# **Appendix E: Public Participation**

Appendix E1: Advert and Site Notice Placement Proof



Figure 1: Somerset East 407, Portion 1



Figure 2: Along the R335 Road



Figure 3: Somerset East, Fonteins Plaats 246, Portion 0



Figure 4: Somerset Kruis, Rivier Outspan 250, Portion 1



Figure 5: Somerset East, Kruis Rivier 248, Portion 0

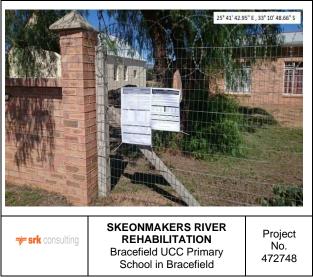


Figure 6: Bracefield UCC Primary School in Bracefield



Figure 7: Somerset East, Kruis Rivier 248, Portion 8

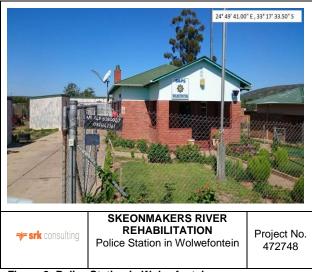


Figure 8: Police Station in Wolwefontein



Figure 9: Somerset East, Geelhoutboom 247, Portion 0



Figure 10: Somerset East, Bouwers Fontein 240, Portion 0







Figure 12: Somerset East, Kruis Rivier 248, Portion 9

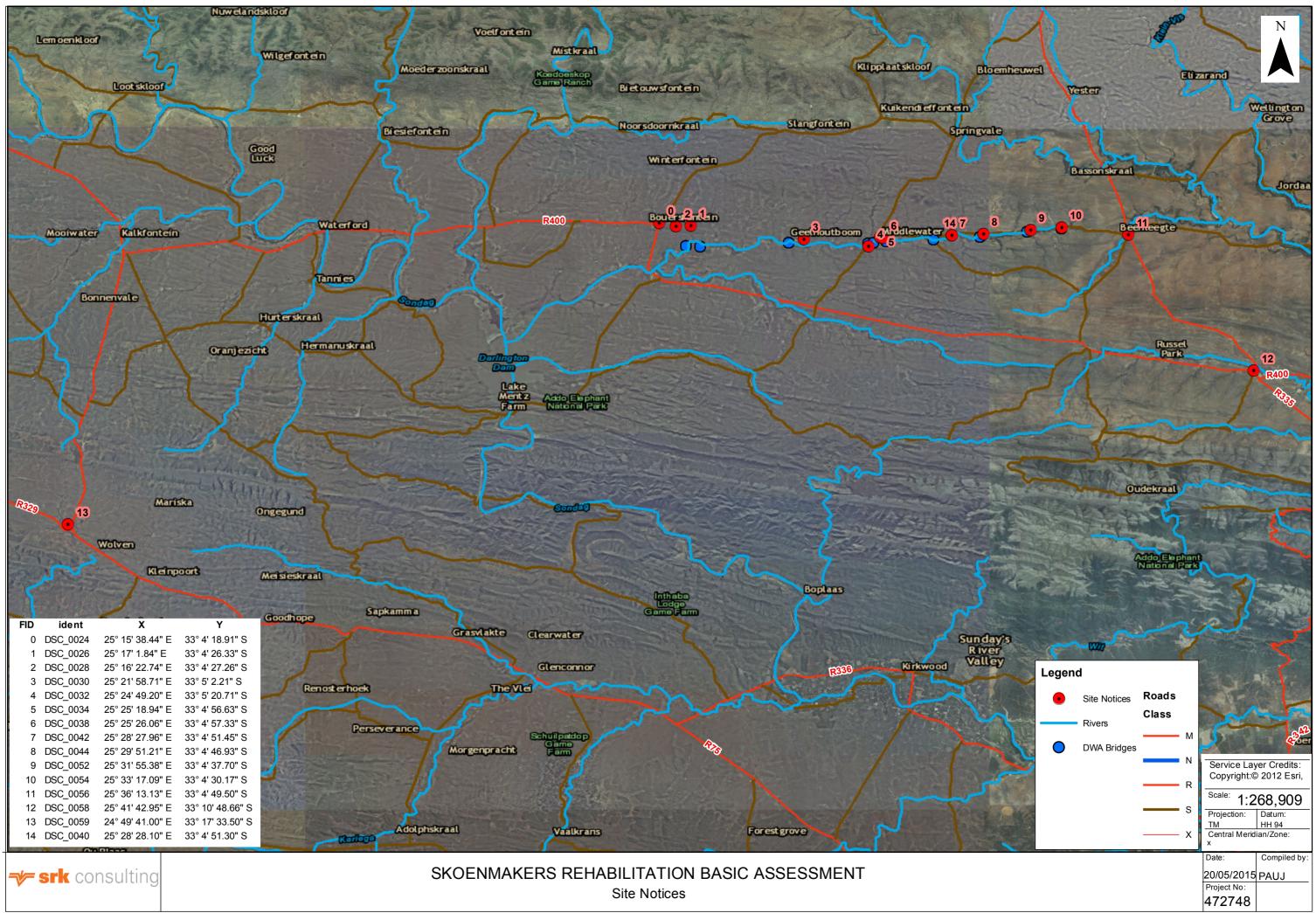


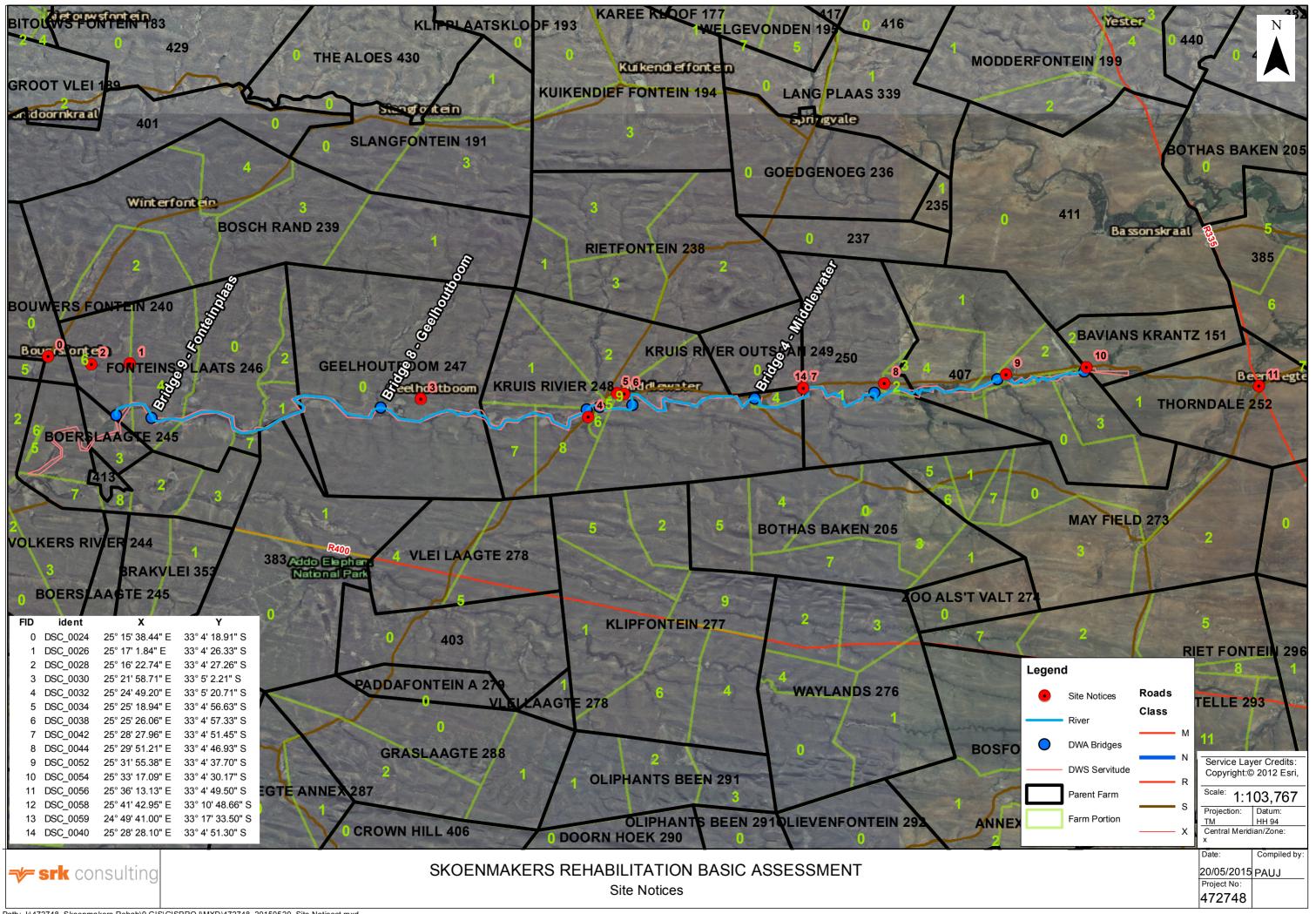


Figure 14: Somerset East 407, Portion 4



Figure 15: Somerset East, Kruis Rivier 248, Portion 5





## **CLASSIFIEDS**

### **SPORT**

Wednesday April 1, 2015

next year ... it's just really too

"For the time I've had out of

the sport and the fitness and the

base work that actually needs to

be done for a race like that, it would just be too difficult."

Cotterell said retirement had

short a time frame.

### **LEGAL NOTICES**

NOTIFICATION APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE RESTORATIONS AND/OR UPGRADING OF TEN RIVER CROSSINGS ON THE SKOENMAKERS RIVER, SITUATED IN THE BLUE CRANE ROUTE LOCAL MUNICIPALITY IN THE EASTERN CAPE

INVITATION TO OPEN HOUSE AND REQUEST FOR STAKEHOLDER TO REGISTER AS AN INTERESTED AND AFFECTED PARTY
 THE AVAILABILITY OF THE DRAFT BASIC ASSESSMENT REPORT (DBAR) FOR COMMENT

**DESCRIPTION:** SRK Consulting was appointed by BVI Consulting Engineers on behalf of the Department of Water and Sanitation DWS) as the independent Environmental Assessment Practitioner to undertake the necessary Environmental Authorisation processes, and associated stakeholder engagement for the proposed project.

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Skoenmakers River has been a conveyance system and spillway to Darlington Dam since 1981. The river channel has deteriorated over years, resulting in; erosion of the river embankment, excessive siltation, causing damage to infrastructure such as road crossings and water extraction weirs

This project entails restoring and/or upgrading the crossings. The bridges are located within DWS servitude and farm portions on which the work will be done is shown below;

Palmietfontein 407 Portion 3 - Bridge 1; Palmietfontein 407 Portion 1 - Bridge 2; Palmietfontein 250 Portion 1 - Bridge 3 Kruis Rivier 248 Portion 5 and 6 - Bridge 6; Kruis Rivier 248 Portion 8 Bridge - 7; Geelhoutboom 247 Portion 0 Bridge - 8; Fonteins Plaats 246 Portion 4 Bridges - 9; Fonteins Plaats 246 Portion 6 Bridges - 10; Kruis Rivier 248 Portion 4 Bridge 4; and Kruis Rivier 248 Portion 9 Bridge 5.

The **DBAR** will be available for a commenting period of 40 days from 7 April 2015 to 19 May 2015. Stakeholders are encouraged to comment on the content of the report and to raise issues and concerns that will be addressed in the Final Basic Assessment Report (FBAR). The DBAR can be obtained at the following public paces;

Public Places	Locality	Contact Person	Telephone number		
Bracefield Recreation Hall	Bracefield	Mr Andile Nshudu	082 329 4526		
Police Station in Wolwefontein	Kommadagga	Inspector AO Duisel	049 838 0087		
SRK Website	www.srk.co.za	Ms Donné Chetty	012 361 9821		
OPEN-HOUSE: Stakeholders are invited to the open house where information about the					

proposed project will be presented on posters where they will have the opportunity to meet with the Project team. Details of the open house are provided below.

Place	Date	Venue	Time			
Kommadagga, Somerset	15 April 2015	Bracefield	9:00 - 14:00			
East		Recreation Hall				
Stakeholders are requested to register as Interested and Affected Parties (I&APs), submit comments by means of e-mail, fax or postage. Alternatively, stakeholders are welcome to submit telephonic comments by contacting SRK's public participation office. Donne Chetty or Fiona Evans Postal Address: PO Box 35290, Menlo Park 0102 Tel: +27(0)12 361 9821 Fax: +27(0) 12 361 9912						

DUE DATE FOR REGISTRATION AS I&APs: 19 May 2015 

### VACANCIES



Please note that the requirements for this position, which was advertised in the The Herald on Monday, 23 March 2015, have been changed to read as follows:

# Hackett in Aus champs comeback plunge

OLYMPIC swimming great Grant Hackett takes another step in his comeback following a troubled spell in retirement at the Australian swimming champion-ships starting on Friday, and is relaxed about his chances.

The 34-year-old walked away from the sport in 2008 after winning the 1 500m freestyle at both the 2000 and 2004 Olympics, and claiming four world titles in the event. He won silver in the event at the 2008 Olympics.

But his life later ran into problems, with a messy divorce from singer-songwriter wife Candice Alley and allegations he smashed up his Melbourne apartment.

Last year the former 1500m world record-holder underwent rehab in the United States after seeking help for an addiction to sleeping pills.

He is now back under his old coach, Denis Cotterell, and will line up on the blocks at the national championships in Sydney. Hackett told the Australian Broadcasting Corporation the upheaval in his personal life led him back to the pool, but he was a different swimmer this time.

"I don't have expectations like I did before and I sort of reserve the right to pull out at any time." He said the championships would allow him to gauge his place among Australia's elite swimmers.

"While I am enjoying it I will

continue to do it but if I don't en- the way to the Olympic trials joy it, I can pull out at any time because it's not like I have set up any grand vision of this big comeback," he said. "I want to just enjoy swimming

and hopefully swim fast." His comeback has focused on

the 200m and 400m freestyle. not diminished Hackett's work Hackett said swimming competitively in the 1500m again ethic. was out of his reach.

"He trains like he used to and "If I really want to continue that's as hard as anyone can poswith this and if I look to going all sibly go," he said. - AFP

# **Venus has** sights on **Rio Games** Hints at possible return to Indian Wells

TENNIS

ENUS Williams hinted yesterday that she might follow her top-ranked sister Serena Williams back to the Indian Wells Masters and end her boycott of the tournament that began in 2001.

Venus Williams stayed home earlier this month as her younger sister returned to the California desert venue where the sisters were booed 14 years ago after Serena was awarded a walkover semifinal victory over Venus.

A day later, Serena came out for the final and beat Kim Clijsters, but was taunted by the crowd in an ugly moment which the family felt was related to racism. The sisters vowed never to return and

stayed away until Serena's entry a fortnight ago, saying it was time to forgive and move on.

Serena Williams received great applause and a warm reception but was forced out because of a knee injury before being able though she wasn't feeling her best. to play in the Indian Wells quarterfinals.

With her sister's return a major success, Venus looks as if she might be willing to let

"It was wonderful to see," Venus said of her sister's Indian Wells return. "I definitely watched every moment and it was great to see her and my family there.

"Next year will be a big year for us, being an Olympic year. I can't exactly say what my schedule will be, but it was wonderful o see her reception.'

Williams said she might soften her own stance in the wake of her sister's groundbreaking move.

"Absolutely," Venus said. "I have heard so much about how much the tournament has just improved in general in terms of the fans and the players. So it will be something for me to see.'

Venus said that she had not mentioned her possible change of heart to Serena, saying the pair never spoke of tennis.

"I think really what Serena did and how she went about it was just awesome for me as a big sister to see, because I feel usually I'm the big sister.

"I feel that in this instance she took the role of big sister," Venus said. "It was really nice. I love how we contin-

ue to protect each other no matter what. She did a fantastic job out there, even

"So as I said, I think the tournament is amazing.'

next year would be the Rio de Janeiro when she plays next year.

The quest to be fit and in form for Rio will But, Venus noted, her main concern play a major role in deciding where and

titles in 2000, 2008 and 2012.

**OLYMPIC FOCUS: American star Venus Williams** 

Olympics. The 2000 Olympic singles

champion will seek a fourth Olympic dou-

bles crown with Serena, having taken past

Picture: GETTY IMAGES

"My whole focus [for next year] is on trying to get to the Olympics. I don't know what tournaments I'm going to play, as long as I'm at the Olympics," Venus said.

"That's my goal, to be healthy enough. I think it would be awesome to return, but I

don't know what my schedule is." - AFP

#### Requirements

B.Tech. Degree in Electrical Engineering or equivalent qualification • Registered as a candidate with the Engineering Council of South Africa (ECSA) • Five years' relevant experience • A valid Code B Driver's Licence.

Furthermore, the closing date has been extended to FRIDAY, 17 APRIL 2015.

Ref. 57 – 1 April 2015

Under the hand of the City Manager, Mr Mpilo Mbambisa

**TOGETHER MOVING SOUTH AFRICA FORWARD!** 

## WE WERE GOING **TO RUN THIS AD ON TV**

But with all the load shedding, there was just no guarantee it would put us on the same page as you.

> So we went with print.



LOSES ITS POWER.



# It's Manchester United or

# nowhere, says Hummels



MANCHESTER United-target Mats Hummels says if he ever transfers abroad it will only be to the Red Devils after telling Borussia Dortmund he is weighing up his future options.

Borussia's captain has a Dortmund contract until 2017, but has long been courted by United, whose manager Louis van Gaal is looking for a dewas thinking fensive leader with the English giants about his poised to table a future bid, according to UK media reports.

Germany centre-back Hummels, 26, told German magazine an offer, therefore we're pretty Kicker he often thought about moving abroad, but gave German daily Bild a far stronger indication of his Manchester thoughts. "If I was to transfer abroad at some stage, it would only be to Manchester United," Hummels is

reported to have said.

BOWLSBRIEFS

Hummels's agent, his father Hermann, is a friend of Van Gaal from when they both worked at Bayern Munich, where Hummels snr was youth team coordinator until 2012, while Van Gaal was head coach from 2009 until 2011. Dortmund chief executive

Hans-Joachim Watzke said Hummels had informed them he was weighing up his options. "Mats had a conversation with [director of sport] Michael Zorc

and myself two weeks ago, when He informed he informed us us that he that he was think-

> ture. "That is completely legitimate. He has a contract until 2017 and we haven't received

relaxed. Dortmund have endured a poor season by their own high standards as the 2011 and 2012 German champions found themselves bottom of the table in February and are now up to midtable in the Bundesliga. - AFP



**DEFENSIVE LEADER: Borussia Dortmund's** Mats Hummels Picture: GETTY IMAGES

#### man, F Hofmeyer, M Katsigaraki, E le Gras, P Longworth, E Marais, M Morgan, F Newton, E Paris, M

THE Women's All Cape, to be held in Port Elizabeth, starts on April 11 with the finals on April 18. The Men's All Cape will also take place in Port Elizabeth, from April 25 to May 2.

MILL Park Oddy's Pairs: The four section winners will play off on April 8 at 1.30pm. They are: Phillip Slaughter, Dave Bunyan, Gareth Rowland. Herman Steyn, Lex Dorfling, Christo Rens and Jaap Coetzer. Other contenders are invited to put in a tab on the day. The final will be held on April 22, which will be followed by the prize giving. Inquiries: Lionel Weetman on 083-955-2839. Tabs in on Saturdays at 1.30pm. All welcome. 

PORT Elizabeth Bowling Club Continental Cars Women's Pairs start on April 8. The following players have confirmed their en-tries: A Algeo, H Banister, A Bleske, D Brunner, J Cawood, M Dingley, E du Toit, I Forbes, J Giles, W Gouws, L Green, S Haddon, E Hamblin, I Kapp, L Hart-072-018-1710.

Perks, L Reed, F Roberts, N Rubin, M Smith, M Steenkamp, D van der Berg, S van der Berg, J van Hemert, A van Niekerk and D Vermaak. Please report by 8.30am. In-quiries: Nina 083-409-5603 or (041) 368-9839.

PEBC's weekly programme: Tomorrow: AM, mixed tabs. Visitors welcome. Friday: Good Friday, club closed. Saturday: PM; Tabs in men and women separate. Sunday: AM, arranged bowls - men (P Scheepers), arranged mixed bowls (S Fullard). Fines master: Ken Martin. Monday: AM, mixed social bowls. Tuesday: AM, Grasshopper Men's Pairs (K Kerchoff).

