

MOOI MGENI TRANSFER SCHEME PHASE 2 (MMTS-2)

Construction of the Spring Grove Dam & Appurtenant Works

[DEA Reference Number: 12/12/20/220]







MONTHLY ECO REPORT: February 2013









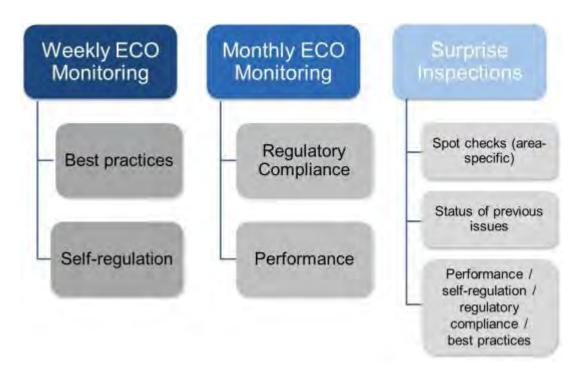
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EXECUTIVE SUMMARY

Nemai Consulting was appointed as the independent Environmental Control Officer (ECO) for the Trans-Caledon Tunnel Authority (TCTA) for the Mooi-Mgeni Transfer Scheme Phase 2 (MMTS-2) project. This document serves as the monthly ECO Report for <u>February 2013</u> for the aforementioned project.

The types of monitoring conducted as part of the ECO functions are captured in the figure to follow.



ECO Monitoring Frequencies & Purposes

The primary areas inspected during the monthly ECO monitoring event include the following:

- Dam wall;
- Earth embankment;
- Spring Grove Weir, below the dam foundation;
- Route 2, below the dam foundation;
- · Borrow pits;
- Route 11; and
- Fish barrier.



The latest air, noise and water quality monitoring (December 2012) conducted by Blue Sands, produced the following results:

1. Air –

- a. Dust fallout rates continue to remain well-within the Residential Band. Generally low dust load was measured as a result wet summer conditions and due to the shutdown over the festive season;
- b. The PM₁₀ concentrations were fully complaint with the 24-hour limit of 120 μg/m³;

2. Noise -

a. Being the three sites closest to the construction site; EN01, EN02 (standard exceeded on 15/12/2012 day-time survey, 19/12/2012 night-time survey) and EN12, recorded reverse hooters, construction and construction associated plant sounds related with site operations during December 2012;

3. Water -

a. Variables at sampling sites associated with construction activities were below thresholds.

Recurring issues from weekly ECO monitoring include the following:

- Management of siltation;
- Control of noxious weeds; and
- Storage and use of hazardous substances.

Overall, a compliance score of 91% was obtained for the monitoring event. Significant issues identified during the monthly ECO monitoring include the following:

- Traffic management (speeding, uncovered loads);
- Dewatering directly into watercourse;
- Rain-filled drip trays (common occurrence);
- General housekeeping to be improved;
- Storage of cement bags;
- Improper wastewater management;
- Settlement pond to be dredged; and
- Concrete waste management.

The following matters are regarded as significant environmental management priorities for future monitoring events:

 Clarification is required on the appropriate way forward for the rehabilitation of wetlands and biodiversity offsets;



- Monitoring Period: February 2013
- Pro-active management is required to minimize siltation from any instream works, which includes –
 - o Proposed river crossings at fish barrier; and
 - o When the coffer dam at the weir site (downstream of the dam wall) is removed.

The issues and complaints register contained 45 entries for the monthly ECO monitoring period. Recurring issues from the current monitoring period include:

- 1. Road condition;
- 2. Improper use of private road;
- 3. Construction programme fish barrier;
- 4. Water supply;
- 5. Litter along road to fish barrier;
- 6. Rehabilitation of the scar and of Route 11;
- 7. Drainage on D146; and
- 8. Speeding on R103.

The only proposed amendment to an EMP relates to the following provision in terms of Search, Rescue and Relocation activities:

 Methods must include details on who will be responsible for monitoring the species postrelocation and quantifiable measures to assess the success of such relocation



TITLE AND APPROVAL PAGE

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LIST OF ACRONYMS & ABBREVIATIONS

DEA Department of Environmental Affairs

ECO Environmental Control Officer

EO Environmental Officer

EMP Environmental Management Plan

EM Environmental Monitor

EMC Environmental Monitoring Committee

MMTS-2 Mooi Mgeni Transfer Scheme Phase 2

TCTA Trans-Caledon Tunnel Authority

RoD Record of Decision



DEFINITIONS

Monitoring Period: February 2013

<u>Auditing</u>

An 'environmental' audit is a methodical examination (including tests, checks, and confirmation) of environmental procedures and practices with the view of verifying whether they comply with internal policies, accepted practices and legal requirements

Environment

The surroundings in which humans exist and which comprise:

- The land, water and atmosphere of the earth.
- · Micro-organisms, plant and animal life.
- Any part or combination of a) and b) and the interrelationships among and between them.
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that can influence human health and well-being.

Environmental Aspect

Those components of the company's activities, products and services that are likely to interact with the environment.

Record of Decision

The written statement from the relevant environmental authority in terms of the Environment Conservation Act (Act 73 of 1989), with or without conditions, that records its approval of a planned activity and the implementation thereof and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

Environmental Feature

Elements and attributes of the biophysical, economic and social environment.

Environmental Impact

The change to the environment resulting from an environmental aspect (an activity) on the environment, whether desirable or undesirable. An impact may be the direct or indirect consequence of an activity.

Environmental Management Plan (EMP)

A detailed plan of action prepared to ensure that recommendations for enhancing positive impacts and/or limiting or preventing negative environmental impacts are implemented during the life-cycle of a project.



Environmental Objective

Overall environmental goal pertaining to the management of environmental features.

Environmental Target

Performance requirement that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

Monitoring Period: February 2013

Hazardous Waste

Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment

Monitoring

'Compliance' monitoring is a continuous and systematic process to ensure that the conditions in the Record of Decision (RoD) Environmental Management Plan (EMP) are being adhered to.

Pollution

Any change in the environment caused by substances, radioactive or other waves, or noise, odours, dust or heat, emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.



1 INTRODUCTION

Nemai Consulting was appointed as the independent Environmental Control Officer (ECO) for the Trans-Caledon Tunnel Authority (TCTA) for the Mooi-Mgeni Transfer Scheme Phase 2 (MMTS-2) project.

The ECO's functions in terms of environmental compliance monitoring are to systematically monitor the processes and activities required for the implementation of each Environmental Management Plan (EMP) and the conditions in the Record of Decision (RoD) (refer to environmental governance arrangements in **Figure 1**).

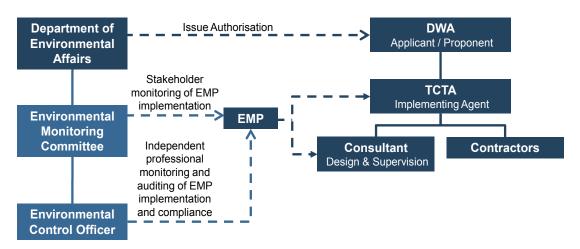


Figure 1: Environmental Governance Arrangements: Lines of Accountability

The RoD requires that a suite of EMPs be prepared for the project. Each EMP comprises two sections, namely a project description and the Environmental Management Philosophy as well as the EMP for a specific activity/phase of construction. To date, the following EMPs have been approved by the Department of Environmental Affairs (DEA):

- Construction of the Spring Grove Dam Wall approved on 03 May 2011;
- Traffic Management and Mitigation Plan approved on 16 August 2011 (amendment application approved on 21 February 2012);
- Search, Rescue and Relocation approved on 07 September 2011;
- Mooi River Gauging Weir approved on 08 October 2011;
- Mooi River Fish Barrier approved on 06 February 2012;
- Mpofana River Gauging Weir approved on 07 March 2012;
- Transplantation of red data species found at Inchbrakie Falls to the Reekie Lynn Falls approved on 13 April 2012;



- Monitoring Period: February 2013
- Roads realignment and flood protection of affected sections of the Lower Loteni Road approved on 07 May 2012;
- Relocation of people living in the dam basin approved on 09 May 2012;
- Refurbishment;
- Service Relocation & Decommissioning approved on 24 July 2012;
- Rehabilitation of off-site wetlands approved on 12 July 2012;
- Establishment of biodiversity offsets approved on 12 July 2012; and
- Spring Grove Dam Impoundment approved on 11 December 2012.

This document serves as the monthly ECO Report for <u>February 2013</u>. The monitoring event was undertaken on 21 February 2013, and the monitoring period commenced on 24 January 2013.

2 ECO MONITORING APPROACH

2.1 Weekly Monitoring

Weekly ECO monitoring sessions are conducted where a full day is spent on site to inspect the overall construction domain on a weekly basis. The weekly ECO monitoring reports, which are submitted to TCTA, serve as an overview of the following:

- New or improved areas of good environmental practices and compliance;
- Areas of poor practices or where concerns have been noted;
- · Status of previous issues; and
- Conclusions.

The weekly ECO monitoring events are more focused on best environmental practices, rather than regulatory compliance.

2.2 Monthly Monitoring

Monthly ECO monitoring serves to check compliance against the following:

- Conditions of the RoD for the construction of the Spring Grove Dam and Appurtenant Works;
 and
- EMPs and associated conditions of approval.



The Monthly ECO monitoring reports are submitted to TCTA, the Environmental Monitoring Committee (EMC), and ultimately DEA. The monthly ECO monitoring includes once a month full day site inspections, checking environmental administrative provisions (e.g. documentation, files, registers), analysing monitoring data, checking complaints, interviewing the Environmental Manager, Environmental Monitor (EM) and Environmental Officer (EO) (as required) and completing a detailed ECO Monitoring Checklist. The ECO Monitoring Checklist consists of monitoring items extracted from the EMP and RoD, and are categorised as follows:

- Environmental Authorisation;
- Administration;
- Environmental Education and Awareness;
- Construction;
- Materials;
- Water Quality;
- Air Quality;
- Noise;
- Community Engagement;
- Archaeology and Cultural Sites;
- Vegetation;
- Fauna;
- Traffic;
- Safety and Security;
- Waste:
- Rehabilitation;
- Search, Rescue and Relocation; and
- Relocation of people in the dam basin.

