



## 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 2015



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## EXECUTIVE SUMMARY

Nemai Consulting was appointed as the independent Environmental Control Officer (ECO) by 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 February 2015.

Regulatory compliance monitoring was primarily completed in September 2013, as the construction phase for the dam had been concluded. During the ensuing defects liability period which originally ended in October 2014 and was subsequently extended until March 2015, the ECO monitoring will focus on the Contractor's performance in terms of the rehabilitation of the site in relation to the conditions of the Record of Decision, as well as the measures contained in the Environmental Management Plans and Rehabilitation Programme.

The following areas were inspected during the monitoring event:

- Left and right bank at the fish barrier, as well as access road – Zone 3;
- Lower Loteni Culverts – Zone 5;
- Route 11 and Route 13 – Zone 6, as well as Vaalekop South Road;
- Mpofana weir;
- Ferret Lane; and
- General shore line area.

A 97% score was achieved in terms of performance and compliance against the following:

- Relevant conditions of RoD; and
- Environmental Management Plans.

The issues identified during the monitoring event include the following:

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- General management of alien invasive plant species and weeds within shoreline area of state land. It is acknowledged that this function forms part of the dam operator's duties.
- Weeds were identified in certain of the rehabilitated areas. Although the root systems of these weeds are assisting in stabilising the soil, their growth needs to be controlled in a suitable manner.

- The efforts of the Contractor in dealing with the bare areas recorded on the Snag List are acknowledged. These sites will be revisited for the remainder of the defects liability period to monitor the success of the rehabilitation measures.
- Bare areas (minor) were identified during the ECO inspection.

The following matters are regarded as significant environmental management priorities that require appropriate attention, or issues that need to be clarified with the project team:

- Clarity is required with regards to the way forward regarding the rehabilitation of wetlands and biodiversity offsets. The completion of the Biodiversity Offset Study will extend beyond the lifespan of the ECO's appointment.
- Management guidelines have been included in the RMP for the management of the dam and state land.
- Maintain firebreaks on state land in consultation with adjoining landowners and relevant fire protection associations. It is noted that the state land surrounding the dam was handed over to the Department of Water and Sanitation, who have delegated operation to Umgeni Water. This responsibility now lies with the operator. Details of firebreaks have been included in the Operation and Maintenance Manual and the accountability now lies with Umgeni Water.
- Prevent illegal access to state land and repair various breaches in fence. This is an operational matter that needs to be attended to by DWS and Umgeni Water.
- The proliferation of an aquatic plant within Spring Grove Dam and the Fish Barrier impoundment has been recorded over a relative short period. It is advised that DWS, Umgeni Water and the relevant mandated authorities further investigate this matter.

In terms of the way forward, ECO monitoring will be conducted until March 2015. An ECO Close-out Report will be compiled following the final inspection for submission to DWS, TCTA, EMC and ultimately DEA. A site visit will be arranged for EMC members prior to the final meeting on 17 March 2015. Provision will be made for the EMC to sign off on rehabilitation. During the final EMC meeting the ECO will present the overall findings of the close-out inspection.

An extract from the Issues and Complaints Register is provided, which focusses on those unresolved matters that relate specifically to rehabilitation and reinstatement.

**TITLE AND APPROVAL PAGE**

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## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>TITLE AND APPROVAL PAGE</b>	<b>4</b>
<b>TABLE OF CONTENTS</b>	<b>5</b>
<b>LIST OF ACRONYMS &amp; ABBREVIATIONS</b>	<b>7</b>
<b>DEFINITIONS</b>	<b>8</b>
<b>1 INTRODUCTION</b>	<b>10</b>
<b>2 ECO MONITORING APPROACH</b>	<b>11</b>
<b>3 ECO REHABILITATION MONITORING</b>	<b>13</b>
<b>3.1 Rehabilitation and Reinstatement Programme</b>	<b>13</b>
<b>3.2 Contractor's Method Statements</b>	<b>13</b>
<b>3.3 Snag List</b>	<b>14</b>
<b>3.4 ECO Site Inspection</b>	<b>16</b>
<b>3.5 ECO Findings</b>	<b>22</b>
3.5.1 ECO Monitoring Checklist	22
<b>3.6 Environmental Issues</b>	<b>22</b>
<b>3.7 Pending Environmental Management Considerations</b>	<b>25</b>
<b>3.8 Way Forward</b>	<b>26</b>
<b>4 ISSUES AND COMPLAINTS</b>	<b>26</b>

## LIST OF TABLES

TABLE 1:	SUMMARY OF MONTHLY ECO MONITORING CHECKLIST CATEGORIES: FEBRUARY 2015	22
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## LIST OF FIGURES

FIGURE 1:	ENVIRONMENTAL GOVERNANCE ARRANGEMENTS: LINES OF ACCOUNTABILITY	10
FIGURE 2:	REHABILITATION PROGRESS ALONG FERRET LANE	14
FIGURE 3:	REHABILITATION MEASURES AT CLAY BORROW AREA	15
FIGURE 4:	REHABILITATION AT LOWER LOTENI CULVERTS (CAMP SITE)	15
FIGURE 5:	REHABILITATION OF RIGHT BANK AT FISH BARRIER	16
FIGURE 6:	MAIN AREAS INSPECTED DURING ECO MONITORING EVENT (NOTE: MPOFANA WEIR NOT SHOWN)	18
FIGURE 7:	FISH BARRIER (TOP – GENERAL VIEW; MIDDLE – ACCESS ROAD ; BOTTOM – LEFT BANK)	19
FIGURE 8:	ROUTE 13	20
FIGURE 9:	VAALEKOP SOUTH ROAD	20
FIGURE 10:	MPOFANA WEIR	21
FIGURE 11:	FERRET LANE	21
FIGURE 12:	WEEDS ALONG SHORELINE	23
FIGURE 13:	WEEDS AT MPOFANA WEIR	23
FIGURE 14:	BARE AREA – LOWER LOTENI CULVERTS DOWNSTREAM RIGHT BANK	24
FIGURE 15:	BARE AREA AND CUT – FISH BARRIER RIGHT BANK	24
FIGURE 16:	AQUATIC PLANT PROLIFERATION	25

## LIST OF APPENDICES

APPENDIX A :	REHABILITATION ZONES – CONTRACTOR'S METHOD STATEMENT	27
APPENDIX B :	REHABILITATION SCHEDULE	30
APPENDIX C :	EXTRACT FROM ISSUES AND COMPLAINTS REGISTER	33
APPENDIX D :	DRAFT SNAG LIST	44

## LIST OF ACRONYMS & ABBREVIATIONS

<b>DEA</b>	Department of Environmental Affairs
<b>ECO</b>	Environmental Control Officer
<b>EO</b>	Environmental Officer
<b>EMP</b>	Environmental Management Plan
<b>EM</b>	Environmental Monitor
<b>EMC</b>	Environmental Monitoring Committee
<b>MMTS-2</b>	Mooi Mgeni Transfer Scheme Phase 2
<b>TCTA</b>	Trans-Caledon Tunnel Authority
<b>RoD</b>	Record of Decision

## DEFINITIONS

### Auditing

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.

### 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.

### 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.

### 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.

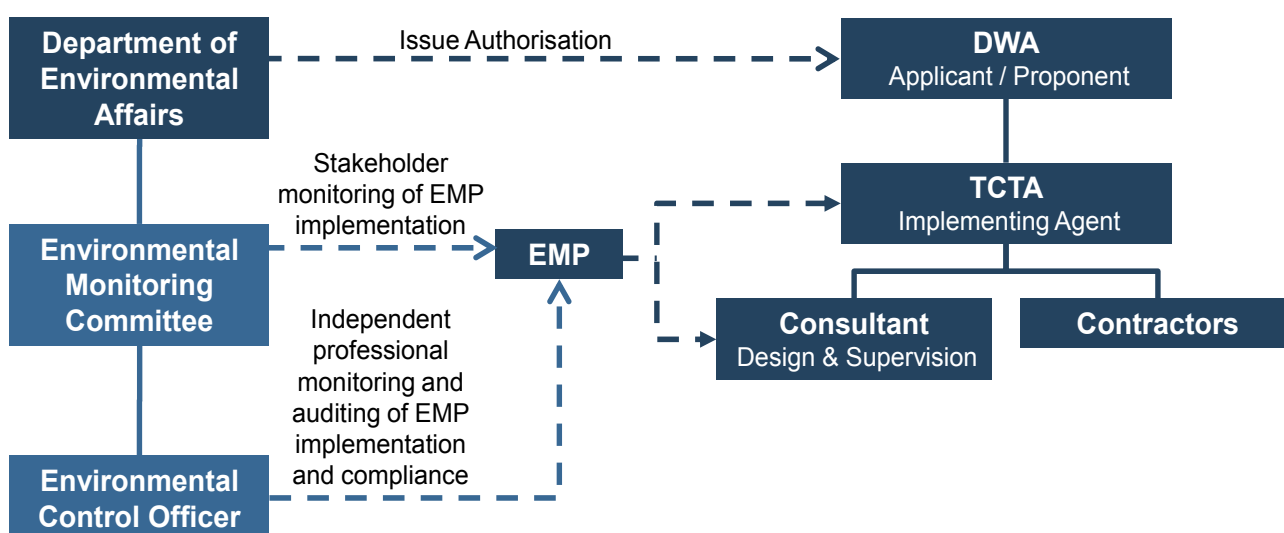
### Rehabilitation

The return of a disturbed area to a state, which approximates the state (where possible), which it was before disruption.

## 1 INTRODUCTION

Nemai Consulting was appointed as the independent Environmental Control Officer (ECO) by 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 Plans (EMPs) 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**

Regulatory compliance monitoring was primarily completed in September 2013, as the construction phase for the dam had been concluded. During the ensuing defects liability period which originally ended in October 2014 and was subsequently extended until March 2015, the ECO monitoring focuses on the Contractor's performance in terms of the rehabilitation of the site in relation to the conditions of the RoD, as well as the relevant measures contained in the EMPs and Rehabilitation Programme.

This document serves as the monthly ECO Report for February 2015.

## 2 ECO MONITORING APPROACH

As mentioned, in terms of the project life-cycle the current focus of the **monthly** ECO monitoring is on the rehabilitation of the construction site. This includes checking performance and compliance against the following:

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

The Monthly ECO monitoring reports are submitted to TCTA, the Environmental Monitoring Committee (EMC), and ultimately DEA. The monthly ECO monitoring includes the following:

- Once a month site inspections;
- Checking environmental administrative provisions (e.g. documentation, files, registers) related to rehabilitation;
- Checking complaints related to rehabilitation;
- Interviewing the Environmental Manager, Environmental Monitor (EM) and Environmental Officer (EO) (as required); and
- Completing a Monitoring Checklist.