UITENHAGE results: MSC Bar Challenge played on March 26 won by Mossie Mostert, run-ner-up Shorty Serrao.

Uitenhage Wimpy Pro Ten Trips on April 9. Play starts as 5pm. At least one novice or aspiring bowler to be in the team. Market Square Men's Classic April 18-19. Interested bowlers contact Francois 071-752-0000 or Kobus

All public holiday bowls played in the morning. Tabs in at VICTORIA Park Bowling Club:

bookings are open for the Two Fat Butcher's steak braai and moonlight bowls. Contact Sarah 083-261-4440 or Dave 082-601-4817.

WALMER Bowling Club pro-gramme for the week: Tuesday, 1.45pm, women's and men's so-cial. Wednesday, 2.45pm, Personal Trust men's pairs competition. Last week's winners Rob Forbes and Coli Smith. Thursday, 1.45pm, Chocoholic mixed competition. Saturday, 9am, drawn club trips. Sunday, 9.15am, social bowls.

WESTERN Suburbs: King Cars Men's Pairs played on March 26: winners were Nigel Holt, Gladwyn Horne and Dave de Klerk. 

WESTVIEW: Tabs-in for men and women on Wednesday at 9am. Men to wear civvies. Saturday tabs-in at1.45pm and Sunday at Cut-throat bowls on Friday at

9.15am. Pub and grub on April 8. Contact Jenny Brennan for book-

ings at 082-898-9783. BARCLAYS Whiskey Weekend

League last Saturday: Men's 1st league: Westview bt Park Drive 5-2, The Woods bt Red-house 5-2, Port Elizabeth bt Despatch 7-0, Walmer CC bt Mill Park 5-2, Walmer bt Jeffreys Bay

2nd league: Western Suburbs bt Westview 5-2, Walmer bt Wal-mer CC 7-0, Port Elizabeth bt Park Walmer 3-0. 3rd A league: Kirkwood bt Jef-freys Bay, Walmer bt Redhouse. 3rd B league: The Woods bt Victoria Park, Walmer bt St Fran-Drive 7-0, Jeffreys Bay bt PE Moth 7-0, The Woods bt Uitenhage 7-0. 3rd league: Westview bt Wal-mer 5-0, Port Elizabeth bt Humansdorp 4-1, Western Suburbs bt Kirkwood 5-0, Summerwood bt cis Bay, Walmer CC bt Western Suburbs.

Jeffreys Bay 3-2. 4th league: Victoria Park bt Uit-enhage 3-2, Walmer bt Western Suburbs 5-0, Summerwood bt Gel-4th league: Walmer A bt Despatch, Westview B bt Summerwood, Westview A bt Walmer B, Western Suburbs A bt Park van 3-2, The Woods bt Jeffreys Bay 5-0. freys Bay.

5th league: Westview bt Uitenhage 5-0, Walmer bt Jeffreys Bay 3-2 Port Elizabeth ht Kirkwood 5-0, Redhouse bt Western Suburbs 5-0.

6th league: Uitenhage bt Jef-freys Bay, Walmer bt Humans-dorp, Western Suburbs bt Port result Elizabeth, Summerwood bt The Woods, Mill Park bt Victoria Park. 7th league; Uitenhage bt West-



EXILED England star Kevin Pietersen should not expect an international recall despite his return to county cricket, according to his Surrey coach, Alec Stewart.

Pietersen has rejoined Surrey to play in County Championship Division Two this season in a bid to win a test recall for England's Ashes showdown with Australia later this year.

The 34-year-old South Africa-born batsman was sacked by the England and Wales Cricket Board (ECB) after the 2013-14 whitewash in Australia.

ECB managing director Paul Downton insists Pietersen will not be brought back into the fold, while test captain Alastair Cook rates the prospect "highly unlikely", and former England opener Stewart agrees.

"If England are winning, [if] they have a good West Indies tour which we expect, then it's going to take an injury or a huge loss of form for a vacancy to become available," Stewart said. "But all Kevin can do - and that's what he's said to us - [is] score runs, sit back and see what happens.'

Pietersen was reported to have fallen out with several senior members of the England squad before he was axed, but Surrey director of cricket Stewart claimed he had never had any problems with his attitude. "He's been as good as gold with us. If he was a bad character we wouldn't have had him.

"Whenever he's been with us he has been outstanding. He's helped the youngsters, he's been in the nets, he's put on batting clinics and he's tried his heart out.

"So hopefully ... he will be exactly the same this time, if not even more hard-working." - AFP

view B, Port Elizabeth bt Victoria Western Suburbs bt Uitenhage Park, Western Suburbs bt Gelvan, Despatch bt Westview A.

3rd league: Port Elizabeth bt Westview 5-0, Humansdorp bt Walmer 3-2, Summerwood bt Western Suburbs 5-0, Kirkwood bt Women's 1st league: Jeffreys Bay bt Westview 7-0, Walmer CC bt PE Moth 7-0, Port Elizabeth bt Summerwood 5-2, The Woods bt Despatch 3-2. Mill Park 5-2, Walmer bt Western 6th league: Jeffreys Bay bt Mill

Park, Uitenhage bt Victoria Park, Summerwood bt Humansdorp, 2nd league: Humansdorp bt Jeffreys Bay 3-2, Uitenhage bt The Woods 3-2, Western Suburbs bt Walmer 5-0. Western Suburbs bt Walmer, Port Elizabeth bt The Woods.

Women's 1st league: Western Suburbs bt Port Elizabeth 4-3, Summerwood bt PE Moth 7-0, The Woods bt Jeffreys Bay 7-0, Walmer bt Walmer CC 7-0, Mill Park bt Westview 5-2.

2nd league: Walmer bt Uitenhage 3-2, The Woods bt Jeffreys Bay 5-0, Western Suburbs bt Humansdorp 5-0.

3rd A league: Jeffreys Bay bt Port Elizabeth, Walmer bt Kirk-Drive, Western Suburbs B bt Jef-

Last Sunday Last Sunday: Men's 1st league: The Woods bt Westview 5-2, Despach bt Jef-freys Bay 5-2, Port Elizabeth bt Mill Park 5-2, Walmer bt Walmer 3rd B league: St Francis Bay bt Walmer CC, The Woods bt Walmer, Victoria Park bt Western Suburbs. CC 5-2, Park Drive v Redhouse no

Suburbs 7-0.

4th league: Walmer B bt Jef-freys Bay, Walmer A bt Western 2nd league: Port Elizabeth bt Walmer CC 7-0, Walmer bt Park Suburbs B, Despatch bt Western Suburbs A, Westview A bt Sum-Drive 7-0, The Woods bt Jeffreys merwood, Westview B bt Park Bay 7-0, Westview bt PE Moth 7-0, Drive

go of past grudges as well.

BOOMTOWN.CO.ZA

### NOTIFICATION

### APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE RESTORATIONS AND/OR UPGRADING OF TEN RIVER CROSSINGS ON THE SKOENMAKERS RIVER, SITUATED IN THE BLUE CRANE ROUTE LOCAL MUNICIPALITY IN THE EASTERN CAPE

### ✤ INVITATION TO OPEN HOUSE AND REQUEST FOR STAKEHOLDER TO REGISTER AS AN INTERESTED AND AFFECTED PARTY

#### ✤ THE AVAILABILITY OF THE DRAFT BASIC ASSESSMENT REPORT (DBAR) FOR COMMENT

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This project entails restoring and/or upgrading the crossings. The bridges are located within DWS servitude and farm portions on which the work will be done is shown below;

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East		Recreation Hall	

Stakeholders are requested to register as Interested and Affected Parties (I&APs), submit comments by means of e-mail, fax or postage. Alternatively, stakeholders are welcome to submit telephonic comments by contacting SRK's public participation office.

**Donne Chetty or Fiona Evans** 

Postal Address: PO Box 35290, Menlo Park 0102 Tel: +27(0)12 361 9821 Fax: +27(0) 12 361 9912

DUE DATE FOR REGISTRATION AS I&APs: 19 May 2015



# Kuns & Vermaak

# **'SANTA GAMKA'** Marlo Minnaar na die planke

Marlo Minnaar het Eben Venter se roman Santa Gamka vir die verhoog verwerk en hy bied dit op die KKNK as eenpersoonstuk aan. Mariana Malan vind meer uit oor die produksie.

k dink die rede waarom ek so groot aanklank gevind het by die storie in *Santa Gamka* was juis omdat ek ook van die Karoo af kom en baie van die hoofkarakter Lucky Marais se eienskappe in myself kon sien - sy gewaagdheid, sy meegevoel teenoor ander, skerp tong . . . en ook dat ek my met baie van die karakters in die boek kon vereenselwig."

Só vertel Marlo Minnaar oor sy rol in en sy verwerking van Eben Venter se roman Santa Gamka. Dis die verhaal van 'n rentboy wat sy lewe in oënskou neem.

Die eenpersoonstuk is eersdaags op die verhoog op die Absa KKNK. Hierdie soort kruisbestuiwing tuskom.

gekom.

sen feeste, meen hy, is wonderlik. "Dit bied uit outomaties meer geleenthede vir produksies om te speel en te groei en maak dit ook toeganklik vir mense wat dit andersins nie

Marlo Minnaar Foto: JACO BOUWER kon sien nie." deur die storie van hierdie bruin Sy kennismaking met Venter se roman was een van daardie toeval-

"Ek het eendag heel per toeval by

'n boekwinkel in Kaapstad ingestap

en op hierdie roman van Venter af-

"Eers was ek aangetrokke tot die

omslag, maar dis eers toe ek die ag-

terskrif gelees het dat ek getref is

seun van die Karoo en sy ietwat opgewonde reis deur die lewe as 'n born-free in die nuwe Suid-Afrika. lighede wat soms oor 'n mens se pad

"Ek het die boek in iets soos drie dae klaar gelees en daarna geen keuse gehad as om Eben op te spoor met die doel om dit op die planke te realiseer nie."

In gesprekke met Venter het dié vir hom gesê dat baie lesers ná die tyd vir hom gesê het dat hy die "lyfding nog warmer" moes maak. Dit was egter nie vir hom die grootste uitdaging nie.

"Ek het nie regtig geweet waarvoor ek my inlaat en wat dit sou verg om 280 bladsye te omskep in 'n teks van 50 bladsye vir die verhoog nie.

"Dit het my omtrent twee jaar geneem voordat ek gevoel het dis die regte tyd om voort te gaan met die projek."

skep het, te vertel, is nog 'n uitdaging hoewel hy al verskeie kere 'n eenpersoonstuk gedoen het. "Daar is maar altyd daardie angs in jou agterkop dat jy jou woorde

Om manalleen op die verhoog te

staan en dan die verhaal wat hy ge-

sal vergeet, of mense dit vervelig sal vind of geïrriteerd raak met jou stem, of sal sit en snork in die middel van 'n vertoning – ja, dit het al gebeur."

Die veelbekroonde Jaco Bouwer is sy regisseur en volgens Minnaar sal hy hom altyd dankbaar wees. Hy beskou Bouwer as geniaal.

Gereelde feesgangers sal Minnaar se eerste solostuk, ... *Af*, onthou waarvoor hy in 2012 vir 'n Slurpie benoem is, asook vir die omstrede Die kortstondige raklewe van Anasta*sia W*, waarvan Marthinus Basson die regisseur was.

Hy meen kunstefeeste bied 'n wonderlike geleentheid vir jong kunstenaars om in 'n veilige atmosfeer hul kreatiwiteit te laat blom.

"Ek wens net dat hulle finansieel meer kanse wou vat om meer in jong teatermakers te belê sodat produksies langer speelvakke kan geniet om dit sodoende die moeite werd te maak vir vryskutakteurs." Minnaar is nog nie lank akteur

nie, maar was nog geen oomblik spyt oor die beroep wat hy gekies het nie.

"As 'n plaasseun daar uit die Karoo het ek the road less travelled gekies en soms kan dit sy tol eis, maar ek glo as jy passie het vir wat jy doen en liefde het daarvoor hoef jy nie 'n dag in jou lewe te werk nie. Santa Gamka word van Saterdag tot 9 April by die KKNK op Oudtshoorn opgevoer.



Kenny Rogers gaan Suid-Afrika in Junie besoek. Volgens 'n persverklaring sal dit sy laaste toer hierheen wees en het daarom die gepaste naam -Farewell South Africa Tour. Hy tree op 15 en 16 Junie in

**Kenny Rogers kom** 

**Kenny Rogers** 

die Big Top-arena in Johannesburg op en sal op 18 Junie in die Grand-arena in die Grand-West-casino in Kaapstad te sien wees. Saam met hom tree die plaaslike country-legendes Lance James, Barbara Ray, Clive Bruce en Tommy Dell op.

Rogers het in sy loopbaan meer as 120 miljoen albums verkoop en meer 20 van sy liedjies het bo-aan treffersparades gestaan. Onder hulle tel "The Gambler" en "Islands In The Stream."





### Geklassifiseerd **DIE BURGER** 🖀: 041 503 6111 F: 041 503 6039





		PERSOONLIKE DIENSTE				BOEDELKENNIS- GEWINGS		KENNISGEWING	
MOTOR	MOTORBEDRYF		GESOEK OM TE KOOP	SLEEPWAENS	HOFBEVELE/ SEKWESTRASIES/ LIKWIDASIES	BOEDELS: LIKWIDASIE EN DISTRIBUSIE	AANSOEK VIR OMGEWINGSMAGTIGING VIR DIE HERSTEL EN/OF OPGI TIEN RIVIEROORGANGE OP DIE SKOENMAKERSRIVIER, GELEË IN DIE ROUTE PLAASLIKE MUNISIPALITEIT IN DIE OOS-KAAP		ELEË IN DIE BLUE CRANE OOS-KAAP
Opsoek na VERKOOPSPERSONE • JW Auto Nuut en Gebruikte Motors CV na <u>joubertrene3@gmail.com</u>		1445 GATVOL VIR SKULD? R50 000 @ R500.00 PM R100 000 @ R1 000.00 PM 041 484 4606 081 718 1242	Big Bucks Swop Shop - Beste pryse vir	A CARAVAN WANTED. Gypsey, Jurgens, Sprite. Could have some wood rot. Please phone <b>*</b> 071 583 0059/041 367 3700 VOERTUIE GESOEK OM TE KOOP 3075	KENNISGEWING OUERREGTE IN DIE HOOGGEREGSHOF VAN SUID-AFRIKA (Wes-Kaapse Afdeling, Kaapstad) Voor die Agbare	G.P. VAN RHYN, MINNAAR & KIE KENNISGEWING EERSTE EN FINALE LIKWIDASIE- EN DISTRIBUSIEREKENING	GEAFFEKTEERDE PARTY TE REC * DIE BESKIKBAARHEID VAN DIE K BESKRYWING: SRK Consulting van Water en Sanitasie (DWS) Omgewingsmagtigingsprosesse onderneem. 'n Basiese Evaluasie (BA) kragte sal word, en 'n Watergebruikslist 1998) (NWA), wat by DWS ingedie	GISTREER CONSEP BASIESE EVALUASIEVERSLAG (D g is deur BVI Consulting Engineers aan ) as die onafhanklike Omgewingseva en verwante insethouersbetrokkenhei ens NEMA, wat by die Departement van ensie-aansoek (WULA) kragtens die N en moet word vir al die rivieroorgange, sa	DBAR) VIR KOMMENTAAR gestel namens die Departement aluasiepraktisyn om die nodige d vir die voorgestelde projek te n Omgewingsake (DEA) ingedien lasionale Waterwet (Wet 36 van al onderneem word.
FAMILIE- KENNISGEWINGS	ERASMUS GLENDA	ZITA'S OFFICE loriscalotter@gmail.com BRIDGING CASH	ongewenste goedere. Ons kollekteer. Skakel 041 484 3231 of 082 800 0674.	SKOON BAKKIES & MOTORS In goeie lopende toestand benodig tot	Waarnemende Regter Smit, Kaapstad, Vrydag 13 Maart 2015 Saaknr. 4348/2015 In die saak tussen:	WAT VIR INSPEKSIE TER INSAE LÊ In die boedel van wyle HENRY MIGGELS, Identiteitsnom- mer 650906 5227 08 8, oor-	die jare agteruitgegaan, en gelei t die infrastruktuur soos padoorgan Hierdie projek behels die herstel e	I 'n vervoerstelsel en oorloop na Darling tot die erosie van die rivieroewer en oorm ige en wateronttrekking-dwarswalle aan an/of opgradering van die oorgange. Die waarop die werk gedoen sal word, word h	natige toeslikking, wat skade aan Igerig het. e brûe is binne die DWS-serwituut
STERFGEVALLE 1005 BARNARD ANTOINETTE (née d'Assonville) 6/5/1949 – 24/03/2015		While you wait for <b>PENSION/PACKAGE</b> payout (lumpsum only) <b>041 363 0245</b> <b>sms/PCM 071 433 0188</b>	VAKANSIE & REIS AKKOMMODASIE	R50 000. Skakel 0833 690 323	en DONWOOK NAM Respondent i.s.: JACOB BRADLEY NAM ID-nr. 131008 5631 08 5	lede 12 September 2015, was binne gemeenskap van goe- dere getroud met Bettie Mig- gels, Identiteitsnr. 630526 0868 08 5 van Berghaan- straat 141, Bergsig, Kirkwood 6120. Boedelnr. 5824/2013. Kennis geskied hiermee dat	Plaasnaam Palmietfontein 407 Palmietfontein 250 Kruisrivier 248 Kruisrivier 248 Geelhoutboom 247 Fonteinsplaats 246 Fonteinsplaats 246	Plaasgedeelte Gedeelte 3 Gedeelte 1 Gedeelte 1 Gedeelte 5 en 6 Gedeelte 8 Gedeelte 0 Gedeelte 4 Gedeelte 4	Brugoorgang Brug 1 Brug 2 Brug 3 Brug 6 Brug 7 Brug 8 Brug 9 Brug 10
Haar heengaan word diep betreur deur haar familie en vriende. Die gedenk- diens vind plaas op Woensdag 1 April 2015 om 14:00 vanuit die Volle Evangelie Kerk, Penford, Penfordrylaan, Uitenhage.	Sag heengegaan te Despatch op Vrydag 27 Maart 2015 in die ouderdom van 62 jaar. Haar heengaan word diep betreur deur haar geliefde	ALL BUYERS & SELLERS	JEFFREYSBAAI 2-slpkws. Ten volle toegerus. DSTv. Eie braaipl, 300m van strand. Vanaf R360 p.n. 082 845 2412	FOUNDED 1971	Die Minderjarige (KONSEP)BEVEL Na die lees van die ingediende stukke en die aanhoor van die regsverteenwoordiger vir die Applikant; WORD DIT GELAS: 1. Dat 'n Bevel Nisi uitgereik word wat alle belangstel- lende partye oproep om	die Eerste en Finale Likwida- sie- en Distribusierekening in bovermelde boedel vir 'n pe- riode van 21 dae vanaf datum van publikasie hiervan vir inspeksie ter insae sal lê by die kantoor van die Meester van die Hooggeregshof, h.v. Govan Mbekilaan en Craw- fordweg, Sentraal, Port Eli-	Insethouers word aangemoedig vraagstukke en besware te opper volgende openbare plekke verkry Openbare plek Bracefield Ontspanningsaal Polisiekantoor op Wolwefontein SRK webtuiste	Gedeelte 4 Gedeelte 9 kommentaar van 40 dae van 7 April 20 g om kommentaar te lewer op die ir r vir die Finale Basiese Evaluasieversla word: Ligging Kontakpersoon Bracefield Mnr. Andile Nsh Kommadagga Inspekteur AO E www.srk.co.za Me. Donne Chel uers word genooi na die ope verg	nhoud van die verslag, en om ag (FBAR). Die DBAR kan by die           n         Telefoonnommer           udu         082 329 4526           Juisel         049 838 0087           tty         012 361 9821
Reëlings: IRENE DYASI	eggenoot Frans, dogter Michelle, familie en vriende. Die gedenkdiens vind plaas môre Woensdag 1 April 2015 om 11:00 vanuit die Caledonstraat Congregational Kerk, Uitenhage . Verassing privaat.	Ons koop alle huishoudelike meubels en goedere. Van toeka tot nou!Beste kontant pryse	PEARSON PARK RESORT Sondagsrivier Volmaakte wegbreek vir Paasnaweek en skoolvakansie. Kampering, selfsorgeenhede, hengel, bootry, kano's te huur.	<b>TEL.</b> 041 366 1660	redes, indien enige, aan te voer op Vrydag 8 Mei 2015 waarom die volgende bevel nie toegestaan moet word nie: 726852(547) 31/3(4005)	zabeth asook by die kantore van Hoof Landdros, Landdro- skantore, Kirkwood. Gedagteken in Uitenhage op hierdie 9de dag van Maart 2015. G.P. VAN RHYN MINNAAR EN KIE ING. Rhymin-Gebou	voorgestelde projek op plakkate projekspan te ontmoet. Besonder Plek Kommadagga, Somerset-Oos Insethouers word versoek om a kommentaar d.m.v. e-pos, faks kommentaar in te dien deur SRK s Donne Chetty of Fiona Evans Posadres: Posbus 35290, Menlop	e aangebied sal word en waar hulle hede van die ope vergadering word hiero Datum Waar 15April 2015 Bracefield Ontspa is Belangstellende en Geaffekteerde F of pos in te dien. Andersins is inset se openbare deelnamekantoor te skakel bark 0102	die geleentheid sal kry om die onder verskaf. Tyd anningsaal 09:00-14:00 Partye (I&APs) te registreer, en thouers welkom om telefoniese
Uitenhage Tel: 041 992 1349	Reëlings: Ooskaap Begrafnisdienste 041 992 5704	aangebied. Gewaarborg! Ons kom haal. HERBIE 082 579 1541	041-4680040/ 078 6433066 <u>info@pearsonpark.co.za</u>	456789-110913-OS-tvaunc-fare1		Republiekplein UITENHAGE (Verw. S. Strydom/lk/ BB0352 303135(49) 31/3(4205)	Tel. +27(0)12 361 9821   Faks +27 SPERDAT	(0)12 361 9912 UM VIR REGISTRASIE AS I&APS: 19	
Vir al u Regs- en Munisipale kennisgewings, kontak Jeanette Kleyngeld by 041 503 6027 Faks 086 508 3245 E-pos jkleynge@media24.com	Vir al u Regs- en Munisipade kontak Jeanette Kleyngeld by O41 503 6027 Faks 086 274- Bregs Jiergregemedia24.com Vir UUREN Contak Jeanette Kleyngeld by O41 503 6027 Faks 086 274- Bregs Jiergregemedia24.com Vir UUREN Contak Jeanette Kleyngeld by Dig Contak Jeanette							C	
4X1VULLER-031012-OS-ebjki-vul Rec Dankie di Suid Afrika To	Pieter en kleinkinders.	gen				tverkoopspunte		SLE R2 ad hou.	123HUIS3-011114-OS-cknell-HUIS3