The following Conformance Scores, based on the level of compliance for the <u>overall site</u>, is allocated to each monitoring item in the checklist:

CONFORMANCE SCORES	DESCRIPTION
1	Task not achieved
2	Task 20% complete
3	Task 50% complete
4	Task 80 % complete
5	Task 100% completed in accordance with the EMP



Where non-conformance to the RoD conditions and EMP mitigation measures is encountered (i.e. COMFORMANCE SCORE < 5), the significance of the associated Impact is recorded based on the following guidelines):

IMPACT SCORES	IMPACT
1	Low – mitigation not needed/ mitigation measures to be maintained
2	Medium – mitigation should be considered
3	High – mitigation compulsory

The identified non-conformances and related impacts are also rated based on the following **Penalty** Scores:

PENALTY SCORES	DESCRIPTION
0	Not Applicable / Impact or Non-Conformance occurred in area of low Environmental Significance
1	Moderate – Impact/Non-Conformance occurred in area of moderate Environmental Significance (1% Deduction from total conformance score)
2	High – Impact/Non-Conformance occurred in area of high Environmental Significance (3% Deduction from total conformance score)
3	Very High – Impact/Non-Conformance Occurred in area of very high Environmental Significance (5% Deduction from total conformance score)

The overall compliance score is based on:

- No of items scored for the monitoring event;
- The highest conformance score for the monitoring event;
- The actual conformance score for the monitoring event;
- The conformance percentage for the monitoring event (%);
- Total Penalty Deductions (%); and
- Total Conformance Score Including Penalty Deductions (%).

2.3 Surprise Inspections

It was requested by the EMC that surprise inspections of the site be undertaken on a monthly basis. Such an inspection includes revisiting selected issues identified as part of the previous weekly monitoring event, as well as spot-checks of certain areas within the construction domain.

The findings of the surprise inspection for February 2013 are included in **Appendix A**.



3 CONSTRUCTION ACTIVITIES FOR THE MONITORING PERIOD

Amongst others, the following main construction activities took place during the monthly monitoring period, as identified during the monitoring sessions and from the EO's daily site diary:

Monitoring Period: February 2013

- Construction of the dam wall (Figures 2 3);
- Backfilling of the earth embankment;
- Activities at the batching plant (Figure 4);
- Construction of the fish barrier and associated coffer dam (Figure 5);
- Construction of Route 13 embankment (Figure 6);
- Construction of a concrete drainage channel adjacent to the permanent access road into the dam basin is ongoing;
- Borrow pit excavation and usage;
- · Watering of interior roads in the dam basin;
- Occupation of offices on the right bank;
- Construction of D146 Road /R103 intersection is completed.
- · Hauling of aggregate and fill;
- Rehabilitation of the road shoulders (includes the D146 and within the basin).
- Construction of a new access road above the Spring Grove gauging weir (completed);
- Removal of the garage, eating and parking area, containers, toilet corral, wood storage area,
 etc. at the dam foundation is ongoing;
- Demolition of homes within the dam basin is ongoing;
- Culvert work on the D146;
- Cattle control person on private road leading to fish barrier;
- Surveying work being conducted at the river diversion (fish barrier);
- Flagmen on D146 directing traffic;
- Fencing of the basin;
- Eskom working in the basin.





Figure 2: Construction of the dam wall – upstream view



Figure 3: Construction of the dam wall – downstream view





Figure 4: Activities at the batching plant



Figure 5: Construction of the fish barrier





Figure 6: Construction of Route 13 Embankment

The following key areas were inspected during the monitoring session:

- Site offices;
- Spoil sites;
- Dam basin;
- Dam foundation;
- Workshop;
- Route 2 culvert;
- Borrow areas;

- Spring Grove weir;
- Area designated for waste storage;
- · Stores area;
- Batch plant area;
- Route 13;
- Route 11;
- Fish barrier construction site.

COMMENTS:

TCTA



4 ENVIRONMENTAL ACTIVITIES FOR THE MONITORING PERIOD

Some of the **key environmental activities** on site, which also include areas of good practices and compliance, were as follows:

- On-going activities
 - o Regular dust suppression;
 - Safe storage and use of hazardous substances;
 - Use of mobile toilets;
 - Vehicle maintenance in dedicated area;
 - Management of siltation (Figure 7 8);
 - Mixing cement on impermeable surfaces;
 - Appropriate signage displayed and barricading;
 - Waste management;
 - Housekeeping;
 - Trucks abiding by speed limit, displaying chevrons, covered loads and numbered;
 - Use of personal protection equipment;
 - Washing of trucks in dedicated areas;
 - Environmental awareness;
 - o Flagmen deployed on new routes;
 - Speed management;
 - Fire risk management;
 - Skills training (Figure 9)
- Activities identified during the monitoring event
 - Rehabilitation of the road shoulders;
 - Hand digging of Scotch thistle and bramble by female work crew; and
 - Rehabilitation of scar left by fencing contractor (Figure 10)





Figure 7: Management of siltation – fish barrier



Figure 8: Management of siltation – dam wall





Figure 9: Skills training



Figure 10: Rehabilitation of scar left by fencing contractor

COMMENTS:

TCTA



5 WATER, AIR AND NOISE MONITORING

Amongst others, the functions of the ECO include the following:

- Conduct third-party monitoring and auditing;
- Regularly monitor and review the progress towards achieving the specific strategies, objectives and performance targets of the EMP; and
- Review monitoring data and evaluate against performance targets.

5.1 Contractor's Monitoring Results

The Contractor has appointed Blue Sands to conduct monthly water, air and noise monitoring (refer to monitoring sites, as shown in **Appendix B**). The last set of reports received was for monitoring conducted in <u>December 2013</u>, which is elaborated on in the sub-sections to follow. No raw data was received for the period thereafter.

5.1.1 Air Quality

Dust Fallout

 For comparison purposes, the monthly dust deposition rates for the 2010 Baseline Air Quality Survey is provided below.

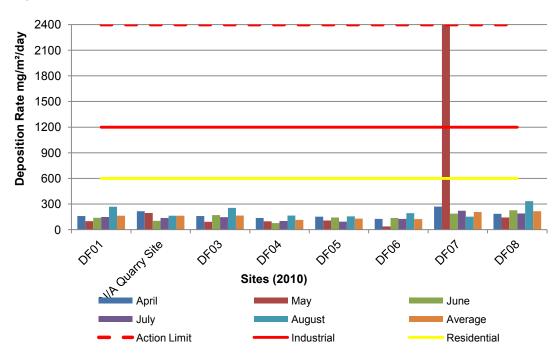


Figure 11: Monthly dust deposition rates for 2010 Baseline Air Quality Survey)



Dust fallout samples were collected on 31 December 2012 – sampling period = 32 days.
 Results follow.

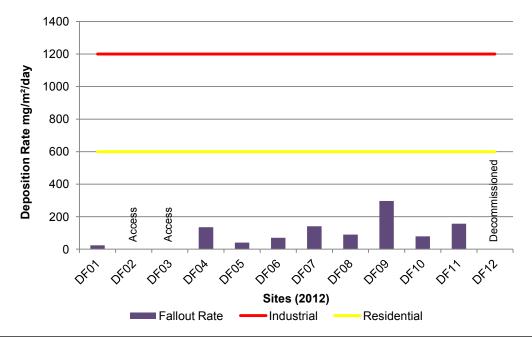


Figure 12: Dust fallout rates for Decemberr 2012 (Blue Sands, 2012a)

Dust fallout rates continue to remain well-within the Residential Band. Generally low dust load
was measured as a result wet summer conditions and due to the shutdown over the festive
season.

Continuous Particulate Monitoring (PM10) with Wind Speed and Direction

The sampling period was from 07 to 31 December 2012. Results follow.

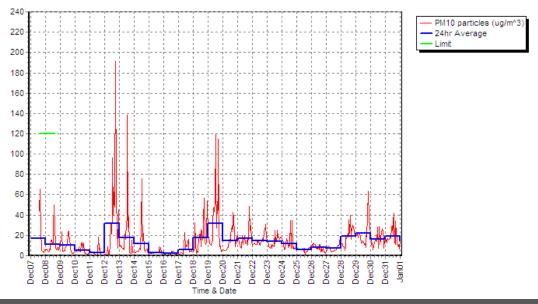


Figure 13: PM₁₀ concentrations for 07 – 31 December 2012 (Blue Sands, 2012a)



- During December 2012, the PM₁₀ concentrations were fully complaint with the 24-hour limit of 120 μg/m³.
- The pollution rose (see Figure 13) shows that the major contribution to the dust levels
 recorded came from the north-easterly and south-easterly sectors. The primary sources in
 these directions are the D146 and unpaved access road.

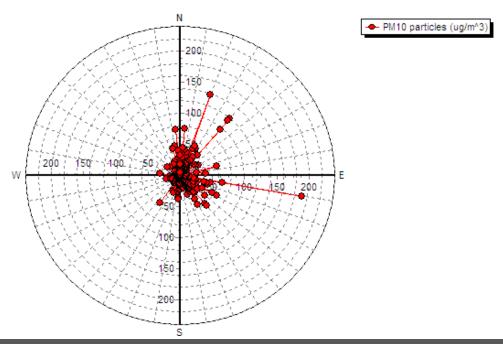


Figure 14:

1-hour PM₁₀ pollution rose for December 2012 at site SG01 (Blue Sands, 2012a)

COMMENTS:

TCTA

5.1.2 Environmental Noise

- Four surveys were undertaken for December 2012. Two daytime surveys were conducted.
 These surveys ran from 07h00 to 11h30 on 15/12/2012 and 17h30 to 21h30 on 29/12/2012.
 Two night-time surveys ran from 22h45 to 01h00 on 19/12/2012 and 22h30 to 01h00 on 29/12/2012.
- Being the three sites closest to the construction site; EN01, EN02 (standard exceeded on 15/12/2012 day-time survey, 19/12/2012 night-time survey) and EN12, recorded reverse hooters, construction and construction associated plant sounds related with site operations during December 2012.