The following Conformance Scores, based on the level of compliance against provisions for rehabilitation, are allocated to the monitoring items 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	<b>Low</b> – mitigation not needed/ mitigation measures to be maintained
2	<b>Medium</b> – mitigation should be considered
3	<b>High</b> – 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	<b>Moderate</b> – Impact/Non-Conformance occurred in area of moderate Environmental Significance ( <i>1% Deduction from total conformance score</i> )
2	<b>High</b> – Impact/Non-Conformance occurred in area of high Environmental Significance ( <i>3% Deduction from total conformance score</i> )
3	<b>Very High</b> – Impact/Non-Conformance Occurred in area of very high Environmental Significance ( <i>5% Deduction from total conformance score</i> )

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 (%).

The following targets have been set for measuring the performance of rehabilitation measures (where applicable):

- ✓ 80% coverage to be achieved for areas that have been grassed or hydro-seeded;
- ✓ No bare patches exceeding 0.25m<sup>2</sup> in an area of 1m x 1m; and
- ✓ In the case of sodding, acceptable cover shall mean that the entire areas shall be covered with live grass at the end of any period not less than three months after sodding.

AECOM compared photographs of the pre- and post-construction state of areas that were affected by construction activities and that were subsequently reinstated and rehabilitated. The findings, which were documented in September 2014, were taken into consideration during the compilation of this report as well as in identifying areas and issues to include in the snag list.

### 3 ECO REHABILITATION MONITORING

#### 3.1 Rehabilitation and Reinstatement Programme

A Rehabilitation and Reinstatement Programme was developed (dated May 2013), which makes provision for the following:

- Roles and Responsibilities;
- Alien Vegetation Removal and Monitoring Plan;
- Weed Control During Construction;
- Rehabilitation and Monitoring Plan;
- Areas identified for Reinstatement and Rehabilitation;
- Miscellaneous Areas used by the Contractor During the Contract; and
- Maintenance and Monitoring of Rehabilitated Areas.

A provisional schedule was also prepared for the rehabilitation activities, which is included in **Appendix A**.

#### 3.2 Contractor's Method Statements

The Contractor has prepared the following method statements (dated September 2013):

- De-establishment of main site; and
- Rehabilitation Plan for Spring Grove Dam and Appurtenant Works.

According to the above-mentioned Rehabilitation Plan, the areas to be reinstated and rehabilitated are split into the following zones (refer to maps contained in **Appendix B**):

- Zone 1 – left and right bank downstream of dam wall;
- Zone 2 – canteen area, stores, precast yard, waste area and laydown area;
- Zone 3 – fish barrier – left and right bank;
- Zone 4 – Little Mooi – left and right bank, and borrow area;
- Zone 5 – Lower Loteni Culverts – up- and downstream sides, site camp; and
- Zone 6 – all small areas along Route 13 and Route 11 that need attention.

Rehabilitation methods are proposed based on the steepness of the slopes.

### 3.3 Snag List

The targets that were set for measuring the performance of rehabilitation measures, as documented in **Section 2**, were initially not met in various areas where rehabilitation had been undertaken due to the lack of growth associated with the dry season. A Snag List was compiled based on monitoring conducted in September and October 2014, with collective input by the Environmental Manager, Environmental Monitor, Environmental Officer and ECO. Salient issues from the Complaints Register that relate to rehabilitation were also added to the Snag List by the Social Monitor. The Snag List is contained in **Appendix D**.

It is noted that various rehabilitation activities have taken place to address the issues on the Snag List, which are shown in **Figures 2 – 5**.



**Figure 2:** Rehabilitation progress along Ferret Lane



**Figure 3:** Rehabilitation measures at clay borrow area



**Figure 4:** Rehabilitation at Lower Loteni culverts (camp site)

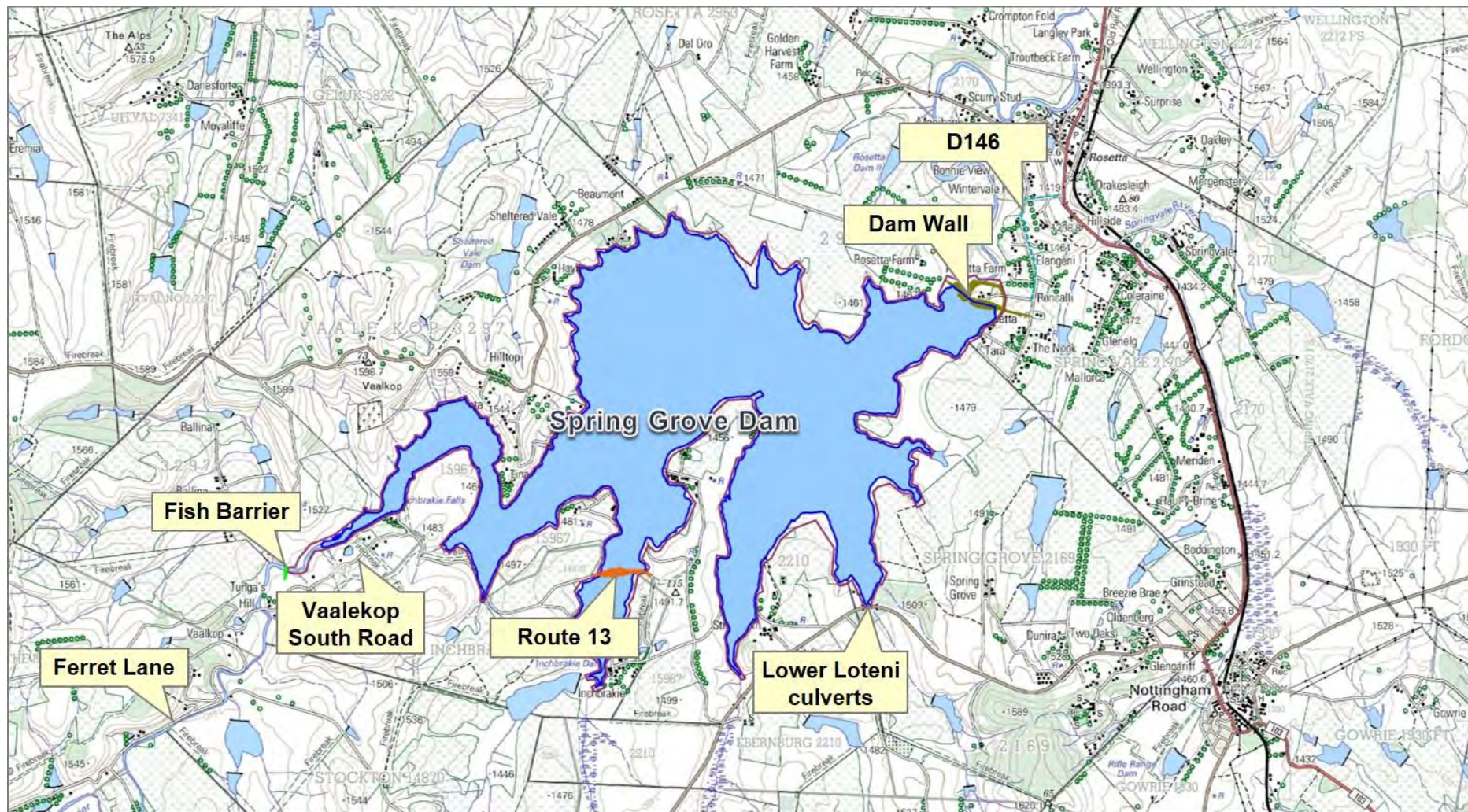


**Figure 5:** Rehabilitation of right bank at fish barrier

### 3.4 ECO Site Inspection

The following main rehabilitated areas were inspected during the monitoring event (refer to map shown in **Figure 6**):

- Left and right bank at the fish barrier, as well as access road (**Figure 7**) – Zone 3;
- Lower Loteni Culverts – Zone 5;
- Route 11 and Route 13 (**Figure 8**) – Zone 6, as well as Vaalekop South Road (**Figure 9**);
- Mpofana weir (**Figure 10**);
- Ferret Lane (**Figure 11**); and
- General shore line area.



**Figure 6:** Main areas inspected during ECO monitoring event (Note: Mpofana weir not shown)



**Figure 7:** Fish barrier (top – general view; middle – access road ; bottom – left bank)



**Figure 8:** Route 13



**Figure 9:** Vaalekop South Road



**Figure 10:** Mpofana weir



**Figure 11:** Ferret Lane

### 3.5 ECO Findings

An overview of the rehabilitation performance, based on the ECO monitoring during the monthly monitoring period, is provided in the sub-sections to follow.

#### 3.5.1 *ECO Monitoring Checklist*

The checklist contains conditions of the RoD and measures from the EMPs related to rehabilitation against which compliance was scored. The results of the monthly ECO Monitoring Checklist for the current monitoring period are provided below.

**Table 1: Summary of Monthly ECO Monitoring Checklist categories: February 2015**

Monitoring Category	Conformance Score (%)
Environmental Authorisation	99
Administration	100
Environmental Education and Awareness	100
Water Quality	80
Vegetation	80
Rehabilitation	97
<b>TOTAL</b>	<b>97%</b>

Note the following:

- Without the weighting of the scoring items a full appreciation of the significance of any non-compliance is not necessarily possible.
- The low scoring that was achieved for the Vegetation category relates to the general management of alien invasive plant species and weeds within shoreline area of the state-owned land. The Resource Management Plan (RMP) addresses the control of alien vegetation during the operational phase, which is the responsibility of Umgeni Water.

### 3.6 Environmental Issues

The issues identified during the monitoring event include the following:

- General management of alien invasive plant species and weeds within shoreline area of state land (see example shown in **Figure 12**). It is acknowledged that this function forms part of the dam operator's duties.



**Figure 12:** Weeds along shoreline

- Weeds were identified in certain of the rehabilitated areas (see examples shown in **Figure 13**). Although the root systems of these weeds are assisting in stabilising the soil, their growth needs to be controlled in a suitable manner.