### KENNISGEWING

#### AANSOEK VIR OMGEWINGSMAGTIGING VIR DIE HERSTEL EN/OF OPGRADERING VAN TIEN RIVIEROORGANGE OP DIE SKOENMAKERSRIVIER, GELEË IN DIE BLUE CRANE ROUTE PLAASLIKE MUNISIPALITEIT IN DIE OOS-KAAP

 UITNODIGING NA OPE VERGADERING EN VERSOEK VIR INSETHOUERS OM AS 'N BELANGSTELLENDE EN GEAFFEKTEERDE PARTY TE REGISTREER

\* DIE BESKIKBAARHEID VAN DIE KONSEP BASIESE EVALUASIEVERSLAG (DBAR) VIR KOMMENTAAR

BESKRYWING: SRK Consulting is deur BVI Consulting Engineers aangestel namens die Departement van Water en Sanitasie (DWS) as die onafhanklike Omgewingsevaluasiepraktisyn om die nodige Omgewingsmagtigingsprosesse en verwante insethouersbetrokkenheid vir die voorgestelde projek te onderneem.

'n Basiese Evaluasie (BA) kragtens NEMA, wat by die Departement van Omgewingsake (DEA) ingedien sal word, en 'n Watergebruikslisensie-aansoek (WULA) kragtens die Nasionale Waterwet (Wet 36 van 1998) (NWA), wat by DWS ingedien moet word vir al die rivieroorgange, sal onderneem word.

Skoenmakersrivier is sedert 1981 'n vervoerstelsel en oorloop na Darlington-dam. Die rivierkanaal het oor die jare agteruitgegaan, en gelei tot die erosie van die rivieroewer en oormatige toeslikking, wat skade aan die infrastruktuur soos padoorgange en wateronttrekking-dwarswalle aangerig het.

Hierdie projek behels die herstel en/of opgradering van die oorgange. Die brûe is binne die DWS-serwituut geleë en die gedeeltes van plase waarop die werk gedoen sal word, word hieronder aangedui

Plaasnaam	Plaasgedeelte	Brugoorgang
Palmietfontein 407	Gedeelte 3	Brug 1
Palmietfontein 407	Gedeelte 1	Brug 2
Palmietfontein 250	Gedeelte 1	Brug 3
Kruisrivier 248	Gedeelte 5 en 6	Brug 6
Kruisrivier 248	Gedeelte 8	Brug 7
Geelhoutboom 247	Gedeelte 0	Brug 8
Fonteinsplaats 246	Gedeelte 4	Brug 9
Fonteinsplaats 246	Gedeelte 6	Brug 10
Kruisrivier 248	Gedeelte 4	Brug 4
Kruisrivier 248	Gedeelte 9	Brug 5

Die DBAR sal vir 'n tydperk van kommentaar van 40 dae van 7 April 2015 tot 19 Mei 2015 ter insae lê. Insethouers word aangemoedig om kommentaar te lewer op die inhoud van die verslag, en om vraagstukke en besware te opper vir die Finale Basiese Evaluasieverslag (FBAR). Die DBAR kan by die volgende openbare plekke verkry word:

Openbare plek	Ligging	Kontakpersoon	Telefoonnommer
Bracefield Ontspanningsaal	Bracefield	Mnr. Andile Nshudu	082 329 4526
Polisiekantoor op Wolwefontein	Kommadagga	Inspekteur AO Duisel	0498380087
SRK webtuiste	www.srk.co.za	Me. Donne Chetty	0123619821

OPE VERGADERING: Insethouers word genooi na die ope vergadering waar inligting oor die voorgestelde projek op plakkate aangebied sal word en waar hulle die geleentheid sal kry om die projekspan te ontmoet. Besonderhede van die ope vergadering word hieronder verskaf.

Plek	Datum	Waar	Tyd
Kommadagga, Somerset-Oos	15 April 2015	Bracefield Ontspanningsaal	09:00 - 14:00
	of pos in te die se openbare deeln park 0102	e en Geaffekteerde Partye (I&APs n. Andersins is insethouers welko amekantoor te skakel	m om telefoniese

Appendix E2: Proof of Stakeholder Notification

## 472748 Skoenmaker's Rehabilitation

## 

First Name	Last Name	Company	Bridge Number	Farm Portion and Farm Portion Info	Contact Information	
BERNARDUS BEYERS	GREYLING	GREYLING BERNARDUS BEYERS	BRIDGE 10	FONTEINS PLAATS 246 PORTION 6	Tell No.: Fax No.: Cell No.: E-Mail: Signature:	- Geen - Geen 07207115621 Fridato Fridugreyling D Vodgmail. Co.Za MA
Greek f Willem	Greeff	W D E S GREEF FAMILY TRUST	BRIDGE 9	FONTEINS PLAATS 246 PORTION 4	Tell No.: Fax No.: Cell No.: E-Mail: Signature:	0875501057 Geen 0823941712 Wdgreett@jabanarco.24 M.L.M.M.
Francios	Nel	GEELHOUTBOOM TRUST	BRIDGE 8	GEELHOUTBOOM 247 PORTION 0	Tell No.: Fax No.: Cell No.: E-Mail: Signature:	042-2432871 Geen 0724594059 Fjnell@r63.co.29

First Name	Last Name	Company	Bridge Number	Farm Portion and Farm Portion Info		Contact Information
					Tell No.:	
		3			Fax No.:	
COLO	hooses				Cell No.:	0764777224
Ploby	ierse .	INQO PROP PTY LTD	BRIDGE 7	KRUIS RIVIER 248 PORTION 8	E-Mail:	
liner	chino	INQO PROP PTY LTD Gerhard de Lange		nie zy borne. Reager och nie op boochkoppe nie.	Signature:	
•				leager ock nicop	Tell No.:	Geen
				boocheppe mi.	Fax No.:	Gen Gen
					Cell No.:	0836307363
AOUL RIAAN	BOSCH	BOSCH RAOUL RIAAN	BRIDGE 6	KRUIS RIVIER 248 PORTION 5	E-Mail:	Geen
		Juns - Kirkwood		×	Signature:	Joh.
					Tell No.:	Geen
					Fax No.:	Green
BERNARDUS	CDEVUING	GREYLING BERNARDUS			Cell No.:	0720711564 fridagreyling@oodenail.co
BEYERS	GREYLING	BEYERS	BRIDGE 6	KRUIS RIVIER 248 PORTION 6	E-Mail:	Fridagreyling@oodanail.co
					Signature:	M
					Tell No.:	0875501056
					Fax No.:	
0					Cell No.:	0824011545
Locio	Grouws	REPUBLIC OF SOUTH AFRICA	BRIDGE 5	KRUIS RIVIER 248 PORTION 9	E-Mail:	Foccogouss Wyah
		S. Gows bandie Tru			Signature:	for
					Tell No.:	parsen pel
,	0	DCA	BRIDGE 4	KRUIS RIVIER 248 PORTION 4	Fax No.:	0875501056
occo	Gauss	S. Gonws Coulie Tru	4		Cell No.:	0824011545

First Name	Last Name	Company	Bridge Number	Farm Portion and Farm Portion Info	Contact Information
					E-Mail: roccogouss & yahoo.com Signature:
chris	GreehP	CHRIS GREEF FAMILY TRUST	BRIDGE 3	Farm 250 PORTION 1	Tell No.: 042-2351545 Fax No.: General Cell No.: 0768467115 E-Mail: chrisgreeft@bosberg.Co Signature: MM Gruff
arel	von Gend.	NOT AVAILABLE	BRIDGE 2	C.von Jent Farm 407 PORTION 1	Tell No.: 0875500958 Fax No.: Gen Cell No.: 0791932993 E-Mail: Jangend Q Jabama, C Signature: Chland.
aulean	Grouse	NOT AVAILABLE Roube Crouse	BRIDGE 1	War in / E Farm 407 PORTION 3 Others in subject	Tell No.:       Fax No.:       Cell No.:     O 8 44911964       E-Mail:     On bekend       Signature:



Block A, Menlyn Woods Office Park 291 Sprite Avenue Faerie Glen Pretoria 0081 P O Box 35290 Menlo Park 0102 South Africa T: +27 (0) 12 361 9821 F: +27 (0) 12 361 9912 E: pretoria@srk.co.za www.srk.co.za



Group Offices:

21 November 2014 472748

#### Attention: Mr Rocco Grouws

Dear Mr Gouws

ENVIRONMENTAL AUTHORISATION NOTIFICATION FOR THE REMEDIATION AND REHABILITATION OF THE SKOENMAKERS RIVER - TEN (10) RIVER CROSSINGS, KIRKWOOD, SOMERSET EAST JANSENVILLE, EASTERN CAPE

#### Agreement between Mr Rocco Gouws and SRK Consulting (SA) (SRK)

#### 1. Project Background

The Skoenmakers River is situated in the Blue Crane Route Local Municipality in the Eastern Cape. It receives water from an upstream dam via a gravity tunnel and discharges into the Darlington dam. The river has been a conveyance system and spillway to Darlington dam since 1981. The raw water is used by farmers, en route to the dam downstream for agricultural purposes. The river channel has deteriorated over years, resulting in:

- Erosion of the river embankment; .
- 0 Excessive siltation causing unnatural islands to form within the river bed;
- Blockage of water extraction Weirs and pump stations;
- Excessive invasive vegetation causing blockage of the water course; and
- Damage to infrastructure such as road crossings, water extraction weirs and equipment to regulate . flood water.

There are 10 River crossings that have been damaged and this project entails restoring and/or upgrading the crossings. The current application is for:

River crossing 3, located along the DWS servitude, is going to be upgraded by removing existing structures and replacing them with portal culverts adequately sized to accommodate the hydraulic capacity, both current and future.

#### 2. Stakeholder Engagement Process

#### SRK Consulting (SA) (SRK) has been appointed by BVI Consulting Engineers to conduct the necessary environmental processes as well as the public participation processes for the proposed projects. Partners AH Bracken, MJ Braune, JM Brown, CD Dalgliesh, JR Dixon, DM Duthe, BM Engelsman, R Gardiner,

African Offices

		B Liber, DJ Mahlangu, RRW McNeill, HAC Meintjes,	Cape Town	+ 27 (0) 21 659 3060	Africa
		'S Reddy, PN Rosewarne, PE Schmidt, PJ Shepherd, MJ Sim, stadt, DJ Venter, ML Wertz, MD Wanless, A Wood	Durban	+ 27 (0) 31 279 1200	Asia
	vin omposya, AA ombren, Hi 5 mean, Kin oder	Stadt, D3 Venter, WL Wenz, WD Wantess, A Wood	East London	+ 27 (0) 43 748 6292	Australia
	Directors AJ Barrett, JR Dixon, PR Labrum, DJ M	fahlangu, VS Reddy, PE Schmidt, PJ Shepherd	Johannesburg	+ 27 (0) 11 441 1111	Europe
	Valences and restriction of the second second second		Kimberley	+ 27 (0) 53 861 5798	North America
		Hinsch, JA Lake, V Maharaj, SA McDonald, RD O'Brien, M Ristic,	Pietermaritzburg	+ 27 (0) 33 347 5069	South America
	JJ Slabbert, AT van Zyl, D Visser		Port Elizabeth	+ 27 (0) 41 509 4800	
	Consultants AC Burger, BSC(Hons); JAC Cowar	Pretoria	+ 27 (0) 12 361 9821	CESA	
	T Hart, MA. TTHD: GA Jones, PrEng, PhD, TR St	Hart, MA. TTHD, GA Jones, PrEng, PhD, TR Stacey, PrEng, DSc; OKH Steffen, PrEng, PhD; J Terbrugge, PrSciNat, MSc; DW Warwick: PrSciNat, BSc(Hons)			
	PJ Terbrugge, PrSciNat, MSc; DW Warwick, PrSc				
SF	SRK Consulting (South Africa) (Pty) Ltd	Dec No. 1005 010000 07	Harare	+ 263 (4) 49 6182	
	SRK Consuling (South Africa) (Pty) Ltd	Reg No 1995.012890.07	Lubumbashi	+ 243 (0) 81 999 9775	

There are various guidelines which need to be taken into in account during the public participation process, as one of which includes informing all land owners of the proposed activity (GN R. 543 Item 54(2)(b) (i) (ii)). SRK Consulting has requested deviation from the this section of the public participation process of the regulation, due to poor or no communication mediums (post, telecommunication and email and limited cell phone reception).

#### 3. Acknowledgement of Expectations

SRK Consulting would like to request you to distribute announcement letters on behalf of SRK Consulting to all landowners and to request each land owner to notify all land occupiers on their property to of the proposed project.

In signing below, will the agreement be understood and accepted that Mr Rocco Gouws would be acting on behalf of SRK in carrying out communication between stakeholders and SRK Stakeholder Engagement Department.

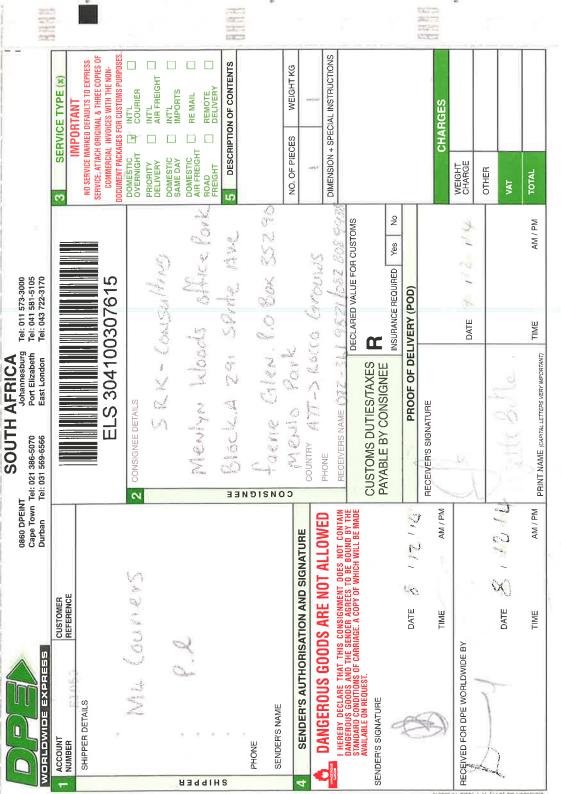
Mr Roccø Gouws

Des. 2014 Date

Yours faithfully, SRK Consulting (South Africa) (Pty) Ltd

SHE CONSIDER - Cardina Electronic Styring to Constant State (Cardina Electronic Styring) Constant State (Cardina Electronic Styring) State State (Cardina Electronic

Manda Hinsch BSc. Hons, Pr. Sci Nat, FWISA Associate Partner/Principal Scientist





Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

> Private Bag X 447· PRETORIA · 0001 · Environment House · 473 Steve Biko Road · Arcadia · PRETORIA Tel (+ 27 12) 399 9372

Reference: 14/12/16/3/3/1/1361, 1362, 1363, 1364, 1365, 1366, 1367,1368,1369,1370 Enquiries: Ms Nyiko Nkosi Tel: (012) 399 9392: (012) 320 7539 E-mail: nnkosi@environment.gov.za

Ms Manda Hinsch SRK Consulting P.O.Box 35290 MENLOPARK 0102

Tel: 012 361 9821 Email: hinm@srk.co.za

Dear Ms Hinsch

# APPLICATION FOR DEVIATION FROM THE PUBLIC PARTICIPATION PROCESS: PROPOSED REMEDIATION OR RECONSTRUCTION OF TEN (10) BRIDGES ALONG SKOENMAKERS RIVER, BLUE CRANE ROUTE LOCAL MUNICIPALITY IN THE EASTERN CAPE

The abovementioned application and letter dated 5 December 2014 requesting to deviate from the public participation process (PPP), the acknowledgement letter from this Department dated 06 January 2015 and additional information received via email on 02 February 2015 refer.

The purpose of this letter is to provide a response to your request to deviate from the public participation process as per Regulation 54 (5) of the 2010 Environmental Impact Assessment (EIA) Regulations, as stated in the acknowledgement letter dated 6 January 2015.

Based on the information provided by you, the proposed project entails the structural upgrade and repair of 10 river crossings along the Skoenmakers River in the Eastern Cape Province. Ten separate application forms have been lodged with the Department and they were allocated the following Department of Environmental Affairs EIA reference numbers:

- 14/12/16/3/3/1/1361- Rehabilitation of River crossing 1;
- 14/12/16/3/3/1/1362- Rehabilitation of River crossing 2;
- 14/12/16/3/3/1/1363- Rehabilitation of River crossing 3;
- 14/12/16/3/3/1/1364- Rehabilitation of River crossing 4;
- 14/12/16/3/3/1/1365- Rehabilitation of River crossing 5;
- 14/12/16/3/3/1/1366- Rehabilitation of River crossing 6;
- 14/12/16/3/3/1/1367- Rehabilitation of River crossing 7;
- 14/12/16/3/3/1/1368- Rehabilitation of River crossing 8;
- 14/12/16/3/3/1/1369- Rehabilitation of River crossing 9; and
- 14/12/16/3/3/1/1370- Rehabilitation of River crossing 10.

As a result, the Department of Water and Sanitation (DW&S) is requesting deviation in terms of Regulation 54 (5) of GN R543 of the EIA Regulations 2010, to conduct a single public participation process for the above mentioned 10 application forms. In addition, 10 separate Basic Assessment reports will be prepared and submitted to the Department.

The Department has evaluated the submitted documents and based on the information provided, the Department hereby approves your request to conduct a single public participation process for all the submitted 10 application forms for the proposed project as indicated on your letter dated 02 February 2015, provided that the following is adhered to:

- The PPP followed, must comply with the requirements of Regulation 54 of GN R.543 of 18 June 2010;
- All documents to be published and distributed during the public participation process to interested and affected parties must make record of all 10 proposed river crossing upgrades;
- As much as a combined PPP will be followed where there are site specific comments raised these must be recorded and captured in the relevant project documents in relation to that specific site; and
- Comments from all relevant stakeholders and/ or commenting authorities must be submitted to the Department with the Final Basic Assessment Report (BAR).