 There was a general decrease in sound levels recorded at the end of December 2012 as illustrated by the long term graphs to follow.

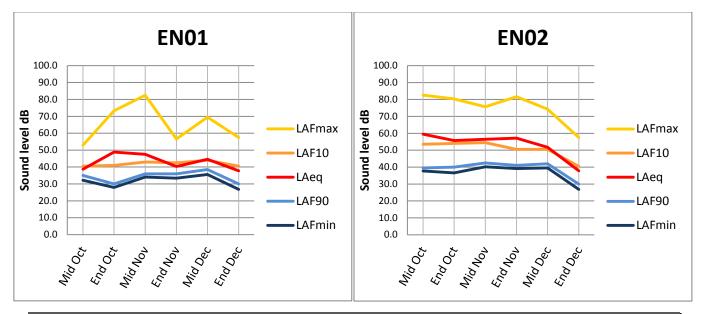


Figure 15: Latest recorded three month sound levels for EN01 and EN02 (Blue Sands, 2012a)

COMMENTS:

TCTA

5.1.3 Water Quality

Mooi River Sampling

- Samples were taken on 18 December 2012 and 01 January 2013.
- Variables at sampling sites associated with construction activities were below thresholds.

Separator Sampling

· Wash bay was not in use over monitoring period.

COMMENTS:

TCTA

5.1.4 Raw Data

No raw data available following the December 2012 water, air and noise monitoring.



6 ENVIRONMENTAL PERFORMANCE

An overview of the environmental performance during the monthly monitoring period is provided in the sub-sections to follow.

6.1 Weekly ECO Monitoring – Status of Issues

Note that only significant environmental aspects and impacts are listed in this section, based on the following qualitative criteria that were used to screen the weekly ECO monitoring Reports:

- 1. **Hazardous** nature of the environmental aspect or impact;
- 2. Extent of impact (within / beyond the boundaries of the construction domain);
- 3. Sensitivity of receiving environment;
- 4. Probability of aspect resulting in significant impact;
- 5. Regulatory context;
- Liability / cost related to corrective actions;
- 7. Potential to lead to legitimate concerns by interested and affected parties; and
- 8. **Cumulative** impacts.

6.1.1 <u>24 January 2013</u>

Issue Ref.	Category	Summary of poor practice / area of concern	Status
191	Materials	Hazardous storage container (cage) at right bank does not have adequate bunding.	Closed
219	Flora & Rehabilitation	 Large number of Scotch thistle (<i>Onopordum acanthium</i>), going into flower, present in the dam basin, particularly on Route 11. Large amount of bramble (<i>Rhubus</i>), currently in flower present within the dam basin. A particular area of concern related to bramble establishment is the section of soil used to begin the rehabilitation of the "fencing scar" adjacent to Route 13. New bramble canes are emerging from this soil. 	Open
220	Water Quality	Large pile of top soil (being used to fill sand bags) has been placed on the right bank of the Mooi River at the river diversion (fish barrier).	Closed
227	Pollution prevention	The chemical solution (Loo Blue) used in the portable toilets has been spilled on the ground at the dam foundation.	Closed
232	Waste	Empty geotextile socks in the waste transition area awaiting disposal; location of the contents of these socks (trapped sediment) questioned.	Closed
239	Pollution prevention	 Diesel spill along road between left and right bank. Diesel bowser parked at the workshop area without a drip tray. Mixing of concrete directly on the ground at the spill way below the dam wall. Lack of drip tray under diesel powered equipment below the dam foundation. 	Closed Open
243	Traffic management	During the inspection, I observed two vehicles in the dam basin driving at excessive speed (a watering truck (Route 13 embankment) and a hauler	Open



Monitoring	Period:	February	2013
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Issue Ref.	Category	Summary of poor practice / area of concern	Status
		(on section of road before turnoff to Route 11).	
244	Pollution prevention	 Numerous diesel spillages around and under the rock crushing equipment in the former RCC area. Diesel spill on ground outside of diesel-equipment repair container on the right bank. 	Open
246	Water Quality	Water being removed from below the dam wall at the spill way being discharged directly into the river.	Open

6.1.2 <u>31 January 2013</u>

Issue Ref.	Category	Summary of poor practice / area of concern	Status
219	Flora & Rehabilitation	 Large number of Scotch thistle (<i>Onopordum acanthium</i>), going into flower, present in the dam basin, particularly on Route 11. Large amount of bramble (<i>Rhubus</i>), currently in flower present within the dam basin. A particular area of concern related to bramble establishment is the section of soil used to begin the rehabilitation of the "fencing scar" adjacent to Route 13. New bramble canes are emerging from this soil. 	Open
239	Pollution prevention	Lack of drip tray under diesel powered equipment at the spillway (below the dam foundation).	Closed
243	Traffic management	During the inspection, I observed two vehicles in the dam basin driving at excessive speed (a watering truck (Route 13 embankment) and a hauler (on section of road before turnoff to Route 11).	Open
244	Pollution prevention	Numerous diesel spillages around and under the rock crushing equipment in the former RCC area.	Closed
		2. Diesel spill on ground outside of diesel-equipment repair container on the right bank.	Open
246	Water Quality	Water being removed from below the dam wall at the spill way being discharged directly into the river.	Open
247	Pollution prevention	Diesel powered equipment immediately adjacent to Mooi River at the river diversion (fish barrier) sitting in (contaminated) water in the drip tray.	Closed
	-	Diesel spill on right bank below hazardous container cage.	Open
248	Water Quality	A large amount of sediment entering the Mooi River at the river diversion (fish barrier) due to construction activities (repairs being made to coffer	Closed
249	Safety	dam wall). Gate post has been damaged leading into the river diversion (fish barrier).	Open
243	Calety	Cate post has been damaged leading into the river diversion (lish barrier).	Open

6.1.3 <u>08 February 2013</u>

Issue Ref.	Category	Summary of poor practice / area of concern	Status
219	Flora & Rehabilitation	 Large number of Scotch thistle (<i>Onopordum acanthium</i>), going into flower, present in the dam basin, particularly on Route 11. Large amount of bramble (<i>Rhubus</i>), currently in flower present within the dam basin. A particular area of concern related to bramble establishment is the section of soil used to begin the rehabilitation of the "fencing scar" adjacent to Route 13. New bramble canes are emerging from this soil. 	Open
243	Traffic management	During the inspection, I observed two vehicles in the dam basin driving at excessive speed (a watering truck (Route 13 embankment) and a hauler (on section of road before turnoff to Route 11).	Closed



Issue Ref.	Category	Summary of poor practice / area of concern	Status
244	Pollution prevention	Diesel spill on ground outside of diesel-equipment repair container on the right bank.	
246	Water quality	Water being removed from below the dam wall at the spill way being discharged directly into the river.	
247	Pollution Prevention	Diesel spill on right bank below hazardous container cage.	
249	Safety	Gate post has been damaged leading into the river diversion (fish barrier).	
250	Pollution Prevention	 Diesel spill present at the RCC trial area (rock crusher area). Lack of drip tray under diesel powered equipment below and on the upstream side of the dam wall. Overflow of concrete contaminated water at the batch plant. Diesel spill, oil rag and battery on ground adjacent to storage containers at the workshop. 	
		5. Hazardous liquid storage container at workshop close to full.	Closed

6.1.4 <u>14 February 2013</u>

Issue Ref.	Category	Summary of poor practice / area of concern	Status
219	Flora	Large number of Scotch thistle (<i>Onopordum acanthium</i>), going into flower, present in the dam basin, particularly on Route 11.	Open
	Rehabilitation	2. Large amount of bramble (<i>Rhubus</i>), currently in flower present within the dam basin. A particular area of concern related to bramble establishment is the section of soil used to begin the rehabilitation of the "fencing scar" adjacent to Route 13. New bramble canes are emerging from this soil.	Closed
244	Pollution prevention	Diesel spill on ground outside of diesel-equipment repair container on the right bank.	Open
250	Pollution Prevention	 Lack of drip tray under diesel powered equipment below and on the upstream side of the dam wall. Overflow of concrete contaminated water at the batch plant. Diesel spill, oil rag and battery on ground adjacent to storage containers at the workshop. 	Open
254	Pollution Prevention	 Diesel spill present at the RCC trial area (rock crusher area) The Osborn Track at the RCC had numerous oil leaks, numerous small oil spills present on the equipment and ground around this equipment, and unlabelled hazardous materials containers without drip trays. Oil spill on ground adjacent to storage containers at the workshop. Lack of drip tray under diesel-powered equipment at the river diversion (fish barrier). 	Closed Open Closed
		 Concrete ladened water as a result of truck washing pooled on side of road on the left bank. 	
255	Water Quality	Large volume of sediment in standing water on the bank adjacent to the dewatering sock below the sediment pond at the river diversion (fish barrier). Sediment noticeable on the shore of the right bank above and below the river diversion.	Closed



6.1.5 <u>21 February 2013</u>

Issue Ref.	Category	Summary of poor practice / area of concern	Status
219	Flora	Large number of Scotch thistle (<i>Onopordum acanthium</i>), going into flower, present in the dam basin, particularly on Route 11.	Open
244	Pollution prevention	Diesel spill on ground outside of diesel-equipment repair container on the right bank.	Open
250	Pollution Prevention	Lack of drip tray under diesel powered equipment below and on the upstream side of the dam wall.	Closed
		 Overflow of concrete contaminated water at the batch plant. Diesel spill, oil rag and battery on ground adjacent to storage containers at the workshop. 	Open
254	Pollution Prevention	The Osborn Track at the RCC had numerous oil leaks, numerous small oil spills present on the equipment and ground around this equipment, and unlabelled hazardous materials containers without drip trays.	Closed
		2. Oil spill on ground adjacent to storage containers at the workshop.	Open
255	Water quality	 Settlement pond at batch plant contains large volume of sediment. Drains at the batch plant filled with a large amount of cement sediment. 	Open

6.1.6 Conclusions

Recurring issues from weekly monitoring include the management of siltation, control of noxious weeds and management of the storage and use of hazardous substances.