**Figure 13:** Weeds at Mpofana weir

- The efforts of the Contractor in dealing with the bare areas recorded on the Snag List are acknowledged, as discussed in **Section 3.3**. These sites will be revisited for the remainder of the defects liability period to monitor the success of the rehabilitation measures.
- Bare areas identified during the ECO inspection are shown in **Figures 14 and 15**.



**Figure 14:** Bare area – Lower Loteni culverts downstream right bank

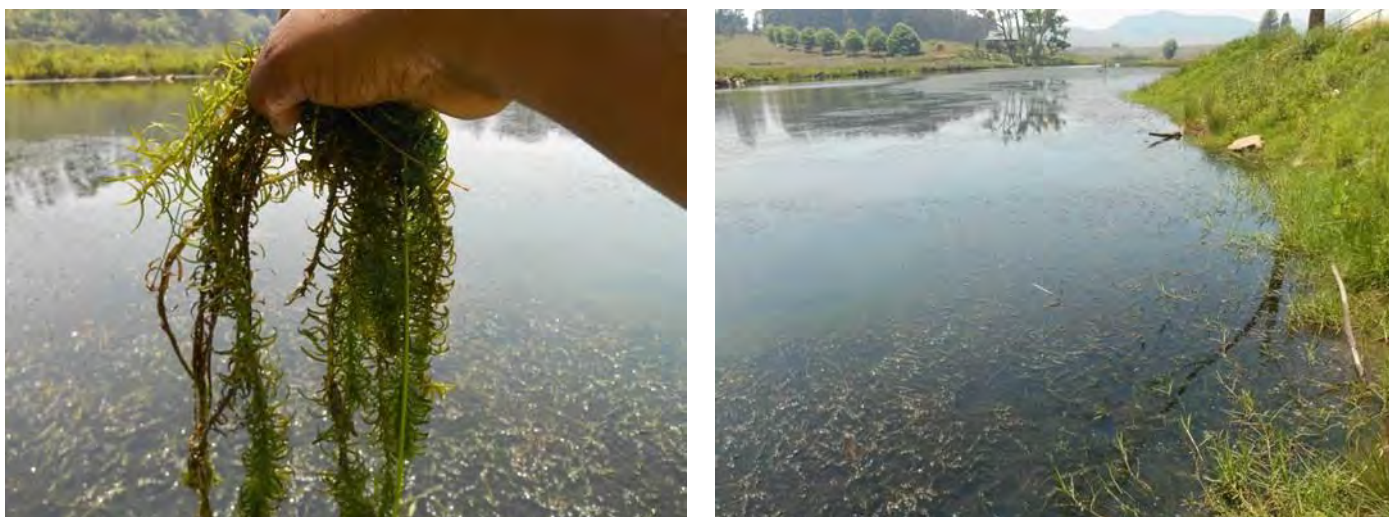


**Figure 15:** Bare area and cut – fish barrier right bank

### 3.7 Pending Environmental Management Considerations

The following matters are regarded as significant environmental management priorities that require appropriate attention, or issues that need to be clarified with the project team:

- Clarity is required with regards to the way forward regarding the rehabilitation of wetlands and biodiversity offsets. The Biodiversity Offset Study will extend beyond the lifespan of the ECO's appointment.
- Management guidelines have been included in the RMP for the management of the dam and state land.
- Maintain firebreaks on state land in consultation with adjoining landowners and relevant fire protection associations. It is noted that the state land surrounding the dam was handed over to the Department of Water and Sanitation (DWS), who have delegated operation to Umgeni Water. This responsibility now lies with the operator. Details of firebreaks have been included in the Operation and Maintenance Manual and the accountability now lies with Umgeni Water.
- Prevent illegal access to state land and repair various breaches in fence. This is an operational matter that needs to be attended to by DWS and Umgeni Water.
- The proliferation of an aquatic plant within Spring Grove Dam and the Fish Barrier impoundment has been recorded over a relative short period (refer to **Figure 16**). It is advised that DWS, Umgeni Water and the relevant mandated authorities further investigate this matter.



**Figure 16:** Aquatic plant proliferation

### 3.8 Way Forward

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ECO monitoring will be conducted until March 2015. An ECO Close-out Report will be compiled following the final inspection for submission to DWS, TCTA, EMC and ultimately DEA.

A site visit will be arranged for EMC members prior to the final meeting on 17 March 2015. Provision will be made for the EMC to sign off on rehabilitation.

During the final EMC meeting the ECO will present the overall findings of the close-out inspection.

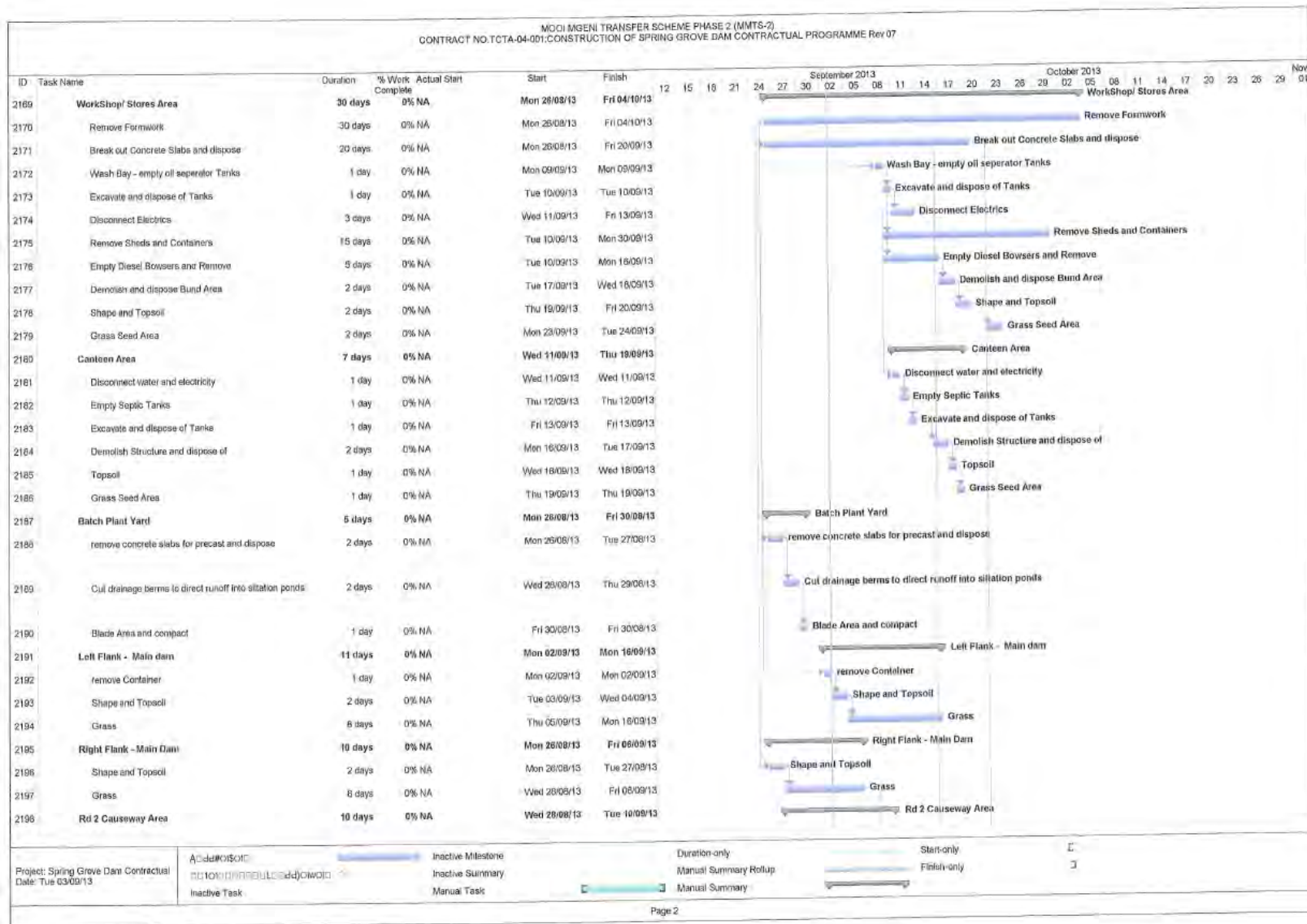
## 4 ISSUES AND COMPLAINTS

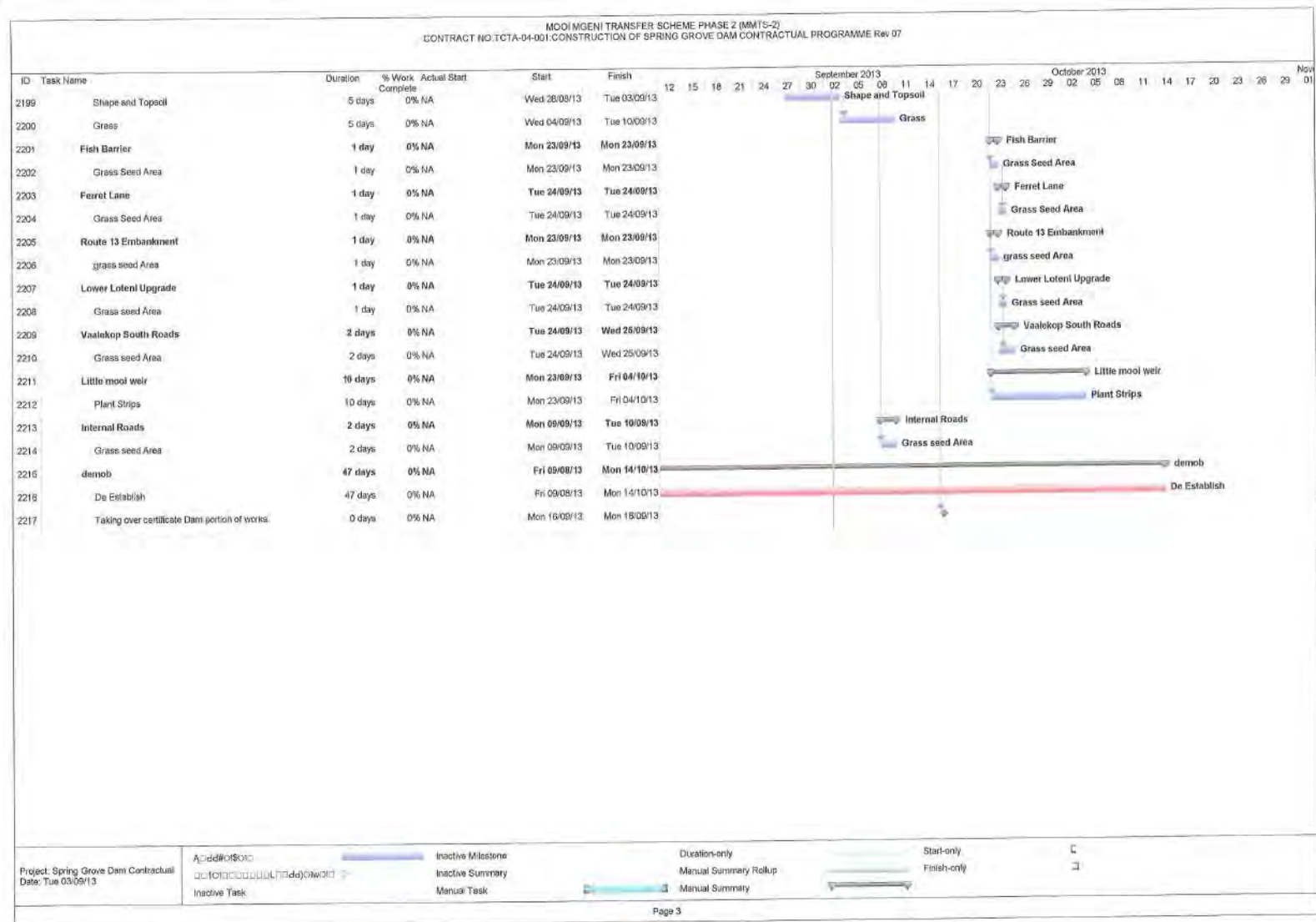
**Appendix C** contains an extract from the Issues and Complaints Register that is maintained by the Social Monitor, focussing on those unresolved matters that relate specifically to rehabilitation and reinstatement.