In addition to the above, the Department notes that you have appointed Mr Rocco Gouws (farmer and landowner in the community) to distribute notification letters on behalf of SRK Consulting to adjacent land owners, as it is difficult for you to reach owners and occupiers due to poor or no communication mediums (post, telecommunication and email and limited cell phone reception) in the area. However, proof of consultation as per Regulation 54 (2) (b) (i) to (viii) must be submitted to the Department with the final BAR. Further to this Regulation 21(2) (a) of the EIA Regulations, 2010 places the responsibility of undertaking the public participation process on the appointed Environmental Assessment Practitioner (EAP) therefore should there be any issues that arise with regards to the notification of landowners, occupiers of land, adjacent landowners or adjacent occupiers of land the EAP will be held accountable and must address such issues accordingly. Any non-compliance with the requirements of Regulation 54 (2) (b) (i) to (viii) by Mr. Gouws will be considered a non-compliance by the applicant and the EAP appointed to manage the application process.

This Department reserves the right to revise or withdraw this letter or to request further information from you should new information on this matter become available.

Yours faithfully

MISdamans

Mr Sabelo Malaza Chief Director: Integrated Environmental Authorisations Department of Environmental Affairs Letter signed by: Ms Milicent Solomons Designation: Director: Integrated Environmental Authorisations Date: 2602/2015

CC:	CC: Mr Dewald Coetzee				Email: coetzeeD@dws.gov.za	
Mr Gerry Pienaar		,	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism		Email: Gerry.pienaar@dedea.gov.za	



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30 January 2015 472748

Ms Nyiko Nkosi Dept. of Environmental Affairs **Environment House** 473 Steve Biko. Arcadia, Pretoria, 0083

#### Attention: Ms Nyiko Nkosi

Dear Ms Nkosi

#### URGENT REQUEST FOR ADDITIONAL INFORMATION FOR PROPOSED UPGRADE OF SKOENMAKERS RIVER CROSSINGS

In reference to your email received 29 January 2015, regarding the request by SRK Consulting (Pty) Ltd (SRK) to provide detailed information of the deviation on how we are going to conduct a single Public Participation Process (PPP) as per the requirement of chapter 54 of GN R.543 of 2010, as well as details on the distances of the river crossings, we would like to provide the following information. The following applications references refer.

Crossings	Reference no
1	14/2/16/3/3/1/1361
2	14/2/16/3/3/1/1362
3	14/2/16/3/3/1/1363
4	14/2/16/3/3/1/1364
5	14/2/16/3/3/1/1365
6	14/2/16/3/3/1/1366
7	14/2/16/3/3/1/1367
8	14/2/16/3/3/1/1368
9	14/2/16/3/3/1/1369
10	14/2/16/3/3/1/1370

#### 1. Deviation from Public Participation

SRK Consulting (Pty) Ltd (SRK) would like to conduct a SINGLE combined public participation process for the remediation and or reconstruction of ten (10) bridges along the Skoenmakers River. A total of ten (10) Basic Assessments will be submitted as agreed with DEA (competent authority). There is an existing

Partners AH Bracken, MJ Braune, JM Brown, CD Dalgliesh, JR Dixon, DM Duthe, BM Engelsman, R Gardiner, GC Howell, WC Joughin, DA Kilian, PR Labrum, B Liber, DJ Mahlangu, RRW McNeill, HAC Meintjes, jA Middleton, MJ Morris, WA Naismith, GP Nel, VS Reddy, M Ristic, PN Rosewarne, PE Schmidt, PJ Shepherd, MJ Sim, VM Simposya, AA Smithen, HFJ Theart, KM Uderstadt, AT van Zyl, DJ Venter, ML Wertz, MD Wanless, A Wood

Directors AJ Barrett, JR Dixon, PR Labrum, V Maharaj, DJ Mahlangu, VS Reddy, PE Schmidt, PJ Shepherd

Associate Partners R Armstrong, N Brien, L Coetser, M Hinsch, AH Kirsten, Dr LH Kirsten, S Kisten, JA Lake, V Maharaj, SA McDonald, RD O'Brien, T Shepherd, JJ Slabbert, D Visser

Consultants AC Burger, BSC(Hons); JAC Cowan, PrSciNat, BSc(Hons); JH de Beer, PrSci Nat, MSc; T Hart, MA, TTHD; GA Jones, PrEng, PhD; TR Stacey, PrEng, DSc; OKH Steffen, PrEng, PhD; PJ Terbrugge, PrSciNat, MSc; DW Warwick, PrSciNat, BSc(Hons)

SRK Consulting (South Africa) (Pty) Ltd

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+ 27 (0) 53 861 5798	North America
+ 27 (0) 33 347 5069	South America
+ 27 (0) 41 509 4800	
+ 27 (0) 12 361 9821	CESA
+ 27 (0) 14 594 1280	
+ 23 (3) 24 485 0928	
+ 263 (4) 49 6182	

servitude which spans from "Bridge 1 – Palmietfontein" to "Bridge10 – Fontein Plaats with rights owned by DWS.

SRK would also like to apply for deviation, from the public participation process applied for in terms of Regulation 54(5) of GN R. 543. Details of the request for deviation include in Table 1-1.

	Table 1-1:	Public	Participation	Regulation	s Table.
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REGULATION		ions Table.	
	REGULATION		DEVIATION
NUMBER		DEVIATION	
	REGULATION The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by giving written notice to— (i) the owner or person in control of the land and of any alternative land where the activity is to be undertaken if the applicant is not the owner or person in control of the land; (ii) the occupiers of the site where the activity is to be undertaken and of any alternative site where the activity is to be undertaken; (iii) owners and occupiers of land adjacent to the site where the activity is to be undertaken; (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site	REASON FOR DEVIATION It will be difficult to reach owners and occupiers due to poor or no communication mediums (post, telecommunication and email and limited cell phone reception) in the area.	DEVIATION There is an existing servitude which spans from "Bridge 1 – Palmietfontein" to "Bridge10 – V with rights owned by DWS. SRK Consulting is in agreement with Mr Rocco Gouws (farmer and landowner in the community) to distribute notification letters on behalf of SRK Consulting to adjacent land owners. Each farmer will be responsible to notify all adjacent land occupiers A letter of agreement has been signed with Mr. Gouws and can be found in Appendix E2. Adjacent landowners have signed a register in receipt for the notification (please see Annexure E3). Notification letters will be sent to landowners upon availability of the Draft BAR and will also include an invitation and details of the public open day.

#### 2. Distances between river crossings

Detailed information regarding the distance between rivers crossing 1 until river crossing 10 in provided in Table 1-2.

DESCRIPTION	TAG	FEAT TYPE	LENGTH
Bridge 1-2	Skoenmakersrivier	Non-Perennial Center Line	3.0km

SRK Consulting				Page 3
Bridge 2-3	Skoenmakersrivier	Non-Perennial Center Line	4.0km	
Bridge 3-4	Skoenmakersrivier	Non-Perennial Center Line	4.5km	
Bridge 4-5	Skoenmakersrivier	Non-Perennial Center Line	4.7km	
Bridge 5-6	Skoenmakersrivier	Non-Perennial Center Line	1.0km	
Bridge 6-7	Skoenmakersrivier	Non-Perennial Center Line	0.47km	
Bridge 7-8	Skoenmakersrivier	Non-Perennial Center Line	6.8km	
Bridge 8-9	Skoenmakersrivier	Non-Perennial Center Line	7.8km	
Bridge 9-10	Skoenmakersrivier	Non-Perennial Center Line	1.4km	
TOTAL	-		33.7km	

Yours faithfully, SRK Consulting (South Africa) (Pty) Ltd

SRK Consulting - Certified Electronic Signature

**c** consulting 4727482/42 2293-7802 This signed an nermission for the

Manda Hinsch Pr. Sci Nat Associate Partner/Principal Scientist Appendix E3: Comments And Response Report

### FINAL BASIC ASSESSMENT REPORTS FOR THE UPGRADE OF TEN RIVER CROSSINGS SITUATED ALONG THE SKOENMAKERS RIVER, EASTERN CAPE COMMENTS AND RESPONSES REPORT

COMMENTS, ISSUES AND SUGGESTIONS RAISED	COMMENTATER	ORGANISATION/ COMMUNITY	DATE	SOURCE	RESPONSE	
GENERAL CONCERNS		•	•	•	·	
How long will it take to build the Coffer dams?	Mr Rocco Gouws	W D E S Greef Hou		Public Open House		The dam will take approximately two to thr
Please try to arrange for it to be built during winter		Family TrustBoerlaagte245(Bridge11)			Yes, we also see this as the best time taki	
Will the height of the Bridges more or less remain the same?		Portion 7			We tried to keep the height the same there	
If the Bridges remain the same height, it is wider?	-				Yes, it is wider.	
How wide will the servitudes be?	Mr Bernardus	Fonteins Plaats	-		It will be approximately 80meters wide.	
How far outside the servitude lines is DWS (Department of Water Affairs) planning to do this work	)	246 (Bridge 10) Portion 6			It has not been confirmed how far outside has to be discussed and that will be done	
A major problem is that we believe that the servitudes lines have been washed away. DWS will have to ensure that new servitudes applied for.					(Presented on a map) Both 100 year ar landowner. If we look at where the river places where the river falls outside of the falls outside of the servitude.	
There is a major problem on the river banks. It will not be long before the wall is completely destroyed. If one looks at the current river banks, it will not be long before outside of the servitude.					The additional water which flows beyond t transfer scheme. This would have flooded	
As a result of the river having changed its course over the past few years, since the then DWS implemented the transfer scheme, water has been flooding my lands rendering the area mushy. I originally had 60 Ha of which I now can only use 40 Ha. The flooded land lies beyond the servitude originally negotiated with my Dad. This is resulting in a devaluation of my property.						
My concern is not with the construction of the bridges but about my land use.						
There is a reduction in value of land/property therefore DWS need to make the servitudes bigger or rehabilitate the affected portions for me to use that portion of land.						
The bridge blocked the water, causing the soil is waterlogged under the masses of water. This causes the river is affected further and soil from being washed away.					It will be reported to DWS. They will have	

three months to build.

aking into consideration the rainfall patterns in the area.

ere are some of the bridges that are slightly higher.

de of the servitude lines where the river would be, since it still ne about it.

and 50year flood line studies were done for each affected er runs currently; we are able to see that there are very few he servitude lines. This is at approximately six places where it

d the servitude is additional run-off and is not the result of the ded your property in any case during major rains.

ve to be notified, although this does not impact on the bridge.

Appendix E4: Proof of Autority Notification



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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DEA Reference: 14/12/16/3/3/1/1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369 and 1370 Enquiries: Mr Herman Alberts Tel: 012 399 9371 E-mail: HAlberts@environment.gov.za

Ms Donné Chetty SRK Consulting (South Africa) (Pty) Ltd PO Box 35290 MENLO PARK 0102

Tel: 012 361 9821 E-Mail: pretoria@srk.co.za

PER MAIL / E-MAIL

Dear Ms Chetty

ACKNOWLEDGEMENT OF RECEIPT OF DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED UPGRADE OF TEN RIVER CROSSINGS SITUATED ALONG THE SKOENMAKERS RIVERS, EASTERN CAPE PROVINCE

The Department confirms having received the draft Basic Assessment Reports dated 30 March 2015 for the above-mentioned projects on 08 April 2015.

You are hereby reminded that the activity may not commence prior to an Environmental Authorisation being granted by the Department.

Yours sincerely

Mr Sabelo Malaza Chief Director: Integrated Environmental Authorisations Department of Environmental Affairs Letter signed by: Mr Herman Alberts Designation: Environmental Officer: Integrated Environmental Authorisations Date: 22/04/2015



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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> DEA Reference: 14/12/16/3/3/1/1361 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

Manda Hinsch SRK Consulting PO Box 35290 MENLOPARK 0102

Fax: 012 361 9912 Tel: 012 361 9821 Email: hinm@srk.co.za

#### **PER FACSIMILE / MAIL**

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (BASIC ASSESSMENT PROCESS) FOR THE PROPOSED STRUCTURAL UPGRADE AND REPAIR OF 10 RIVER CROSSINGS ALONG THE SKOENMAKERS RIVER – REHABILITATION OF RIVER CROSSING 1 WITHIN BLUE CRANE ROUTE LOCAL MUNICIPALITY IN EASTERN CAPE PROVINCE

The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

Please note that the Department will respond to the request for deviation to conduct a single combined public participation process for the remediation and or reconstruction of 10 bridges along the Skoenmakers River in due course.

In addition, please consider the following during compilation of reports for this application for environmental authorisation:

- Please be advised that in terms of the EIA Regulations and NEMA the investigation of alternatives is mandatory. Alternatives must therefore be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).
- A detailed and complete EMPr must be submitted with the BAR. This EMPr must not
  provide recommendations but must indicate actual remediation activities which will be
  binding on the applicant. Without this EMPr the documents will be regarded as not
  meeting the requirements and will be returned to the applicant for correction.
- The applicant/EAP is required to inform this Department in writing upon submission of any draft report, of the contact details of the relevant State Departments (that administer laws relating to a matter affecting the environment) to whom copies of the draft report were

submitted for comment. Upon receipt of this confirmation, this Department will in accordance with Section 24O(2) & (3) of the National Environmental Management Act, 1998 (Act 107 of 1998) inform the relevant State Departments of the commencement date of the 40 day commenting period, or 60 days in the case of the Department of Water Affairs for waste management activities which also require a licence in terms of the National Water Act, 1998 (Act 36 of 1998).

Should it be necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999), please submit the necessary application to SAHRA or the relevant provincial heritage agency and submit proof thereof with the Basic Assessment Report. The relevant heritage agency should also be involved during the public participation process and have the opportunity to comment on all the reports to be submitted to this Department.

You are requested to submit two (2) electronic copies (the main report must be separated from the Appendices (each appendix saved separately) (CD/DVD) and two (2) hard copies of both the Draft and Final Report to the Department. The hard copies must be double-sided printed; and must be ring binded.

The EAP must, in order to give effect to regulation 56 (2), before submitting the Basic Assessment Report to the Department give registered interested and affected parties access to, and an opportunity to comment on the report in writing.

In terms of regulation 67 of the EIA Regulations, 2010 this application will lapse if the applicant (or the EAP on behalf of the applicant) fails to comply with a requirement in terms of the Regulations for a period of six months after having submitted the application, unless the reasons for failure have been communicated to and accepted by this Department.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Matoriato

Mr Ishaam Abader

Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations Date: OGOI DOIS

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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> DEA Reference: 14/12/16/3/3/1/1362 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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PER FACSIMILE / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (BASIC ASSESSMENT PROCESS) FOR THE PROPOSED STRUCTURAL UPGRADE AND REPAIR OF 10 RIVER CROSSINGS ALONG THE SKOENMAKERS RIVER – REHABILITATION OF RIVER CROSSING 2 WITHIN BLUE CRANE ROUTE LOCAL MUNICIPALITY IN EASTERN CAPE PROVINCE

The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

Please note that the Department will respond to the request for deviation to conduct a single combined public participation process for the remediation and or reconstruction of 10 bridges along the Skoenmakers River in due course.

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submitted for comment. Upon receipt of this confirmation, this Department will in accordance with Section 24O(2) & (3) of the National Environmental Management Act, 1998 (Act 107 of 1998) inform the relevant State Departments of the commencement date of the 40 day commenting period, or 60 days in the case of the Department of Water Affairs for waste management activities which also require a licence in terms of the National Water Act, 1998 (Act 36 of 1998).

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You are requested to submit two (2) electronic copies (the main report must be separated from the Appendices (each appendix saved separately) (CD/DVD) and two (2) hard copies of both the Draft and Final Report to the Department. The hard copies must be double-sided printed; and must be ring binded.

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In terms of regulation 67 of the EIA Regulations, 2010 this application will lapse if the applicant (or the EAP on behalf of the applicant) fails to comply with a requirement in terms of the Regulations for a period of six months after having submitted the application, unless the reasons for failure have been communicated to and accepted by this Department.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

#### MERCHARS

Mr Ishaam Abader

Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata

Designation: Environmental Officer: Integrated Environmental Authorisations Date: ©6 [0t] 2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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> DEA Reference: 14/12/16/3/3/1/1363 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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Fax: 012 361 9912 Tel: 012 361 9821 Email: hinm@srk.co.za

PER FACSIMILE / MAIL

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (BASIC ASSESSMENT PROCESS) FOR THE PROPOSED STRUCTURAL UPGRADE AND REPAIR OF 10 RIVER CROSSINGS ALONG THE SKOENMAKERS RIVER – REHABILITATION OF RIVER CROSSING 3 WITHIN BLUE CRANE ROUTE LOCAL MUNICIPALITY IN EASTERN CAPE PROVINCE

The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

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Yours sincerely

MRAboth

Mr Ishaam Abader Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations Date: 06/01/2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
-	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



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> DEA Reference: 14/12/16/3/3/1/1364 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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**PER FACSIMILE / MAIL** 

Dear Sir/Madam

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Yours sincerely

#### Metootiate

Mr Ishaam Abader

Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations

Date: 06 01 2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za Email: Gerry.pienaar@dedea.gov.za
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> DEA Reference: 14/12/16/3/3/1/1365 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

Manda Hinsch SRK Consulting PO Box 35290 MENLOPARK 0102

Fax: 012 361 9912 Tel: 012 361 9821 Email: hinm@srk.co.za

**PER FACSIMILE / MAIL** 

Dear Sir/Madam

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (BASIC ASSESSMENT PROCESS) FOR THE PROPOSED STRUCTURAL UPGRADE AND REPAIR OF 10 RIVER CROSSINGS ALONG THE SKOENMAKERS RIVER – REHABILITATION OF RIVER CROSSING 5 WITHIN BLUE CRANE ROUTE LOCAL MUNICIPALITY IN EASTERN CAPE PROVINCE

The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

Please note that the Department will respond to the request for deviation to conduct a single combined public participation process for the remediation and or reconstruction of 10 bridges along the Skoenmakers River in due course.

- Please be advised that in terms of the EIA Regulations and NEMA the investigation of alternatives is mandatory. Alternatives must therefore be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).
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You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Mr Ishaam Abader Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations Date: OG OT 2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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> DEA Reference: 14/12/16/3/3/1/1366 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

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Mr Ishaam Abader Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations Date: 06/01/2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
-	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



Department: Environmental Affairs **REPUBLIC OF SOUTH AFRICA** 

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> DEA Reference: 14/12/16/3/3/1/1367 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

Manda Hinsch SRK Consulting PO Box 35290 MENLOPARK 0102

Fax: 012 361 9912 Tel: 012 361 9821 Email: hinm@srk.co.za

**PER FACSIMILE / MAIL** 

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The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

Please note that the Department will respond to the request for deviation to conduct a single combined public participation process for the remediation and or reconstruction of 10 bridges along the Skoenmakers River in due course.

- Please be advised that in terms of the EIA Regulations and NEMA the investigation of alternatives is mandatory. Alternatives must therefore be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).
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Yours sincerely

#### MRitallero

Mr Ishaam Abader Deputy Director-General: Legal, Authorisations, Compliance, and Enforcement Department of Environmental Affairs: Letter signed by: Ms Mmatlala Rabothata Designation: Environmental Officer: Integrated Environmental Authorisations

Date: 06 01 2015

CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

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> DEA Reference: 14/12/16/3/3/1/1368 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

Manda Hinsch SRK Consulting PO Box 35290 MENLOPARK 0102

Fax: 012 361 9912 Tel: 012 361 9821 Email: hinm@srk.co.za

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The Department confirms having received the application form with motivation for exclusion from fee payment, project map, project schedule, Declaration of Applicant and Declaration of EAP for environmental authorisation for the abovementioned project submitted by you on 5 December 2014. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The application is accepted.

