season: Ecological Report, Report No *BIM-REP-281-HD- 16_17((Wet) July 2018* was presented. Monitoring locations have been selected during the	Water quality is being monitored on a monthly basis by ENVASS (C04931) and is reported on a quarterly basis.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		(estuarine and freshwater); Macro-invertebrates (freshwater); and Macro Crustacea (estuarine and freshwater). Sec 10.3.3.1 of the BAR specifies the frequency of the monitoring. Locations for sampling will be based on results of biomonitoring specialist study.		initial baseline studies and which is reflected on the Environmental Features Map.	The most recent Biomonitoring Report provided for the wet season: Ecological Report, Report No (IM-MEM-281-16_17 (FB-Q3 2019) 0.0) August 2019.	
	35	Harvesting of medicinal species as well as Red Data rescue and relocation missions for all species as specified by KZN Wildlife will occur prior to the start of any construction activities in an area. Permits to relocate the TOPS protected species will be obtained from KZN Wildlife. Specimens will be removed as per TOPS permit conditions.	**3**	A search and rescue operation were undertaken prior to the commencement of mining operations. A register is kept for snakes relocated from site, an activity undertaken on a continual basis see SHERCDOC-66-3865.Register of plants removed is retained on record.	Same findings	N/A
	36	Long term mitigation measures include establishment of off-set areas where required. A biodiversity offset-agreement has been compiled in conjunction with KZN Wildlife and DWA. Management and monitoring of these offset areas are critical for the success thereof and will be measured as per the conditions and monitoring requirements of the offset agreement. The offset plan provides alternative and sustainable land use strategies to enhance the future health of the biodiversity of this important area. It is proposed that a Siyaya monitoring forum be established with a key focus on sustainable land use and management within the Siyaya	**2**	The Strategic Offset Management Plan for Fairbreeze Mine and Associated Activities, Ver 1.0, June 2016, Report # EP194-01, drafted by D. McFarlane of EcoPulse was approved by DEDTEA on 8 September 2016. This Plan is part of a 3-year contract to finalise all offset requirements for all mining infrastructure. It was reported that the Offset Plan was being finalised / revised with inclusion of the C-Ore body area as part of the Everglades Expansion Project. The Offset Advisory Committee, under the chairmanship of the DEDTEA has not met since its inception. It was reported that DEDTEA is attempting to have the committee initiated through DMR.	The Offset Advisory Committee held a meeting on the 1st August 2019 at Fairbreeze Mine Office, which was chaired by DMR. It was noted that formal approval by the OAC of the site-specific management plan for offset areas on C extension was still outstanding.	Follow up on the approval of the site-specific management plan for C extension.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		catchment. Relevant key stakeholders, e.g. EXXARO, Mondi, DWA, WESSA, KZN Wildlife, and Mtunzini Conservancy will be involved in Forum.				
	A2	Disturbances to habitat known to protected species will be prevented through access control, training of personnel and management of mine activities.	**1**	Buffer zones and no-go areas have been created and are being maintained.	Buffer zones are being disturbed during grading of the service corridor roads.	Implement updated SWMPlan after approval.
	38	EXXARO will implement an alien and invasive vegetation programme to remove alien and invasive plants in all the identified natural vegetation areas within the mining area.	**2**	An Alien Weed Management Programme (*Pdocs 259280)* has been drafted and a contractor has been appointed to manage alien and invasive weeds (Contract no 460001150)	An Alien Weed Management Programme was drafted (October 2013) It is recommended that a record of alien plant control progress be established.	It is recommended that a record of alien plant control progress be established.
	39	Firebreaks will be maintained as agreed with the landowners, neighbours and in terms of the Veld and Forests Fire Act (101 of 1998). EXXARO will join and participate with the local Fire Protection Association.	**3**	All firebreaks are cleaned and managed annually. The firebreaks have been surveyed for inclusion in the Environmental Features Map. A formal Agreement has been established with Mondi. The Draft Emergency Veldfire Response Procedure has been incorporated into the DMR Regulatory required (mandatory) Fire Management COP which is currently under review, REF: ZFPA membership certificate 2018 MINING-DOC-41-116 Tronox-Mondi firebreak agreement MINING-DOC-41-79	All firebreaks are cleaned and managed annually by Tronox.	Follow up on the status of the fire management COP.
Minimise risk of avian collision due to re-aligned ESKOM powerlines	41	The bird flappers will be installed, monitored and maintained as per ESKOM standards, by ESKOM.	**3**	Although not the responsibility of Tronox, Eskom has installed bird flappers on some of the overhead lines. One bird-strike (heron) was reported at the MSRF during 2018.	Eskom has installed bird flappers on some of the overhead lines ECO11/19.	N/A
Manage the direct (in the mining area) loss of herpetofauna	42	An on-site herpetofauna monitoring program in the initial year of operations at FB will be undertaken to quantify the numbers and species of herpetofauna	**3**	A register (SHERCDOC-66-3865) is kept of snakes relocated from site as part of a continual rescue operation. All species removed are released in areas which will not be impacted upon by mining activities.	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		impacted on by mining operations.				
	43	Where necessary a herpetofauna search and rescue operation will be undertaken within the identified wetlands prior to their destruction by mine development. Rescued specimens will be released in the offset or other suitable areas. A herpetologist will provide the necessary expertise for release.	**3**	Duplicate aspects are not evaluated.	A search and rescue operation were undertaken prior to the commencement of mining operations.	N/A
Catchment loss (FBA, FBB, FBC, FBD, MSRSF, VRSF) feeding wetland systems	46	Restore surface water runoff from rehabilitated areas to the original catchments on the basis of the survey of the original landform.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline for rehabilitation.	Implement updated rehabilitation plan.
Minimise impact on wetlands due to contaminated surface and groundwater/change in water quality	53	Rigorous and regular monitoring of stream flow will be undertaken in alignment with the biomonitoring programme requirements. This will inform any adaptive management measures if deemed necessary by aquatic specialists. Section 10.3.3 of the BAR specifies the frequency of the monitoring. Locations for sampling will be based on results of biomonitoring specialist study.	**3**	*See 51, 54 and 59* Flow monitoring is captured by DWS at the two weirs on a daily basis, SRK (C05634 2017-2019) incorporates all monitoring data, rainfall and flow records to update the hydrological model for the monthly report. The most recent report ref: Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017 dated February 2018 were submitted as confirmation. Water quality is being monitored on a monthly basis by ENVASS (Contract No C04931) and is reported on a quarterly basis, see Report No *MON-WQR-281-HD-16_17* (September2018).	Water flow is captured in the Fairbreeze Surface Water and Groundwater Hydrology report- 2019 (April 2020). Water quality is being monitored on a monthly basis by ENVASS MON-WQR-281-FB-16_17 (19-09)	N/A
	54	Monitoring of the Siyaya estuary will be undertaken in alignment with the biomonitoring programme requirements. Section 10.3.3 of the BAR specifies the frequency of the monitoring. Locations	**3**	*See 51, 53 and 59* Biomonitoring is being undertaken by ENVASS (C04931) as part of the Water quality monitoring. Monitoring locations have been selected during the initial baseline studies and which is reflected on the	Biomonitoring is being undertaken by ENVASS. Biomonitoring takes place in 12 locations of the Fairbreeze mine.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		for sampling will be based on results of biomonitoring specialist study.		Environmental Features Map.		
Aspect: Water (surface and groundwater)						
Minimise or prevent deterioration in surface water quality due to mining activities	59	Water quality and flow monitoring within the freshwater and the estuarine parts of the catchments will be undertaken in accordance with EXXARO monitoring programme (Section 10.3.3). The results will be used in the development of the closure plan remediation and monitoring programme.	**3**	Flow monitoring is captured by DWS at the two weirs on a daily basis, SRK (C05634 2017-2019) incorporates all monitoring data, rainfall and flow records to update the hydrological model for the monthly report. The most recent report ref: *Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017 dated February 2018* were submitted as confirmation. Water quality is being monitored on a monthly basis by ENVASS (Contract No C04931) and is reported on a quarterly basis, see Report No *MON-WQR- 281-HD-16_17* (September2018). Monitoring locations have been selected during the initial baseline studies and which is reflected on the Environmental Features Map.	Water flow is captured in the Fairbreeze Surface Water and Groundwater Hydrology report- 2019 (April 2020). Water quality is being monitored on a monthly basis by ENVASS MON-WQR-281-FB-16_17 (19-09).	N/A
	60	Clean water diversions and dirty water collection facilities will be established at all mining areas as well as at the RSFs, PWP and RWD to prevent clean surface runoff becoming contaminated by construction or operational activities. Diversion measures will be established before land clearing and mining commences. The measures envisioned are simple soil berms and trenches to prevent clean runoff entering dirty areas and others to divert dirty water to settlement paddocks.	**1**	All water which fall upon the RSF, PWP, RWD (Valley Dam), and the mine areas (highest risk) is treated as "dirty water" by the mine. It is reported that water quality monitoring is undertaken every 3 months from all the water holding facilities (RSF Pollution Control Dam, Valley Return Water Dam, PWP Pollution Control Dam). It was noted that a significant amount of mine fines from the MSRSF has and continuously enters the Valley Return Water Dam. It was also observed that the significant volume of material deposited into the PWP Pollution Control Dam has not yet been removed. This compromises the water holding capacity of the dam and contributed to the un-controlled releases experienced during rainfall events.	The drain which empties into the PWP PCD was not completed during the construction phase. The construction of the stormwater drains before the rain season as per recommendation is not completed. ECO/11/19	Implement updated SWMPlan after approval.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
				It was also observed that the storm water cannels within the PWP facility are not being maintained on a regular basis with significant volumes of material entering the Pollution Control Dam.		
	61	Dirty water drains will be sized to manage the 'dirty' water generated by a 1:50 year storm arising on contaminated areas. Dirty water will be directed to retention ponds, from where it can be returned to the mine or process water circuit. The storage facilities will have a minimum freeboard of 0.8m above full supply level. The width and height of the drains will be determined to ensure compatibility with identified hydraulic requirements of the drain.	**2**	Aspect requirements formed part of design submitted to the DWA which was approved on the 23rd of February 2009, see license # 2116914 Valley RWD. It was observed that the storm water cannels within the PWP facility are not being maintained. It was reported that the PWP Pollution Control Dam has overflowed twice due to heavy rains during 2018. The uncontrolled releases were a result of the volume of sediment allowed to enter the dam thus lessening its holding capacity and the reported failure to maintain the required freeboard level.	It was reported that the PWP PCD overflowed during the heavy rains experienced in November 2019. ECO11/19	N/A
	62	The water levels in the dirty water storage facilities will be kept low by recycling into process water circuit. This ensures that the facility has enough capacity in the event of another severe rainfall event. All dirty water storage facilities will be managed with the required freeboard	**2**	Evidence indicated that dirty water storage facilities (PWP & RSF) has overflowed as a result of both high rainfall and sedimentation of the PWP and RSF pollution control dams. It was reported that the RSF Pollution Control Dam will be cleaned of the deposited material and the required freeboard is being maintained. Evidence suggests that the stipulated freeboard is not always maintained at the PWP Pollution Control Dam.	It was reported that the PWP PCD overflowed during the heavy rains experienced in November 2019. ECO11/19. It was observed that the PWP PCD FSL stipulation is not followed. ECO11/19	Follow up on the corrective action taken after the PWP PCD overflowed.
	63	EXXARO will keep water systems clear of obstructions. Drains will be inspected regularly for erosion and obstructions. Unless problems are encountered during these inspections, the drains will be cleaned and maintained, as necessary.	**2**	It was observed that drains within the PWP area was not regularly maintained and cleared of deposited materials.	It was observed that the plant stormwater drains require follow-up cleaning prior to the rain season. ECO 11/19	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
	64	Spillages from pipelines near to watercourses will be contained by soil bunds. These will contain spillages or direct the material to areas where it may be cleaned up and returned to the process. A contingency plan will be implemented to enable early detection of burst pipelines.	**1**	It was observed that spillages from pipelines are not immediately cleaned or contained resulting in spilled material (ROM or fines) eventually being washed away by rainfall	On the 7th of November a ROM pipe failure occurred at the FBCX ROM Booster pump resulting in ROM breaching an insufficient berm, spilling over the services corridor road and through a stormwater drain into the buffer area stream. ECO 11/19. The spill was quickly contained and the spilled material removed.	N/A
	65	Prevention of spillages by quarterly inspection and maintenance of pipelines. All pipe bursts and spillages will be recorded as incidents and measures implemented to contain, clean-up and prevent further spillages. The mine will u s e its incident reporting system to ensure appropriate measures are taken in the event of incidents.	**2**	Pipelines are inspected and maintained as part of daily operational procedures. It was however observed that a tailings pipeline failure occurred at the RSF (SW wall), although partially cleaned, no evidence could be presented that the incident was reported. It was also observed that a similar tailings pipeline failure occurred along the NW wall which was also partially cleaned, and no incident report could be confirmed.	Product and sand tailings pipeline spillages (behind PD pumps MCC) are partially cleaned. The ROM pipe on the 9th of October at the 1st stream crossing south of the ROM Booster failed. A 2nd ROM pipe failure also during October further south along the service corridor. ECO11/19.	Follow up on mitigation measure put in place for the pipe failures.
	66	Ensure that temporary toilet facilities do not cause any water pollution or a health hazard.	**3**	Chemical toilets at the mining area and MSRF are situated well away from water courses and are cleaned on a regular basis by a service provider. Concern was expressed in respect of the PWP conservancy tank, which overflowed frequently in the past, bundwall which is required to contain110% of the storage volume has not yet been constructed.	Chemical toilets at the mining area and MSRF are situated well away from water courses and are cleaned on a regular basis by a service provider.	N/A
	67	The flocculants used will be such that both the flocculants and its decay products will not be to the detriment of	**3**	The water management system is closed and there are thus no downstream users. The flocculants used are bio-degradable.	The flocculants used are bio-degradable.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		downstream water users. The dosage of excessive amounts of flocculants will be avoided.				
	68	Should contamination or excessive surface water flow be detected, the mine will immediately notify relevant authorities. The mine will then: identify the source of the contamination; identify, and if necessary, implement, measures for the prevention of this contamination (short and long term); determine, and if necessary, implement, any remediation measures.	**1**	Evidence was presented that the reported uncontrolled release incidents have been reported to the DWA and DMR. See Notices submitted: 20/02/18 in respect of the overflows at the PCD and RSF as a result of heavy rainfall. 23/07/2018 in respect of the PCD as a result of plant failure. In both instances the required freeboard was not maintained *See 60*	The PWP PCD has yet again overflowed during the heavy rains experienced in November. No evidence was presented whether uncontrolled release was reported to the relevant Authority. ECO11/19. Any evidence of overflowing of the PWP PCD should be reported to DHSWS and DMR.	N/A
Minimise risk of erosion from either increased base flow or mining operations	69	Changes in base flow in the affected rivers will be determined as part of the monitoring programme (ref 17).	**3**	Flow monitoring is undertaken on a monthly basis by SRK (C05634) and reported on an annual basis. See *Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017* dated February 2018	Flow monitoring is done by SRK refer to Fairbreeze Surface Water and Groundwater Hydrology 2019 (April 2020).	N/A
	70	A log will be kept of breaching events of the Siyaya Estuary, including, where possible, duration of the breach, rainfall and flow in the Siyaya and Amanzimnyama Rivers	**3**	No breach of the estuary has been reported during this report period. A system of reporting has been established should a breaching occur.	Same findings	N/A
	71	To minimise impact on the receiving water bodies, EXXARO will optimise the removal of return water from backfilling operations.	**3**	No back filling has yet been undertaken although water is being returned from the construction (same material) of the RSF walls.	Return water from the RSF is used for mining.	N/A
	72	Water systems, such as drains, and canals will be designed to prevent pollution and minimise erosion or sedimentation.	**3**	All systems have been constructed in accordance with Generally Accepted Engineering Standards and are reflected in various design plans.	Same findings	N/A
	B12	Rise in water levels at the Siyaya	**3**	Aspect will only be monitored now that mining has	No reports of water rising	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		Borehole (located at FBCX) to within 10m of the surface will trigger additional mitigation measure such as pumping or a cut-off trench.		commenced at the C-Extension ore body.	beyond 10m at the Siyaya Borehole has been recorded.	
Minimise changes in flow patterns caused by blockages in the rivers	75	River and riparian crossings will be designed and maintained such that stream flow will not be impaired.	**2**	Not Assessed	At sampling point FS08, the culverts present restrict through-flow.	N/A
	76	Pipelines that cross any watercourse and / or drainage line will allow flows to safely pass without any risk of flooding or damming. Embankments at watercourse crossings, within the flooding zone, will be protected against erosion. Where culverts are used at crossings, the culverts will have downstream erosion protection and energy dissipaters to reduce flow rates to their original velocities. Except for watercourse crossings, roads and pipelines will be positioned outside the 1:50 year flood line.	**3**	Various structures have been created along the pipeline routes to allow for the free flow of water underneath the pipes, accumulate at the lowest points with restricted discharge into the drainage / buffer zones.	Same findings	N/A
Manage changes in mean annual runoff	77	The flow measurement facilities at the two weirs are to be re-established by DWA with assistance provided by EXXARO. The flow in the Siyaya and Amanzimnyama will then be recorded on a continuous basis by DWA. EXXARO will use this information as part of its water quality monitoring (Ref. 59- 68) and assessment to determine sediment loads, erosion potential, alterations to natural flow regimes and risk of estuarine breaching.	**3**	Data from the measuring devices, re-instated and monitored by the DWS, is provided on a regular basis to SRK which is then included in the SRK flow modelling reports. See *Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017* (February 2018).	Same findings refer to Fairbreeze Surface Water and Groundwater Hydrology 2019 (April 2020).	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
	78	The closed systems and water capture measures will reduce the water requirements for the mining operations, thus reducing the impact on other users.	**3**	In accordance with management procedures negligible raw water has been extracted from Mhlathuze since June 2017 and only process water has been used. The raw water used has been predominantly for top-up and pipeline maintenance. Of the raw water allocation (permit for 26 000m³/day), minus the 15% restriction, less than 5 000m³/ has been used per day.	Same findings	N/A
	A5	Restoration of landform during backfilling must ensure that catchment divides are restored in terms of the pre-mining survey.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline during rehabilitation	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
Minimise change in ground water quantity and quality	80	A groundwater monitoring programme consisting of the following will be conducted,: the use of soil moisture probes or other relevant instrumentation to determine unsaturated zone conditions; as many of the future exploration boreholes as possible will be drilled to bedrock; piezometers will be installed across the FB deposit and monitored to establish the shape of the current groundwater mound more accurately; piezometers will be installed in the coastal strip between the rivers and the sea to include areas such as the Twin Streams Educational Center and the Umlalazi Nature reserve; Geohydrological data, abstraction rates and water level measurements will be obtained for the water supply boreholes and the data analysed.	**3**	Ground water is monitored in respect of quality and height at specific boreholes, as per approved EMPR e.g. Twin streams. The piezometers installed only monitor groundwater levels and is analysed on a monthly basis by SRK whilst groundwater quality is monitored on a quarterly basis by ENVASS. Most recent Report provided: *Water Quality Report, Monthly Water Quality Update, MON-WQR-281-FB-16_17,* (September 2018).	Same findings refer to recent Report provided: Water Quality Report, Monthly Water Quality Update.MON-WQR-281-FB-16_17 (19-09).	N/A
	B13	Model simulations will be re-run as monitoring data becomes available in order to ensure predictions are continuously updated in terms of estimated losses.	**3**	SRK, as service provider, does annual re-modelling which is then reported to the DWS. See Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017 dated February 2018	Same findings Refer to Fairbreeze Surface Water and Groundwater Hydrology, future scenario 2019 (April 2020).	N/A
	B14	Installation of lysimeters at Hillendale (rehabilitated areas) and Fairbreeze in relevant areas in order to quantify the change in recharge pre-mining, during rehabilitation and post mining. After installation, monitoring data will be used to update the model simulations on an annual basis.	**3**	No lysimeters were installed. Piezometer readings from Hillendale was used to determine inter alia soil moisture and update the current 2016 Geohydrological Models (Reference Report Number 468000/3).	Piezometer readings are being used for monitoring.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
Aspect: Air quality						
Air emissions will be managed to minimise nuisance effects and prevent health effects.	81	The mine will develop an Air Pollution Control System (APCS) for FB prior to commencing with operations. This APCS must include detailed management plans, mitigation measures and monitoring and operational procedures developed for each significant source to ensure reductions in emissions. The APCS will be implemented and revised on an on-going basis. Air quality must be compared to pre-mining ambient levels and maintained with maximum allowable limits.	**2**	Not Assessed	An air quality management plan was developed for Tronox the latest updated management plan is dated January 2018. Dust fallout is measured monthly at the Tree Barrier, Twin streams EC, Twin streams Nursery, Site 2, Site 3, Site 9, Site 10, Shepley Farm, N2B2, FBC 100, FBC 200.	N/A
	82	The dirt road entering the Siyaya property will be upgraded and surfaced. A maximum speed limit of 40km/h will be observed. Dedicated entry and exit routes will be established to access each active mining area and infrastructure.	**3**	The access road has been closed for any use.	Access road remains closed.	N/A
	83	The establishment of intermediate revegetation on the mined-out area will take place within 60 days of the removal of the mining disturbance. Intermediate revegetation will aim to establish at least 80% dust control efficiency.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline during rehabilitation	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	84	The rehabilitation (vegetation) or dust suppression measures of the backfilled area will take place as soon as the previously mined void has been filled. Dust from backfilled areas will be	**3**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	An extra berm has been constructed and grassed to serve as a dust suppression method.	Rehabilitation programme needs to be updated and implemented as per the