# APPENDIX A

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## REHABILITATION SCHEDULE

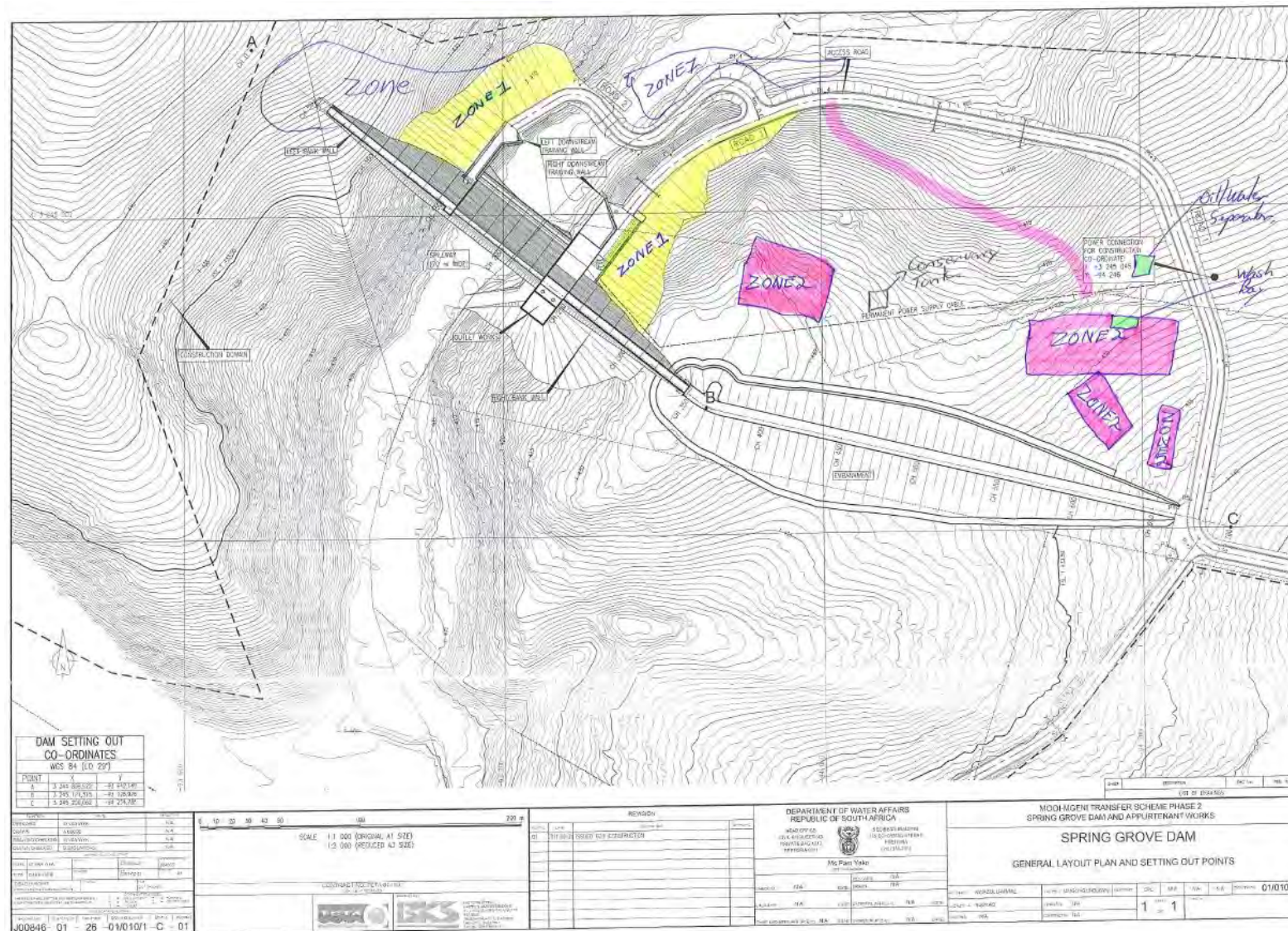


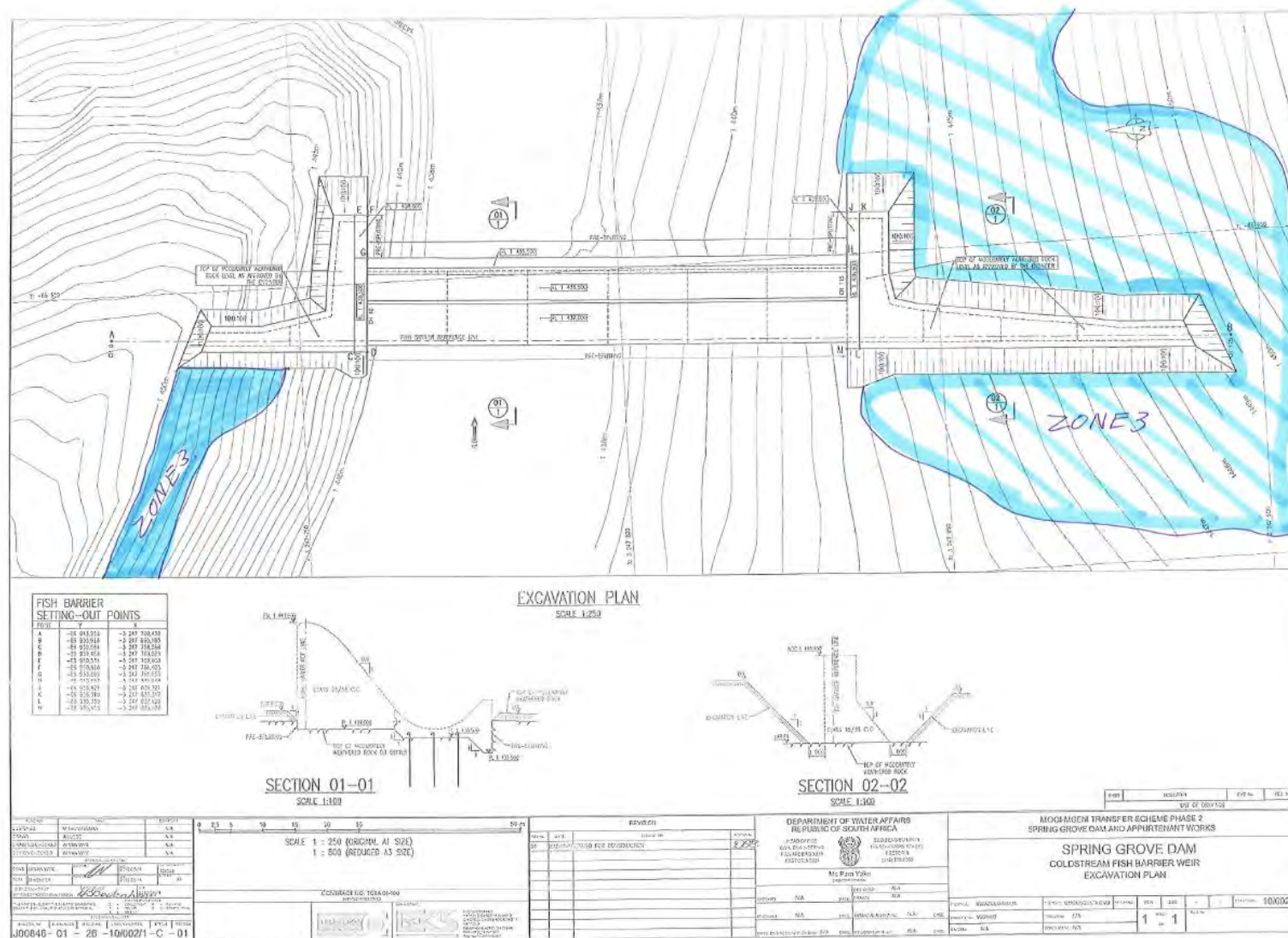


## APPENDIX B

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### REHABILITATION ZONES SHOWN IN CONTRACTOR'S METHOD STATEMENT





## APPENDIX C

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EXTRACT FROM ISSUES AND COMPLAINTS REGISTER – SPECIFIC TO REHABILITATION

## ISSUES AND COMPLAINTS REGISTER

*Unresolved issues based on register dated 24 September 2014*

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
895	14-Aug-13	Hi Katie, As mentioned to I had heard that the re hab of the above was going to be deferred until the pipeline pumping station etc had been completed. You have indicated that this is not so and I am pleased to hear this. The above is easy to comprehend but from my perspective in addition to the above the drainage channel outside my fence line needs some re engineering to take the water further down my property to avoid flooding my cottages. The triangle of land opposite me needs clean up and the Eskom pole needs to be straightened up. Do you have a snag list which includes issues raised by the community. If not I suggest you get one as there will be issues raised when the contractor has left site and we will be left with a problem. Thanks, John	14-Aug-13	Hi John, Thanks so much for following your call up with an e-mail. The rehabilitation of the D146 and road verges will not be delayed until the end of the next contract. It will be done under G5, as soon as they can mobilise resources away from contractual completion deadlines. In fact, they need to attend to the road surface as well as the drainage and verge rehab. Gavin is aware of the drainage outside your fence line, and it is on his snag list. I do have a snag list of issues raised by the community. The snag list has been developed from my issue register, and in particular from the open issues in the register. If you are aware of mutterings in the community then please let me know, because only the issues raised formally through me could be attended to. I can't gauge what hopes and expectations there are unless people are in touch. Kind regards, Katie	Issues resolved. Blake to meet Gavin for handover.	D146 rehab
1032	14-Jan-14	Thanks Katie, for this info. Compliments of the season to you and yr team. Also new year, new start. Any idea when they will be sorting out the verge and entrances to Shonalanga on the D146. To stop storm rain water. Brett's house took in more water over xmas. Plse advise as this is now rather urgent. thx	14-Jan-14	Drainage has been attened to already;please indicate exactly what is unsatisfactory.	Issues resolved. Blake to meet Gavin for handover.	D146 rehab
1041	06-Feb-14	Katie, I have some problems with the road and we will not take it over until rectified. Some of the items listed below: 1. Drainage problem at the corner where the rock bolsters are directing water across the road. 2. Quality of gravel is poor as it corrugates and becomes very loose when dry. 3. The access for the Waller's at the corner needs to be removed as part of the agreement for the consolidation sub divisions. Please get Gavin to phone so that we can arrange handover meeting. Thanks, Blake Mackenzie	06-Feb-14		Issues resolved. Blake to meet Gavin for handover.	D146 rehab
168	29-Mar-12	A huge road has been graded through natural veld. This is unacceptable!	29-Mar-12	It was graded by the fencing contractors, wrongly. It will be rehabilitated. The final plans for this will be communicated after the Easter break. 17 April 2012: Scar along fence line will be rehabilitated at the same time as there is plant in the area working on Route 11, which should be sometime in June 2012. Scar along fence line has been back-graded (overburden placed on certain sections of the scar): 09 July 2012	Scar has been hydro seeded and also used as a site for habitat creation, no further work will take place, sign-off awaited	Fencing scar rehab
214	08-May-12	At EMC: there's a scar along the fence line on Piet Pelser's property. How long until it will be rehabilitated?	08-May-12	Response from Gavin Elliott at EMC: the Spec re rehabilitation can be sent to Pippa Huggins. The method statement re rehabilitation will cover the requirements of the spec. The scar has been partially repaired, but has not yet been signed-off on. Furthermore, the scar-site was used as a habitat creation area, to ensure that further rehab	Scar has been hydro seeded and also used as a site for habitat creation, no further work will take place,	Fencing scar rehab

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
933	03-Sep-13	<p>Dear Katy, I understand that you are having your last monthly EMC meeting tomorrow and there are a couple of issues/ reminders which I wanted some answers on. 1. Rehabilitation of the river just downstream of the weir. We have on numerous occasions asked that a deep channel be left in this section of the river to prevent foot or vehicle traffic, as prior to construction the river was only ever navigable on foot in the very dry period of the year and even then one had to be prepared to wade through the river. At the last meeting I attended the instruction was given that when rehabilitation took place we should be consulted in order that we were happy with the channel created. A deep artificial channel was created on our side of the river to allow water flow from the outlet pipe, however it has already been filled in 2 places to allow foot and vehicle access. Even more worrying is that we now understand that the intent is to fill this channel (as it is artificial) and attempt to return the river to its original course, and open up its original channels. This worries me. The original channels have been so interfered with and the river is now more than double its original width at the weir. I imagine what will happen is that the channel will be filled, or part filled, with rock but before rehabilitation is completed the water will come over the weir and we will be left without a deep channel. If the rocks are not going to be removed from the channel, please could we meet with the environmental monitor on site to discuss what will be done. 2. Road verges. The verges on our section of road appear to have been forgotten. They still need to be neatened and drainage opened up. 3. Rap surface at our entrance. We understood that we would be left with a solid surface, whilst this is more like a gravel. Perhaps there is still something to be sprayed on it? If not, could you please come and have a look at it as we are not what we were promised. 4. Fencing. Just a reminder that there is still a bit to do. Gates need to be removed from access road to the weir and that section of fencing replaced, a section between us and the Kidds needs fencing, fencing around the weir to be completed and gate for vehicle access placed. 5. Weir. Is this supposed to leak? Quite a bit of water appears to be coming through the structure – hope this is all according to plan! 6. Use of resources. Finally, I would like a comment made at the EMC about the use of resources for rehabilitation. A huge amount of beautiful rock was blasted/dug out in order to construct the weir. In spite of numerous requests for us to access these rocks, these were all denied and the rocks simply covered up with soil and will now be flooded by water. They would have been beautiful and useful in the rehabilitation around the weir. Perhaps it would be worth bearing this in mind for future projects. Would there be any objections if we accessed some of these, at our own cost, before the area is flooded? Sincerely, Mary Lund</p>	03-Sep-13	<p>measures were taken. No further work will take place on this scar.</p> <p>Hi Mary, Thanks so much for putting this is writing after our discussion yesterday. It always helps a great deal when the rest of my team can see the points directly from you. I've sent your mail on to Gavin for his response about some matters, but can report the following in the mean time: 1. Response needed from Gavin. Bellwood is currently accessing both the left and right bank to do work, and so has re-created a temporary downstream crossing. 2. Grant from Bellwood assures me that he is still working on the tidying up of all of the verges. This will be attended to. 3. Response needed from Gavin. 4. Noted, we are aware that the permanent fencing needs to go in. 5. Response needed from Gavin. 6. Noted, and I'll find out whether you'd be able to collect rock at your own cost. Kind regards, Katie</p> <p>04 September 2013, from Gavin Elliott: Hi Mary, Following up on your query on the Rap surfacing placed on your section of road. The Rap material is certainly the real thing, and was obtained from a stockpile source in Pmbg. I've discussed your concerns with the Contractor who confirms that the material is in the standard form of a gravel obtained from the rehabilitation of asphalt surfacing through a milling off process. His view is that the material will begin to bond once the seasonal temperature rises again in the summer. I'm not an expert, but may I suggest that you find out from whoever did your original strips of Rap how it was done and we can discuss further. Regards, Gavin</p>	<p>sign-off awaited</p> <p>To be closed when the final work is done at the Fish Barrier (anticipated to be during July 2014)</p>	<p>Fish Barrier rehab</p>

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
997	03-Nov-13	Hi Katie, We were up this weekend, and Julia and I noticed that the weir is leaking at some of the seams, and that there are several ( about 40 ) spots where the water is shooting straight through the wall, almost like when our Jack Russell has savaged the hosepipe. Is this normal? If not, what is going to happen about it? Also, the area below the weir and on the sides still looks like a demolition site. I'm assuming that some serious rehabilitation work and planting is still coming??? Thirdly, the road going down to the gate runs straight down to the river. I realize that the construction teams are hardly out of there, but during the last rains I watched, from my veranda, mud, topsoil and muck flowing straight into the river. Unacceptable. Previously there was a shoulder in the road that sent the drainage onto the field below. Can this be re-instated? Regards, Peter Kidd. Thanks Katie, It reminds me of that brave bloke who stuck his finger in the dyke in Holland. Saved the country. I have instructed Themba to prepare himself mentally for a repeat of above scenario. He is hyping himself up as we speak. Regards, Peter.	03-Nov-13	Dear Peter, That is normal, but they're not leaks. The water behaves like that as it hits little irregularities in the concrete (little rough spots at the joints), and forms small cascades as it runs down the wall. There is one leak, on the left bank, where the wall was keyed into the bank. Some water is escaping through a weak section there, and that is now being grouted and fixed (the big red grouting machine). The area below the weir and on the banks still needs to be rehabilitated. Some material will be moved to fill-in the artificial channel/river diversion, and will be landscaped. Mitre drains can be cut on that road down to the weir. Thanks for pointing that out. Kind regards, Katie From Greg: I'm assuming the small holes in the weir are not a major concern. As I understand it concrete structures under pressure are porous.	Landowner not yet satisfied with final rehab at Fish Barrier.	Fish Barrier rehab
1021	28-Nov-13	Hi Katie, Weir rehab is looking so much better. We are insisting that you have to ensure that vehicles and cattle cannot cross the river below the weir. 1. It is an water quality issue. 2. It is a security issue. 3. It is a rehabilitation issue. TCTA has created this issue and they must take responsibility for it. Relying merely on the fact that is within the expropriation fence and therefore vehicles and cattle should not be there is not acceptable. We all know that vehicles and cattle will be within the fence line. Regards, Mary	28-Nov-13	Agreed; the deep channel that existed originally/naturally will remain.	Landowner not yet satisfied with final rehab at Fish Barrier.	Fish Barrier rehab
1045	06-Mar-14	Hi Katie, The message re handing over of the dam has left me a little nervous. Can you confirm that the outstanding rehab jobs will still be attended to? I went down to have a look at the weir yesterday. There is still a lot of bare earth and quite a lot of wash is happening. Alex had planted it, but of course that all got disturbed when the construction vehicles came back. I think you need to come and take a look. Could you give me a call tomorrow sometime? Thanks, Mary. Thanks Katy, Can you confirm that they also have on their plan the steps we discussed earlier in the year to prevent vehicle access into the river from the opposite side? I wasn't aware the Russell had been on site - but pleased to know that the wheels are turning. Who should I be contacting directly re the expropriation/ transfer? I am just a bit concerned that they may forget to contact us before the documents are submitted. It is an issue as our access bond will be frozen while the documents are with the Deeds Office. Watching the dam fill up I am also a bit nervous about our pump house and the flood line - are we quite sure that it does not fall within this area? As always, thanks for your help. Regards, Mary	06-Mar-14	Dear Mary, The operations side of the dam has been handed over to Umgeni Water, but we're still in our year liability and rehab period and so work continues. I can confirm that the outstanding rehab jobs will be attended to (re-vegetation, stabilisation of slopes, re-alignment of your fence line which Ryan has just been to look at, etc). Weekly monitoring takes place, and Ryan may be able to give you more feedback in a few weeks. Thanks for keeping an eye on all of this. Kind regards, Katie	To be closed when rehab period over	Fish Barrier rehab

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
1052	10-Jun-14	<p>Dear Katie, I would like to make a couple of formal complaints.</p> <p>1. We still do not have a permanent surface on the road on the steep section at the entrance to our property. I took the matter up with Peet the last time we had a meeting on site and he agreed that the rap laid down was not of good quality. He specifically instructed Gavin to go ahead and put a better surface on the steep section.</p> <p>2. As far as I know we still do not have a signed servitude agreement. I was really under the impression that part of the terms of conditions of access via our road was that this would be sorted out for us and we have not heard anything about it for months.</p> <p>3. Work has not yet finished on the weir. I know that we have been promised that our concerns will be addressed re vehicles crossing the river but if the complaints register is no longer open how will we complain if this does not happen?</p> <p>Would it be possible for you to forward details of whoever is responsible finalising our Title Deeds. I have not heard from anyone and am a little nervous that they proceed without informing us. As our access facility on the loan will be frozen we need some warning! Many thanks, Mary</p>	10-Jun-14	<p>17 June 2014: Dear Mary, Sorry to be responding a week after your e-mail.</p> <p>1. I'm assuming that you mean that steep section straight off the tar road, or do you mean that RAP on your property? Gavin and I drove both roads last week, and Gavin's very happy with the RAP on your property, but wants to give the RAP on the steep section through the avenue of trees a bit more of a chance to bind over the next couple of months. I'll do a more detailed response about this particular issue and send to everyone who uses that road.</p> <p>2. I've chatted to Mike Forsyth, and the servitude agreement is ready, bar the SG diagram that is being prepared by Peter Newmarch/Russell Wheeler, to be signed. They're doing the diagrams for all of the properties, to be reflected on title deeds, so it's a rather protracted process. Either Mike or I will send you an update when we hear something.</p> <p>3. You're correct, work hasn't finished. We still have your list of concerns, and the plans to address them remain the same. The complaints register is still open throughout G5's liability period, the construction component of which ends in October this year, and the environment component in March 2015. Just send me a mail! If you have title deed queries you could contact Russell Wheeler (rwheeler@wol.co.za) or Kogi (Knaidoo@tcta.co.za). I'm not really sure who is dealing with it in TCTA's legal department, but Kogi is the best person to direct any TCTA-related questions to. Kind regards, Katie</p>		Fish Barrier rehab
998	03-Nov-13	<p>Dear Katie, I agree with Pete that the section below the weir is still looking dreadful. I do have two issues to raise: 1. The work which we agreed upon at 2 meetings on site with Ryan and Peet present has yet to be done. 2. I know that Alex March is still coming back to complete rehabilitation work however I am really concerned that the area between the artificial channel on our side of the river and the original river course has not been included in the rehabilitation plan. I was present when it was decided which area he would be rehabilitating and at that meeting it was not pointed out to Alex or myself that the artificial channel would be filled in i.e. the river would be diverted back to its original course almost immediately downstream of the weir. Whilst we have been informed that the artificial channel will be filled in, I have heard of no plans to then topsoil and plant the area. Regards, Mary. Thanks Katy. Ryan did arrange with us to allow access for the excavator. However, this sounds like access for more than one excavator. We have already had one extra access road unnecessarily created due to early rehab of the first one. If you are needing access for vehicles again please could you use one of the road which has already been rehabilitated. We are not even allowing access for our own vehicles in order for the area to recover as quickly as possible and would appreciate it if as little traffic as possible goes down. Once again please could you pass on the request to open up the original deep channel on our side of the river. Even though it is not visible on your photos, it was definitely there and</p>	03-Nov-13	<p>Dear Mary, 1. Agreed; we needed to wait for the weir to fill first, to observe the downstream flow, and now need to mobilise resources (excavator etc.) to come onto site to do the final rehabilitation work. This will still be done. 2. The area that you've mentioned is directly in the path of the overflow/spillway. As was explained by Peet, whatever loose material is there, plus the rocks below the channel, will be used to back-fill the channel. It cannot be topsoiled and planted, though. Kind regards, Katie. Hi K – please tell Mary that the best is to leave the re-alignment of the fence until after concreting of the comp. pipe and rehab is completed. It doesn't make a lot of sense to move it now with a risk of damage by machines. We also need to know if they want to keep a gate in that position or not. Re-assure her that we will not let the contractor run away without our signing off on outstanding matters. G</p>	Landowner not yet satisfied with final rehab at Fish Barrier.	Fish Barrier reinstatement

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
		helps stop foot traffic. We have asked for this from the start of the project, and assurances have been given at plenty of meetings that the channel would be opened. Do we know when the fencing guys are coming ? Perhaps they could come in before the road is rehabilitated again. Sincerely, Mary				
1050	15-May-14	Hi Ryan, I believe you will be coming to the weir this afternoon to assess the rehab. On our side could you have a look at the steep section of bank down to the river? There is quite a bit of wash on that bank which appears to be eroding under the rocks. Any chance we could we plant some more shrubs/ trees within the weir fence? We would like to create a visual/ sound barrier if possible. I mentioned to Katy that we really do not want a new road created when the last bit of work is done. We will allow single access/ exit for essential construction vehicles in through our gate to access the weir but request that all other vehicles ( i.e. those transporting people) to be left up at the road. Essentially this means that vehicles will need to come in and stay down at the river until the work is completed. Hopefully this should avoid the necessity for any further rehab to access roads and minimize dust, noise etc. Look forward to hearing from you. Regards, Mary. Thanks Ryan, I will have another look when I go down this morning, but I don't think it is duckweed. Will send pictures. I was wondering whether plants reeds along the river banks would help prevents it? Beautiful day – enjoy. Mary	15-May-14	Hi Mary, As promised I would get back to you. TCTA do not have any problem with you planting any trees inside the fenced area of the fish barrier provided they are indigenous species. Secondly, the remaining work we have to do to remove the concrete wall will all be done via Ballina access and none will be via your property. Katie mentioned to me about the water weed in the Fish Barrier. That will happen with ponding water. We experienced it all over Spring Grove while it was filling up. I think it is duck weed. It seems to die away in the winter months. There is not much you can do about it but will let you know what more I find out about it. See attached I think this is it. Kind Regards Ryan Phelan	Reinstatement has taken place. Deep channel has been opened, and large boulders put across road to prevent people from trying to cross the river. Landowner hasn't indicated that she is satisfied.	Fish Barrier reinstatement
619	05-Mar-13	Hi Katie, Sometime before commencement of the fish barrier, various suggestions were made to minimize the negative environmental impact a concrete wall will have on this beautiful valley. All these suggestions seemed to be positively and fairly enthusiastically accepted at the time. Amongst them were rocks to make the weir look more like a waterfall, and colouration of the concrete to make it look more like the surrounding area. Please note I'm referring to the actual area where the water comes over, and the large concrete stays on the sides, - not the grassed side areas away from the water. At the moment, from my side, all I see is a large Spaghetti Junction concrete wall. Please tell me that this is going to be softened into the environment in the ways previously suggested, and that we are not going to be gazing at a Spaghetti Junction monstrosity that we seem to be getting. Note that very little water	05-Mar-13	Via phone call: visual mitigation will probably only be in the form of re-planting and rehabilitation, but your queries will be forwarded to the client and engineering team.	Landowner not yet satisfied with final rehab at Fish Barrier. Nothing more to be done by project team. Suggest that, since landowner has since sold property, EMC signs off.	Fish Barrier visual impact and mitigation

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
		comes over in winter, so the view will be primarily flat Spaghetti Junction concrete! Kind regards, Peter Kidd.				
598	25-Feb-13	1. Via phone call: Sick of being fobbed off, latest incident (Jenay's tire) shows total lack of management and supervision and planning, gate will be closed tomorrow and a meeting must be set up. 2. Via e-mail to Tente Tente: Tente, This last complete fiasco where, with no warning, our access road was flooded, forcing my wife to drive across an incomplete, 16 meter high causeway with no safety barriers, and then being made to drive back over rough gravel, as seen in the photo, resulting in a puncture, is the final straw. Life along our road has become untenable, what with just today's fiasco, the speeding, the dust, the noise, the off-road driving, the way longer construction time, Sunday traffic that no one knows about, the long list of broken promises etc etc etc. Notice is hereby served that I am without further notice withdrawing my temporary right of access through my farm, until we reach agreement on the following : 1. Compensation and payment for the 2 punctures suffered in the past 10 days. 2. Compensation and payment for the loss of income suffered by me for not being able to rent out our cottage since January due to the continued chaos and disruption on our road. 3. A stricter and more controlled dust abatement policy, particularly as we head into the dry season, providing I allow continued use of our road. 4. Compensation and payment for the repainting of all my buildings damaged as a result of the excessive dust. 5. A written undertaking with a completion date to replace the 2 meters wide kikuyu grass planted by me along all my road edges and destroyed by your vehicles. 6. A written undertaking with a completion date as to when my cattle gates with adjoining gates will be installed. I am enquiring as to how to lodge an official dispute with TCTA and so will be doing so shortly. This letter is written in my personal capacity and does not include the list of grievances of the other members of the Inchbrakie Road Property Owners. Kind Regards	25-Feb-13	Good Afternoon Charles, I confirm receipt of your email and will revert after consultation internally and with the rest of the team members. Having said that I can't claim that I am not aware of the challenges that we (the landowners and the project team) have/are experiencing with regards to the access road and the actual construction of the fish barrier. Be that as it may I was cautiously optimistic that things would not come to this point. I am still hopeful that we will be able to reach a point of common interest and restore trust amongst ourselves. Regards, Tente	Resolution only when Charles is satisfied with the final condition of the road post-rehabilitation, or when The Project is satisfied that the best job possible has been done.	Inchbrakie-Vaalekop South Road rehab

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
1036	21-Jan-14	<p>Dear Katie, Thank you for the repair work done recently on our access road. However, I do have a number of concerns which need to be addressed.</p> <ol style="list-style-type: none"> <li>1. The RAP topping on the piece of road on the 1st hill off the tar district road has not proved successful and a more suitable alternative needs to be found.</li> <li>2. The steep bank on the uphill side of Chapmans Peak Drive, as predicted, slid into the road in 2 places during recent heavy rain. As it is too steep to dig a trench at the top, heavy rain will continue to run off here, continuing to erode the topsoil and wash it into the road. Any vegetation planted in this thin layer of topsoil, will never take root into the clay underneath, so unless a gabion is made at the base, or a wooded lattice is placed on the surface, this problem will continue every summer. This exact problem was to have been addressed after being raised at a meeting at the Huggins'.</li> <li>3. I recently consulted a contractor to come and give us a price to perform regular maintenance on the entire road. Of concern, was his comment that the current repairs, potholes, rainwater washaways, etc, would use about 20% of our replacement stone stockpile. This needs to be addressed as our original shale pit had an almost limitless lifetime, whilst the replacement may last 5 years, according to his calculations.</li> <li>4. On 2 occasions recently, after a heavy downpour, water backed up quite substantially on the upstream side of the causeway. Simply put, this means that the potential inflow is greater than the volume that the release pipe can handle. Couple this to the fact that this pipe is actually below ground level which means it is going to quickly silt up, any future major downpour when the dam is full, will mean that the water will go over the top of the causeway as there is no spillway. As we have no alternative access, this will be problematic, to say the least.</li> <li>5. The amended road servitude agreement is still not finalised.</li> </ol> <p>All 5 of these issues need to be addressed to all of our satisfaction prior to us being prepared to sign off on the road and thereafter assume responsibility for it. Kind Regards, Charles Jonsson.</p>	21-Jan-14	<p>Dear Charles, Thank you so much for putting your points across so clearly. I had a short discussion with Gavin about them this morning, and I've passed each one on to the relevant engineers/team member. In the mean time:</p> <ol style="list-style-type: none"> <li>1. Gavin drove that road today and is very happy with the way in which it has bound and is holding-up. The existing drainage on the road is not good, and so those small ruts have formed. He's going to consider a solution, and also speak to a RAP expert who will be looking at Andy and Mary's road before final sign-off.</li> <li>2. I'm sure that you've seen Grant working on this problem already. He's creating a longer berm at the top of the hill to prevent run-off. After initial discussions there seems to be no need to other retaining work, but I will ask for that in writing and with a clear explanation.</li> <li>3. I understand your point. This has been passed on to TCTA for comment.</li> <li>4. This has been passed on to the design engineer. Gavin's reassured me that it will never overtop, and that the catchment isn't big enough to harness a volume that would need a spillway. I await further response.</li> <li>5. I'm afraid that's in Mike Forsyth's hands at the moment. I'll follow-up again. I'm not sure what the delays are, since I'm sure that you have all signed it.</li> </ol> <p>The engineers will sign-off on Routes 9, 11 and 13. The rehabilitation on the banks of these roads needs to be signed off by the landowners and the EMC, but there's no sign-off of your private road that has been extensively upgraded. I do understand what you mean though, about taking ownership. Kind regards, Katie</p>	Discussions ongoing	Inchbrakie-Vaalekop South Road rehab

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
1049	09-May-14	<p>Dear Katie, Despite your assurances that our gravelled servitude road would require little or no maintenance for years to come, after 6 months there are now a few places that do now need attention. As detailed a few times by me when this road was being put in, we have neither the expertise nor the equipment to make the now necessary repairs, nor can I find a contractor who has. Please can you assist with providing the name / names of suitably qualified contractors as well as confirming with me who will be liable for this additional cost as it will undoubtedly be way in excess of what we would have incurred using farm machinery and farm labour. Kind Regards, Charles Jonsson. Chairman, Inchbrakie Road Fund. Response: Dear Katie, You are correct when you stated that you were sure to get a response from me, you would have had one sooner but for some reason I did not receive your mail. Firstly, let me correct a few inaccuracies.</p> <ol style="list-style-type: none"> <li>1. The road through our property was never impassable, being almost dead flat.</li> <li>2. The gabion on the hairpin bend was only repaired by TCTA as it was their articulated truck delivering heavy equipment to the fish barrier that broke it in the 1st instance.</li> <li>3. We are not arguing the merits of the current road versus the old one, I simply asked 2 questions, which remain unanswered.</li> </ol> <p>Gavin's reply is wholly insufficient and does not answer my 2 questions, namely to please provide us with a contractors name who is suitably qualified to repair such a road surface, and who will bear the ongoing cost thereof. For Gavin to suggest that we lightly rip the road surface is ill advised as this will result in a 6 km loose gravel road, much like an arrestor bed, not exactly suitable as an access road. To further suggest that we hand compact it is not feasible as this would take several months. As I have stated, we have neither the expertise or machinery to do the necessary work on our road and Gavin has skirted around these issues. Kind Regards, Charles Jonsson</p>	09-May-14	<p>30 May 2014: Dear Charles, Gavin has done a draft response, but our client hasn't commented on it yet. I really do hesitate to respond without TCTA's input, but I realise how frustrating it must be for you to have waited for 3 weeks for a reply. So, please see Gavin's response as follows, for your information and further discussion:</p> <ul style="list-style-type: none"> <li>• The surfacing of a road with a properly graded natural gravel material provides an improvement in the serviceability of the road in that it has a hard wearing surface and will require less maintenance than a softer, finer grained material as was previously used.</li> <li>• The road has stood up extremely well through the recent high rainfall period. Some sections would have been impassable without emergency maintenance especially through Charles Jonsson's property and on the Huggins' property where drainage was virtually non-existent. The road fund was saved about R200 000 by The project upgrading the gabion hairpin bend.</li> <li>• A gravel road does need maintenance as does any road surface, but the extent and frequency depends on the type of surface. In the case of Vaalekop South road a high quality gravel was used which will serve its purpose well providing that occasional attention is given to it, in particular the drainage and the repairs of pot holes as and when they develop. The later should reduce now that the construction trafficking has ended.</li> <li>• In my view, providing that the farm machinery includes a means to lightly rip the surface where necessary prior to adding gravel, and a light roller or hand compactors, this should be adequate. Manual labour with picks, shovels and rakes would also be sufficient if properly supervised.</li> <li>• There is no doubt that the road is a significant improvement on the original road, based on the fact that gravelling of dirt roads by means of hardening a surface is standard practice.</li> </ul> <p>I'm not expecting you to be satisfied with this explanation, so I do expect another considered e-mail from you. This is our pay weekend so I won't be able to chat to anyone until Tuesday. Our client is on site next week, so we hope to have a discussion about the road then. Chris also noted, during our last EMC, that she is not happy with the RAP that was placed on the steep slope at your driveway off the Lower Loteni Road (Wuthering Heights Road). This is another discussion point. Kind regards, Katie</p>		Inchbrakie-Vaalekop South Road rehab
1051	09-Jun-14	Hi Katie, I would like to add my voice concerning the road at the lower Loteni turnoff. I refer you back to your email on Monday, 12/9/2013 where you were	09-Jun-14	Thanks peter; noted.		Inchbrakie-Vaalekop

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		aware of the concerns about that section. Since then many hundred huge fully loaded construction vehicles have used that section, and it has deteriorated. I had suggested concrete strips earlier on in the year, before the heavy vehicles compromised the substrate. This section won't last very long. I feel this must now be addressed, after all, we did allow use of this servitude in good faith. Kind regards, Peter				South Road rehab
1053	18-Jun-14	Dear Katie, You said that someone was going to be looking at the slope leading from the tar road to Clive Garlick's new entrance. I have heard nothing since. Meanwhile the surface deteriorates and is in an appalling condition. Kind regards, Chris	18-Jun-14	Thanks Chris, it's on our agenda but we're waiting for the right decision-makers to respond.	G5 has instructed a contractor to repair the RAP on the steep section of road.	Inchbrakie-Vaalekop South Road rehab
915	23-Aug-13	Hi Katie, Quarry rehab From the drawings it looks like an access was drawn on top of the bank next to the fence. As we discussed at the meeting we need an access track to the south side of the quarry, Andrew, Willy, Rick and I discussed the path of the access track next to the fence to the south side of the quarry. The borrow pit rehab. As discussed it will be benched to a flat area next to the road. And as discussed before any plant is removed a site inspection is to be done. So no further expense is incurred loading and moving plant, and moving it back again! Regards Patrick	23-Aug-13	Hi Patrick, Thanks for meeting with us today, twice! Here's a sum-up of the rehabilitation conclusions, and snags: Quarry: Road was constructed, to your satisfaction, today. Fence was fixed, as was the gate, this afternoon. Further top soiling and seeding to take place. Clay borrow: Don Robertson will cut trees; the useable logs will be stacked for your use, and the unusable wood will be buried. Material to be pulled back from the trees. Boulders to be removed to the sides of the area. Area to be shaped and topsoiled. Entrance to be created. Main weir site: Agreed that rocks are to be removed. The fence on the right banks is not to be taken down now; Ryan will liaise with you about timing. Area (minus permanent access road) is to be topsoiled. Platform to be created for your pump station. Kind regards, Katie	Final inspection still to be done, specifically on clay borrow. Sign off to be obtained.	Little Mooi rehab
1039	04-Feb-14	Hi Katie, I'm not sure what the seeds are going to grow in as most of the top soil that was spread over the clay has washed away. So I don't see much success in the so called hydro-seeding that was allegedly done on the borrow pit area. The area is unfenced so we don't plan and have not put our horses in there to graze. Thanks Patrick	04-Feb-14	Thanks for your answer; agreed that some bare spots remain.	Rehab continues to be monitored	Little Mooi rehab
1043	16-Feb-14	Hi Katie, Thanks for getting the guys to repair the tar road at the entrance to the construction site access, but I see the entrance to the clay borrow pit where the excavator was draining in and out the whole time has broken up very badly and now starting to wash with all the rain! Kind regards, Patrick	16-Feb-14	Hi Patrick, I'll chat to Gavin and Andrew about that too. I just told Andrew, and Blake Mackenzie, about the sad state of the entrance to the construction site so the repair was their doing. Kind regards, Katie	Blake to respond	Little Mooi rehab
460	01-Nov-12	Katie, Have you visited? How is it looking? Tiff	01-Nov-12	Hi Tiff, Please see Donald's photos attached. There's still a fair amount to do, but the team is working hard at it. The weather has been absolutely awful, which has made a lot of work impossible to do. <ul style="list-style-type: none"> <li>• If the weather holds the earthworks (taking up temporary access road and relaying it on the driveway) can be done within a week.</li> <li>• Meander Island will be grassed during the same time.</li> <li>• All the other outstanding items will also be done within this window.</li> <li>• Instrumentation for the instrumentation hut will be available to install at the end of this month (November).</li> <li>• The power supply has been disconnected and taken up. Driveway to be repaired.</li> </ul>	Most activities have been completed, but issue only to be closed when rehab is finalised.	Mpofana rehab

Issue No.	Date submitted	Description of Issue	Date reported	Response to Issue	SM memo/notes regarding status of resolution	Relevant action category
				<ul style="list-style-type: none"> <li>The site office has been uplifted and taken away.</li> <li>The concrete for the steel bridge bases was cast yesterday and the steel bridge will probably be installed before Friday.</li> </ul> DWA and Umgeni Water are to start pumping again from tomorrow. Please let me know if you have any questions? When are you next planning to be here? Kind regards, Katie		
1033	15-Jan-14	Katie, Please see attached some photos of the weed that have sprung up around the house and on the island near the measuring weir. I am aware you did hydro-seed and there is evidence of some grass growing but as expected the weeds have invaded the open soil. Please arrange that they are pulled out before they go to seed so this does not become a permanent problem. Please keep me in the loop as to what your plans are. Regards, Tiff	15-Jan-14	Hi Tiff, Ryan Phelan (environmental monitor) visited, and the idea is to send a weeding team to your property to control and manage this problem during our liability period (until the end of this year). As soon as we have a timeline for the team's arrival I'll be in contact with you. Kind regards, Katie	Ongoing	Mpofana rehab
1042	10-Feb-14	Katie, Any update on when the weeding will take place? Tiff	10-Feb-14	Hi Tiff, Andrew Olden (G5 Contracts Manager, and honorary rehabilitation manager) is on his way down to your property now, in order to quantify the job and get the right team and equipment. He'll let me know when they plan to start (soon, if the work on the other areas is anything to go by – teams are being mobilised now). Kind regards, Katie	Weeding ongoing	Mpofana rehab
1053	18-Jun-14	Dear Katie, You said that someone was going to be looking at the slope leading from the tar road to Clive Garlick's new entrance. I have heard nothing since. Meanwhile the surface deteriorates and is in an appalling condition. Kind regards, Chris	18-Jun-14	Thanks Chris, it's on our agenda but we're waiting for the right decision-makers to respond.	G5 has instructed a contractor to repair the RAP on the steep section of road.	Inchbrakie-Vaalekop South Road rehab

## APPENDIX D

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### UPDATED SNAG LIST

## REHABILITATION SNAG LIST – February 2015

ITEM NO.	AREA/ZONE	ENVIRONMENTAL ACTION REQUIRED	SOCIAL ACTION REQUIRED	ACTION BY	ACTION DATE	COMMENTS	CLOSED OUT
1	Zone 1 – left and right bank downstream & upstream of dam wall	Bare /sparse patches must be reinforced by fertilizing and re-seeding.		G5	15-Nov-14	EM 15/11/2014: Complete.	Yes
		Right bank: Erosion measures required				No areas of concern for G5	To be confirmed
		Left bank upstream needs to be top soiled, seeded and erosion measures to be put in place above FSL.				EM 15/11/2014:100 % kikuyu sodding done	Yes
2	Zone 2 – canteen area, stores, precast yard, waste area and lay down area	The access road: growth is sporadic. It was communicated that this Road is still being used. AECOM to advise whether this will be covered by WBHO.		EM	14-Oct-14	AECOM: This area will be covered under the New Contract (WBHO).	Yes
3	Zone 3-Fish Barrier	Sporadic re-vegetation on both the left and right banks. Bare patches must be reinforced by fertilizing and re-seeding.	Mary Lund has noted this as a concern, and the issue will need to be closed off in the Issues and Complaints Register. The landowner has queried whether more shrubs/trees could be planted.	G5 EMC	15-Nov-14	EM 15/11/2014:Topsoiling complete and hydro seeding done	Yes
		Remove construction-related waste from river at fish barrier.			15-Nov-14	EM 15/11/2014: all waste removed	Yes
		Remove Concrete wall at compensation pipe.			complete	EM 28/10/2014: Removed	Yes
		Remove rocks on old access rd on Lund property			complete	EM 28/10/2014: Removed	Yes
		Aesthetic impact			7-Oct-14		Yes
		Re-enforcing of silt fences			14-Oct-14	SJN: It was observed in the photos of the last ECO report (Sep 2014) that silt fences require re-enforcing.	Yes

ITEM NO.	AREA/ZONE	ENVIRONMENTAL ACTION REQUIRED	SOCIAL ACTION REQUIRED	ACTION BY	ACTION DATE	COMMENTS	CLOSED OUT
4	Zone 4: Little Mooi Site	Little Mooi Site has vegetated well	Landowner is required to provide feedback on satisfaction of rehabilitation and highlight any further requirements. Sign-off by the landowner is required should there be no further action required.	SM	14-Oct-14		To be confirmed
		Clay borrow area: Sparse/bare patches on the left bank must be top soiled, seeded and erosion measures to be put in place to prevent slippage.		G5	15-Nov-14	EM:15/11/2014. Top soiled and hydro seeded	Yes
		Quarry: Sparse/bare patches were noted in the area right of the quarry excavation. However landowner is using this area to access site.	Landowner is required to provide feedback on satisfaction of rehabilitation and highlight any further requirements. Sign-off by the landowner is required should there be no further action required.	SM	14-Oct-14	N/A	To be confirmed
		Un-vegetated patch along the Banks of the weir		EM		EM: Topsoiled and hand seeded but very steep as was the case with original river bank profile	To be confirmed
5	Zone 5: Lower Loteni	Bare /sparse patches must be reinforced by fertilizing and re-seeding in the following areas: - Site establishment - Left and right banks		G5	15-Nov-14	EM 15/11/2014: Entire area re topsoiled, area was hydro seeded	Reseeded on 10/01/15. Access point for cattle down to water.
		Spoil material left in riparian zone of watercourse on upstream			14-Oct-14		Yes

ITEM NO.	AREA/ZONE	ENVIRONMENTAL ACTION REQUIRED	SOCIAL ACTION REQUIRED	ACTION BY	ACTION DATE	COMMENTS	CLOSED OUT
6	<b>Zone 6: Route 9, 11, 13</b>	left bank must be removed.					
		Query regarding cover depth of topsoil that was placed at old camp site area.			complete	EM: Area has been topsoiled as off 28/10/2014	Yes
		Route 9: Bare patches noted in the last ECO monitoring period		<b>G5</b>	20-Oct-14		Yes
		Route 11: -Bare /sparse patches must be reinforced by fertilizing and re-seeding -Compare structure of watercourse affected by construction activities undertaken along Route 11 with pre-construction state. - Monitor area where slippage occurred for acceptable regrowth		<b>G5</b>	14-Oct-14	SJN: The construction of the culvert along route 11 has allowed for natural drainage to continue in this area, with no major scouring of the banks, however the right bank of the culvert will be monitored for erosion in the months that follow. The ECO was happy with this assessment in the absence of pre-construction photos which are not available for comparison.	Yes
		Rehabilitation of access road created along Route 11 (Fig 15 in ECO September 2014 report)		<b>G5</b>	15-Nov-14	EM 15/11/2014: Topsoiled and hydro seeded	Yes
7	<b>Ferret Lane</b>	Route 13: Waste material to be removed which has been left adjacent to road embankment.		ECO/EMC	14-Oct-14	ECO has accepted Contractors explanation of material being a micro habitat. ECO to discuss with EMC.	Yes
		Bare /sparse patches noted, these must be reinforced by fertilizing and re-seeding.		<b>G5</b>	15-Nov-14	EM 15/11/2014: Topsoil taken in and erosion control measures installed and hand seeded. Weeding to take place	Area stabilised. Compost seed mix applied on 10/02/15. Need to check cover.
8	<b>D146</b>	Topsoil and seed bank on sharp corner where access was		G5	20-Oct-14	This is to be covered in	Yes

ITEM NO.	AREA/ZONE	ENVIRONMENTAL ACTION REQUIRED	SOCIAL ACTION REQUIRED	ACTION BY	ACTION DATE	COMMENTS	CLOSED OUT
		removed. The turning circle at the bottom of the D146 will be rehabilitated by WBHO				under the new contract.	
9	Mpofana	Bare /sparse patches noted, these must be reinforced by fertilizing and re-seeding.	Landowner has queried the rehabilitation, and has not been satisfied with the results. SM to obtain sign-off when team is positive that rehab goal has been achieved.	G5	15-Nov-14	EM 28/10/2014: Top Soiling done and hydro seeded	Yes
		Cow were noted grazing in the rehabilitation area	SM to liaise with the landowner regarding access restrictions on grazing cows.	SM			Yes
10	Fencing Scar	Re-vegetation is very sparse, this area needs to be reinforced by fertilizing and re-seeding.	SM must note that a landowner's cattle have done great damage to this habitat creation area.	G5	20-Oct-14	TCTA/AECOM: The Contractors carried out rehabilitation of this area as instructed, and despite the DWS dam perimeter fencing the grazing activities by the local landowner's cattle, prohibited adequate vegetation to occur. In this regard the Contractor is no longer responsible for the rehabilitation of the scar and no further work will be undertaken in this area. There is a chance that it will recover through the current growing season	Yes

ITEM NO.	AREA/ZONE	ENVIRONMENTAL ACTION REQUIRED	SOCIAL ACTION REQUIRED	ACTION BY	ACTION DATE	COMMENTS	CLOSED OUT
11	Vaalekop South Rd	Scarify and seed access road on Marshal property to quarry		G5	15-Nov-14	EM 28/10/2014: Toposiling done and hydro seeded	Yes
		Instate erosion measures		G5	14-Oct	EM 28/10/2014: N/A	Yes
12	Vaalekop South Rd	Integrity of gabion structure on Vaalekop South Road to be inspected		ECO	14-Oct	EM 28/10/2014: AECOM RE satisfied with structure. <b>SJN: ECO to verify satisfaction as per open item on the ECO report.</b>	Yes
13	Monitoring	Rehabilitated areas to be compared with pre-construction state – photographs from the pre-construction survey to be used in this regard.		RE to review and sign off on report.			Yes
14	Monitoring	Monitor sediment contribution from areas affected by construction activities		ECO		ECO: If good cover is achieved then this should not be a problem. This requirement was more focused on the rainy periods when storm water flows over bare areas.	Yes
15	Monitoring	Weeds at Mpofana weir				Landowner is happy to sign-off, pending one further attempt to eradicate weeds close to the actual weir site.	