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> DEA Reference: 14/12/16/3/3/1/1369 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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> DEA Reference: 14/12/16/3/3/1/1370 Enquiries: Ms Mmatlala Rabothata Tel: 012 399 9372 E-mail: mrabothata@environment.gov.za

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CC:	Mr Dewald Coetzee	Department of Water & Sanitation (DWS)	Fax: 041 586 0379	Email: CoetzeeD@dws.gov.za
	Mr Gerry Pienaar	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism	Fax: 043 605 7300	Email: Gerry.pienaar@dedea.gov.za
	Mr Thabiso Klaas	Blue Crane Route Local Municipality	Fax: 042 243 0633	Email: mmanager@bcm.gov.za

Appendix E5: I&AP Register

I&AP REGISTER - 472748 SKOENMAKERS REHAB						
NAME & SURNAME	COMPANY	POSITION/FARM PORTION				
AFFECTED LAND OWNER						
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Volkers Rivier 244 (Bridge 12) Portion 3				
ewald Coetzee	Department Of Water & Sanitation (DWS)	Volkers Rivier 244 (Bridge 11) Portion 7				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Fonteins Plaats 246 (Bridge 10) Portion 6				
ewald Coetzee	Department Of Water & Sanitation (DWS)	Fonteins Plaats 246 (Bridge 9) Portion 4				
ewald Coetzee	Department Of Water & Sanitation (DWS)	Geelhoutboom 247 (Bridge 8) Portion 0				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Kruis Rivier 248 (Bridge 7) Portion 8				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Kruis Rivier 248 (Bridge 6) Portion 5				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Kruis Rivier 248 (Bridge 6) Portion 6				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Kruis Rivier 248 (Bridge 5) Portion 9				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Kruis Rivier 248 (Bridge 4) Portion 4				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Palmietfontein 250 (Bridge 3) Portion 1				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Palmietfontein 407 (Bridge 2) Portion 1				
Dewald Coetzee	Department Of Water & Sanitation (DWS)	Palmietfontein 407 (Bridge 1) Portion 3				
	ADJACENT LANDO	WNERS				
Iomvuselelo Songelwa	South African National Parks	Volkers Rivier 244 (Bridge 12) Portion 3				
Villem Greeff	W D E S Greef Family Trust	Volkers Rivier 244 (Bridge 11) Portion 7				
Freyling Bernardus Beyers	Greyling Bernardus Beyers	Fonteins Plaats 246 (Bridge 10) Portion 6				
Villem Greeff	W D E S Greef Family Trust	Fonteins Plaats 246 (Bridge 9) Portion 4				
rancios Nell	Geelhoutboom Trust	Geelhoutboom 247 (Bridge 8) Portion 0				
Gerhard Delange	Inqo Prop Pty Ltd	Kruis Rivier 248 (Bridge 7) Portion 8				
Bosch Raoul Riaan	Bosch Raoul Riaan	Kruis Rivier 248 (Bridge 6) Portion 5				
Freyling Bernardus Beyers	Greyling Bernardus Beyers	Kruis Rivier 248 (Bridge 6) Portion 6				
Rocco Gouws	S Gouws Baniki Trust	Kruis Rivier 248 (Bridge 5) Portion 9				
locco Gouws	S Gouws Baniki Trust	Kruis Rivier 248 (Bridge 4) Portion 4				
Chris Greeff	Chris Greef Family Trust	Palmietfontein 250 (Bridge 3) Portion 1				
Carel Van Gend		Palmietfontein 407 (Bridge 2) Portion 1				
auben Grouse		Palmietfontein 407 (Bridge 1) Portion 3				
Villem Greeff	W D E S Greef Family Trust	Boerlaagte 245 (Bridge 11) Portion 7				
Rocco Gouws	S. Gouws Family Trust	Populierplaas 248				
Rocco Gouws	S. Gouws Family Trust	Middelwater 248				
	COMPETENT AUTH	ORITIES				
shaam Abader	Department of Environmental Affairs	Deputy Director-General Legal Authorisations and Compliance Inspectorate				
	COMMENTING AUTH	HORITIES				
/ls P Makhanya	Department Of Water & Sanitation (DWS) - Eastern Cape	Chief Director: Eastern Cape				
Л. Jonas	Department of Economic Development and Environmental Affairs	MEC				

NAME & SURNAME	COMPANY	POSITION/FARM PORTION	
	PROVINCIAL GOVER		
	Eastern Cape Department of Economic Development and Environment		
Gerry Pienaar	Affairs and Tourism (DEDEAT)	Environmental Impact Management – Senior Manager	
	LOCAL MUNICIPA		
Vr Thabiso Klaas	Blue Crane Route Local Municipality	Municipal Manager	
	DISTRICT MUNICIF	ALITY	
Cr Khunjuzwa Eunice Kekana	Cacadu District Municipality	Executive Major/Municipal Head	
Г Pillay	Cacadu District Municipality	Municipal Manager	
	WARD COUNCIL	LOR	
Vs Z Funiselo	Ward 6	Ward Councillor	
	OTHER ORGANS OF STATE /	/ PARASTATALS	
	Addo Elephant National Park		
	MEDIA		
Amilia Kloppers	Herald	Representative	
leanette Kleyngeld	Die Burger	Representative	
	BUSINESS AND COM	IMERCE	
C Delange	Kuzuko Lodge	Manager	
Henry Flats	Henry's Flats Aerodrome	Representative	
	Bedrogfontein Darlington Lake Lodge		
	PUBLIC PLACE	S	
Henry Greff	Bracefield UCC Primary School	Landowner	
Yoandie	Kronenhoff Guesthouse	Administrator	
AO Duisel	Wolwefontein Police Station	Inspetor	
	NON GOVERNMENTAL OR		
Dr Howard Hendricks	WESSA (the Wildlife and Environment Society of South Africa)	Director: Conservation	
Dr Mark Brown	The Nature's Valley Trust	Program Director	
Evan kritzinger	Farmers Association	Chairperson	
Andrew Muir	Wilderness Foundation	Executive Director of the Wilderness Foundation	
	OTHER I & AF		
Andile Nshudu	IGR	Representative	
eane Rosley	Ward 2 PROJECT TEAI	Ward Councillor	

Appendix E6: Correspondence



Block A, Menlyn Woods Office Park 291 Sprite Avenue Faerie Glen Pretoria 0081 P O Box 35290 Menlo Park 0102 South Africa T: +27 (0) 12 361 9821 F: +27 (0) 12 361 9912 E: pretoria@srk.co.za www.srk.co.za



30 January 2015 472748

Ms Nyiko Nkosi Dept. of Environmental Affairs **Environment House** 473 Steve Biko. Arcadia, Pretoria, 0083

#### Attention: Ms Nyiko Nkosi

Dear Ms Nkosi

#### URGENT REQUEST FOR ADDITIONAL INFORMATION FOR PROPOSED UPGRADE OF SKOENMAKERS RIVER CROSSINGS

In reference to your email received 29 January 2015, regarding the request by SRK Consulting (Pty) Ltd (SRK) to provide detailed information of the deviation on how we are going to conduct a single Public Participation Process (PPP) as per the requirement of chapter 54 of GN R.543 of 2010, as well as details on the distances of the river crossings, we would like to provide the following information. The following applications references refer.

Crossings	Reference no
1	14/2/16/3/3/1/1361
2	14/2/16/3/3/1/1362
3	14/2/16/3/3/1/1363
4	14/2/16/3/3/1/1364
5	14/2/16/3/3/1/1365
6	14/2/16/3/3/1/1366
7	14/2/16/3/3/1/1367
8	14/2/16/3/3/1/1368
9	14/2/16/3/3/1/1369
10	14/2/16/3/3/1/1370

#### 1. Deviation from Public Participation

SRK Consulting (Pty) Ltd (SRK) would like to conduct a SINGLE combined public participation process for the remediation and or reconstruction of ten (10) bridges along the Skoenmakers River. A total of ten (10) Basic Assessments will be submitted as agreed with DEA (competent authority). There is an existing

Partners AH Bracken, MJ Braune, JM Brown, CD Dalgliesh, JR Dixon, DM Duthe, BM Engelsman, R Gardiner, GC Howell, WC Joughin, DA Kilian, PR Labrum, B Liber, DJ Mahlangu, RRW McNeill, HAC Meintjes, jA Middleton, MJ Morris, WA Naismith, GP Nel, VS Reddy, M Ristic, PN Rosewarne, PE Schmidt, PJ Shepherd, MJ Sim, VM Simposya, AA Smithen, HFJ Theart, KM Uderstadt, AT van Zyl, DJ Venter, ML Wertz, MD Wanless, A Wood

Directors AJ Barrett, JR Dixon, PR Labrum, V Maharaj, DJ Mahlangu, VS Reddy, PE Schmidt, PJ Shepherd

Associate Partners R Armstrong, N Brien, L Coetser, M Hinsch, AH Kirsten, Dr LH Kirsten, S Kisten, JA Lake, V Maharaj, SA McDonald, RD O'Brien, T Shepherd, JJ Slabbert, D Visser

Consultants AC Burger, BSC(Hons); JAC Cowan, PrSciNat, BSc(Hons); JH de Beer, PrSci Nat, MSc; T Hart, MA, TTHD; GA Jones, PrEng, PhD; TR Stacey, PrEng, DSc; OKH Steffen, PrEng, PhD; PJ Terbrugge, PrSciNat, MSc; DW Warwick, PrSciNat, BSc(Hons)

SRK Consulting (South Africa) (Pty) Ltd

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+ 27 (0) 12 361 9821	CESA
+ 27 (0) 14 594 1280	
+ 23 (3) 24 485 0928	
+ 263 (4) 49 6182	

servitude which spans from "Bridge 1 – Palmietfontein" to "Bridge10 – Fontein Plaats with rights owned by DWS.

SRK would also like to apply for deviation, from the public participation process applied for in terms of Regulation 54(5) of GN R. 543. Details of the request for deviation include in Table 1-1.

	Table 1-1:	Public	Participation	Regulation	s Table.
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REGULATION		ions Table.	
	REGULATION		DEVIATION
NUMBER		DEVIATION	
	REGULATION The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by giving written notice to— (i) the owner or person in control of the land and of any alternative land where the activity is to be undertaken if the applicant is not the owner or person in control of the land; (ii) the occupiers of the site where the activity is to be undertaken and of any alternative site where the activity is to be undertaken; (iii) owners and occupiers of land adjacent to the site where the activity is to be undertaken; (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site	REASON FOR DEVIATION It will be difficult to reach owners and occupiers due to poor or no communication mediums (post, telecommunication and email and limited cell phone reception) in the area.	DEVIATION There is an existing servitude which spans from "Bridge 1 – Palmietfontein" to "Bridge10 – V with rights owned by DWS. SRK Consulting is in agreement with Mr Rocco Gouws (farmer and landowner in the community) to distribute notification letters on behalf of SRK Consulting to adjacent land owners. Each farmer will be responsible to notify all adjacent land occupiers A letter of agreement has been signed with Mr. Gouws and can be found in Appendix E2. Adjacent landowners have signed a register in receipt for the notification (please see Annexure E3). Notification letters will be sent to landowners upon availability of the Draft BAR and will also include an invitation and details of the public open day.

#### 2. Distances between river crossings

Detailed information regarding the distance between rivers crossing 1 until river crossing 10 in provided in Table 1-2.

DESCRIPTION	TAG	FEAT TYPE	LENGTH
Bridge 1-2	Skoenmakersrivier	Non-Perennial Center Line	3.0km

SRK Consulting				Page 3
Bridge 2-3	Skoenmakersrivier	Non-Perennial Center Line	4.0km	
Bridge 3-4	Skoenmakersrivier	Non-Perennial Center Line	4.5km	
Bridge 4-5	Skoenmakersrivier	Non-Perennial Center Line	4.7km	
Bridge 5-6	Skoenmakersrivier	Non-Perennial Center Line	1.0km	
Bridge 6-7	Skoenmakersrivier	Non-Perennial Center Line	0.47km	
Bridge 7-8	Skoenmakersrivier	Non-Perennial Center Line	6.8km	
Bridge 8-9	Skoenmakersrivier	Non-Perennial Center Line	7.8km	
Bridge 9-10	Skoenmakersrivier	Non-Perennial Center Line	1.4km	
TOTAL	-		33.7km	

Yours faithfully, SRK Consulting (South Africa) (Pty) Ltd

SRK Consulting - Certified Electronic Signature

**c** consulting 4727482/42 2293-7802 This signed an nermission for the

Manda Hinsch Pr. Sci Nat Associate Partner/Principal Scientist



#### OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: EASTERN CAPE

13<sup>TH</sup> Floor, Caxton House, Terminus Street, East London P.O. BOX 1375, East London, 5200 Tel: (043) 700 6000 |Fax: (043) 743 3687

Enquiries: N. Pindani

Your Ref: Attention: Vusi Masango

Tel: 012 361 9821 Fax: 012 361 9912

Dear Sir

Your letter has a reference.

#### PROPERTIES:

- 1. Palmietfontein 407, Portion 3- Blue Crane Route Local Municipality.
- 2. Palmietfontein 407, Portion 1 Blue Crane Route local Municipality.
- 3. Palmietfontein 250, Portion 1 Blue Crane Route Local Municipality.
- 4. Kruis River 248, Portion 5 and 6 Blue Crane Route Local Municipality.
- 5. Kruis River 248, Portion 8 Blue Crane Route Local Municipality.
- 6. Geelhoutboom 247 Portion 0 Blue Crane Route Local Municipality.
- 7. Fonteins Plaats 246 Portion 4 Blue Crane Route Local Municipality.
- 8. Fonteins Plaats 246 Portion 6 -- Blue Crane Route Local Municipality.
- 9. Kruis Rivier 248 Portion 4 Blue Crane Route Local Municipality.
- 10. Kruis Rivier 248 Portion 9 Blue Crane Route Local Municipality.

This serves to confirm that there are no land claims registered on the abovementioned properties.

It must also be pointed out that some claims have been received for unspecified land and until such claims have been field visited it is not known to which portions of land it applies. Therefore the fact that a claim has not been registered specifically on the abovementioned properties at this stage does not preclude the fact that it might be included in the unspecified claims mentioned above.

Furthermore with the opening of the lodgment of the new claims, it might not be ruled out that a claim might be lodged against the property.

While reasonable care has been taken in ensuring the accuracy in the compilation of this information, the office of the Commissioner cannot be held accountable for any claims that may be brought as a result of legal actions based on the information thus given.

Please feel free to contact us for any clarification that may be required.

Yours faithfully

MR Z. PITYI CHIEF DIRECTOR: REGIONAL LAND CLAIMS COMMISSIONER EASTERN CAPE DATE: 02.06-2015



Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

> Private Bag X 447· PRETORIA · 0001 · Environment House · 473 Steve Biko Road · Arcadia · PRETORIA Tel (+ 27 12) 399 9372

Reference: 14/12/16/3/3/1/1361, 1362, 1363, 1364, 1365, 1366, 1367,1368,1369,1370 Enquiries: Ms Nyiko Nkosi Tel: (012) 399 9392: (012) 320 7539 E-mail: nnkosi@environment.gov.za

Ms Manda Hinsch SRK Consulting P.O.Box 35290 MENLOPARK 0102

Tel: 012 361 9821 Email: hinm@srk.co.za

Dear Ms Hinsch

# APPLICATION FOR DEVIATION FROM THE PUBLIC PARTICIPATION PROCESS: PROPOSED REMEDIATION OR RECONSTRUCTION OF TEN (10) BRIDGES ALONG SKOENMAKERS RIVER, BLUE CRANE ROUTE LOCAL MUNICIPALITY IN THE EASTERN CAPE

The abovementioned application and letter dated 5 December 2014 requesting to deviate from the public participation process (PPP), the acknowledgement letter from this Department dated 06 January 2015 and additional information received via email on 02 February 2015 refer.

The purpose of this letter is to provide a response to your request to deviate from the public participation process as per Regulation 54 (5) of the 2010 Environmental Impact Assessment (EIA) Regulations, as stated in the acknowledgement letter dated 6 January 2015.

Based on the information provided by you, the proposed project entails the structural upgrade and repair of 10 river crossings along the Skoenmakers River in the Eastern Cape Province. Ten separate application forms have been lodged with the Department and they were allocated the following Department of Environmental Affairs EIA reference numbers:

- 14/12/16/3/3/1/1361- Rehabilitation of River crossing 1;
- 14/12/16/3/3/1/1362- Rehabilitation of River crossing 2;
- 14/12/16/3/3/1/1363- Rehabilitation of River crossing 3;
- 14/12/16/3/3/1/1364- Rehabilitation of River crossing 4;
- 14/12/16/3/3/1/1365- Rehabilitation of River crossing 5;
- 14/12/16/3/3/1/1366- Rehabilitation of River crossing 6;
- 14/12/16/3/3/1/1367- Rehabilitation of River crossing 7;
- 14/12/16/3/3/1/1368- Rehabilitation of River crossing 8;
- 14/12/16/3/3/1/1369- Rehabilitation of River crossing 9; and
- 14/12/16/3/3/1/1370- Rehabilitation of River crossing 10.

As a result, the Department of Water and Sanitation (DW&S) is requesting deviation in terms of Regulation 54 (5) of GN R543 of the EIA Regulations 2010, to conduct a single public participation process for the above mentioned 10 application forms. In addition, 10 separate Basic Assessment reports will be prepared and submitted to the Department.

The Department has evaluated the submitted documents and based on the information provided, the Department hereby approves your request to conduct a single public participation process for all the submitted 10 application forms for the proposed project as indicated on your letter dated 02 February 2015, provided that the following is adhered to:

- The PPP followed, must comply with the requirements of Regulation 54 of GN R.543 of 18 June 2010;
- All documents to be published and distributed during the public participation process to interested and affected parties must make record of all 10 proposed river crossing upgrades;
- As much as a combined PPP will be followed where there are site specific comments raised these must be recorded and captured in the relevant project documents in relation to that specific site; and
- Comments from all relevant stakeholders and/ or commenting authorities must be submitted to the Department with the Final Basic Assessment Report (BAR).

In addition to the above, the Department notes that you have appointed Mr Rocco Gouws (farmer and landowner in the community) to distribute notification letters on behalf of SRK Consulting to adjacent land owners, as it is difficult for you to reach owners and occupiers due to poor or no communication mediums (post, telecommunication and email and limited cell phone reception) in the area. However, proof of consultation as per Regulation 54 (2) (b) (i) to (viii) must be submitted to the Department with the final BAR. Further to this Regulation 21(2) (a) of the EIA Regulations, 2010 places the responsibility of undertaking the public participation process on the appointed Environmental Assessment Practitioner (EAP) therefore should there be any issues that arise with regards to the notification of landowners, occupiers of land, adjacent landowners or adjacent occupiers of land the EAP will be held accountable and must address such issues accordingly. Any non-compliance with the requirements of Regulation 54 (2) (b) (i) to (viii) by Mr. Gouws will be considered a non-compliance by the applicant and the EAP appointed to manage the application process.

This Department reserves the right to revise or withdraw this letter or to request further information from you should new information on this matter become available.