COMMENTS:

Т	CI	ΓΑ

6.2 Monthly ECO Monitoring Checklist

The results of the monthly ECO Monitoring Checklist are summarised in the sub-sections to follow.

6.2.1 Monitoring Categories

The results of the monitoring categories are summarised in **Table 1**.



Table 1: Summary of Monthly ECO Monitoring Checklist categories: Feb 2013

Monitoring Category	Conformance Score (%)
Environmental Authorisation	91
Administration	100
Environmental Education and Awareness	75
Construction	100
Materials	94
Water Quality	88
Air Quality	96
Noise	100
Community Engagement	100
Archaeology and Cultural Sites	100
Vegetation	93
Fauna	93
Safety & Security	100
Waste	80
Traffic	89
Search, Rescue and Relocation	98
Construction Camp	90
Relocation of People Living in the Dam Basin	94
Rehabilitation	100

6.2.2 Areas of Non-Compliance

Selected areas of significant non-compliance for February 2013, which (amongst others) influenced the conformance and penalty scores contained in Table 1, are captured in the table to follow.

Table 2: Selected areas of non-compliance: Feb 2013

Monitoring Category	Condition / Mitigation Measure	Comments
	Hazardous and flammable substances must be stored and used in compliance with the applicable regulations and safety instructions	All drip trays to be emptied of rain water (Figure 17).
Environmental Authorisation	During the construction phase the speed limit of 40km/h on public and other roads within the project area to be adhered to. This include roads and streets within Rosetta and Nottingham Road, sections of the R103, road D146, the access road to the Vaalekop South smallholdings and Riverholm, the Balgowan road for accessing the Mpofana outfall works (N3 Toll 25) and the access road to the quarry site on Springvale Farm 2170	Complaint received regarding speeding - verified.
	Undertake dust abatement measures such as the wetting of construction areas and the application of chemical palliatives on heavily used unpaved roads and the re-vegetation of permanent	Complaints received regarding dust.



Stockpiles Security measures to be implemented to ensure the safety and security of the workers, material and surrounding communities D146 main access road used by construction vehicles must be rehabilitated and surfaced post construction Provisions of the National Water Act, 1998 (Act 36 of 1998). Silting, demarcation and management of material storage and vehicle servicing areas used by the contractor to be outside of the 1:50 year flood line or at least 100 meters from any watercourses Provisions of the Hazardous Substances Act (Act 15 of 1973) to be adhered to All staff, contractors and sub-contractors to be familiar with or be made aware of the RoD contents All public complaints during construction must be adhered to as soon as possible All personnel (including Sub-Contractors and suppliers) to be familiar with and understand the specifications contained in CEMP The concept of "clean site" policy to be explained on site. Materials to be neatly stored on site in a stream of the made aware to management required (Figure 18-19). Complaints received regarding illegal access to private property. Complaints received regarding illegal access to private property. D146 road upgraded and maintained during construction and management of fraillegal access to private property. D146 road upgraded and maintained during construction provate property. D146 road upgraded and maintained during construction of private property. D146 road upgraded and maintained during construction of private property. D146 road upgraded and maintained during construction of private property. D146 road upgraded and maintained during construction foraltained. Folia first provised for adult provative frail and provative frail provative frail and provate frail and provate frail and provative frail and provative frail and provative frail and provative frail and provate frail and provative frail and provate frail a
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designated area (Figure 18 - 19). Rain filled drip trays to be
Materials Uncontrolled releases of hazardous materials to be cleaned (Figure 17).
prevented Spill reporting procedures to be available at all Not all storage areas are provided with
storage facilities spillage procedure.
Provide treatment and/or disposal method for the wastewater downstream of dam site entering watercourse (Figure 20).
Silt laden water shall not be directly discharged Dewatering directly into the river at Route 13
over land or directly into watercourses and shall be embankment (Figure 16). Pro-active
contained in settlement ponds and managed management required to reduce siltation from
Water Quality before release. Silt, sand and silt-laden water shall coffer dam at gauging weir downstream of
not enter any surface watercourse. dam wall. Sedimentation pond at batching
plant to be dredged (Figure 22). Contaminated starmwater and run off from the Runoff from cleared areas to be intercepted.
Containifiated Stormwater and full-oil filler Wastewater downstream of dam site entering
watercourse (Figure 20).
Toolbox Talks on RoD Awareness are being
Social Environmental Awareness Training for all different undertaken. Refresher talks required based levels of construction workers on nature of complaints received (e.g.
levels of construction workers on nature of complaints received (e.g. speeding, littering).
Improved housekeeping required at dam
Waste Site to be kept clean and free of litter basin (Figure 18). Concrete waste on ground
to be removed from fish barrier site.
Complaint received regarding litter. All delivery trucks travelling on the N3, R102 and Uncovered load - 12 & 21 Feb 2013 (Figure
Traffic All delivery trucks travelling on the N3, R102 and D146 must be properly covered 21).



Monitoring	Period:	February	2013
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Monitoring Category	Condition / Mitigation Measure	Comments
	No heavy construction vehicles may access road P164 from Rosetta to Kamberg, the section of the Overdale Road between the D146 and the P164 in Rosetta or road D682 in Rosetta	K724 traveling wrong direction - 01 Feb 2013.
	Official warnings to be issued against rock drivers that exceed the posted speed limit by more than 10km/h on the P147 or the R103, and after the third warning (for overloading and speeding offences combined) the contractor to be instructed to remove the particular driver from the project	Feedback from Safety Officer: TAF 97 speeding on P147 - 12 Feb 2013; TAF 80 speeding on R103 - 21 Feb 2013.
	Crushed stone loads to be covered with tarpaulins to prevent spillage, dust and damage to other vehicles on the road	Uncovered load - 12 & 21 Feb 2013.
	Working hours to be limited from Monday to Saturday from 06h00 to 18h00. No traffic will be permitted on the road between 07h00 and 08h00.	Complaint received regarding working on Sunday, 17 Feb.
Search, Rescue & Relocation	Conduct a detailed search of the inundation area (including Inchbrakie Fall) during spring and summer, taking due cognizance of specialist studies already undertaken as part of the EIA process	The bridging study done during the EIA was considered carefully and discussions took place with Rob Scott- Shaw from EKZNW. He was able to make some valuable suggestions with regard to the receiving area exclusion plots and these were carried out by the ACER team.
Construction Camp	The security of the surrounding communities shall not be compromised by the construction activities in any way	Complaint received regarding unlawful access.



Figure 16: Dewatering directly into watercourse





Figure 17: Rain-filled drip trays



Figure 18: General housekeeping to be improved





Figure 19: Broken cement bags



Figure 20: Improper wastewater management



Figure 21: Uncovered truck delivering aggregate





Figure 22: Settlement pond to be dredged

6.2.3 <u>Status of Relocation of Existing Services in the Dam Basin</u>

The table to follow reflect the status of the relocation of existing services in the dam basin.

Table 3: Status of the relocation of existing services in the dam basin

Activities	Comments
Buildings - demolished & removed	All complete except one
Roads - left as is (where relevant)	Roads all being left
Fences - demolished & removed	80% complete
Septic tanks - opened and filled with un-compacted soil	Complete.
Power lines - demolished & removed	In process
Pipelines - disconnected but left in situ. Realignment needed	None removed - services still in use as
for some pipelines	are pump stations.

COMMENTS:

TCTA

6.2.4 Overall Monitoring Results

A summary of the results of the ECO monitoring checklist follows.



Table 4: Summary of results of Monthly ECO Monitoring Checklist: February 2013

Description	Total	Percentage
Number of Items Scored for this Audit	270	
Actual Conformance Score	1233	91 %

6.2.5 <u>Sequential ECO Monitoring Results</u>

A graph indicating the sequential ECO Monitoring Results from May 2011 until present follows.

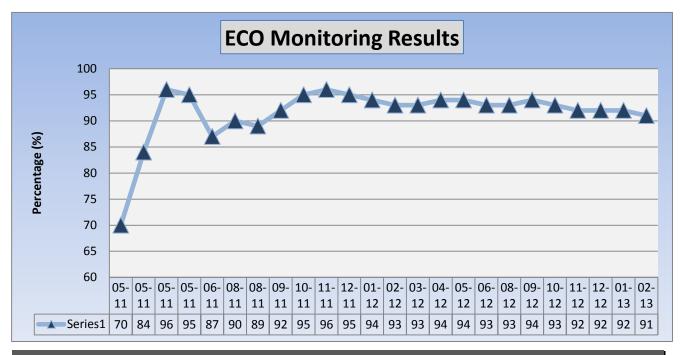


Figure 23: Graph – summary of results of Monthly ECO Monitoring Checklists

It should be noted that without the weighting of the scoring items a full appreciation of the significance of the non-compliance is not conveyed.

The graphs to follow indicate the compliance scores achieved for various significant categories over the entire ECO monitoring period.