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		minimised by the establishment of vegetation, or dune coating (which can achieve higher efficiencies than vegetation in the short term). Vegetation cover, where relevant, will be maintained to a minimum dust control efficiency of 80%.				timeframes and recommendations.
	A6	Shade netting must be used on rehabilitated areas at FBCX to limit dust impacts.	**1**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline during rehabilitation	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	85	The routine monitoring of vegetation cover will be undertaken to determine the effectiveness of the rehabilitation protocols that have been employed. The establishment of vegetation will be monitored on a quarterly basis for 3 years or until monitoring indicates that a suitable, self-sustaining vegetation cover has been achieved.	**2**	This aspect will be addressed when the Rehabilitation Plan is implemented during 2020.	A Rehabilitation Research Plan needs to be established to be used as a guideline during rehabilitation.	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	86	The 100 m wide tree barrier between FB and Mtunzini (85-90m of indigenous trees, and 10- 15m of Eucalyptus, 5m firebreak) will be maintained and supplemented to ensure its development and effectiveness. Where necessary, powerlines and services will be re- routed so that the barrier remains intact.	**3**	The required tree barrier has been established and is being maintained. The barrier is greater than the required 100m in some places which may be reduced to the minimum requirement once mining has reached that point. It must be noted that due to the slow growth of the required indigenous trees, the indigenous tree barriers do not serve as visual barriers as was intended.	Rows of Eucalyptus have been planted to serve as a visual barrier.	N/A
	87	Additional windbreaks/visual barriers will be implemented as per the	**3**	Various additional barriers have been established along the western boundary of the mine property	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		recommendations indicated in Figure 10.2. The tree barriers (85- 90 m of indigenous trees, and 10-15 m of Eucalyptus, 5 m firebreak) will be planted within 6 months of mining approval. These barriers will be maintained and supplemented to ensure their development and effectiveness.		consisting of both indigenous and commercial trees. The establishment of buffers and screen is an ongoing process.		
	88	Dust suppression will be applied on unpaved roads to achieve a minimum control efficiency of 85% (using either water sprays or chemical suppressants).	**3**	The service corridor and RSF roads are sprayed with water during hot and windy days. It was noted that the new clearing at the C-Ore Extension holds significant risk of dust generation during hot and windy days. It was reported that contingency plans are being put in place for when mining commences.	The service corridor and RSF roads are sprayed with water during hot and windy days.	N/A
	89	Source based performance indicators for the mining operations will include the following: visible reductions in fugitive dust resulting from mining activities; dust fall immediately downwind over the N2 Highway to be <1200 mg/m²/day; and dust fall within the residential development of Mtunzini to be <600 mg/m2/day.	**1**	The future mining area at C-extension is viewed as the highest risk in respect of fugitive dust. Performance indicators / minimum standards have been established. Contingency plans have been developed for dealing with fugitive dust from the RSF during Hot and windy days whilst the facility is under construction. It is noted that during south-westerly winds visible dust across the N2 is regularly observed. No monitoring of dust fall over the N2 Highway has been reported. Dust Monitoring results are recorded, see Powerdoc 232608.	Dust fallout has exceeded the residential limit of 600 at Site 10 in March 2019, at Twin streams EC in February 2019 and during September 2019 at the FBC 200	Follow up on dust levels at the Twin streams EC and at the FBC 200, if they have reduced to acceptable limits.
	90	Source based performance indicators for sources of wind erosion will include: vegetation cover up to 1m from the source (applicable to the RSFs and topsoil pile); vegetation density to be at least 80% on backfilled areas; and dust fall immediately downwind from the	**1**	Current operation has not yet reached a stage where this aspect can be implemented in full.	The stockpiles established to the north and north east of FBCX mining area, which served as dust source during high wind conditions in October will be resprayed with a soil binder chemical	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		source to be <1 200 mg/m²/day.			and windbreaks erected on top of it. ECO 11/19	
	91	Compliance with the performance indicators will be assessed as part of an on-going monitoring programme.	**3**	The approved Ver 7 of the 2017 Air Quality Management Plan which used to be available on the Tronox Website was removed from the website as there were no "hits" recorded in respect of the document. No following updates were submitted as reference. PM10 and dust bucket monitoring is being undertaken in terms of the ASTM standard and reported on a monthly basis.	An air quality management plan was developed for Tronox the latest updated management plan is dated January 2018. It was reported that of the 4PM remote stations established only three remain (one at Mtunzini, one at Mc Murry farm, and one at Sheppy Farm). It was further reported that of the three, no data is being received from any of the stations however the stations will be fixed during 2020. It was noted that the average dust fallout recorded at FBC200 (north of FBC) was recorded at 672,73 mg/m2/day for Aug 2019 thereby exceeding the internal threshold. ECO 11/19. It is recommended that the four remote monitoring stations be repaired in order to provide the intended monitoring information.	N/A
Aspect: Noise						
Minimise noise disturbance during	92	It is recommended that if pile operations are needed, noise attenuation	**3**	Not assessed	Earth berms have been constructed	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
mining		measures such as an earth berm will be constructed. If impact piling is conducted, an additional survey will be conducted at night to determine the zone of influence as well as the actual efficacy of the attenuation measures. Mitigation measures from survey must be adhered to.				
	93	Construction staff will receive noise sensitivity training to ensure that the construction noise is kept at a minimum.	**3**	Not assessed	Noise sensitivity training is part of the annual site access training.	N/A
	94	During construction of the PWP, a noise specialist will be on site weekly during piling and other noisy activities. The noise specialist will conduct monitoring to ensure the portable noise attenuation screens are applied effectively. These can be placed as close as possible to the noise source such as mobile compressors, drilling rigs etc.	**4**	Not assessed	Fairbreeze mine is now at the operational stage and monitoring is done quarterly by NOSA Occupational Hygiene Services.	N/A
	95	Night time activities will be limited to use of minimum required equipment.	**1**	Not assessed	The outcome of the investigation regarding the June Survey Report reporting of night-time exceedance specific noise from a D9 Dozer has not been received. ECO 11/19.	Follow-up on the outcome of the investigation of the June Survey Report reporting of night-time exceedance specific noise from a D9 Dozer.
	96	Monthly noise surveys will be conducted at sensitive receptors to determine the efficacy of noise attenuation measures. Noise levels will be compared to pre-mining ambient levels and maintained	**1**	Not assessed	Noise rating levels at four of the eight measurements exceeded the baseline noise rating levels for their respective measurement	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		within maximum allowable limits.			locations / time intervals. The monthly noise surveys are conducted by NOSA Occupational Hygiene Services.	
	97	The tree barriers at the PWP will be kept in place, and all additional noise barriers as advised by the noise specialist will be adhered to. See Also Ref 86 and 87 on tree barriers.	**3**	Not assessed	Tree barriers at the PWP are in place.	N/A
	A7	Noise monitoring will be conducted bi-weekly at the PWP site during construction. Noise levels to be compared to pre-mining ambient levels and maintained within maximum allowable limits.	**4**	Not assessed	Monitoring is done quarterly by NOSA Occupational Hygiene Services.	N/A
	A8	Noise monitoring will be conducted quarterly during the first year. Noise levels will be compared to pre-mining ambient levels and maintained within maximum allowable limits.	**4**	Not assessed	Noise rating levels at four of the measurement locations exceeded the baseline noise rating levels for their respective measurement locations/time intervals.	N/A
	99	Mining of FBCX will advance northwards towards Mtunzini to ensure that the hydraulic monitors are normally not visible from the town (acoustically screened behind the bench) (as per FMCX ROD).	**3**	Current operation has not yet reached a stage where this aspect can be evaluated.	The hydraulic motors are not visible from the Mtunzini town.	N/A
	100	Bulldozing operations at FBCX will be limited to daytime hours (as per FMCX ROD).	**3**	This requirement is being enforced.	Same findings	N/A
	101	The mine will avoid clustering of the hydraulic monitors when mining in the zone nearest to Mtunzini (as per FMCX	**3**	Current operation has not yet reached a stage where this aspect can be evaluated.	The Hydraulic Motors have been spread out at the FBCX as per the EMPR	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		ROD)			requirements.	
Aspect: Archaeology						
Manage the loss of archaeological or cultural sites	102	A monthly monitoring program to record and assess potential sites/artefacts that were missed due to the current vegetation or that were below the surface at the time of the survey will be undertaken.	**3**	Monthly reporting takes place based on mining progress into new areas. The last "no findings report" was submitted for July 2018. A once off survey was undertaken prior to commencement of operations. A New contract was put in place and inspections are being undertaken by the appointed archaeologist.	Monthly reporting is conducted by Umlando: Archaeological Surveys and Heritage Management.	N/A
	103	A destruction permit will be obtained for any identified sites and any other unrecorded sites that may be recorded during the monitoring program, in terms of the KwaZulu Natal Heritage Act of 1997.	**3**	A mining permit was issued in respect of Heritage Items Ref # 0011/10 dated 11 October 2011.	Same findings	N/A
	104	Should any graves or heritage artefacts be unearthed during construction or mining then operations in that location all activities in that area will be suspended in order to allow investigation and appropriate action to be completed.	**3**	A blanket SAHRA approval in respect of grave relocation have been issued Permit ID #2093 dated 4 September 2015	The mine was surveyed on 20 December 2018, and a sensitive area was monitored (site ht1 in Fig. 1) This area may have human remains that were not noted during the surveys. The area was monitored while a bulldozer cleared the topsoil and approx. 1m of deposit. The clearance activity did uncover a rubbish midden probably dating to the 1960s – 1970s (Fairbreeze monthly heritage Survey Dec 2018). No further mitigation is required at this area.	N/A
Manage the loss of buildings with historical	105	All buildings will be adequately recorded before demolition, in the form	**3**	All buildings were recorded as part of the initial submissions. Document Reference Heritage Survey	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
value		photographs and basic measurements, indicating the various additions. Middens would need sampling, and some compounds would need photographing and mapping, if no drawings available.		of the Proposed Fairbreeze Mine for Exxaro Sands, Dated 5 March 2010, By Gavin Anderson of Umlando: *Archaeological Tourism and Resource Management.*		
	106	A demolition permit will be obtained for any identified historical buildings from AMAFA KZN.	**3**	Approval was originally granted for the demolition of specific buildings / homesteads, (Heritage KZN Permit Ref # 10/3KZ284/01 11/027). This permit has however expired and must be renewed. The farmhouse on FBCX will be demolished during 2019 as part of the FBCX development. A Scope of Works document is currently being drafted.	All buildings at the Siyaya Farm have now been demolished. It was reported that authorisation was granted for the demolition of the staff house. ECO 10/19	N/A
	107	The Highfields House will be retained and not demolished, as per recommendation of historian.	**3**	The Highfields House was renovated and is used as offices.	Same findings	N/A
Aspect: Visual						
Minimise visual disturbance	108	Existing indigenous and plantation vegetation will be retained wherever possible (especially along the N2 and the western and eastern extremities of the site and along the western boundary of the plant site). This forms part of the tree barrier recommendations (See Also Ref 86 and 87 on tree barriers.)	**2**	Indigenous and commercial tree barriers have been retained were practicably possible. New barriers have been and are being established along the mine boundary. It must be noted that due to the slow growth of the required indigenous trees, the indigenous tree barriers do not serve as visual barriers as was intended.	Certain sections of the C-extension are still visible on the N2 as tree growth is slow.	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	109	An ecological approach to rehabilitation measures, as opposed to a horticultural approach to landscaping will be adopted wherever possible. For example, communities of indigenous, preferable endemic, plants enhance biodiversity and blend well with existing vegetation. A registered landscape architect (SACLAP) will be consulted for this	**3**	See B7 Based on the research and resultant findings at Hillendale an new approach to rehabilitation was developed and approved by the relevant authorities. This approach is constantly updated and amended and will be used once rehabilitation commences at Fairbreeze. The latest recommendations are contained in a report titled *Rehabilitation options for Fairbreeze mine, Dr.*	Same findings	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		purpose. This approach could be considered along the N2 in areas where plantations will not necessarily be grown. If this is not possible then Eucalyptus will be planted in dense rows to create an effective tree screen along the N2.		*C. Smith, 5 July 2017.*		
	110	All existing vegetation between the mining site and all public roads must be retained where possible. See Also Ref 86 and 87 on tree barriers.	**3**	Barriers along the N2 is being maintained although the indigenous tree barriers established in response to the requirement has not yet grown to a height where it serves any purpose.	Barriers along the N2 are being maintained ECO11/19	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	111	The worked-out area behind the mining face will be screened using shrub planting, where effective.	**3**	Current operation has not yet reached a stage where this aspect can be evaluated.	Vegetation planting has commenced on the walls.	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations
	112	The RSF walls will have slopes no steeper than 1:2 and will be vegetated. The walls will be vegetated within 60 days after shaping and removal of disturbing factors. This will be a continuous process as the wall raising advances.	**3**	The inside walls have a slope of 1:2 and the outer walls a slope of 1:3. See drawings KDR 0001087001 drafted by SRK dated 18/01/2013.	The dam wall has been complete and the process to cover the walls with vegetation is still ongoing.	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations
	113	Light pollution will be kept to a minimum. Security and flood lighting to only be used where absolutely necessary and will be directed downwards so as to avoid illuminating the sky. i.e. away from Mtunzini and residences west of	**3**	See 114 The height stipulation has not been met as contained in the Construction EMP.	A report is required to provide evidence that the light facing the freeway from the RSF shed was altered to comply with the stipulated light shed	Follow up on a report stipulating that the light facing the freeway from the RSF shed was altered

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		the site and also away from the Murray property.			requirements. ECO11/19	
	114	Install light fixtures that provide precisely directed illumination to reduce light "spillage" beyond the immediate surrounds of the complex – this is especially relevant where the edge of the proposed mining is exposed to residential properties.	**3**	See 113 See above	See 113	N/A
	115	Avoid high pole top security lighting along the periphery of the site or at elevated locations.	**3**	High pole security lights have been limited to the PWP area.	Same findings	N/A
	116	Use security lighting at the periphery of the site that is activated by movement and are not permanently kept on.	**3**	No security lights have been installed at the periphery of the mine and only working lights are employed at the PWP and mining area.	All the lights at the PWP are facing downwards	N/A
Aspect: Social and Socio-economic						
Minimise changes in the demographics of the area	117	Where possible EXXARO will employ people from district 28 (uThungulu District Municipality). The EXXARO policy is to employ at least 60% of the people from the Region 28 and the remainder of the workforce from anywhere. This was approved by the HR&R Board Committee and agreed to with the current Community Forum, which represents Region 28. The Community Forum consists of representatives from Amakhosi and Councillors. People from outside this area will only be employed if the necessary skills required are not available in the local area.		See B17 Records reflect that 100% of the current permanent staff compliment (213) comes from uThungulu District Municipality (DC28) of which 170 are core staff members. HR Recruitment Policy Ref No. CPCDOC-43-2015.	Not reviewed due to outstanding information	
	118	If suitably trained employees are not	**3**	A new Social and Labour Plan Document for the	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		available from within the surrounding communities, EXXARO will, in accordance with the EXXARO Social and Labour Plan, introduce training programmes focused on raising the skill levels of the local residents.		period 2018-2022 have been submitted to the DMR and approved.		
	119	EXXARO will not allow establishment of informal settlements on its land and leased land (in consultation with Mondi)	**3**	No evidence was found of any informal settlements establish as a result of the mine.	Same findings	N/A
Minimise increase in crime arising from mining construction activities	120	The northern boundary of the mine will be fenced, and the fence regularly checked and maintained.	**3**	The northern boundary adjacent to Mtunzini has been fenced and is regularly checked and maintained.	Same findings	N/A
	121	To discourage theft, loitering and public disturbances due to the influence of the mine, there will be no direct accessible link between FBCX and Mtunzini.	**3**	No vehicle access is permitted through C-extension as the gate between FBCX and Mtunzini remains locked.	Same findings	N/A
	122	It is recommended that there be increased security assigned to the mining areas with controlled access and maintained fences around the proposed mine construction areas.	**3**	Security is provided at all access points including roving security at the mining areas and PWP. All access points are controlled. Evidence and reports suggest that security can be improved in respect of unauthorised access to the mining area	Security is provided at all access points including roving security at the mining areas and PWP.	N/A
Maximise possible contributions to the economy	123	The mine procurement policy will encourage the establishment of sustainable businesses from which goods are obtained, in accordance with the targets as set out in the EXXARO Social and Labour Plan.	**3**	Preferential Procurement Procedure Sharepoint Ref # 34-32 Records Reflect the following BBEE expenditure for 2017: Capital 90%; Services 89%, and Goods 65%	Record show the following BBEE expenditure for 2019: Goods 70%; Services 80%, and Research and development 70%	N/A
	124	Every attempt will be made to ensure that the mine is operated in a responsible manner (see all the commitments above) to ensure that tourism and eco-tourism will not suffer.	**3**	No new financial contributions have been made to enhance tourism whist no indication has been found that tourism has declined since commencement of mining operations.	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
	125	EXXARO will, where possible, support local accommodation establishments when hosting visitors from out of town.	**3**	Not Assessed	Accommodation arrangements are made by the consultants, Tronox has no input on accommodation of visitors.	N/A
	126	Tree buffers between Twin streams and FBC- ore body will be retained. See Also Ref 86 and 87 on tree barriers.	**3**	Tree barriers have been planted and is being maintained.	Same findings	N/A
	128	As a proactive measure, to limit decline at the Centre, EXXARO should financially assist with investigating alternatives e.g., identify other suitable alternate sites which could be developed for Twin streams and linked with the current site.	**3**	Tronox has contributed to the Twin streams facility by increasing their water holding capacity by installing a tank and a pump building an Eco House in 2014 and a Guest house during 2017. See 124	Same findings	N/A
Encouraging educational tourism at the Fairbreeze site	130	EXXARO will offer regular educational tours to school and other interest groups to describe the mining process.	**3**	The Mine Health & Safety Act does not allow this aspect to be implemented. Offsite talks are given to school groups.	Tronox provides assistance to schools offsite, it sponsors school trips.	N/A
Changes in physical infrastructure, e g. roads	131	Heavy goods vehicles related to EXXARO FB mine will not be allowed to pass through Mtunzini. EXXARO have proposed to construct an off-ramp onto Bridge 4; which would mean that the mine will not have use the Ring Road unless special circumstances and adjacent landowners and existing road users informed.	**3**	Heavy vehicles are not allowed to travel through town and access to FBCX is not allowed via Mtunzini as part of the mine's Standing Operating Instructions.	Same findings	N/A
Minimise risk of an increase in social pathologies and diseases	133	To combat a rise in the incidence of social diseases, education and awareness campaigns will be held with all mine employees stressing the precautionary measures that will be taken to avoid such diseases.	**3**	Voluntary HIV testing campaign has been undertaken whist TB is dealt with as part of the annual medical requirements, during the mine's Annual Wellness Campaign held during September 2018.	HIV and TB testing is part of the standard employee wellness.	N/A
Minimise impact on	134	Drainage streams on neighbouring	**3**	70% of Tronox's monitoring takes place offsite and is	Same findings.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
adjacent farmers and landowners		farms and boreholes used for irrigation will be monitored to ensure that water quality is maintained. If farm drainage streams require additional filtering or maintenance due to mining impacts the landowners will be compensated.		conducted by an independent service provider (ENVASS). No complaints / concerns have been raised to date.		
	135	Communicate rehabilitation process and plans for Fairbreeze Mine to the general public and provide regular updates on this matter.		The mine's rehabilitation plans have been and is communicated to the public through the bi-annual Direct Neighbours & Farmers Meeting (last meeting record 26/04/2018) and the two monthly MRA Environmental Oversight Meeting (last meeting record 20/07/2018).	not reviewed due to outstanding information	
	136	Twin Streams Nursery or other initiatives with local participation will be given an opportunity to provide the services and plants required for rehabilitation or landscaping.	**3**	The Twin Streams nursery was sold. Most services are locally sourced such as alien plant control, garden services, and catering.	The Twin streams nursery is run by Ezemvelo.	N/A
Devaluation of property adjacent to the FB site	137	The study area's current economic success is linked to the natural environment. Every attempt will be made by EXXARO to ensure that the mine is operated in a responsible manner to ensure that tourism and eco-tourism will not suffer. This will ensure the economic sustainability of the study area once the mine has closed. It will also yield benefits such as a smooth and conflict free relationship with the residents of the study area.	**3**	Not assessed	Mtunzini hosts various consultants that have business with Tronox, this supports the economic viability of the area.	N/A
	138	The mining method and mine rehabilitation have the power to influence the area long after the mine has closed. Rehabilitation will thus be conducted in such a manner that it will	**2**	Not assessed	A Rehabilitation Research Plan needs to be established to be used as a guideline for during rehabilitation.	Rehabilitation programme needs to be updated and implemented as per the

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		have a positive impact upon land value and hence upon sustainable post-mining land use. (Rehabilitation will be done on the basis of information derived from the Rehabilitation Research Programme).				timeframes and recommendations.
Maintain positive and transparent relationships with EXXARO's stakeholders	142	It is proposed that a Siyaya monitoring forum be established with a key focus on sustainable land use and management within the Siyaya catchment. The forum will meet quarterly to discuss progress, monitoring and issues.	**2**	This forum was intended to manage the estuary. However, the Siyaya Catchment now forms part of the offset and is thus included in the Offset Management Plan with oversight by the Offset Advisory Committee under the chairmanship of the DMR as the lead authority.	The Offset Advisory Committee held a meeting on the 1st August 2019 at Fairbreeze Mine Office, which was chaired by DMR. However, there were no discussions on the Siyaya Catchment.	Regular communication to all forums should be maintained on a continuous basis.
	143	EXXARO will maintain communication channels with I&APs through the community forums, e.g. Greater Mhlathuze Environmental Forum (quarterly); Community Forum (quarterly); Employee Forum (quarterly); Greater Mtunzini Communications Forum (quarterly); Regulatory authority meeting (quarterly); Amakhosi information meeting (quarterly); and Councillors information meeting (quarterly).		The mine currently communicates with the public through the Direct Neighbours Meeting (6 monthly), the local Amakhosi Meeting, and the MRA Environmental Oversight Meeting (as and when required) which met once during 2018.	Not reviewed due to outstanding information	Regular communication to all forums should be maintained on a continuous basis.
	144	The forum information sessions will initially be aimed at construction activities, and as mining commences, will gradually change over to reflect the status of operations. Forums will be maintained until mine closure.	**3**	Three forums have been retained and regular feedback meetings are held.	Same findings	N/A
	145	Communicate rehabilitation process and plans for Hillendale Mine and	**3**	Several presentations were given at various public forums, during the Fairbreeze construction phase,	Communication will be distributed when the	Rehabilitation programme needs

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		Fairbreeze Mine to the general public.		reflecting on the rehabilitation successes at Hillendale	rehabilitation phase for Fairbreeze commences.	to be updated and implemented as per the timeframes and recommendations. Communication should also be included in the rehabilitation programme.
	146	Inform the general public of the EXXARO comments and complaints procedure and contact details. Ensure annual notification of the facility.	**3**	The mine's complaint procedure is available on the Tronox website. In addition, the MRA also maintains a Complaints Porthole on their website which is managed by the MRA. Complaints are then forwarded to Tronox for further investigation and action. See 168	Same findings	N/A
Provide stakeholders with relevant information	147	All information as described in the relevant sections will be made available to interested and affected parties via the communication channels outlined in Ref 143.	**3**	Information has been and is regularly disseminated through various means.	Same findings	N/A
	148	Authorities will be provided with information as specified in the relevant legislation and authorisations.	**3**	Regular Reports are submitted to the DWA and DMR as is required by them. DEDTEA has not affected any inspections during this report period.	Same findings	N/A
Put in place a fair and transparent process with regards to recruitment and management of labour.	B17	As committed to communities, EXXARO will without compromising job-specific skills requirements, safety, quality and meeting of construction timeframes, define a recruitment strategy based on principles, such as including a fair and accessible process of advertising employment opportunities, skills		See 117 See 118 Records reflect that 100% of the current permanent staff compliment (227) comes from uThungulu District Municipality (DC28)	not reviewed due to outstanding information	

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		development and training opportunities, creation of opportunities for local entrepreneurs.				
Provide information to relevant authorities as required	156	Performance assessments relating to the contents of Section 10 will be conducted annually by an Independent Environmental Auditor (See Section 10.4.1).	**3**	Regular Reports are submitted to the DHSWS and DMR as is required. Due to change in legislation, DEDTEA no longer require any reports	Same findings	N/A
	B18	All conditions of all applicable licenses, permits and authorisations related to the Fairbreeze Project will be adhered to.	**2**	All regulatory conditions as contained in the Permits and Licenses are audited on the stipulated timeframes, whilst compliance to the EMPR is audited on a monthly basis.	Same findings	N/A
Limit nuisance impacts due to mining and related activities on site	165	Good 'housekeeping' (keeping the site tidy and neat) is essential throughout all phases of the project. Adequate toilet and proper sanitation facilities shall be provided at all work areas, approximately one toilet per 15 staff members. Sewerage sludge removed from chemical toilets and conservancy tanks (by a 'honey sucker') will be disposed of at a licensed facility for such waste.	**3**	Good housekeeping is maintained through regular inspections by the various supervisors as well as the monthly EMPR audits. Waste manifests are kept on record in conjunction with Safe Disposal Certificates in the case of Hazardous Waste disposed. Efforts to minimise the Service Provider's delay in supplying the life-cycle documents continues.	Same findings	N/A
Aspect: Engineering design recommendations						
Aspect: Engineering design recommendations	149	The RSFs will be regularly inspected by suitably qualified consultant engineers who will devise a system of checks and management principles to ensure that the stability of the dam remains within acceptable limits.	**3**	The RSF walls are inspected every 3 months by a suitably qualified engineer from SRK an independent Service Provider (Contract Ref #C04646).	Same findings	N/A
	150	The RSFs will be constructed and maintained in accordance with the design criteria specified by the detailed design engineers and in accordance	**3**	The RSF is constructed and maintained in accordance with the mandatory Code of Practice for Mine Residue Deposits (Sharepoint Ref # MININGDOC -88-1) and in terms of the Operations	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		with the Code of Practice required in terms of the Mine Health and Safety Act.		Manual (Sharepoint Ref # MININGDOC 86-7 and 86-8).		
	151	Good housekeeping will be maintained to minimise the risk of pollution. The mine will operate in such a way as to prevent uncontrolled releases of potentially polluting material.	**2**	The product containment dam still has a large amount of material in it thus lessening its stormwater holding capacity. No evidence was found that the material which has on previous occasions washed into the Pollution Control Dam has been removed thus lessening the Pollution Control Dam's water holding capacity in the event of heavy rains. It was observed that slimes from the MSP is still being disposed into the Product Containment Dam despite the current situation. It was reported that the radio activity of the smiles are being monitored. It was observed that the volume of silt deposited from the MSRSF Pollution Control Dam into the Valley RWD has increased significantly. The opinion is held that this deposition into the Valley RWD may have future financial and water quality implications. It was observed that the continued, from commissioning, leaking of oil from the PD Pumps still continue with contaminated material being distributed outside of the formal drains.	The VRWD has high volumes of deposited fines which remains a concern. To manage any further dispositions of fines, closing of the original coffer dam berm at the VRWD inlet can be considered.	Management of the RWD should be reviewed in order to manage fines.
	152	The mine will ensure that relevant equipment is well maintained and fully operational. Development and implementation of equipment maintenance schedule.	**3**	The contractor supplying mining plant is responsible for the maintenance of their equipment. The mine has a well-established maintenance unit which attends to all pumps and mining machinery and equipment.	Same findings	N/A
	153	Non-mining waste materials will be classified according to the Minimum Requirements for the handling and disposal of waste as published by DWA. Classified waste materials will be placed in containers specifically identified for this purpose and disposed	**3**	A central waste collection area has been established at the PWP workshop where waste is sorted into skips. The skips are removed on a regular basis by a Service Provider and the classified waste disposed to DCLM. Safe Disposal Certificates are monitored. An Integrated Water and Waste Management Plan	Feedback is awaited regarding the assigned reference number on ShareDoc and operationalising (as a SOP) of the Integrated Water and Waste Management Plan	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		in appropriate disposal sites. Hydrocarbons in particular will be disposed in a licensed H:h disposal site. All spills will be treated as per the approved EXXARO spills procedure.		and Stormwater Management Plan (2018) has been submitted The Waste Management Procedure is available on Sharepoint Ref # CPDOC-40-70	and Stormwater Management Plan (Dated 2017) submitted to DWS on 28/09/2017. ECO 11/19 A central waste collection area has been established at the PWP workshop where waste is sorted into skips. The skips are removed on a regular basis by a Service Provider	
	154	The approved EXXARO Emergency Procedure will be applied during all phases of mining.	**2**	See 158 A Code of Practice is still in preparation with no evidence submitted that the procedure has been completed and approved.	Same findings	N/A
	155	All employees and contractors will receive basic training in environmental awareness as well as the applicable sections of the Emergency Procedure. The environmental awareness training will include reference to the following: identified environmental risks in the workplace; Environmental Management Plans related to the specific risks; provisions and commitments contained in Section 10; incident identification and reporting.	**3**	See 33 A comprehensive induction programme was implemented. A focused environmental presentation was presented to all shift staff during 2018. A comprehensive Environmental induction presentation was also developed for future presentations.	Environmental awareness is part of the annual site access induction that is conducted annually.	Tronox must provide proof of annual site access induction.
	157	The mine will carry out regular risk assessments to ensure that potentially hazardous materials are appropriately stored, labelled and handled.	**2**	All Business streams carried out risk assessments prior to commencement of operations. Mini-HIRA's are carried out by all staff including contractors when new works are undertaken.	Proof that the Mine Office septic tank was constructed according to approved Drawings is still outstanding. It was observed that the SLI wash-	Follow-up on the proof that the office septic tank was constructed according to the drawings.

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
					bay oil trap was overflowing. During the rain events recorded in November 2019 the trap tanks were not drained which caused the overflow. ECO 11/19 The mine front workshop MSDS Register must be updated.	
	158	To minimise the risk of pollution arising from the use of mobile equipment, drivers (both mine and contractors) will be trained on how to deal with accidents involving hydrocarbons and other potential contaminants. Emergency action plans will be drawn up to deal with serious spills on the road in order to minimise the impact on water resources.	**2**	See 154 An Emergency Spill Procedure has been established. Procedure for Clean-up of Hydrocarbon Spillages on Non-Radio Active Material (Sharepoint Ref # CPDOC-40-72). See Code of Practice for Emergency Response *in prep*	The oil store onsite is managed by the onsite manager, however a response is still awaited for the SOP for the management, storage, and transport and dispensing of hydrocarbons.	Follow up on the SOP for management, storage, and transport and dispensing of hydrocarbons.
Maintain the RWD to minimise the risk of failure and maintain operating standards	159	The RWD will be constructed and maintained in accordance with the design criteria specified by the detailed design engineers and in accordance with the Code of Practice required in terms of the Mine Health and Safety Act.	**3**	The Valley RWD is Designed in accordance with COP (Design Report Ref # MININGDOC-86-85). The RWD is operated in accordance with the Operational Manual (MININGDOC-86-33).	Same findings	N/A
	160	The RWD will be regularly inspected by suitably qualified consultant engineers who will devise a system of checks and management principles to ensure that the stability of the dam remains within acceptable limits.	**3**	The RWD is inspected every 3 years by a suitably qualified engineer from SRK an independent Service Provider (Contract Ref #C04646). In practice the dam is inspected every time the RSF walls are inspected which is every 3 months.	The RWD was inspected by SRK Consulting in August 2019.	N/A
SANRAL management	163	SANRAL has a generic EMP which will	**4**	Concluded during the construction phase	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
principles for road construction and related issues		be adhered to at all times by the Contractor undertaking the on and off ramp construction. The on-off ramp construction is considered part of the Fairbreeze project and will thus adhere to all other EXXARO requirements, as well as all mitigation measures contained in the BAR.				
ESKOM management principles of power lines and related issues, e.g. maintenance of servitude area	164	ESKOM has a generic EMP and protocol document, e.g. AMAFA requirements, vegetation removal procedure, which will need to be adhered to at all times by the Contractor undertaking the powerline deviation. The ESKOM powerline re-alignment is considered part of the Fairbreeze project and will thus adhere to all other EXXARO requirements, as well as all mitigation measures contained in the BAR.	**4**	Concluded during the construction phase and which was monitored by Eskom's service provider.	Same findings	N/A
Further investigation						
Undertake further investigations/actions prior to the commencement of mining to confirm predictions made in this report	166	Detailed engineering design for the final mitigation plans for the impacts identified during the environmental impact assessment process.	**3**	Mitigatory aspects have been included in the EMPR and various license conditions. These conditions are monitored during monthly audits and annual Due Diligence audits. The final "As-Built" drawings was submitted to the DWS on 27 March 2017.	Same findings	N/A
	A9	Groundwater and surface water models to be updated with additional DWA and EXXARO monitoring data on an annual basis, or as specified by DWA.	**3**	SRK as service provider (C05634) monitor ground and surface water and updates the water models on an annual basis. Ref. *Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017* (February 2018).	Refer to Tronox Fairbreeze: surface and groundwater; hydrology – future scenarios- 2019 (April 2020).	N/A
	167	Adhere to all specialist study recommendations and monitoring	**3**	1) Quarterly - ENVASS 2) Annually although data is received	Same findings	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		programmes as per Section 10.3.3 of the EMP. Below is included a summary table. Item Points Frequency and Duration1. **Surface water quality** / Watercourses in all affected catchments / Quarterly for life of mine2. **Water course flow** / At weirs in Siyaya and Amanzimnyama Rivers / Monthly for life of mine3. **Ground water quality and levels**. / Boreholes. / Quarterly for life of mine4. **Water management structures** / Drains, berms, dams, channels, sumps / Quarterly and after heavy rainfall events.5. **Aquatic Biomonitoring** / Proposed monitoring localities. / Quarterly for life of mine6. **Dust buckets** / Dust fallout network comprising of two twin directional dust buckets and installed single buckets. / Monthly for life of mine7. **Noise monitoring** / At sensitive receptors / Weekly during PWP construction.Quarterly during mining8. **Tree barriers** / All planted tree barriers / Quarterly for 3 years after planting, thereafter bi-annually until closure.9. **Vegetation establishment** / All revegetated sites / Quarterly for 3 years after planting, thereafter bi-annually until closure		monthly - DWS and SRK 3) Level monitoring conducted internally on a monthly basis and quarterly - ENVASS and Internal 4) Dams are inspected daily and other infrastructure after heavy rain events - Internally 5) Quarterly - ENVASS 6) Monthly – Internally 7) Bi-Annual Enviro noise - NOSA Occupational Hygiene Services (OHS every 2nd month) 8) Weekly – Internally 9) Not yet commenced		
Undertake further investigations/actions during mining to confirm/improve	A10	The groundwater model will be updated prior to mining in order to ensure that the conservative estimates are refined and correct management applied. The	**3**	See A9 Ground water modelling has been undertaken annually as of 2011 with the last updated report submitted report during February 2018 It was	The last updated report for the groundwater water is dated April 2020 by SRK consulting.	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
predictions made in this report.		groundwater model must be updated when significant new information is derived from any of the monitoring programmes, or at least every year. Information derived from the model must be incorporated into future management and monitoring.		reported that the predictive models correlate very closely with the actual monitoring data.	According to the report the baseflow fluxes generated using the surface water model and the groundwater model compare favourably, which indicates a realistic simulation of the surface and ground water interactions.	
	A11	The surface water model will be updated when significant new information is derived from any of the monitoring programmes, or at least every year. Information derived from the model must be incorporated into future management and monitoring.	**3**	The Groundwater and Surface water models are integrated.	According to the report the baseflow fluxes generated using the surface water model and the groundwater model compare favourably, which indicates a realistic simulation of the surface and ground water interactions.	N/A
	A12	Exxaro will establish, drive and fund a Rehabilitation Research Programme. The Rehabilitation Research Programme will investigate all aspects concerning the rehabilitation of, and vegetation growth on, areas disturbed during mining at the Fairbreeze Mine. The programme must be multi-disciplinary, with the objective of producing objective and scientific information to guide and continuously improve the rehabilitation of areas affected by mining.	**2**	See B7 Specialist research undertaken by Dr. Smith at Hillendale, and which is contained in various guideline reports, will inform future rehabilitation activities at Fairbreeze Mine. • Four-Year Assessment of the Hillendale Eucalyptus Rehabilitation Trail. Dr C. Smith. (December 2016). • Rehabilitation Options for the Fairbreeze Mine. Dr. C. Smith. (July 2017).	Same findings	Rehabilitation programme needs to be updated and implemented as per the timeframes and recommendations.
	A13	Exxaro will establish, drive and fund the Siyaya Biodiversity Forum. The Siyaya Biodiversity Forum will be responsible	**3**	The Forum has been replaced with the Offset Advisory Committee which was supposed to be chaired by the DEDTEA, however with the change in	The Offset Advisory Committee held a meeting on the 1st August 2019 at	N/A

Objectives to manage potential impacts	EMPR Ref.	Requirement	Category	Previous findings	Current findings	Follow up action
		for the development, implementation and management of the biodiversity offset area until the area is formally transferred to a conservation agency.		legislation, this responsibility should be taken over by DMR. No meetings were recorded during 2017 and none for 2018.	Fairbreeze Mine Office, which was chaired by DMR.	
	A14	The mining of FBD may not be undertaken until such time as EXXARO has concluded monitoring and studies necessary to demonstrate to the competent authority the low significance of mining on the dune cordon wetlands. Such studies must also present the management, mitigation and rehabilitation requirements of mined areas which potentially impact on the dune cordon wetlands.	**3**	Mining of the D Ore body was not approved and will thus not take place.	Authorisation for the D ore body has not been granted; therefore, mining will not take place until an Authorisation is granted.	N/A
	168	Update EXXARO complaints procedure to include Fairbreeze Mine. Complaints procedure details provided to IA&P's prior to start of construction and updated as required.	**3**	See 146 Duplicate aspects are not evaluated	See 146	N/A

2.3. Summary of findings from audit

Based on the above audit table, Table 3 below provides a summary of findings.

Table 3. Summary of audit findings

Finding number	Number of findings	Comments
1	16	Non-compliance, further action is required. These has been grouped into categories of outstanding information and items requiring further management actions.
2	33	Partial compliance this may be a result of a change in the arrangement/planning but does not cause a non-compliance. Further action may be required.
3	111	Full compliance, no actions required
4	8	Not Applicable

3. CONCLUSION AND WAY FORWARD

The Fairbreeze EMPR was issued on the 05 August 2012 and according to Regulation 34 of GN326 of 2017, the holder of an environmental authorisation must, for the period during which the environmental authorisation and EMPr remains valid, submit an environmental audit report to the relevant competent authority. This Report provides the audit results of the EMPr and the performance of the Fairbreeze mine.

3.1. Items requiring management action

Stormwater and management of dams

During the audit various instances of inadequate stormwater management was observed. This should be rectified in order to protect the buffer zones and riparian zones. The stormwater drains must be constructed as per recommendation to ensure that there's no overflow of the PWP PCD, and a recommendation is that management at all the dams should be reviewed in terms of effective silt and stormwater management. Tronox must implement the updated SWMPlan after approval.

Rehabilitation

The rehabilitation plan of Fairbreeze needs to include aspects of rehabilitation research to be used as a guideline during implementation. It needs to address aspects such as topsoil management, buffer area management, the revegetation schedule, final shaping, and then implemented. This plan should include the requirement of record-keeping of alien plant control.

3.2. Outstanding information

Dust

Tronox is to ensure that dust levels at the Twin streams EC and at the FBC 200, have reduced to acceptable limits.

Noise

The outcome of the investigation of the June Survey Report reporting of night-time exceedance specific noise from a D9 Dozer must be made available.

General

Tronox must provide proof that annual site access induction was conducted. Tronox must provide a report stipulating that the light facing the freeway from the RSF shed was altered and a report with the SOP for management, storage, and transport and dispensing of hydrocarbons. Tronox must provide proof that the office septic tank was constructed according to the drawings and the provide a status of the fire management COP. Regular communication to all forums should be maintained on a continuous basis.

4. REFERENCES

An environmental noise survey at selected areas of the Fairbreeze mine. NOSA. (October 2019)

A review of proposed rehabilitation methods on mined sites at Fairbreeze, northern KwaZulu-Natal, Dr C. Smith. (January 2012)

Aquatic biomonitoring memo for the Tronox KZN Sands Fairbreeze mine: Quarter 3-2019 (August 2019)

BBEEE report. (December 2019)

Dam Safety Evaluation of Fairbreeze Valley Dam Return Water Dam - 12/2/W122/24 (August 2019)

Fairbreeze ambient perimeter monitoring- dust fallout Jan 2019-Jan 2020 (January 2020)

Fairbreeze Offset advisory committee Minutes of meeting held on 1 August 2019

Fairbreeze Surface Water and Groundwater Hydrology report- 2019 (April 2020)

Four-Year Assessment of the Hillendale Eucalyptus Rehabilitation Trail. Dr C. Smith. (December 2016)

Rehabilitation options for the Fairbreeze mine. Dr C. Smith. (July 2017)

Tronox Fairbreeze mine. Environmental Management Programme. (April 2012)

TX_C061 Environmental Compliance Report: Fairbreeze Mine Operational Phase. (November 2019)

TX_C061 Environmental Compliance Report: Fairbreeze Mine Operational Phase. (October 2019)

Tronox KZN – Fairbreeze Mine – Monthly Water Quality Update.MON-WQR-281-FB-16_17 (September 2019)

Tronox Fairbreeze: Surface Water and Groundwater Hydrology - 2017 (February 2018)

Tronox Fairbreeze: Volumetric topsoil stockpile survey report. (January 2020)

Tronox Fairbreeze: Volumetric topsoil stockpile survey report. (February 2020)

Quarterly Safety Monitoring Report: Fairbreeze Mine RSF and Return Water Dam Complex 1st Quarter (April 2020)