Yours faithfully

MISdamans

Mr Sabelo Malaza Chief Director: Integrated Environmental Authorisations Department of Environmental Affairs Letter signed by: Ms Milicent Solomons Designation: Director: Integrated Environmental Authorisations Date: 2602/2015

CC:	Mr Coetzee	Dewald e	Department of Water and Sanitation	Tel: 041 508 9700	Email: coetzeeD@dws.gov.za
	Mr Pienaar	Gerry	Eastern Cape Department of Economic Development and Environmental Affairs and Tourism		Email: Gerry.pienaar@dedea.gov.za

## Appendix F: Impact Assessment

	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION Likelynood Consequence (Probability												El	A	FTER I	AL SIGNIFICANCE	-
	Со	nseque	ence								Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	/IRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water					1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise		· · · · ·			· 1	<del>.</del>		•		• 	• 	• T	• T	• T	• T	•	
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 1. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			Τ					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	3	3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality	1	1		-	-			1			1	1	-	-	-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	,	1	21	L No Management
piles may have a negative impact on air quality.			. 0	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	Ĵ			2	-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION Likelynood Consequence (Probability												El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence								Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>				No parking of vehicles or equipment should take					1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					ENV	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	ENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Con	seque	ence	•	yhoo d babilit /)	Significance (Degree to					Cor	nsequ	ence	(Pro	elyhod d obabili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water													1		1		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise								· · · ·			1	ľ	- 	i I	1	· · · · · · · · · · · · · · · · · · ·	
Construction activities resulting in noise disturbance in the surrounding area Waste management	2	2	1	1	1	10	L No Management Required	There is no potential for noise disturbance around crossing 2. No mitigation required.	{-}	{-}	2	2	1	1	1	10	L No Management Required
waste inanagement								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			T					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required										
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	2	30	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	1	2	2	2	24	L No Management Required													
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO																	
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO																	
					3	3	3	3	3					No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO											
			2 1									No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO													
		2		3						3	3	3	3	3	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24
											The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO														
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO																	
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management																	

of invasive alien vegetation.	3 3	3 3	3 3	2	2	2	2	2	2	2	<u>.</u>											45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management									
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO																																	
Air quality	1	1			-			1			1	1	-	-	-																												
					2																												Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock piles may have a negative impact on air quality.	3 2	2	3	2		35	ML Maintain Current Management	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	~	1	21	L No Management																									
		2	. 0	2				Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	- 3	2		2	-			Required																									
									Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO																																

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)					EN	/IRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	ENDED MITIGATION MEASURES	5		ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION																
	Con	Consequence		Likelyhoo d (Probabilit y)		Significance (Degree to						Consequence		e Likelyho d (Probabi y)														
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact		SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Severity Spatial Duration	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology											
Surface water					Γ			The construction footprint must not			Γ				Γ													
							L No Management Required	extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO																		
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15		The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.		ECO	2	2 1 2		1	2	15	L No Management Required											
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO																		
								Construction should preferably take place during the dry season.	March-August	Project management																		
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by hydrocarbons.	g It 3				2														Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
		2	1	3		30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	ECO	3	3 2	1	3	1	24	L No Management Required												
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO																		
Noise Construction activities resulting in							L	There are no noise sensitive									L											
noise disturbance in the surrounding area	2	1	1	1	1	8	No Management Required	areas located close to crossing 3. No mitigation required.	{-}	{-}	2	1	1	1	1	8	No Management Required											
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO																		

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surdequely service the work areas. The contractor is to ensure that the surdequely service that the surdequely service that the surdequely service that the surdequely service thas litter bins, must be provided within the construction camp. Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction         On-going         On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA/ithe Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
								No parking of vehicles or equipment should take place off the access	On-going	ECO							
Indirect Impact: Disturbance of							ML	road or designated parking areas.									L
Vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity								No vehicles or plant should be							1		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 :	3 :	3 3	3 2	2	45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality		-		-							-	-	-	-	-	_		
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock	3	2	2 3	8 2	,	35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	2	1	21	L No Management
emissions and fires as well as dust				, 2	-		Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	0	2	2		-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>				No parking of vehicles or equipment should take					1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water				1	1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO		2					
Noise		· · · · ·		! 	• T		• I	• 	· T	· T	• T	• T	•				
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 5. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			T					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	3	3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality	1	1	1	-	-			1			1	1	-	-	-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	,	1	21	L No Management
piles may have a negative impact on air quality.			. 0	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	Ĵ			2	-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water				1	1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO		2					
Noise		· · · · ·		! 	• T		• 	• 	· T	· T	• T	• T	•				
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 5. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			T					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	3	3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality	1	1	1	-	-			1			1	1	-	-	-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	,	1	21	L No Management
piles may have a negative impact on air quality.			. 0	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	Ĵ			2	-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water				1	1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise		· · · · ·		! 	• T	ł 		•		• 	• 	• T	• T	• T	• T	•	
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 5. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			T					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	3	3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality	1	1	1	-	-			1			1	1	-	-	-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	,	1	21	L No Management
piles may have a negative impact on air quality.			. 0	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	Ĵ			2	-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITIC	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Со	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water				1	1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise		· · · · ·		! 	• T	ł 		•		• I	• 	• T	• T	• T	• T	•	
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 5. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surrounding bush is not being used as an ablution facility. Appropriate disposed of at a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (IWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
			T					No parking of vehicles or equipment should take place off the access	On-going	ECO					Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.		200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	No Management Required
Biodiversity			T					No vehicles or plant should be						Γ	T		
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	8 3	3 3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality			-	-	_						-	-	-		-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	2 3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	~	1	21	L No Management
piles may have a negative impact on air quality.			. 5	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	5				-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITH	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Co	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					ENV	VIRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	ENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Con	seque	ence	•	yhoo d babilit /)	Significance (Degree to					Cor	nsequ	ence	(Pro	elyhoo d babilit y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water											1		1	1			
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise								· · ·			1	ľ	-	r	1	· · · · ·	
Construction activities resulting in noise disturbance in the surrounding area Waste management	2	2	1	2	2	20	L No Management Required	There is no potential for noise disturbance around crossing 9. No mitigation required.	{-}	{-}	2	2	1	2	2	20	L No Management Required
wase management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surcounding bush is not being used as an ablution facility. Appropriate disposed for alt a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
Son and Land Use	Γ	Γ						No parking of vehicles or equipment should take place off the access	On going	ECO	Γ			Ι	Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.	On-going	200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	ML Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	L No Management Required
Biodiversity	Γ							No vehicles or plant should be			Γ	<u> </u>		Γ			
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	8 3	3 3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality			-	-	_						_	_	-		-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	2 3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	~	1	21	L No Management
piles may have a negative impact on air quality.			. 5	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	5				-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

			E	BI	EFORE	ITAL SIGNIFI E MITIGATIO		RECOMMENDED MITH	GATION MEASURES				El	A	FTER I	AL SIGNIFICANCE	-
	Со	nseque	ence		ynood ability						Co	nsequ	ence		ynood ability		
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	ce (Degree to which impact may cause irreplacea ble loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water															-		
Sediment may build up behid the new structures.	3	1	2	2	2	24	L No Management	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	- 3	1	1	1	1	10	L No Management
Structures.							Required	The bridge must be maintained regularly.	Annually	ECO							Required
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							Required
Waste management			1		1	1					1	1	1	1	1		
								Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO							
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced	3	2	1	2	1	18	L No Management	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	3	2	1	1	1	12	L No
during maintenance activities may have negative impacts on the surrounding environment.	5	2		2		10	Required	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	5	2				12	Management Required
								No waste is to be buried or burned on site.	On-going	ECO							
								Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO							
Soil and Land Use		<u> </u>		<u> </u>	1			No parking of vehicles or equipment should take				1	1	T	1		
Indirect Impact: Disturbance of							L	place off the access road or designated parking areas.	On-going	ECO							L
vegetation on the river banks due to the maintainance activities may lead to erosion of the river banks.	3	2	2	1	2	21	No Management Required	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	3	2	2	1	1	14	No Management Required
Biodiversity																	
Disturbace of fauna during sie maintainance activities	3	1	2	1	1	12	L No Management Required	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	3	1	2	1	1	12	L No Management Required

					EN	/IRONMENTAL SIGNIFICANC BEFORE MITIGATION	E	RECOMM	IENDED MITIGATION MEASURE	s						ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION	
POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	Cor	iseque	nce	(Pro	lyhoo d babilit y)	Significance (Degree to					Cor	isequ	ence	(Pro	lyhoo d babili y)		
	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	which impact may cause irreplaceable loss of resources)	SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Severity	Spatial	Duration	Freqquency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
Surface water					1							1	1	T	T		
								The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO							
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	1	2	1	2	15	L No Management Required	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the comencement of construction	ECO							
								Construction should preferably take place during the dry season.	March-August	Project management							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
Spillages from the plant and equipment that will be used during construction activities could result in pollution of the water by	3	2	1	3	2	30	ML Maintain Current Management	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO	3	2	1	3	1	24	L No Management Required
hydrocarbons.								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Noise					·	I		· · · · · · · · · · · · · · · · · · ·		ł 1	+					۰ ۱	
Construction activities resulting in noise disturbance in the surrounding area	2	2	1	2	2	20	L No Management Required	There is potential for noise disturbance around crossing 5. Any noise disturbance will be temporary. No mitigation required.	{}	{-}	2	2	1	2	2	20	L No Management Required
Waste management								All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO							

Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis. Weighbills of the delivery at the landfill site must be kept on file. All construction materials should be stored in designated areas. No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site. No waste is to be buried or burned on site. Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that the surcounding bush is not being used as an ablution facility. Appropriate disposed for alt a registered landfill site. Waybills for all such disposals are to be kept by for review by the ECO.	Weekly during construction On-going On-going On-going On-going On-going On-going On-going On-going	ECO ECO ECO Contractor/ECO ECO ECO	4	2	2	2	1	24	L No Management Required
Impact on unidentified heritage artefacts. Soil and Land Use	3	1	1	2	2	20	L No Management Required	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required
Son and Land Use	Γ	Γ						No parking of vehicles or equipment should take place off the access	On going	ECO	Γ			Ι	Τ		
Indirect Impact: Disturbance of							ML	road or designated parking areas.	On-going	200							L
vegetation on the river banks due to the construction activities may lead to erosion of the river banks.	3	2	2	2	2	28	ML Maintain Current Management	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	3	1	2	2	1	18	L No Management Required
Biodiversity	Γ							No vehicles or plant should be			Γ	<u> </u>		Γ			
								parked within the river course when not actively working on the construction.	On-going	ECO							

Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	2	2	1	2	3	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	2	1	2	2	24	L No Management Required
Disturbace of fauna during sie clearance and construction activities		1	2	3	2	30	ML Maintain Current Management	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							
								Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO							
								No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place ontop of an impermiable surface.	When applicable	ECO							
Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.		2	1	3	3	36	ML Maintain Current Management	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								Construction should preferably take place during the dry season.	Prior to the comencement of construction	ECO							
								Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management							

Disturbance of the river bank vegetation could lead to the spread of of invasive alien vegetation.	3 3	8 3	3 3	2		45	MH Maintain Current Management	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	3	1	36	ML Maintain Current Management
								An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the comencement of construction	ECO								
Air quality			-	-	_						-	-	-		-			
								Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO								
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock 3	3 2	2	2 3	2		35	ML Maintain Current	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	3	2	2	2	~	1	21	L No Management
piles may have a negative impact on air quality.			. 5	2			Management	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO	5				-			Required
								Vehicles and machinary are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constractor/ECO								

## Appendix G: EMP

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# River Crossing 1

DEA Reference Numbers: 14/12/16/3/3/1/1361

**Report Prepared for** 

### **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 1**

DEA Reference Number: 14/12/16/3/3/1/1361

# **Department of Water and Sanitation**

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SRK Project Number 462748 June 2015

#### Compiled by:

#### Peer Reviewed by:

Fiona Evans Environmental Scientist Matt Braune Partner

#### Authors:

Fiona Evans; Manda Hinsch

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEDEA	Department of Economic Development and Environmental Affairs
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

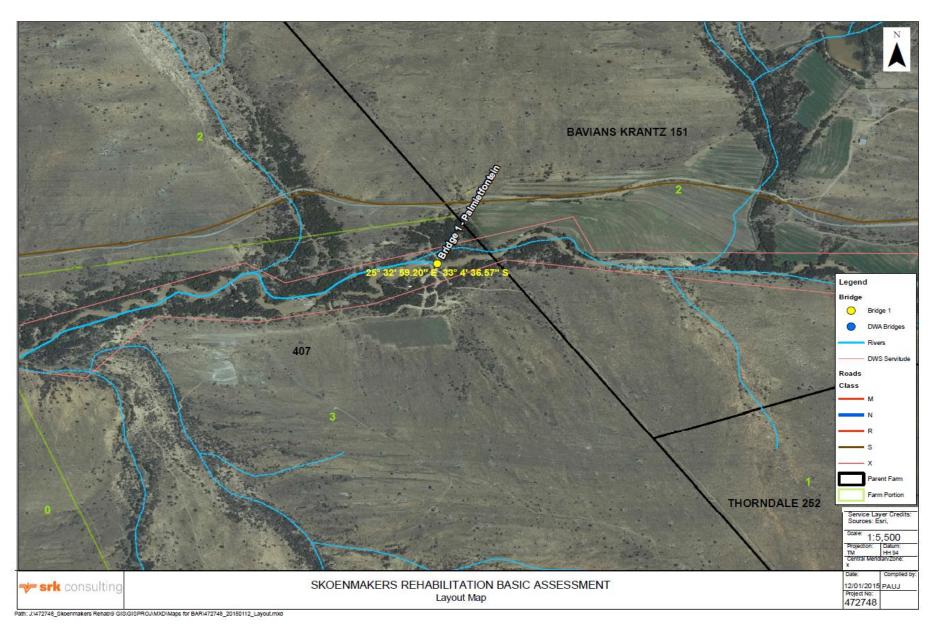
### 1 Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 1, located on portion 3 of the farm Palmietfontien 407 (within the Department of Water and Sanitation servitude), along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 1. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.



### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

The project team collectively possesses the core competence required to prepare the EMPr for the proposed project.

### 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of

the river crossing. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

### 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- $\circ$  The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- Occupational Health and Safety Act (Act No. 85 of 1993).

### 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. This stage of the proposed bridge upgrade has already been completed. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be

appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- o Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - To ensure that general and hazardous waste is handled correctly.
- Heritage
  - Minimise impacts on any cultural or heritage artefacts.
- Soil and Land Use:
  - Minimise contamination of soil.
- Biodiversity
  - Minimise the disturbance of ecologically sensitive areas.
  - Prevent the spread and establishment of alien vegetation.
- Air Quality
  - Minimise deterioration in air quality.

#### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES				
••••••••		Management and mitigation measures	Timeframe	Responsibility		
Surface water	•		•			
Construction activities within the	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO		
river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO		
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO		
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management		
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO		
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO		
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO		
Noise						
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 1. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{- <del>}</del>		
Waste management						
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO		
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO		
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO		
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO		

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)		RECOMMENDED MITIGATION MEASURES				
		Management and mitigation measures	Timeframe	Responsibility		
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO		
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO		
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO		
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO		
Heritage						
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO		
Soil and Land Use						
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO		
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO		
Biodiversity						
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO		
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO		
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO		
clearance and construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO		

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES				
		Management and mitigation measures	Timeframe	Responsibility		
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO		
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO		
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO		
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO		
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO		
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO		
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management		
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO		
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO		
Air quality						
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO		
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO		
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO		
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO		

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
ÌMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÎMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

### Prepared by

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Matt Braune Pr. Eng

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 2**

DEA Reference Numbers: 14/12/16/3/3/1/1362

**Report Prepared for** 

### **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 2**

DEA Reference Number: 14/12/16/3/3/1/1362

# **Department of Water and Sanitation**

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act , Act 107 of 1998

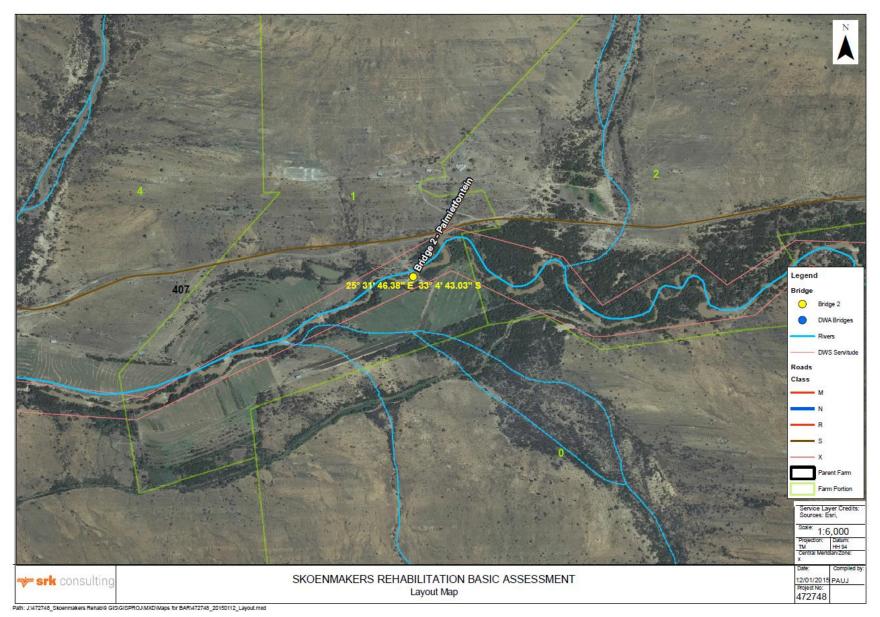
### **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 2, located on portion 1 of the farm Palmietfontien 407 (within the Department of Water and Sanitation servitude), along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 2. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.



### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

### 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

### 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- Occupational Health and Safety Act (Act No. 85 of 1993).

### 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced.. This stage of the proposed bridge upgrade has already been completed. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - o To ensure that general and hazardous waste is handled correctly.

#### Heritage

• Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

• Minimise contamination of soil.

#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### • Air Quality

• Minimise deterioration in air quality.

### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
,		Management and mitigation measures	Timeframe	Responsibility
Surface water				
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 2. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES				
		Management and mitigation measures	Timeframe	Responsibility		
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO		
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO		
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO		
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO		
Heritage				<u> </u>		
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO		
Soil and Land Use						
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO		
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO		
Biodiversity						
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO		
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO		
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO		
construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO		

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO
Air quality				
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
İMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water			•		
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÌMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

#### Prepared by

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Fiona Evans

Environmental scientist

#### **Reviewed by**

#### Matt Braune Pr. Eng

Partner SRK Consulting - Certified Electronic Signature **SRK** CONSULTING 472748/42088/Repot 7115-8821-612-HOWG

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 3**

DEA Reference Numbers: 14/12/16/3/3/1/1363

**Report Prepared for** 

### **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 3**

DEA Reference Number: 14/12/16/3/3/1/1363

# **Department of Water and Sanitation**

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

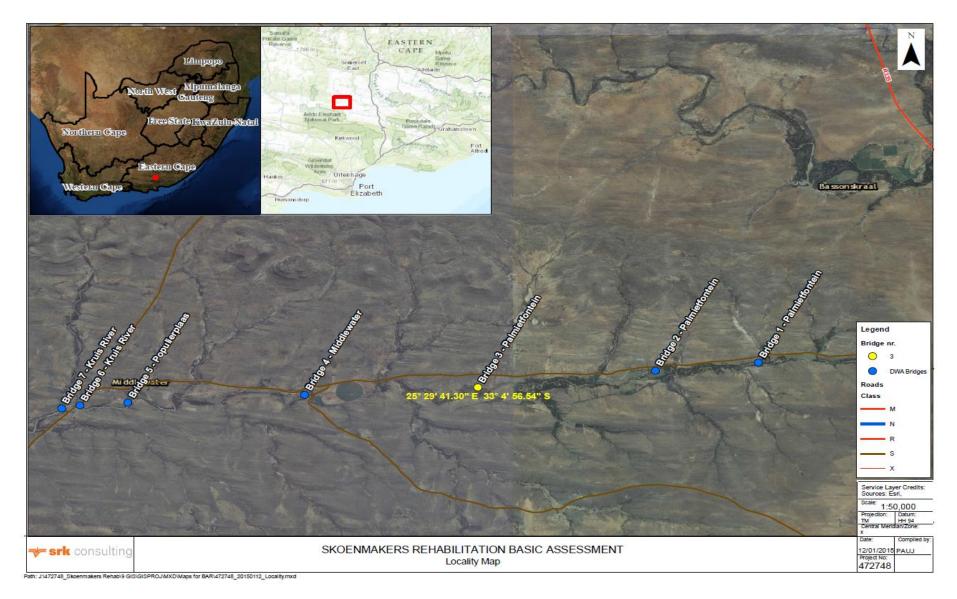
# 1 Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 3, located on portion 1 of the farm Palmietfontien 250 (within the Department of Water and Sanitation servitude), along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures to ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration of Department of Water and Sanitation (DWS) river crossing 3 along the Skoenmakers River in the Eastern Cape. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.





### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

# 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

# 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- Occupational Health and Safety Act (Act No. 85 of 1993).

# 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and

Page 4

operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - o To ensure that general and hazardous waste is handled correctly.

#### Heritage

• Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

• Minimise contamination of soil.

#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### • Air Quality

• Minimise deterioration in air quality.

### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES	RECOMMENDED MITIGATION MEASURES						
		Management and mitigation measures	Timeframe	Responsibility					
Surface water									
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO					
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO					
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO					
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management					
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO					
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO					
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO					
Noise									
Construction activities resulting in noise disturbance in the surrounding area	8.	There are no noise sensitive areas located close to crossing 3. No mitigation required.	{-}	{-}					
Waste management									
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO					
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO					
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO					
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO					

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage					
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use			·		
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO	
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO	
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management	
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO	
Air quality					
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO	
vehicle emissions and fires as well as dust from vehicle movements and	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	
stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO	
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO	

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES					
IMPACT)		Management and mitigation measures	Timeframe	Responsibility			
Surface water							
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor			
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO			
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO			
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO			
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO			
Waste management							
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO			
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO			
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO			
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO			
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO			
Soil and Land Use	Soil and Land Use						
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO			
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO			

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÎMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities		No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

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Fiona Evans

Environmental scientist

### **Reviewed by**

Matt Braune Pr. Eng

Partner

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 4**

DEA Reference Numbers: 14/12/16/3/3/1/1364

**Report Prepared for** 

### **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 4**

DEA Reference Number: 14/12/16/3/3/1/1364

# **Department of Water and Sanitation**

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#### SRK Project Number 472748

#### June 2014 Compiled by:

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act

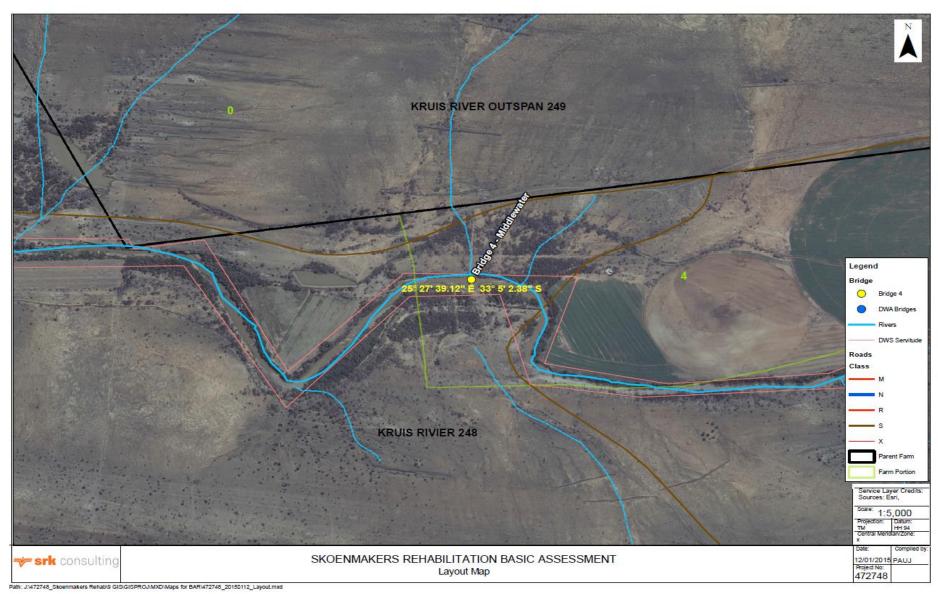
### **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 4, located on portion 4 of the farm Kruis River 248, along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures to ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration of Department of Water and Sanitation (DWS) river crossing 4 along the Skoenmakers River in the Eastern Cape. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.







### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

# 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Crossing 4 will be expanded on with 2 additional culverts and the reinstatement of

the washed away embankment including approach slabs. Please refer to the method statement attached in appendix B for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

### 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- Occupational Health and Safety Act (Act No. 85 of 1993).

## 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be

appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- o Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - To ensure that general and hazardous waste is handled correctly.
- Heritage
  - Minimise impacts on any cultural or heritage artefacts.
- Soil and Land Use:
  - Minimise contamination of soil.
- Biodiversity
  - o Minimise the disturbance of ecologically sensitive areas.
  - Prevent the spread and establishment of alien vegetation.
- Air Quality
  - Minimise deterioration in air quality.

#### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
,		Management and mitigation measures	Timeframe	Responsibility
Surface water			-	
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There are no noise sensitive areas located close to crossing 4. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No l				
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage			<b>I</b>		
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
clearance and construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO	
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO	
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management	
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO	
Air quality					
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO	
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO	
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO	

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
IMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES				
IMPACT)		Management and mitigation measures	Timeframe	Responsibility		
Biodiversity						
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO		
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO		
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO		
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO		

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 5**

DEA Reference Numbers: 14/12/16/3/3/1/1365

**Report Prepared for** 

### **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 5**

DEA Reference Number: 14/12/16/3/3/1/1365

# **Department of Water and Sanitation**

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SRK Project Number 472748 June 2015

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ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

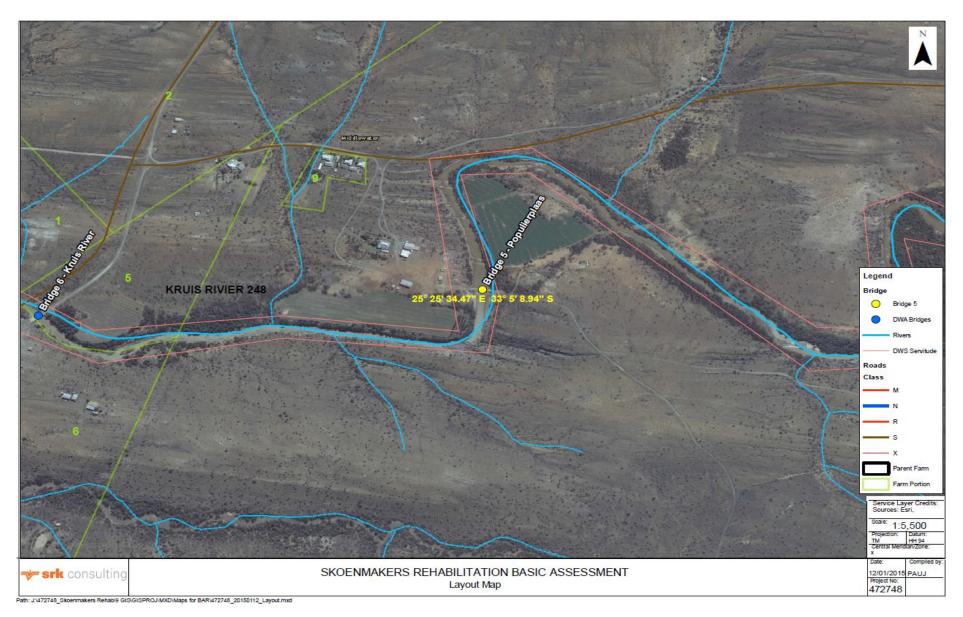
## **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 5, located on portion 4 of the farm Kruis Rivier 248, along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 5. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.



### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians..

# 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

The construction of crossing 5 will be limited to approach slabs and maintenance only. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

# 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- $\circ$   $\;$  The NEMA, (Act No. 107 of 1998) and Regulation 543.
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- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- Occupational Health and Safety Act (Act No. 85 of 1993).

### 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- $\circ$   $\;$  Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - o To ensure that general and hazardous waste is handled correctly.
- Heritage
  - Minimise impacts on any cultural or heritage artefacts.
- Soil and Land Use:
  - Minimise contamination of soil.

#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### Air Quality

• Minimise deterioration in air quality.

### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
,		Management and mitigation measures	Timeframe	Responsibility
Surface water				
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 5. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage				I	
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO
Air quality				
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
İMPACT)		Management and mitigation measures	Timeframe	Responsibility
Surface water			•	
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Waste management				
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO
Soil and Land Use	Soil and Land Use			
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÎMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

#### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

#### Prepared by

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Fiona Evans

Environmental scientist

#### **Reviewed by**

#### Matt Braune Pr. Eng

Partner

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🛹 srk consulting 472748/42088/Report 7115-8621-1617-HOWG This signature has been printed

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 6**

DEA Reference Numbers: 14/12/16/3/3/1/1366

**Report Prepared for** 

# **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 6**

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# **Department of Water and Sanitation**

#### SRK Consulting (South Africa) Pty Ltd.

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SRK Project Number 472748 June 2015

#### Compiled by:

#### Peer Reviewed by:

Fiona Evans Environmental Scientist Matt Braune Partner

#### Authors:

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

## **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 6, located on portion 5 and 6 of the farm Kruis River 248 along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 6. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.





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# 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the causeway. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

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The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

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The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

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An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

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#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### Air Quality

• Minimise deterioration in air quality.

### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

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,		Management and mitigation measures	Timeframe	Responsibility
Surface water				
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will loosen sedimentary	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 6. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
	11.	All construction materials should be stored in designated areas.	On-going	ECO
	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)		RECOMMENDED MITIGATION MEASURES	S		
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage				I	
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
clearance and construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO
Air quality				
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
IMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
due to the maintenance activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	
Biodiversity					

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÍMPACT)		Management and mitigation measures	Timeframe	Responsibility
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

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### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

#### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

#### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

Prepared by

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Fiona Evans

Environmental scientist

#### **Reviewed by**

Matt Braune Pr. Eng

Partner

SRK Consulting - Certified Electronic Signature

TIS Signature Thas been primited digitally. The Autor has given permissi use for this occurrent. The default of the Six Signature Date

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 7**

DEA Reference Numbers: 14/12/16/3/3/1/1367

**Report Prepared for** 

# **Department of Water and Sanitation**



Report Number 472372



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 7**

DEA Reference Number: 14/12/16/3/3/1/1367

# **Department of Water and Sanitation**

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#### SRK Project Number 472372

# June 2014

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# List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

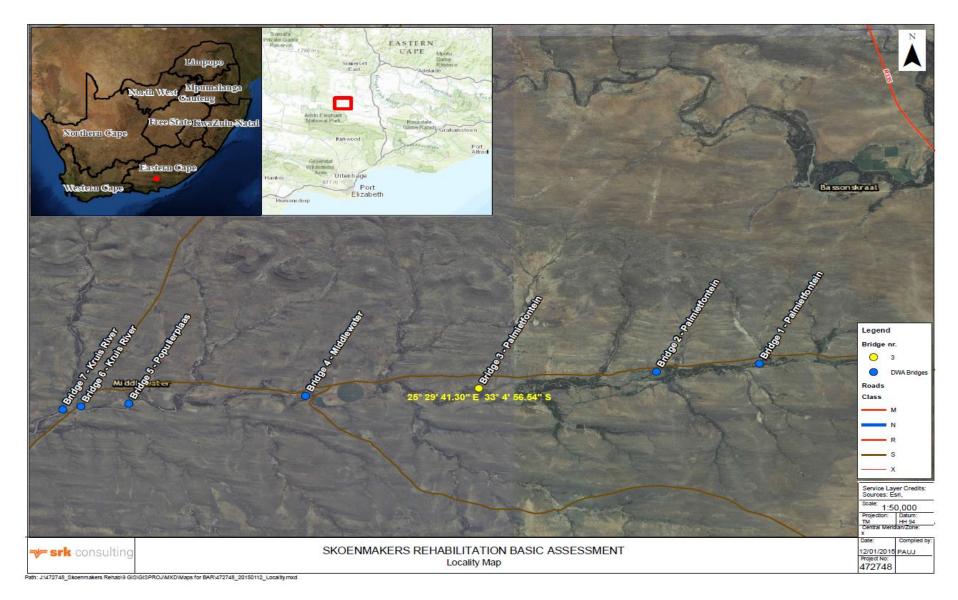
## **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 7, located on portion 8 of the farm Kruis Rivier 248, along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures to ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration of Department of Water and Sanitation (DWS) river crossing 7 along the Skoenmakers River in the Eastern Cape. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.





### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

## 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

## 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- o Occupational Health and Safety Act (Act No. 85 of 1993).

## 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

#### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.

#### Waste Management

- o To ensure that general and hazardous waste is handled correctly.
- Heritage
  - Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

- Minimise contamination of soil.
- Biodiversity
  - Minimise the disturbance of ecologically sensitive areas.
  - Prevent the spread and establishment of alien vegetation.
- Air Quality
  - Minimise deterioration in air quality.

#### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES					
		Management and mitigation measures	Timeframe	Responsibility			
Surface water							
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO			
activities within the river and on the river banks will loosen sedimentary	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO			
material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO			
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management			
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO			
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO			
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO			
Noise							
Construction activities resulting in noise disturbance in the surrounding area	8.	There are no noise sensitive areas located close to crossing 7. No mitigation required.	{-}	{-}			
Waste management							
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO			
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO			
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO			
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO			

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO
Heritage				
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO
Soil and Land Use				
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO
Biodiversity				
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO
clearance and construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO
Air quality				
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
IMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
ÎMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

#### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

#### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

#### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

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Fiona Evans

Environmental scientist

#### **Reviewed by**

Matt Braune Pr. Eng

Partner

SRK Consulting - Certified Electronic Signature

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 8**

DEA Reference Numbers: 14/12/16/3/3/1/1368

**Report Prepared for** 

## **Department of Water and Sanitation**



Report Number 472372



Report Prepared by



June 2015

## Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

## **River Crossing 8**

DEA Reference Number: 14/12/16/3/3/1/1368

## **Department of Water and Sanitation**

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SRK Project Number 472748 June 2015

#### Compiled by:

#### Peer Reviewed by:

Fiona Evans Environmental Scientist Matt Braune Partner

#### Authors:

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## List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

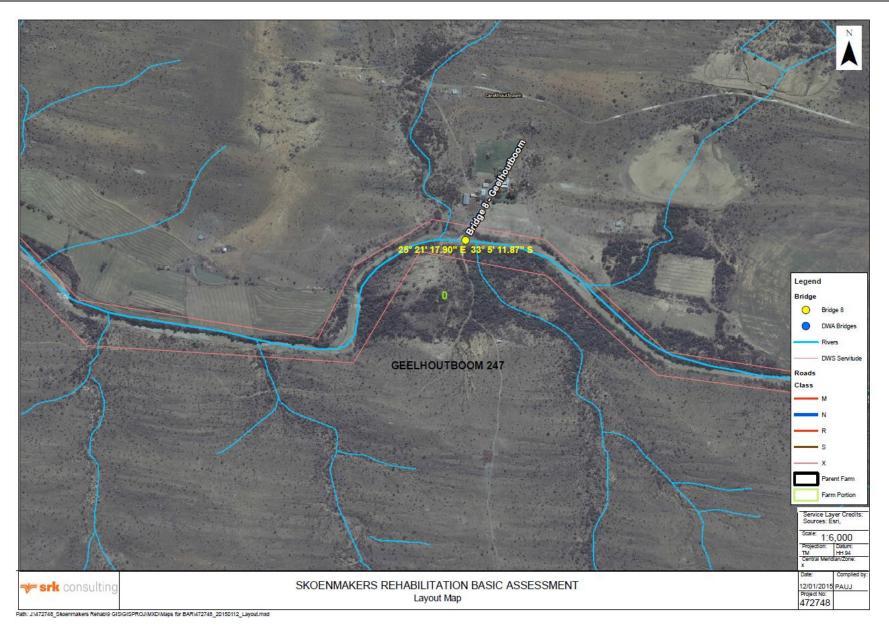
## **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 8, located on portion 0 of the farm Geelhoutboom 247 along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 8. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.



### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

## 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in appendix B for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

## 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- o Occupational Health and Safety Act (Act No. 85 of 1993).

## 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

#### 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - o To ensure that general and hazardous waste is handled correctly.

#### Heritage

• Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

• Minimise contamination of soil.

#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### • Air Quality

• Minimise deterioration in air quality.

#### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES					
,		Management and mitigation measures	Timeframe	Responsibility			
Surface water							
Construction activities within the	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO			
river and on the river banks will loosen sedimentary	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO			
material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO			
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management			
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO			
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO			
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO			
Noise							
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 8. Any potential noise disturbance will be temporary. No mitigation required.	{ <del>-</del> }	{-}			
Waste management							
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO			
construction material etc.) and hazardous waste	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO			
(Oils, hydrocarbon etc.) produced during the	11.	All construction materials should be stored in designated areas.	On-going	ECO			
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO			

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage				<u> </u>	
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
clearance and construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO	
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO	
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management	
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO	
Air quality					
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO	
vehicle emissions and fires as well as dust from vehicle	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	
movements and stock piles may have a negative impact on air	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO	
quality.	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO	

### 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
IMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES		
İMPACT)		Management and mitigation measures	Timeframe	Responsibility
Biodiversity				
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO

### 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

#### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

### 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

#### Prepared by

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Environmental scientist

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# River Crossing 9

DEA Reference Numbers: 14/12/16/3/3/1/1369

**Report Prepared for** 

## **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

## Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

## **River Crossing 9**

DEA Reference Number: 14/12/16/3/3/1/1369

## **Department of Water and Sanitation**

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#### SRK Project Number 472748

#### June 2014 Compiled by:

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## **List of Abbreviations**

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development and Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environment Control Officer
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, Act 107 of 1998

## **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 9, located on portion 4 of the farm Fontein Plaats 246, along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures to ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration of Department of Water and Sanitation (DWS) river crossing 9 along the Skoenmakers River in the Eastern Cape. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.





### **1.1 Environmental Assessment Practitioner (EAP)**

### 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
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Professional Registration	Pr Sci Nat 400164/09
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#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians.

## 2 Description of the proposed activity

### 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in Appendix A for more information.

### 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

## 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- o Occupational Health and Safety Act (Act No. 85 of 1993).

## 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

### 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

### 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

## 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.

#### Waste Management

- o To ensure that general and hazardous waste is handled correctly.
- Heritage
  - Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

- Minimise contamination of soil.
- Biodiversity
  - Minimise the disturbance of ecologically sensitive areas.
  - Prevent the spread and establishment of alien vegetation.
- Air Quality
  - Minimise deterioration in air quality.

#### 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
Surface water				
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There are no noise sensitive areas located close to crossing 9. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter,	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
	11.	All construction materials should be stored in designated areas.	On-going	ECO
construction phase may have negative impacts on the	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO	
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO	
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO	
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO	
Heritage			<b>.</b>		
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	
Soil and Land Use			•		
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO	
Biodiversity					
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	
construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO	
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO	
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO	
	29.	Construction should preferably take place during the dry season.	Prior to the commencement of construction	ECO	
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management	
Disturbance of the river bank vegetation could	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	
lead to the spread of invasive alien vegetation.	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO	
Air quality					
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO	
vehicle emissions and fires as well as dust from vehicle movements and stock piles may have a negative impact on air quality.	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO	
	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO	
	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO	

## 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES			
IMPACT)		Management and mitigation measures	Timeframe	Responsibility	
Surface water					
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.	Prior to construction	Contractor	
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO	
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO	
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO	
Waste management					
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO	
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO	
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO	
may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO	
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO	
Soil and Land Use					
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO	

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES			
		Management and mitigation measures	Timeframe	Responsibility	
Biodiversity					
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO	
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO	
The disturbance of the area surrounding the upgraded river crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO	
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO	

## 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

#### 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

## 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

#### 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- o Identification and avoidance of demarcated no-go areas.

#### Prepared by



Fiona Evans

Environmental scientist

#### **Reviewed by**

Matt Braune Pr. Eng

Partner

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Environmental Management Programme for the Upgrade of Ten River Crossings situated along the Skoenmakers River, Eastern Cape

# **River Crossing 10**

DEA Reference Numbers: 14/12/16/3/3/1/1370

**Report Prepared for** 

# **Department of Water and Sanitation**



Report Number 472748



**Report Prepared by** 



June 2015

# Environmental Management Programme for the Upgrade of Ten River Crossings Situated along the Skoenmakers River, Eastern Cape

# **River Crossing 10**

DEA Reference Number: 14/12/16/3/3/1/1370

# **Department of Water and Sanitation**

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SRK Project Number 472748 June 2015

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	5.8	Environmental awareness plan	
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# List of Abbreviations

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DWS	Department of Water and Sanitation
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I&APs	Interested and Affected Parties
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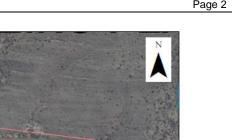
# **1** Introduction

The Skoenmakers River (located in the semi-arid Karoo region of the Eastern Cape) is being used as a transfer route for water transferred by the Orange-Fish-Sundays River Interbasin Transfer Scheme. Development of the Orange-Fish-Sundays River Interbasin Transfer Scheme in the 1970s to early 1980s made access for farmers to their lands hazardous/inaccessible. To overcome inaccessibility to Middlewater and farmlands, 10 River crossings were constructed.

The change in the hydrological regime of this once ephemeral stream to a much bigger perennial river, led to dramatic changes to both the physical structure and riparian vegetation structure of the river system. This continual change has led to the deterioration of the 10 river crossings. River crossing 10, located on portion 6 of the farm Fontein Plaats 246 along the Skoenmakers River is one of ten river crossings that have been damaged that require restoration and/or upgrading (Figure 1-1).

The purpose of the Environmental Management Programme (EMPr) is to provide the mitigation and management measures. These will ensure that social and environmental impacts, risks and liabilities identified during the Environmental Impact Assessment (EIA) process are effectively managed during the construction and operations of the proposed upgrade and restoration river crossing 10. This proposed upgrade will improve the flow regime along the Skoenmakers River and provide safer and better access to the surrounding agricultural community.

The EMPr specifies the mitigation and management measures to which the applicant is committed, should the Environmental Authorisation (EA) be granted, and shows how the applicant will mobilise organisational capacity and resources to implement these measures. The EMPr also shows how management measures aimed at mitigation and enhancement will be scheduled.





# **1.1 Environmental Assessment Practitioner (EAP)**

## 1.1.1 Details of the EAP

Environmental Assessment Practitioner	Manda Hinsch
Company	SRK Consulting (SA) (Pty) Ltd
Qualifications	BSc (Hons), Water Utilisation, University of Pretoria, 1993
Professional Registration	Pr Sci Nat 400164/09
Tel number	011 361 9821
Email address	hinm@srk.co.za
Postal Address	PO Box 35290, Menlo Park, 0102

#### 1.1.2 Expertise of EAP

This EMPr was prepared by Fiona Evans under technical guidance of Manda Hinsch, and reviewed by Matt Braune.