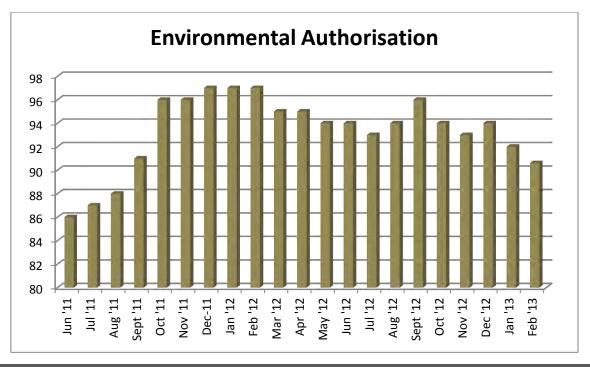


Figure 24: Graph – summary of compliance for category: Environmental Authorisation

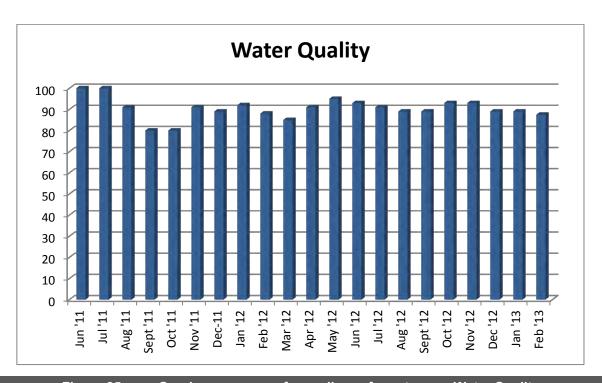


Figure 25: Graph – summary of compliance for category: Water Quality



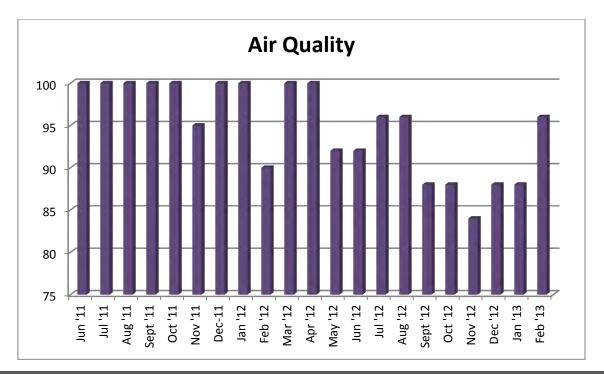


Figure 26: Graph – summary of compliance for category: Air Quality

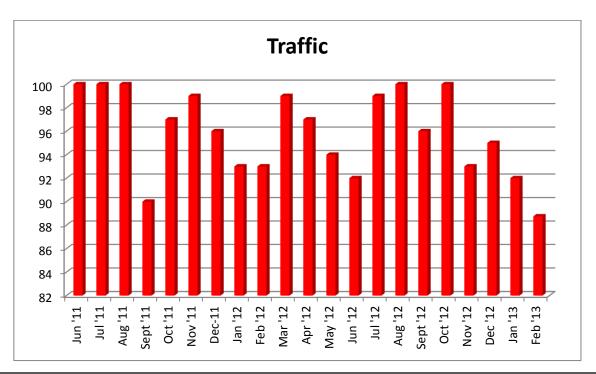


Figure 27: Graph – summary of compliance for category: Traffic

COMMENTS:

TCTA



6.3 Pending Environmental Management Considerations

The following matters are regarded as significant environmental management priorities for future monitoring events:

- Clarification is required on the appropriate way forward for the rehabilitation of wetlands and biodiversity offsets. Phase 1 of baseline study underway.
- Pro-active management is required to minimize siltation from any instream works, which
 includes the proposed river crossings at fish barrier and when the coffer dam at the weir site
 (downstream of the dam wall) is removed.
- Contractor to develop a Rehabilitation Programme. According to the RoD, all area disturbed by construction activities are to be fully rehabilitated to the satisfaction of the ECO and Environmental Monitoring Committee (EMC).

COMMENTS:

TCTA

7 NON-CONFORMANCE / INCIDENT REPORTING

The following non-conformances / incidents previously recorded by the Environmental Monitor (EM) remain open:

 NCR/Incident No. J00846-NCR039 (issued on 23-01-13) – Inadequate dust suppression on the D146 and onsite.

New environmental non-conformances / incidents recorded by the EM during the monthly ECO monitoring period are contained in the table to follow.

Table 5: Environmental Non-Conformance/Incident Register entries: Jan - Feb 2013

Date of NCR / Incident	NCR/Incident No.	Description	Suggested Corrective Action	EM Suggested Deadline	Actual Date Corrected
08/02/2013	J00846-NCR041	Settlement ponds established to capture RCC 'wash-runoff' are porous. Uncontrolled run-off and pooling of contaminated water outside the settlement ponds is being noted on the left bank. The RCC Engineer responsible for all RCC related work communicated the specifics required, however this was not followed through.	Sedimentation ponds shall be constructed using suitable materials and shall be watertight, using a liner which shall be approved by the Engineer. They shall be subdivided to enable alternative sections to be cleaned while other sections are in operations. All contaminated areas must be cleaned and	07/02/2013	No



Date of NCR / Incident	NCR/Incident No.	Description	Suggested Corrective Action	EM Suggested Deadline	Actual Date Corrected
			disposed of accordingly.		
12/02/2013	J00846-NCR042	Spills at the crusher area, workshop and dam foundation have not been cleaned accordingly. Spills at the crusher were first noted on the 31/01/2013. Additionally spill trays are required in this area and awareness training must be conducted with the mechanic and foremen who were unaware of measures and disposal methods.	All spills must be cleaned immediately and disposed of within all legal requirements; toolbox talks must be conducted with ALL site staff as spill prevention measures are not being enforced in general.	14/02/2013	No
12/02/2013	J00846-NCR043	Wash bay is not functioning accordingly and overflow of waste water was noted on several occasions. The settlement pond is reaching capacity and storm water trenches are not adequate as pooling of storm water is evident.	Afrisam Wash bay needs to be emptied, settlement pond must be cleaned and storm water trenches around the Afrisam site need to be reinstated to ensure storm water flows into the settlement pond and kept separate from batch plant runoff.	15/02/2013	No
12/02/2013	J00846-NCR044	Control measures are not effective in preventing Traffic EMP contraventions. An SGD truck was spotted at 9h30 on the 12/02/2013 at the bottom of D146 uncovered. Number on trailer was 727 and number on driver door was 724. Two trucks were also parked parallel to each other on the D146 and no flagmen were directing traffic. Additionally Traffic reports have not been received by the contractor in adequate time over the past few weeks and daily monitoring of Traffic is not taking place as the traffic safety officer has no computer to do so.	1. Traffic safety officer needs to be actively monitoring Traffic; this is his primary role onsite. 2. Reports need to be submitted on a weekly basis for auditing purposes and submission to the client. 3. Contractor needs to provide feedback taken for all the contraventions presented and recourse to prevent further contraventions.	15/02/2013	No
18/02/2013	J00846-NCR045	1. Saturday 16 February 2013, afternoon: work continued until 17h00, despite the condition in the EMP being Saturday work until 15h00. This condition can be relaxed if The Contractor informs The Engineer, but this condition was not observed. 2. Sunday 17 February 2013, all day: unauthorised work occurred from 08h30 until 16h30 on Sunday, without any notification being given to The Engineer. This is contrary to the EMP, which stipulates no Sunday work. This condition can be relaxed if enough warning and notice is given of the need for Sunday work.	The correct supervisory measures must be put in place to prevent future occurrences. Contractor to communicate these measures formally	21/02/2013	No

given of the need for Sunday work.

Note: Wording directly extracted from Environmental Non-Conformance / Incident Register

* COMMENTS:

TCTA	



8 ISSUES AND COMPLAINTS

Appendix C contains the issues and complaints (45 entries) that were recorded by the Social Monitor during the monthly ECO monitoring period (starting from 16 November 2012). The following issues (apart from matters pertaining to expropriation and compensation) remain open, based on the Issues and Complaints Register, which require feedback / action from the project team:

Open issues from current monitoring period -

(Note: recurring issues highlighted)

- 9. Issue no. 550 (23-Jan-13) Road condition;
- 10. Issue no. 551 (24-Jan-13) Pump; rates; cattle grids; borehole;
- 11. Issue no. 552 (24-Jan-13) Improper use of private road;
- 12. Issue no. 553 (24-Jan-13) Construction programme fish barrier;
- 13. Issue no. 556 (25-Jan-13) Blasting damage;
- 14. Issue no. 557 (25-Jan-13) Water supply;
- 15. Issue no. 559 (28-Jan-13) Construction programme fish barrier;
- 16. Issue no. 561 (30-Jan-13) Fencing on Route 11;
- 17. Issue no. 563 (30-Jan-13) Damage to tyres road condition;
- 18. Issue no. 566 (06-Feb-13) Implications of fish barrier impoundment on property;
- 19. Issue no. 567 (06-Feb-13) Litter along road to fish barrier; rehabilitation of the scar and of route 11;
- 20. Issue no. 568 (06-Feb-13) Loud music played by taxi's at the gate;
- 21. Issue no. 571 (08-Feb-13) Litter;
- 22. Issue no. 572 (08-Feb-13) Construction programme fish barrier; road sharing agreement;
- 23. Issue no. 574 (13-Feb-13) Construction programme fish barrier;
- 24. Issue no. 575 (13-Feb-13) Removal of roof sheeting by previous owner;
- 25. Issue no. 577 (14-Feb-13) Drainage on D146;
- 26. Issue no. 584 (18-Feb-13) Speeding on R103;
- 27. Issue no. 588 (20-Feb-13) Killed guineafowl; request for a new speed bump in our road; speed limit;
- 28. Issue no. 589 (20-Feb-13) Dangerous driving by an aggregate truck;
- 29. Issue no. 590 (20-Feb-13) Damage to tyres road condition;
- 30. Issue no. 592 (21-Feb-13) Timeframe for night work; dumping (stockpiling); and
- 31. Issue no. 594 (21-Feb-13) Inability to plant winter feed due to Eskom lines.

COMMENTS:

TCTA



9 PROPOSED AMENDMENTS TO THE ROD AND EMP

9.1 Proposed Amendments to RoD

An application for an amendment to the RoD was submitted by DWA to DEA on 15 August 2011. Proposed amendments or matters for clarification related to the RoD are contained in **Table 6**.

<u>Table 6:</u> Proposed amendments / matters for clarification related to the RoD

Condition No.	Description	Comments / Amendment			
NO.	Amendments Previously Recorded				
3.2.1.22	Indigenous vegetation removed from the dam basin	Addressed in EMP for Search, Rescue and			
	must be kept in a temporary nursery to be used for rehabilitation	Relocation, which was approved on 07 September 2011.			
3.2.1.23	The wood from exotic and/or invasive species removed from the dam basin must be made available to the local community free of charge	Decision pending from Contractor regarding the way forward for the disposal of the cleared vegetation. RoD condition may prove to be costly.			
3.2.3.1	Daily monitoring by ECO	ECO was not appointed as a daily monitor. Daily monitoring is undertaken by the EO on behalf of the Contractor and by the EM on behalf of the Engineer. Weekly ECO monitoring conducted.			
3.2.3.3	ECO's quarterly environmental performance audits	Environmental performance audits undertaken by the ECO every six months.			
3.2.3.4	Submission of environmental compliance report every two months by the ECO.	Environmental compliance report submitted monthly.			
3.2.3.5	ECO to maintain – a) Daily site diary b) Non-conformance register c) Public complaints register d) Register of audits	ECO to ensure that these documents, registers, reports and permits are maintained. Documentation to be maintained by Environmental Monitor.			
	e) Copies of method statements f) Material Safety Data Sheets (MSDS) g) Monitoring reports of the contractor/s h) Compliance and audit reports i) Training registers j) Copies of the RoD and EMPs k) Waste disposal certificates l) Copies of all permits required during construction	MSDSs to be kept between the OHS file and Environmental Monitor's file, due to a split function.			
3.2.3.6	ECO to remain employed until the end of rehabilitation	ECO to remain employed until the end of defects liability period			
3.2.6.1(d)	Provisions of the National Water Act, 1998 (Act 36 of 1998). Silting, demarcation and management of material storage and vehicle servicing areas used by the contractor to be outside of the 1:50 year flood line or at least 100 meters from any watercourses.	Mobile toilets to be situated at least 50m away from a watercourse.			
3.2.1.11	All access roads must be clearly demarcated and 'no entry' sings must clearly indicate those roads not to be used by contractors or delivery vehicles. No heavy construction vehicles may access road P164 from Rosetta to Kamberg, the section of the	Proposed amendment: All access roads must be clearly marked and 'no entry' sings must clearly indicate those roads not to be used by contractors or delivery vehicles. No construction vehicles			



Condition No.	Description	Comments / Amendment	
	Amendments Previously R	ecorded	
Overdale Road between the D146 and the P164 in Rosetta or road D682 in Rosetta May access road P164 from Rokamberg, the section of the Overdate between the D146 and the P164 in Royal Rosetta, however, impoundment of the dam take placed the completion of the fish barrier, action to the road P164 from Royal Roya		may access road P164 from Rosetta to Kamberg, the section of the Overdale Road between the D146 and the P164 in Rosetta or road D682 in Rosetta, however, should impoundment of the dam take place prior to the completion of the fish barrier, access will then be allowed on the road P164 to the Ballina Road for completion of the works.	
New Recommended Amendments			

k	COMMENTS:

N/A

TCTA

9.2 Proposed Amendments to EMP

In accordance with the RoD condition no. 3.2.4.4, EMPs will be regarded as dynamic documents and any changes to the EMPs must be submitted to DEA for acceptance, which is to be accompanied by recommendations of the EMC.

An EMP Amendments Register was submitted by TCTA to DEA on 21 September 2011, which records the proposed amendments to the EMP for management measures that are deemed to be ineffective or redundant. These amendments were discussed with the EMC on 03 August 2011.

Proposed amendments or matters for clarification related to the EMP are contained in **Table 7**.

Table 7: Proposed amendments / matters for clarification related to the EMP

No.	Description	Comments	
	Mitigation Measures identified during pro	evious ECO monitoring events	
	Existing Mitigation Measures	contained in EMPs	
EMPs to provide rehabilitation measures for areas to be disturbed during the construction phase [RoD condition no. 3.2.4.3(b)].		EMP for the Construction of the Spring Grove Dam Wall to make provision for rehabilitation of areas affected by construction work outside of dam basin (e.g. access roads).	
2. EMPs to include implementation measures aimed at controlling invasive plant species and weeds [RoD condition no. 3.2.4.3(f)].		Addressed in EMP Register.	
3.	Cover vehicles transporting spoil, topsoil or other dust generating materials.	Addressed in EMP Register.	
4.	Dust suppression measures must be	The spoil area opposite Erika Millican's	



No.	Description	Comments
	implemented on dry weather days.	property is considered a working area and will not be watered down for dust suppression. Instead, visual inspections will be undertaken and if dust is a nuisance the area will be watered down.
5.	For each waste type create a MSDS that is always available to accompany the waste.	Addressed in EMP Register.
6.	All waste containers designated for off site transport to be secured and labelled with the contents and associated hazards, be properly loaded and be accompanied by a shipping paper (i.e. manifest) describing the load and its associated hazards	Impractical for all waste containers. Suitable for hazardous waste.
7.	Transporters of hazardous materials to ensure that: vehicles transporting hazardous materials are registered for this purpose; clearly display in English the nature of materials being transported; what to do in the event of an emergency and an emergency telephone number (24 hour) of a responsible person who can provide advice in an emergency	Bulk fuel transporters comply with this measure. However, requirements are too onerous for sub-contractors (e.g. mechanics). EMP deviation to be discussed.
8.	The quantity of hazardous material used each month is to be documented	Requirement is more feasible in terms of fuel usage. Necessity of measure to be explored further in terms of other hazardous material used on site, such as material used for the maintenance of vehicles, material used at the laboratory, etc.
9.	Monitor the number of project related vehicles travelling off site per day	Trucks are being monitored through GPS tracking system. Monitoring of other construction-related vehicles is an onerous task, and the practicality thereof needs to be investigated further.
10.	Phase 2 of social monitoring is monthly local area monitoring where in-depth research will be done in all the local 'communities' identified in the MEP as constituting local social environment. These areas will be covered over 12 months and comprehensive narrative reports will be compiled. The first round of longitudinal survey will be conducted. A sample of households will be interviewed every four months until the project completion to determine how they experience social impacts related to MMTS2	Need to consider how current social monitoring conforms to original intentions of the associated mitigation measure.
11.	Phase 3 of social monitoring is in-depth investigation and participation appraisal where the focus shifts from area monitoring to specialist investigation of themes and participatory appraisal and planning with project communities to determine whether social changes claimed by respondents have significance in the project social environment, the level of significance, what they involve and what responses are required Specify targets for minimum numbers of each	Need to consider how current social monitoring conforms to original intentions of the associated mitigation measure. Specialist feedback: Impossible to set target



No.	Description	Comments	
	species to be relocated; the selected destination and the party responsible for post-relocation care	numbers because we don't know population sizes or even if the species occur or not. Preference is to relocate within the basin and post-relocation care of animals is impossible we can only manage their habitat.EMP amendment.	
13.	Working hours to be limited from Monday to Saturday from 06h00 to 18h00. No traffic will be permitted on the road between 07h00 and 08h00. Requested change in working hours a fish barrier.		
	Additional Mitigation Measures	to supplement EMPs	
14.	Working within watercourses and safeguarding the characteristics of the watercourse, including flow, water quality, habitat (morphology) and aquatic biota		
15.	Borrow pits (e.g. stormwater management). It is noted that certain of the existing categories of the EMP for the Construction of the Spring Grove Dam Wall make provision for managing the environmental aspects and impacts associated with the borrow pits		
16.	Mobile toilets to be situated at least 50m away fr		
17.	Silt laden water shall not be directly discharged over land or directly into watercourses and shall be contained in settlement ponds and managed before release. Silt, sand and silt-laden water shall not enter any surface watercourse. Proposed new wording: Silt laden water shall not be directly into discharged into watercourses and shall be contained in settlement ponds and managed before release. Silt, sand and silt-laden water shall not enter any surface watercourse.		
	Mitigation Measures identified during	last ECO monitoring event	
18.	Methods must include details on who will be responsible for monitoring the species post-relocation and quantifiable measures to assess the success of such relocation	Specialist feedback: When we do capture and translocate fauna, it will be impossible to measure the success of translocation. It is expensive and impractical to mark or tag the animals after relocation.	

COMMENTS:

TCTA

REFERENCES

Blue Sands, 2012a. Air Quality Monitoring. December 2012. Spring Grove Dam Construction. Prepared for Group Five (Pty) Ltd.

Blue Sands, 2012b. Environmental Noise Surveys. December 2012. Spring Grove Dam Construction. Prepared for Group Five (Pty) Ltd.

Blue Sands, 2012c. Water Quality Monitoring. December 2012. Spring Grove Dam Construction. Prepared for Group Five (Pty) Ltd.



APPENDIX A

SURPRISE ECO INSPECTION REPORT



MOOI MGENI TRANSFER SCHEME PHASE 2 (MMTS-2)

ENVIRONMENTAL CONTROL OFFICER (ECO)

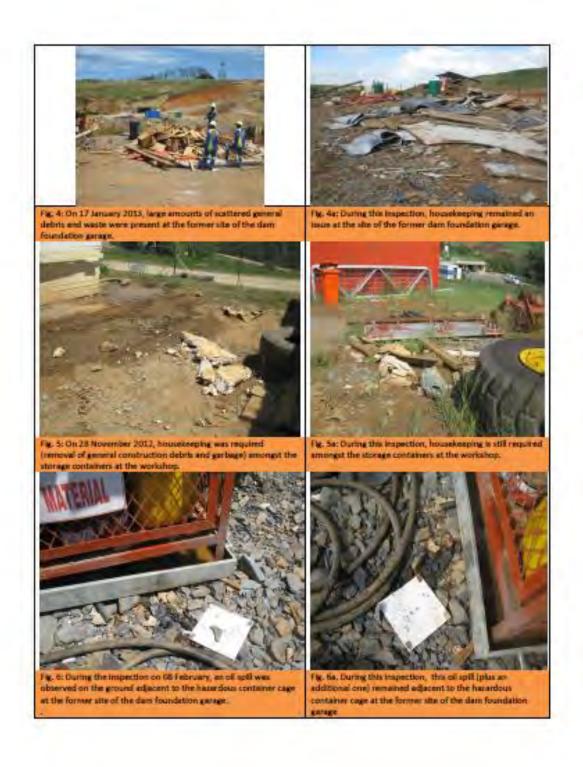
MONTHLY UNSCHEDULED INSPECTION REPORT

DATE:	12 February 2013
REPORT NUMBER:	07
TARGET LOCATIONS:	Left bank; former site of dam foundation garage; former RCC trial area; Workshop area and batch plant.
DURATION:	Two hour inspection
PURPOSE:	Unscheduled ECO Inspection
ATTENDANCE:	ECO (Nemai Consulting - A. Burke); Environmental Monitor (BKS - S. J. Narain T. Molaba)















numerous holes in it allowing a large volume of sediment ladered water to escape with no literation.





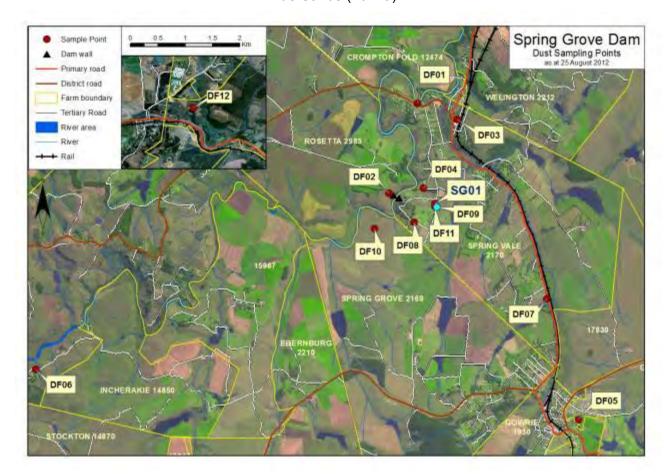
APPENDIX B

MONITORING SITES



Dust Sampling Points

Blue Sands (2012a)

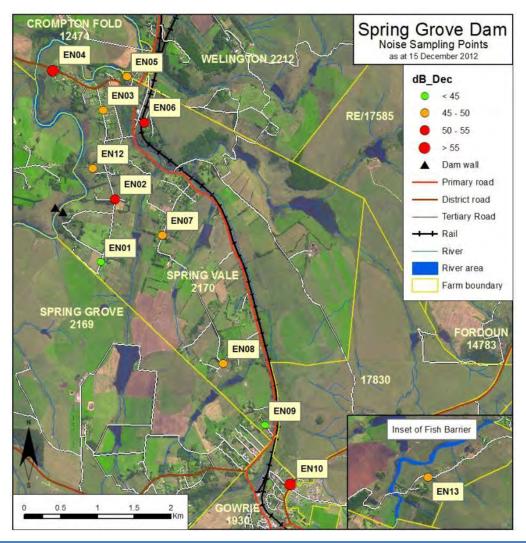


Sampling Site	and Description	Coordinates
DF01	Paul Van Oerle's Property	29°18'13.60"S; 29°58'12.00"E
DF02	Construction Site, North of Dam Wall	29°19'06.49"S; 29°57'51.32"E
DF03	Rosetta Post Office	29°18'22.70"S; 29°58'38.00"E
DF04	Construction Site, North Fence	29°19'04.90"S; 29°58'13.60"E
DF05	Gowrie Village	29°21'23.60"S; 29°59'55.10"E
DF06	Fish Barrier	29°20'45.30"S; 29°53'48.20"E
DF07	Pangbourne School	29°20'13.10"S; 29°59'36.00"E
DF08	Construction Site, South Fence	29°19'24.70"S; 29°58'08.90"E
DF09	Between Offices and D146	29°19'16.40"S; 29°58'21.63"E
DF10	Construction Site, above Spoil Area	29°19'26.88"S; 29°57'40.89"E
DF11	Peter Warren's Property	29°19'15.86"S; 29°58'23.51"E



Noise Sampling Points

Blue Sands (2012b)



Position	Rationale / site description
EN01	At the end of the road to Rosetta Farm
EN02	The entrance to Shonalanga Cottages
EN03	The entrance to Overdale Guesthouse
EN04	The entrance to Tamakwa Country Lodge on Kamberg Road
EN05	Willowvale Road in Rosetta Village
EN06	On the road to Drakesleigh farm next to railway tracks
EN07	On Patrick Guilbridge Road on the D682
EN08	At the entrance to "The Stables" Wine estate
EN09	At the entrance to Boddington 200 m from the R103
EN10	At the entrance to the Midlands Community College opposite Gowrie
EN12	Between the Mooi and Spring Grove access road, north of Shonalanga Cottages
EN13	At the entrance to the fish barrier construction site



Water Quality Sampling Points

Blue Sands (2012c)



Location	Rationale / site description		
WQ01	Upstream of the Fish Barrier		
WQ02	± 2km upstream of the temporary on-site bridge		
WQ03	Jpstream of the temporary on-site bridge		
WQ04 ± 50 m downstream of the proposed Dam Wall			
WQ05	Downstream of the Dam Wall at Rosetta Bridge		
WQSP	Separator		
WQ06	Mpofana Outfall		



APPENDIX C

EXTRACT FROM ISSUES AND COMPLAINTS REGISTER



ISSUES AND COMPLAINTS REGISTER: JANUARY - FEBRUARY 2013

Is: Is: Is:

Issue closed

Issue open (related to Spring Grove Dam)
Issue open (related to pipeline refurbishment)

No	Date	Submitted by	Description of Issue	Response to Issue	Resolved	Notes regarding Status
550	23-Jan-13	Greg Huggins	The immediate problem is that the old road thru the dip - alt to route 11 is so sharp it's destroying tires. Just had another puncture. Can we start using route 11 again?	From Gavin to Andrew: Afternoon Andrew, There has now apparently been an excavator over the grass at C Johnssons' property, the gate post at the fish barrier taken out by a construction vehicle and two further punctured tyres reported having happened over that gravelled section at the Route 11 bypass we agreed needs some attention. Fynn & James need some serious talking to. There will be claims for tyre damages arising out of this. Katie will now tell the locals to use Route 11 until further notice. RegardsDear all, The bypass to Route 11, that you should all have been using while we complete the work on Route 11, has very sharp aggregate on it. This has caused a couple of punctures. Please use Route 11 until we have sent a compacter over the bypass (your old road). Kind regards, Katie. Compacter only sent on 25th Jan. Hi Greg, The contractor has been instructed to reimburse you, and the easiest way to do this is through a once-off payment. In order to do this the contractor will need a tax invoice from you, please, itemised, and with banking details. Kind regards, Katie	Z	Will close when payment is made
551	24-Jan-13	Piet Pelser	1. Pump? When will it be back? Need drinking and stock watering and irrigation water supply if the pump is not back on the river tomorrow. 2. Rates? When will they be paid? Has received a summons. 3 cattle grids, when will those be placed? 4. Borehole of 2000l/hr is not sufficient for reinstatement of supply; it will never cover household needs!	Pump back on river on 30 Jan 2013. 2. TCTA to provide answer. 3. Fynn and James to provide answer. 4. BKS to provide answer.	N	
552	24-Jan-13	Charles Jonsson	Below is a photo of where a vehicle with a tank track drove off the road yesterday, between the markers, about 30 meters away from the designated passing area, despite yet more assurances from all concerned that it would not happen. During our last meeting, the umpteenth regarding these same issues, I was told I was being "unreasonable", "petty" and to "mind your language". Clearly the respect from the clowns at the Spring Grove Circus towards the landowners is non-existent, as is the landowners' tolerance toward the unruly contractors. Therefore yet further discussions on these same issues is futile. I therefore have scheduled a meeting with the police captain in Nottingham Road to press criminal charges of trespassing and malicious damage to private property and have also instructed my attorney to institute a civil case for damages against TCTA, the driver, and the contractors. Let the games begin.	All issues not yet resolved.	z	



No	Date	Submitted by	Description of Issue	Response to Issue	Resolved	Notes regarding Status
553	24-Jan-13	Charles Jonsson	You are now suggesting that I should be further inconvenienced for the next 3 months by an unsightly fence, just because your contractors cannot control their staff. That said it is probably the only remaining option. Please provide more details as to construction, timing etc. This will not deter me from proceeding with my criminal and civil charges. Interestingly, the Captain tells me that more than half of the issues she deals with relate complaints about the Spring Grove Circus; perhaps my charges will open the floodgates.	All issues not yet resolved.	N	
554	25-Jan-13	John Wetton	Hi Dave, There is presently dust and it does not appear that the road has been watered. One or two trucks are trundling up the road but it is end of month/ pay day so perhaps volumes are down. Regards, John	A new water cart arrived on site on the 25th, and dust mitigation has been taking place fairly well since then, with no issues raised. However, management of it remains an issue.	Y	The management of dust remains an issue
555	25-Jan-13	Piet Pelser	Pump still not back and we're running out of water. What's going on?	Pump sent to winder and still at winder.via sms: Hi Piet, sorry I missed you. Andrew says he's spoken to you and a water tanker in on standby. Thanks for always being so patient with us. K. Pump finally replaced on Wednesday 30 Jan 2013	Y	
556	25-Jan-13	Pearl Anthony	The first big blast at the dam, months ago, shook the house. The back door now doesnt' close property because the wall cracked. Apparently the dam is doing something for Moira, so can we do something about the cracked house?		N	to firm response yet.
557	25-Jan-13	Brad Cartwright	Really concerned about water supply solution. Must be guaranteed access. Property is completely useless without guaranteed long term sustainable water supply.	Meetings scheduled for the week of the 4th of Feb 2013	N	
558	26-Jan-13	Adrian Short	Hasn't heard about access to water, and whether he can build a jetty.	Ugo Hiddema responded to both issues. Jetty can be built, and pump house will be moved to above the FSL of the Fish Barrier	Υ	
559	28-Jan-13	Charles Jonsson	In response to RCC proposal: Dear Katie, I am not agreeing to an additional 3 months on top of the already agreed to three month extention unless we are financially compensated for all this inconvenience. How a group of so called professional people can so underestimate such a job beggars belief, I am more inclined to think they have mislead us from the outset. Let's not forget we we told it would be complete by December, then end March and now end July. To be 100% clear. You do not have, and will not be getting, my approval for another extention, without financial compensation. Kind Regards	All issues not yet resolved.	N	
560	29-Jan-13	Pippa Huggins	Dear team, I see that the re- grassing of the banks along Route 11 and environs in underway. I was under the impression that it would be planted out with sods of localised grasses. However the predominant vegetation that appears to be emerging along these areas is Nut Sedge and Datura – both of which are invasive and noxious weeds. I am anxious that this does not occur anywhere along our road verges as it is extremely difficult to eradicate these plants. Perhaps the environmental	Hi Pippa, Thanks for raising this concern with us. The environmental team has the following response: The datura is being used as an emergency measure to limit erosion and get the banks stabilised. Hydro seeding is to commence next week, on both Route 11 and Route 9. Hydro seeding will take place with a combination of Eragrostis Curvula, Eragrostis Teff, and Cynodon Dactylon. These are all indigenous grasses. Rehabilitation of the scar along the fence line will also take place at this time. Kind regards, Katie. Hi Pippa, The datura and sedge grass are only pioneer species on disturbed soil, and as the	Υ -	







No	Date	Submitted by	Description of Issue	Response to Issue	Resolved	Notes regarding Status
573	08-Feb-13	Pippa Huggins	Hi there Katie, Just to let you know that I saw 2 construction vehicles using the private road through the maize lands above route 13 this morning. One was an ADT and the other was a front end loader which had an NE number plate. Unfortunately I could not see the other details. I am under the impression that construction vehicles must use the dam basin road until such time as the road is flooded and the necessary upgrade of the private road, including gravelling, is in place. Why they do not use the dam basin road is a mystery to me! It is much flatter and receives regular maintenance to ensure it is suitable for heavy vehicles. Our road in contrast, is much more hilly, and sadly does not receive the regular maintenance that is needed when heavies use it! The maize has reached such a height and size now that there are very few pull over points if a resident were to be in the unfortunate position of being behind one of these vehicles. Please could you look into this for us? Kind regards. Pippa	Hi Pippa, Sorry to only be getting back to you now. That road definitely is being used. We sent out an amended road use agreement (see attached) in which we commit to upgrading the section of road between Route 13 and Route 11 too, since we acknowledged that we'd been using it. That route is the most efficient way for vehicles to travel, occasionally, between Route 13 and Route 11. This section of road has been part of the upgrade; culverts have been fixed, it has been graded, and our engineers note that it is in a good condition. It will receive a layer of gravel at the same time as the rest of the road is rehabilitated. Thank you for noting the concern about the height of the maize reducing visibility. We will discourage any large trucks from using that section of road from now on. Kind regards, Katie	Y	
574	13-Feb-13	Charles Jonsson	Re: use of private road. I have made my stance on this issue very clear in my last mail and have only since hardened my stance. What they are looking for is an 8 month extension (Jan to Aug) on a job that they originally told us would take 8 months (May to Dec). How they can get that so wrong makes me believe they have mislead us from the outset and had I known at the outset the disruption they would cause us, I would never have agreed to the initial 8 month period, let alone agree to a further 8 month extension. Our house is closest to what used to be our quiet farm track, so we have suffered the most from the dust of speeding heavy trucks and countless other vehicles, which can only get worse as we head into the dry season, and yet will derive absolutely no benefit from the fish barrier. Maximum inconvenience with no benefit is not something I will allow to continue 1 day beyond the already agreed to, already extended, and previously revised, end date of 31 March. In any building contract, there are financial penalties for running over the agreed time, why not so in this agreement? I am happy to meet whoever and whenever but that is my stance. Kind Regards	Meeting held.	N	Meeting held, formal response needed.
575	13-Feb-13	lda and Angela Skhosana	Piet Pelser has talen all of their roof sheeting that had been promised to them.	SM called Piet Pelser to remind him that an agreement had been made that the houses, which have been expropriated from him and are no longer his property, could be salvaged by the occupant families. This is also in the relocation EMP. Pelser refuses to listen, and says material is his. Matter passed on to TCTA: Hi Lonwabo both you and Idah called yesterday to alert me to the fact that the corrugated iron roofing from the Skhosana's houses was being "salvaged" by Piet Pelser. These materials have already been	N	



No	Date	Submitted by	Description of Issue	Response to Issue	Resolved	Notes regarding Status
				bought from him by TCTA, and had been offered to the Skhosanas as part of their relocation package. I called Piet to let him know that he didn't have the right to take the materials, and that we'd appreciate it if he'd release them for their intended use. He noted that what he does with his old houses are none of our business, and said that we have no right to offer anything to his staff. He refuses to release the materials. I'd suggest that we have the "salvaged" materials valued, and offer the Skhosanas the value of those materials, and then bill Piet! Kind regards, Katie		
576	13-Feb-13	John Wetton	22h10: Hi Katie, Heavy trucks still on 146 at this time? John	From Andrew (communication passed on to John) 1. Katie, the only restriction is on the delivery of concrete aggregates, if the truck is delivering rip rap there is no issue. Please note the same trucks deliver both and the ones running later are rip rap ones. 2. Morning Katie, The guys check the GPS in the afternoon so we will know which aggregate trucks were running if at all, there is no restriction on other trucks as far as I know. Please Note Rip Rap and Gravel will be delivered on the weekends as there are no restrictions on them. Regards	*	
577	14-Feb-13	John Wetton	Drainage on the road must be engineered correctly. Water flowing off road into property right next to cottages. 2. dust is really bad today	Apologies about the dust, truck to be sent immediately. D146 upgrade not yet finished, and the drainage is on the priority list.	N	
578	14-Feb-13	John Wetton	23h00: truck just went past.	From Andrew (communication passed on to John) 1. Katie, the only restriction is on the delivery of concrete aggregates, if the truck is delivering rip rap there is no issue. Please note the same trucks deliver both and the ones running later are rip rap ones. 2. Morning Katie, The guys check the GPS in the afternoon so we will know which aggregate trucks were running if at all, there is no restriction on other trucks as far as I know. Please Note Rip Rap and Gravel will be delivered on the weekends as there are no restrictions on them. Regards	Y	
580	16-Feb-13	Charles Jonsson	Inappropriate or unsuitable aggregate has been placed on the road, which has caused a punture. Unaccpetable.	Dear all, our contractor has fiddled with your road again. I understand that there is unsuitably sharp material on the road, which will be compacted by 12h00 on Monday. The contractor suggests that low speeds will reduce the risk of punctures. Hugest apologies from an embarrassed social monitor. Please send tire claims to be processed. Katie	Y	
581	2013/02/17 and 18 Feb 2013	Peter Jerman	1. 21h00, Sunday evening: Hi Katie, we've had no water in the Puddles tanks since this morning. Please check that no dam activity has disrupted our supply when you get in tomorrow. 2. 09h00, any news of the Puddles water problem. 3. The water problem has now been fixed; it was a faulty coupling at the pump which has been replaced.	Hi Peter, I will check during working hours tomorrow. 2. Hi Peter, Rob McKenzie is dealing with it at the moment and will get back to me. Perhaps you could be in contact with him? 3. Hi Peter, that's excellent news.	Y	
582	17-Feb-13	Charles Jonsson	Work at the Fish Barrier has been going on all day!	Dear all, I have been alerted to the fact that you had construction traffic on your road from 08h30 to 16h30 yesterday (Sunday 17 February 2013). After speaking with Andrew Olden (G5) I am able to let you know that the team was working on the river crossing at the Fish Barrier, and had not been informed about working hour restrictions. I also understand that trucks were speeding along the road yesterday, and that they no longer have visible markings so	Υ -	



claim an entire set as I'm not too happy driving the distances I

do on repaired tyres. Hi Q invoice R 120, 2 hours of my time R



processed, or

answer given.

No	Date	Submitted by	Description of Issue	Response to Issue	Resolved	Notes regarding Status
		,	500, Trip to Hi Q R 50, Total R 670. I expect this to be be promptly, unlike the other claims of my neighbours who are still waiting after several weeks. Please also let me know what has been resolved with the incorrect stones put down on our road as it will only cause further punctures unless sorted out. I note that the engineer declined my offer to meet with him on site on Monday. Kind Regards			
591	20-Feb-13	Chris King	Isuzu bakkie, with guys wearing orange jackets, accessing through property without permission. Concerned for safety, must be notified.	After investigation it turned out to be ESKOM.	Y	
592	21-Feb-13	Erica Millican	What's the timeframe for night work? It has been going all night for months, so disruptive and so noisy. Also, there is dumping (stockpiling) right infront of her house, what's that about. And, is there a design yet for the boathouse? Feels that she should see it since it will be in her view.		N	Need information re timing of deliveries.
593	21-Feb-13	Peter Jerman	Pumps seem to not be working, no water coming in to tanks.	Both water pipe and electric cable damaged, repairs needed on both.	Y	
594	21-Feb-13	Baden Smythe	Dear Katie, We are having problems with the inability to plant winter feed as Eskom lines are still in the way. We have repositioned the pivot, but cannot use it as the lines are still there. We had a meeting with you and this issue was raised as a priority on Wednesday 5 October 2011, highlighting the power lines that needed to be dealt with urgently. Because the power lines have not being moved, this jepodises the winter feed of rye grass needing to be plant by the end of the month, to ensure a crop to sustain a pasture for the winter grazing of the cattle. Please can this be brought back into focus as a urgent priority. Thank you, Baden	Dear James, Neil, Kogi and Gavin (cc Baden), Please see Baden's e-mail below about the relocation of ESKOM lines, and the way in which timing has affected the farm. Neil, thanks for talking with me about this earlier this morning, and I hope to hear from you about a meeting time today. I'd like to be part of your meeting with the Smythes, please. We've all been aware since early on in the project that the relocation of the lines has an impact on the reconfiguration and commissioning of Baden's pivot, but couldn't have anticipated that we would be prevented for so long from constructing the main line that is needed before others can be decommissioned and moved. Without that line other priority work has been impossible. The Project had originally indicated that it was the landowner's responsibility to liaise with ESKOM, and would have preferred not to have been involved in the relocation of the lines other than financially. However, ESKOM line relocation has been tied to the land acquisition process, and has needed to be coordinated with technical solutions for continued access to water for some people. All lines moves are critical at this point, and it is hoped that Baden's case can be solved today when he meets with Neil. Kind regards Katie	N	Will close when line has been moved.

Note: Wording directly extracted from Issues and Complaints Register