Fiona Evans is an Environmental Consultant with SRK. She has Honours in Ecology, Environment and Conservation obtained from the University of the Witwatersrand, and has two years of project experience in environmental management. Fiona has both personally prepared and given input to various EMPr's. Manda Hinsch is an Associate Partner and Principal Environmental Scientist with SRK and has 34 years of experience in water quality management, waste management, project management and water and environmental legislation. Manda is a fellow member of the Professional Natural Scientists South Africa and FWISA. Matt Braune is a Partner and civil engineer. Matt has over 34 years of experience in the field of water engineering. His expertise include numerous surface water and urban storm water management projects, hydraulic studies regarding the design of flood and erosion control measures and co-ordination of multi-disciplinary project teams of engineers, geologists, environmental scientists and technicians..

# 2 Description of the proposed activity

## 2.1 Construction of the River Crossing

Different design approaches were considered in the process of providing a hydrological sound and practical solution to the existing river crossing. Construction of the crossing is able to take place during the annual shut-down maintenance period of the transfer scheme, during which time the transfer flow will not take place. This is usually over a period of one month in June and July. The construction programme will however stretch over a longer period and the Construction Methodology thus plays a big part in determining the nature and extent of construction that is to take place.

The most viable option is to do construction in 2 phases where berms divert the water through half of the existing structure there by allowing construction of the alternative section. Subsequently water will be diverted back through the new section thus allowing the construction completion of the rest of the river crossing. Please refer to the method statement attached in Appendix A for more information.

## 2.2 Operational phase

During the operational phase an alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).

# 3 Legislation guidelines

The environmental component of the project will comply with the requirements of inter alia, the following Legislation, and the Regulations promulgated thereunder:

- The Constitution of the Republic of South Africa (Act No. 108 of 1996).
- The NEMA, (Act No. 107 of 1998) and Regulation 543.
- The NEM:WA (Act No. 59 of 2008) and Regulation 718.
- National Environmental Management: Air Quality Act (Act No. 39 of 2004).
- National Environmental Management: Biodiversity Act (Act No. 10 of 2008).
- The Environmental Conservation Act (Act No. 73 of 1989).
- The Hazardous Substances Act (Act No. 15 of 1973).
- The National Water Act (Act No. 36 of 1998).
- The National Heritage Resources Act (Act No. 25 of 1999).
- The Health Act (Act No. 61 of 2003).
- o Occupational Health and Safety Act (Act No. 85 of 1993).

# 4 Motivation for the proposed project

The upgrade of the bridges will ensure that the river crossing is safe for all users and improve the ecological state of the Skoenmakers River.

The existing river crossing has been affected by erosion of river banks, siltation and blockages. The restoration and upgrade of the river crossing is a necessary environmental option in order to remediate these environmental problems affecting the existing structure. The upgrade and restoration of the river crossing will improve road accessibility to local farmers for the transportation of agricultural goods and well as provide a safe crossing for livestock. The proposed upgrade will be beneficial for the water course as well as the community members that make use of the river crossing.

# 5 Environmental management programme

The Environmental Management Programme (EMPr) is a requirement of GN R. 543(22) and complies with the requirements of GN R. 543(33). The EMPr contains mitigation and management measures suggested to ameliorate the impacts associated with the proposed activities.

The EMPr is divided into two phases; construction and operation. Planning and design has not been included as part of the EMPr. Planning and design does not apply to this project as existing structures are being replaced. Further, due to the permanent nature of the river crossings, no impacts or mitigation measures for a closure and rehabilitation phase has been assessed. Should the need arise; the EMPr shall be amended to accommodate the need for rehabilitation and closure.

## 5.1 The Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed by the applicant to oversee all environmental aspects relating to the proposed river crossing upgrade. The ECO should be appointed to assess environmental compliance to the EMPr during the construction and operational phases. Two different ECO's maybe appointed for the various phases .i.e. construction and operational phases. The ECO will be responsible for providing feedback on emergent environmental problems associated with the proposed upgrade. In addition the ECO will be responsible for;

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management; and
- Undertaking weekly compliance monitoring during construction.

## 5.2 Environmental objectives

In order to ascertain the relevant level of mitigation and management measures required to ameliorate the impacts associated with proposed river crossing upgrade, the objectives of the EMPr need to be identified. Below is a summary of the environmental objectives that will be addressed in the EMPr.

#### • Surface Water

- Limit the contamination of surface water.
- Noise
  - Minimise noise disturbance.
- Waste Management
  - o To ensure that general and hazardous waste is handled correctly.

#### Heritage

• Minimise impacts on any cultural or heritage artefacts.

#### • Soil and Land Use:

• Minimise contamination of soil.

#### • Biodiversity

- Minimise the disturbance of ecologically sensitive areas.
- Prevent the spread and establishment of alien vegetation.

#### • Air Quality

• Minimise deterioration in air quality.

## 5.3 Construction Phase

This section of the EMPr provides management principles and mitigation measures for the construction phase of the project. Environmental actions, procedures and responsibilities as required during the construction phase are specified. These specifications will form part of the contract documentation and therefore the Contractor will be required to comply with these specifications to the satisfactory of the Project Manager and Environmental Control Officer. Please refer to Table 5-1 for the proposed mitigation measures.

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
••••••••		Management and mitigation measures	Timeframe	Responsibility
Surface water	•			
Construction	1.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
activities within the river and on the river banks will	2.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
loosen sedimentary material resulting in an increase in the current sediment	3.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO
load.	4.	Construction should preferably take place during the dry season.	March-August	Project management
Spillages from the plant and equipment that will	5.	Plastic trays and liners must be used to prevent spillages of hazardous substances such as oil or diesel into the water body.	On-going	ECO
be used during construction activities could	6.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.	On - going	ECO
result in pollution of the water by hydrocarbons.	7.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
Noise				
Construction activities resulting in noise disturbance in the surrounding area	8.	There is potential for noise disturbance around crossing 10. Any potential noise disturbance will be temporary. No mitigation required.	{-}	{-}
Waste management				
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the	9.	All waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO
	10.	The waste must be stockpiled in a designated area within the site camp and transported to the Municipal Landfill Site on a regular basis.	Weekly during construction	ECO
	11.	All construction materials should be stored in designated areas.	On-going	ECO
	12.	No dumping of construction waste of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO

#### Table 5-1: Proposed mitigation measures for the construction phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.	RECOMMENDED MITIGATION MEASURES		
		Management and mitigation measures	Timeframe	Responsibility
surrounding environment.	13.	No waste is to be buried or burned on site.	On-going	ECO
	14.	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO
	15.	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO
	16.	Bins and/or skips must be emptied regularly and waste must be disposed of at a registered landfill site.	On-going	ECO
Heritage				
Impact on unidentified heritage artefacts.	17.	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO
Soil and Land Use				
Indirect Impact: Disturbance of vegetation on the	18.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO
river banks due to the construction activities may lead to erosion of the river banks.	19.	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO
Biodiversity				
Construction activities could result in the	20.	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO
disturbance of the vegetation specifically on the banks of the water course.	21.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO
Disturbance of fauna during site clearance and	22.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO
construction activities	23.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	No.			
		Management and mitigation measures	Timeframe	Responsibility
	24.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO
	25.	No refuelling of vehicles or machinery will be allowed on the construction site. All refuelling will be done in the site camp or another designated area off site.		ECO
Construction activities and	26.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO
spillages will negatively impact on aquatic biota	27.	The construction footprint must not extend further than is necessary, preferably not more than 30m up and downstream of the positioning of the bridge structure.	On-going	ECO
present in the Skoenmakers River.	28.	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO
	29.	Construction should preferably take place during the dry season.		ECO
	30.	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	March-August	Project management
Disturbance of the river bank vegetation could lead to the spread of invasive alien vegetation.	31.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO
	32.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken monthly during the construction phase and yearly during the operational phase.	Prior to the commencement of construction	ECO
Air quality				
Air pollution from	33.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO
vehicle emissions and fires as well as dust from vehicle movements and stock piles may have a negative impact on air quality.	34.	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO
	35.	Fires by construction or project personnel are strictly prohibited.	When Applicable	ECO
	36.	Vehicles and machinery are to be kept in good working order and meet the manufacturer's specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Contractor/ECO

## 5.4 Operational phase

This section of the EMPr provides management principles for the operational phase of the project. Environmental actions, procedures and responsibilities as required from the DWS during the operational phase are specified. Table 5-2 provides the management measures to be implemented during the Operational phase of the general domestic waste disposal facility.

#### Table 5-2: Proposed mitigation measures for the operational phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES				
İMPACT)		Management and mitigation measures	Timeframe	Responsibility		
Surface water			•			
Sediment may build up behind	1.	The design of the structure makes provision for limiting sediment build up.		Contractor		
the new structures.	2.	The bridge must be maintained regularly.	Annually	ECO		
Spillages from the plant and	3.	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO		
equipment that will be used during maintenance activities could result in pollution of the	4.	No refuelling of vehicles or machinery will be allowed on the maintenance site. All refuelling will be done in a designated area off site.	On - going	ECO		
water by hydrocarbons.	5.	No large scale mixing of cement will take place on site. Where possible Ready Mix cement should be used for the cast <i>in-situ</i> structures. Any mixing of cement must take place on top of an impermeable surface.	When applicable	ECO		
Waste management						
	6.	Portable toilet facilities must be provided for maintenance workers and serviced and maintained as and when necessary by a registered waste disposal company.	When applicable during maintenance	ECO		
Contamination of the area with general waste (litter,	7.	All waste produced during maintenance should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Upon completion of site maintenance	ECO		
construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during maintenance activities	8.	No dumping of waste and excess construction materials generated during maintenance will be allowed in the bush surrounding the maintenance site.	During maintenance	ECO		
during maintenance activities may have negative impacts on the surrounding environment.	9.	No waste is to be buried or burned on site.	On-going	ECO		
	10.	Appropriate disposal facilities, such as litter bins, must be provided during maintenance activities.	During Maintenance	ECO		
Soil and Land Use						
Indirect Impact: Disturbance of vegetation on the river banks due to the maintenance	11.	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO		
activities may lead to erosion of the river banks.	12.	All work must take place within the maintenance footprint area must be rehabilitated once the maintenance has been completed.	Upon completion of site maintenance	ECO		

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE	No.	RECOMMENDED MITIGATION MEASURES				
ÎMPACT)		Management and mitigation measures	Timeframe	Responsibility		
Biodiversity						
Disturbance of fauna during	13.	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	During Maintenance	ECO		
site maintenance activities	14.	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO		
The disturbance of the area surrounding the upgraded rive crossing could lead to the	15.	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site maintenance	ECO		
spread of invasive alien vegetation. Particularly after flood events.	16.	An alien eradication and management program must be developed. Eradication and monitoring must be undertaken at the start of the wet season (August) and the end of the wet season (May) as well as after major flooding events (when the 1:100 flood level is reached).	Prior to the completion of construction	ECO		

## 5.5 Emergency procedures

Emergency procedures for the management of construction site during all phases of operation must be in line with the relevant Health and Safety policies of the Department of Water and Sanitation.

## 5.6 Organisation structure

The daily management of the construction site will be the responsibility of the Contractor. The Project Manager will also have to appoint an Environmental Control Officer (ECO) who will be responsible for the correct implementation of the conditions of the Environmental Authorisation and the mitigation and management measures contained in the approved EMPr.

## 5.7 Monitoring, reporting and auditing

An alien eradication and management monitoring program will have to be compiled and implemented during construction and operation:

Site inspections must be conducted on a weekly basis during construction and annually during operation to ensure continued compliance with the conditions of the environmental authorisation and the measures contained in the approved EMPR.

## 5.8 Environmental awareness plan

On-site training must be provided for all contractors and personnel working on. No personnel may be allowed onto site without having been instructed on the requirements of the approved EMPr and the Environmental Authorization conditions.

The training must deal specifically with triggers that would require the implementation of mitigation measures contained in the EMPr. These include, but are not limited to:

- o Identification of TOPS listed species, both fauna and flora
- o Identification of potential heritage resources
- $\circ$   $\;$  Identification and avoidance of demarcated no-go areas.

#### Prepared by

SRK Consulting - Certified Electronic Signature 🛹 srk consultin 472748/42087/Report 169-8068-1925-EVAS ted digitally. The Autornas given permission foris is signature has been SRK Signature Databas se for this document. The details are stored in the

Fiona Evans

Environmental scientist

#### **Reviewed by**

Matt Braune Pr. Eng

Partner

SRK Consulting - Certified Electronic Signature



All data used as source mat**erial** plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

# Appendix H: Details of EAP and expertise

## Resume Manda Hinsch

Principle Scientist / Associate Partner

	Profession Education Registrations/ Affiliations	Water Scientist BSc (Hons), Water Utilisation, University of Pretoria, 1993 BSc, Biochemistry & Chemistry, University of Johannesburg (former RAU), 1981 Pr Sci Nat (South Africa), 400164/09 Member, FWISA
Specialisation	water and environmental legis	vater allocation, waste management, project management, slation, policy development; policy implementation, water resource management
Expertise	<ul> <li>expertise includes:</li> <li>thorough and in depth un National Water Act (199)</li> <li>water reform strategies a water allocation reform (</li> <li>implementation of WAR</li> <li>development of awarene Reform;</li> <li>evaluation of impacts an Authorisations and the n mining water and waste</li> <li>implementation and polition on water quality manage informal areas;</li> <li>waste management strating management;</li> <li>institutional development Management Agency in source pollution;</li> <li>member of various steer System, 2010 Water Quite extensive experience in development and impler investigation for nuclear</li> <li>surface water specialist</li> <li>annual water monitoring</li> <li>steering and guiding of r Research Commission;</li> <li>extensive international e Europe, the USA and Ch</li> </ul>	cy development in water and related fields particular focus ement and management of water quality in urban and tegies for the then Pretoria Council and project t in the water sector- establishment of Catchment the Crocodile West Water Management Area and diffuse ing Committees, e.g Development of Classification ality Standards etc. And basic environmental assessments; the environmental and water legislation both in policy nentation and environmental ( hydrology and water quality)
Employment Jan 2008 - present Aug 1993 – Dec 2007 1991 - 1993 1988 - 1991 1983 - 1988 1981 - 1983	Bergman & Partners Inc. Co Waste Tech, Hazardous Wa	s, Deputy Director: Water Quality Management, Pretoria onsulting Engineers, Senior Consultant< Johannesburg aste Consultant, Germiston logy, (Mintek), Research Assistant, Johannesburg
Publications		ontribution to professional reports, and study tours
Languages	English – read, write, speak Afrikaans – read, write, spea	

Afrikaans - read, write, speak (Excellent) German - read, write, speak (Fair)

# Manda Hinsch

#### Principle Scientist / Associate Partner

#### **Publications**

- 1. Presented paper at the AMCOW meeting in Ethiopia in preparation for the UN Sustainable Development Meeting in New York 2004
- 2. Presented a paper at the United Nations Habitat meeting in Weihai in preparation for the African Ministers Committee of Water (AMCOW) meeting in Ethiopia in December 2003
- 3. Hinsch, M. and Quibell G Managing the water quality effects of Settlements, Department of Water Affairs and Forestry
- 4. R.G. M. Heath; Hinsch M, and Pulles. Unique implication of policies and solutions to diffuse pollution management in a developing country South Africa
- 5. NATO Meeting in Canada regarding the rehabilitation of contaminated land by Industries.
- 6. Various papers were read at local conferences on topics relating to Catchment Management, Water Quality Management and remediation of contaminated land
- 7. Harmonising land use management with catchment management.
- 8. The Bigger Picture: Managing water quality impacts in an urban context

Location:

# Manda Hinsch

#### Principle Scientist / Associate Partner

#### Key Experience:

#### Integrated water- and environmental management

Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project: Location: Project duration & year: Client: South Africa, Gauteng Apr 2013 – Mar 2014 African Exploration Mining & Finance Corp Vlak Ph3 Vlakfontein Phase 3 EMP Principal Scientist R2 000 000.00

Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:

Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:

Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:

Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:

Location: Project duration & year: Client: Name of Project: Project Description:

Job Title and Duties: Value of Project: Principal Scientist R2 000 000.00 South Africa Mar 2013 – Mar 2014 Optimum Coal Services (Pty) Ltd Iwula Kwagga Environmental Authorisation & Iwula Kwagga Principal Scientist

South Africa, North-West Sep 2013 – Nov 2013 Bafokeng Rasimone Platinum Mine JV Styldrift 2013 Audit Styldrift 2013 WUL & EMP Audit Principal Scientist R1 000 000.00

South Africa, Gauteng Sep 2013 – Nov 2013 City of Tshwane Metropolitan Municipality Tshwane ERM Tshwane ERM Services Principal Scientist R1 000 000.00

Jun 2013 – Nov 2013 Nyumba Akiba S.A.R.L Nyumba Water Nyumba Ahiba Water Principal Scientist R1 000 000.00

DRC

R1 800 000.00

Phalaborwa
Ongoing , 2011
Foskor Mining Division
Water Use Licence Audit and IWWMP Update
Water Use licence audit on the mine in terms of compliance with all licensing conditions. Updating of the IWWMP
Project Auditor
R300K

# Manda Hinsch Principle Scientist / Associate Partner

# Key Experience: Integrated water- and environmental management

Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties:	Thyspunt, Bantamsklip and Duynefontein 2009 - 2011 Eskom Holdings Soc Limited EIA for the Nuclear 1 Project (Hydrology) The Environmental Impact Assessment (EIA) relates to the construction and operation of a Conventional Nuclear Power Station and associated infrastructure in the Eastern or Western Cape areas. The Sites, which will were investigated during this EIA, have been identified based on previous site investigations undertaken since the 1980s. The Environmental Impact Report (EIR) comprises the baseline information and an impact assessment for the following Sites: Duynefontein; Bantamsklip; and Thyspunt. Responsible for the water quality component and impact assessment
Value of Project:	R1500K
Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:	Nkomati and Mputo Basins 22 months, 2009- 2011 PRIMA, TPTC Progressive Realisation of the IncuMaputo Agreement, Development of a Disaster management Plan for the catchments Development of a water disaster management plan for the two catchments. The objective of the assignment was to prepare sets of comprehensive disaster preparedness, implementation and management plans, protocols and decision support systems for each of the identified basins to mitigate the possible effects of floods, droughts and major pollution accidents. Leading Consultant in the team for the Water Quality Component R5 800K
Location: Project duration & year: Client: Name of Project: Project Description: Job Title and Duties: Value of Project:	Mogalakwena Municipality 18 months, Jan 2008 – July 2009 Mogalakwena Municipality Environmental Authorisation for the pipeline for bulk water supply. Obtaining an environmental authorisation for the bulk water supply pipeline from Flag Bosheillo dam to the municipality from the relevant authority. Specialist studies for the project included biodiversity and aquatic evaluations which were performed by specialists in this field Project Manager and technical advisor R600K

# Appendix I: Specialist declaration of interest



# environmental affairs

Department: Environmental Affairs **REPUBLIC OF SOUTH AFRICA** 

#### DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

hinm@srk.co.za

File Reference Number: NEAS Reference Number: Date Received:

(For official use only)	
12/12/20/	
DEAT/EIA/	

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010

#### **PROJECT TITLE**

E-mail:

Basic assessment for the upgrade of 10 river crossings along the Skoenmakers River in the Eastern Cape

Specialist:	SCIENTIFIC AQUATIC SERVICES CC			
Contact person:	STEPHEN VAN STADEN			
Postal address:	P O BOX 751779, GARDENVIEW			
Postal code:	2047	Cell:	083 415 2356	
Telephone:	011 616 7893	Fax:	086 724 3132	
E-mail:	stephen@sasenvironmental.co.za			
Professional	PRI.SCI. NAT. REG NO: 400134/05			
affiliation(s) (if any)				
Project Consultant:	SRK Consulting (Pty) Ltd			
Contact person:	Manda Hinsch			
Postal address:	291 Sprite Avenue, Faerie Glen			
Postal code:	0081	Cell:	0828089938	
Telephone:	0123619821	Fax:		

4.2 The specialist appointed in terms of the Regulations\_

#### I, STEPHEN VAN STADEN, declare that -

General declaration:

I act as the independent specialist in this application

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;

I will comply with the Act, regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

#### SCIENTIFIC AQUATIC SERVICES CC

Name of company (if applicable):

30 MARCH 2015

Date: