



Water Use License Application: Technical Report

Parsons Power Park Solar PV Plant, Greenbushes,
Gqeberha, Eastern Cape

DWS Reference: WU30920

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Applicant:

Type	Private Company
Name	Parsons Power Park (Pty) Ltd
Company Registration number	2020/254265/07
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Applicant contact person	Mr Ezio Verneti

Person submitting application:**Full Name:** Roy de Kock**Title / Position:** Ecologist**Qualification(s):** BSc (Hons) Geology; MSc Botany; Candidate PhD Botany**Experience (years/ months):** 16 years**Registration(s):** SACNASP (400216/16)**Expertise:**

Roy has over 16 years' experience in environmental consulting and specialist services in the Eastern Cape. Various projects throughout South Africa as well as Africa at large has also been undertaken. Projects include baseline studies, impact assessments and compliance auditing for various large-scale projects including numerous wind farms, roads (National and Provincial), and infrastructure development projects. BlueLeaf also offers a wide range of in-house specialties that aligns to the NEMA Regulations and its associated Specialist Themed Protocols including but not limited to Animal and Plant Species, Terrestrial and Aquatic Biodiversity, Agricultural and Soils and the Visual/Landscape environment. Other specialist fields include Plant and Animal Search and Rescue, Fauna and Flora permit applications, Venomous Animals Training Workshops, Water Use Licencing and General Authorisation Applications.

Roy holds a BSc Honours in Geology (2008) and an MSc in Botany (2010) from the Nelson Mandela University in Port Elizabeth. He is currently busy with his PhD (Doctorate degree) in Botany and Soil Science.

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1.1. Project description

BlueLeaf Environmental (Pty) Ltd has been appointed by Silikhaya Properties (Pty) Ltd (the project site owner) and by Parson Power Park (Pty) Ltd (the solar PV facility owner), to conduct a Water Use Licence Application for the proposed construction and operational activities of constructing a new Solar PV facility in Gqeberha in the Eastern Cape Province. The proposed activities include the construction of the following:

- Solar power generation array,
- Underground power cabling (connecting the project substation to the municipal substation),
- Access road (extension of the existing Lategan Road),
- Operations and Maintenance (O&M) and Security building,
- Project substation,
- Connection to the municipal sewer pipeline,
- Connection to the municipal bulk water supply pipeline,

This report is compiled in accordance with the National Water Act (Act No. 36 of 1998) and the Regulations regarding the procedural requirements for water use licence applications and appeals of 2017. This report was compiled to inform the Department of Water and Sanitation's (DWS) decision regarding whether to authorise new water use activities related to this project.



Figure 1.1 Location map of the new Parsons Power Park in Greenbushes, Gqeberha in the Eastern Cape.

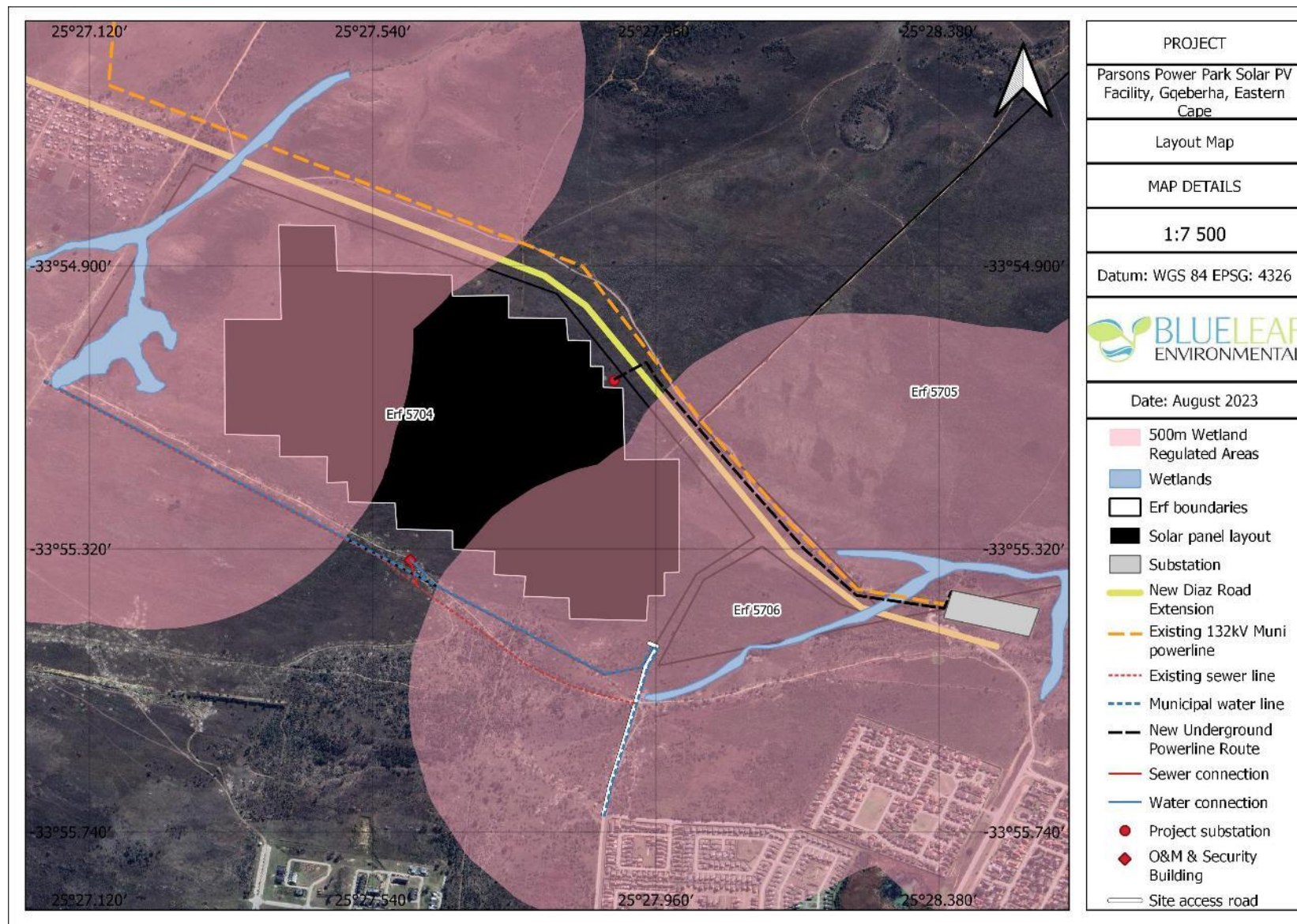


Figure 1.2 Layout map of the Loerie Sewer Pumpstation and Rising Main, Kouga Local Municipality, Eastern Cape.

1.2. Legal framework

The protection of water resources is essential for sustainable development and therefore many policies and plans have been developed, and legislation promulgated, to protect these sensitive ecosystems. The proposed project must abide by the relevant legislative requirements. The table below shows an outline of the environmental legislation relevant to the project.

Legislation	Relevance to the project
South African Constitution (Act no 108 of 1996)	The constitution includes the right to have the environment protected
National Environmental Management Act (No 107 of 1998; NEMA)	Outlines principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state.
The National Water Act (No 36 of 1998; NWA)	Chapter 4 of the NWA addresses the use of water and stipulates the various types of licensed and unlicensed entitlements to the use of water. The water uses under Section 21 (NWA) that are associated with the applicant's proposed activities are section 21 (c) and (i).
General Authorisations (GAs)	Any uses of water which do not meet the requirements of Schedule 1 or the GAs, require a license which should be obtained from the DWS. This application does not qualify for a GA due to the activities not complying with all the requirements of a GA as set out in the Government Notices applicable to Section 21(c) and (i) water uses.

1.3. Location of the water uses

The Parsons Power Park Solar PV Facility are located on Erf 5704, Parsonsvlei in Greenbushes, Gqeberha, Eastern Cape. The geographic co-ordinates of the central point for the Parson power Park Solar PV facility are listed below:

Direction	Co-ordinates
Centre Point	33°55'7.26"S; 25°27'37.00"E

The Applicant is also the landowner of the property.

The proposed development straddles the M10D Chatty and M20A Papkuils (Papenkuils) catchments associated with the tributaries of these systems within the South Eastern Coastal Belt ecoregion.

The observed wetlands within the study area and in particular the proposed development footprint include several areas of channelled and unchanneled valley bottom wetlands associated with seepage areas. Several depressions/pans are located well beyond the site and will be avoided by any development activities associated with this project. Overall, these valley bottom wetlands within the study area are largely in a transformed state, as flows, and vegetation growth have been altered. Current and existing impacts are in the form of stormwater and sewage inputs from informal development, as well as existing tracks and grazing by livestock.

In terms of the National Freshwater Ecosystems Priority Areas (NFEPA) assessment, all the riverine systems associated with the study area were assigned a condition score of E (Condition not acceptable) & Z (unknown, but estimated to be transformed) (Nel *et al.* 2011), indicating that they are no longer intact. However, at a fine scale level the study area wetlands still provide an ecological function with regards to bird/wader habitats, impeding/slow surface water flows into downstream areas and to provide water quality. The latter pertains the absorption of nutrients, but with the lack of dominant wetland vegetation within the systems it is anticipated that water quality improvements are not a significant function within these systems.

The National Freshwater Ecosystems Priority Areas (NFEPA) (Nel *et al.*, 2011), also earmarked sub-quaternaries, based either on the presence of important biota (e.g., rare, or endemic fish species) or conversely the degree of riverine degradation, i.e., the greater the catchment degradation the lower the priority to conserve the catchment. The important catchments areas are then classified as Freshwater Ecosystems Priority Areas (FEPAs).

The Present Ecological State scores (PES) for the study area systems were rated as follows:

Wetland #	HGM type	Impacts	Present Ecological State (PES)	Ecological Importance and Sensitivity (EIS)
1 (West of the site)	Channeled Valley Bottom	Grazing, alien invasive trees, alien grass cover and poor water quality, with altered / increase in baseflow that has increase channel incision	D	Moderate
2 (East of the site)	Channeled Valley Bottom	Grazing, alien invasive trees, alien grass cover and poor water quality, impoundments, and channel incision. Solid waste (building rubble) also occurs	C/D	Moderate

1.4. Method statements

As mentioned earlier, the following activities will occur within the 500 m wetland regulated areas of the site:

- Construction of a new underground power cable.** This cable is to be approximately 1.25 km in length starting at the project substation in the northern section of the site and ending at the Rowallan Park municipal substation for the purpose of connecting the solar generation facility to the Nelson Mandela Bay municipal power grid. The project's substation will be located outside the 500 m wetland regulated area (Figure 1.2 above). The power cable will be buried underground through an approximately 1 m deep trench to be excavated in the existing municipal overhead powerline inspection track that will be then backfilled and compacted. The underground power cable will transect the wetland system to the east of the site through the existing gravel track to connect to the existing municipal substation.



2. **Construction of solar panels.** The solar panels on Erf 5704 will cover a total area of approximately 63 ha. Of these only approximately 36 ha will be located within the 500 m wetland regulated areas. No solar panel will be located within a wetland system. These solar panels will be mounted on steel structures that will lift them off the ground.



3. **New access road.** As per the municipal subdivision and rezoning approval of the project site, the existing Lategan drive will be extended from Bridgemean, an urban suburb to the south of the site, along a municipal approved road reserve to the southeast section of Erf 5704. This will form the main entrance to the site during both construction and operational phases. The road will remain a gravel road and will include the construction of a concrete causeway to reduce the risk of impact to the eastern wetland system which is located nearby (approx. 100m) from a section of the new road.

All other activities associated with the construction and operations of the new Parsons Power Park Solar PV Facility will be located outside the 500 m wetland regulated areas and will therefore not be included into the WUL application. This includes the sewer and bulk water connections to municipal systems, O&M & Security building.

1.5. Stormwater Management Plan

A detailed SWMP has been developed for the site and will be included into Appendix A of this report.

1.6. Water Used applied for

The application includes the following water uses:

Water use(s) activities	Purpose	Capacity/ Volume (m³, tonnes and/or m³/annum)/ dimension	Property Description	Co-ordinates
Section 21(a)				
None				
Section 21(b)				
None				
Section 21 c & i				
Impeding or diverting the flow of water in a watercourse through the construction of an underground power cable, solar panels, and a new access road.	Part of the construction of a new Solar PV Plant	Road: 500 m long	Erf 5704, Parsonsvlei	Road: 33°55'35.46"S 25°27'55.65"E
Altering the bed, banks, course, or characteristics of a watercourse through the construction of an underground power cable, solar panels, and a new access road.		Underground cable: 1.2 km long Solar panels: 32 ha		Underground cable: 33°55'24.35"S 25°28'19.73"E Solar panels: 33°55'9.27"S 25°27'41.85"E
Section 21(g)				
None				
Section 21(f)				
None				

Water use(s) activities	Purpose	Capacity/ Volume (m ³ , tonnes and/or m ³ /annum)/ dimension	Property Description	Co-ordinates
Section 21(h)				
None				
Section 21(j)				
None				

1.7. Water demand and water supply

Water demand

Potable water will be needed at the O&M and Security building located in the south of the site (Figure 1.2). Water will also be needed during periodic cleaning of the solar panels.

Water supply

All water will be sourced from a metered municipal connection from a line running along the southern border of Erf 5704 via an underground pipe connection. This connection will be located outside the 500 wetland regulated areas.

1.8. Sewage management

The O&M and Security building will connect to an existing sewer line running near the southern boundary of Erf 5704. The building will connect to this sewer line via an underground pipe connection as per approved municipal specifications and regulations. This connection will be located outside the 500 wetland regulated areas.

1.9. Impacts and mitigation measures

The following impacts and mitigations were identified and assessed by an aquatic specialist (Dr Brian Colloty; EnviroSci) during the EIA process. Below is a summary of his impacts identified:

Issues	Impacts
Fragmentation (physical loss of ecological connectivity and or CBA corridors)	Loss of Very High Sensitivity systems, namely the valley bottom wetlands through physical disturbance although the proposed layout will avoid any of these systems
Changes in numbers and density of species	
Faunal and vegetation communities inhabiting the site	
Erosion control	Increase in sedimentation and erosion due to runoff from development area Impact
Hydrological regime or Hydroperiod changes (Quantity changes such as abstraction or diversion)	Changes to the hydrological regime with regard surface water run-off patterns and stormwater management.
Streamflow regulation	

Issues	Impacts
Water quality changes (increase in sediment, organic loads, chemicals or eutrophication)	Risks on the aquatic environment due to water quality impacts Impact

The following mitigations were proposed:

- Vegetation clearing should occur in a phased manner in accordance with the construction programme to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment, and suitable dust and erosion control mitigation measures should be included in the EMP to mitigate.
- All construction materials including fuels and oil should be stored in demarcated areas that are contained within berms / bunds to avoid spread of any contamination / leaks outside of any delineated waterbodies and their buffers. Washing and cleaning of equipment should also be done in berms or bunds, to trap any cement / hazardous substances and prevent excessive soil erosion. Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any channel.
- It is also advised that an Environmental Control Officer (ECO), with a good understanding of the local flora be appointed during the construction phase. The ECO should be able to make clear recommendations with regards to the re-vegetation of the newly completed / disturbed areas along aquatic features, using selected species detailed in this report.
- All alien plant re-growth must be monitored, and should these alien plants reoccur, these plants should be re-eradicated. The scale of the operation does however not warrant the use of a Landscape Architect and / or Landscape Contractor.
- It is further recommended that a comprehensive rehabilitation plan be implemented from the project onset, for any work carries out within watercourse areas (including buffers) to ensure a net benefit to the aquatic environment. This should form part of the suggested walk down as part of the final EMP preparation preconstruction.

1.10. Section 27 (1)

The requirements contained in Section 27(1) of the National Water Act, 1998 (Act 36 of 1998) have been considered and are discussed further below.

Existing lawful water uses

Existing lawful water use is dealt with in this sub paragraph of section 27(1) and in sub paragraph (f), which refers to *“the likely effect the water use to be authorized on the resource and on the other water users”*. The reasoning for this consideration is that it is necessary to know the amount of water currently being used in the catchment and by water users and the applicant. The result is the ability to determine the amount of remaining available water and therefore the amount available for allocation.

There are no known existing lawful water uses on the proposed property. The amount of water currently being used within this catchment is also unknown. There are dams upstream and irrigation

within the catchment that would probably require authorisation by the DWS. Therefore, DWS is responsible for determining the amount available for allocation.

However, the activities associated with this application will not affect the amount of water available to users downstream since no water is being extracted. All water will be sourced from a metered municipal connection.

The Section 21 (c) and (i) Water Uses applied for do not involve water abstraction and will not have a detrimental impact after mitigation is implemented.

The need to redress the result of past racial and gender discrimination

The allocation of water in the past, under the old act, discriminated against people from former homelands. To rectify past imbalances, it is necessary to consider the needs of all stakeholders in the catchment to ensure equity of allocation policy. According to Perkins (1998) *“the human reserve must be met first, followed by the ecological reserve. Thereafter, other demands should be addressed in an equitable manner, with a view to addressing past imbalances”*. Therefore, it is necessary to accommodate previously disadvantaged users and promote projects which actively reverse race and gender discrimination and empower and uplift historically disadvantaged individuals.

The water uses are applied for by the Parsons Power Park will allow the Solar PV facility to operate legally. The facility will provide permanent jobs to several previously disadvantaged individuals and facilitate the transfer of skills. The jobs created by the facility will contribute to reducing poverty in the affected households. The skills labourers develop through working on the site will make them more marketable in future and will potentially enable them to secure future jobs in the industry. The development will not discriminate against any race or gender group.

Efficient and beneficial use of water in the public interest

Water needs to be allocated equitably and used beneficially for the public interest, while protecting the environment. As public trustee of the nation’s water resources, the National Government, acting through the Minister, is ultimately responsible for this. Section 152 and 153 of the constitution of the Republic of South Africa puts forward the objective that local government has an obligation to provide sustainable basic services to all citizens wherever they reside and to give priority to such basic needs of communities.

The application will not affect the amount of water available to users downstream since no water will be extracted from any river or stream.

The socio-economic impact of the water use

This section considers the socio-economic impact of water use to be authorised or failure to authorise of the water use. It is important to compare the two impacts to balance the benefits of allocating the licence with the advantages.

The application for a water use licence is applied with relation to the operation of the Parsons Power Park Solar PV Facility. The socio-economic impact of the water uses to be authorised will result in

the improved job security for several employed individuals. The Project also supports the local economy by providing electricity to the community.

Any catchment management strategy applicable to the relevant water resource

None. There is no catchment management strategy to our knowledge. The ephemeral stream where the underground power cable will transect is not a major system but does feed into the Papenkuils River. It is assumed that the DWS official responsible for the area will know whether the water resources form part of any catchment management strategy.

The likely effect of the water use to be authorised on the water resource and on other water users

It is necessary to consider the impact of the water use on the quantity and quality of the water resource being assessed. Again, this must be understood in the context of the equitable treatment of existing and potential water users in the catchment.

The municipal water that is proposed to be used for dust suppression and panel cleaning is not going to affect any water resource or other water users. Regarding the Section 21 (c) and (i) water uses, involving the construction of the new access road, new solar panels, and underground power cable will not be detrimental upon any local watercourse. If the mitigation measures are adopted during construction and operational phases, the activity will not change the PES and ecological processes will be maintained.

The class and the resource quality objectives of the water resource

There is no catchment management strategy to our knowledge. The ephemeral stream where the underground power cable will transect is not a major system but does feed into the Papenkuils River. It is assumed that the DWS official responsible for the area will know whether the water resources form part of any catchment management strategy.

Investments already made and to be made by the water user in respect of the water use

An EIA has already been conducted and completed and an Environmental Authorization to construct and operate the solar PV facility has been granted. A contractor is in the process of being appointed for construction. Also, a new 160 ha Private Nature Reserve will be proclaimed to protect sensitive vegetation as well as upstream valleys along the Papenkuils River.

The strategic importance of the water uses to be authorised

The Municipal Spatial Development Framework states various sub-strategies and land use policy guidelines that will be used to build an inclusive integrated and vibrant city. It is imperative that the City should proactively manage electricity input, this is done by ensuring that the solar PV facility will be operating legally in order to ensure that the impacts on the areas surrounding the site are mitigated and controlled. This is done by conducting the required studies and assessments which form part of this application.

The activity supports the regional economy and employment of previously disadvantaged individuals. Both being of critical importance in the context of South Africa. It is therefore of national strategic importance.

The quality of the water in the water resource which may be required for the reserve and for meeting international obligations

The quality of the water within the project site is unlikely to change due to any activities. It is assumed that this section will also be addressed by DWS as it is the authority's responsibility to determine the reserve of this catchment.

The probable duration of any undertaking for which a water use is to be authorised

The Solar PV plant has a projected lifespan on 20 years.

1.11. Public participation

The WULA public participation process was conducted in terms of Section 41 (4) of the NWA and Regulation 17 of the Regulations regarding the procedural requirements for water use licence applications and appeals (2017). This report was compiled in accordance with Regulation 19.

The WULA 60-day PPP commenting period was initiated on the 25 August 2023 ending on the 25 October 2023. The goal of PPP is to enable Interested and Affected Parties (I&AP's) to voice their opinions and concerns regarding the proposed activities associated with the water uses. The comments provided by I&AP's are valuable contributions to the decision-making process since it enables the evaluation of all aspects of the activity and its effect on the environment. Therefore, for the public participation process to be adequate, the application should be brought to the attention of all relevant organs of state, interested persons and the public.

An I &AP database was compiled, which identified affected adjacent landowners, authorities, organs of state and other affected (Table 1.1). These I&APs and the public were then notified accordingly. All comments will be incorporated into an Issues & Comments table and included into the Final Technical Report submitted to DWS.

The following public participation has been conducted:

- Notifications via email notification, direct telephonic calls, and site notices.
- Notice boards (See photograph below) were fixed at the appropriate visible location.
- An advert was placed in the Herald newspaper on the 25 August 2023.
- Written notice via emails to affected adjacent landowners, and other affected parties. Identified neighbouring I&AP's are shown in the register below.
- The public participation commenting period of 60 days are provided for the WUA.
- The Technical Report and annexures were made available on both the BlueLeaf and Natura Viva websites.

Table 1.1: Register of Landowners, Stakeholders and I&APs

COMPANY/DEPARTMENT	CONTACT PERSON	TELEPHONE	ADDRESS	EMAIL
LANDOWNERS AND SURROUNDING LANDOWNERS				
The applicant is the landowner				
Lafarge Mining South Africa Pty Ltd	Gordon Stannic	041 373 2295	P.O. Box 2788, North End, Port Elizabeth, 6056	gordon.stannic@lafarge.com
Chade Properties (Pty) Ltd	Claude Janse van Rensburg	041 484 6863	PO Box 21142, Port Elizabeth, 6000	claud@vansspares.co.za
Mtero Quarries	Deon Janse van Rensburg	-	-	deonjvr@metroquarries.co.za
Silikhaya (Pty) Ltd	Charmaine Janse van Rensburg	041 484 6740	PO Box 27477, Greenacres, Port Elizabeth, 6057	cjvr@mweb.co.za
Afrimat	Jeff Hoffman (Quarry Manager)	041 372 1122 041 398 9300 082 657 0584	E6 Mission D85 Rd, Greenbushes X 1, Port Elizabeth	jeff.hoffman@afriat.co.za
Cubenco 176	Urmila Soni	-	-	soni@bdlattorneys.co.za
Lim'uvune Universitas	Khaya Sakawuli	-	-	sakawuli03@icloud.com
GOVERNMENT OFFICIALS				
Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)	Case Officer: Riyadh Casoojee	041 508 5800	Private Bag X5001, Greenacres, Port Elizabeth, 6057	Riyadh.Casoojee@dedea.gov.za
	Manager: EQM: Andries Struwig	041 508 5808		andries.Struwig@dedea.gov.za
	Regional Manager – Environmental Affairs: Sarah Baartman/Nelson Mandela Bay Region: Jeff Govender	041 508 5800		Dayalan.Govender@dedea.gov.za
Eastern Cape Provincial Heritage Resources Authority (ECPHRA)	Sello Mokhanya	043 642 2811	P.O. Box 16208, Amathole Valley, 5616	smokhanya@ecphra.org.za
	Mzikayise Zote			mlzote@ecphra.org.za
South African Heritage Resource Agency (SAHRA)	Phillip Hine	021 462 4502	PO Box 4637, Cape Town, 8000	phine@sahra.org.za

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COMPANY/DEPARTMENT	CONTACT PERSON	TELEPHONE	ADDRESS	EMAIL
Department of Water and Sanitation (DWS)	Marisa Bloem	041 501 0717 083 232 9822	Private Bag X6041, Port Elizabeth, 6000	BloemM@dws.gov.za
Department of Agriculture, Land Reform and Rural Development (DALRRD)	Thabo Nokoyo	041 407 4051	Private Bag x9087, Cape Town, 8000	NokoyoD@environment.gov.za NokoyoT@environment.gov.za
	Babalwa Layini			BabalwaL@daff.gov.za
DEDEAT (Waste)	Chris Julius	041 508 5808	P/Bag X5001, Greenacres, Port Elizabeth, 6057	chris.julius@deaet.ecape.gov.za
NMBM: Executive Mayor	Bennet Mzwengqaba Bhanga	041 506 3267/8	Mayoral Office, City Hall, Central Port Elizabeth, 6001	pamayor@mandelametro.gov.za
NMBM: Public Health directorate	Sizwe Mvunelwa (ED)	041 505 4578 060 802 6744	13 th / 15 th Floor, Lillian Diedricks Building, Govan Mbeki Ave; P.O. Box 116, Port Elizabeth 6000	smvunelwa@mandelametro.gov.za
	Jill Miller	041 506 5464		jmiller@mandelametro.gov.za
	Rosa Blaauw (Environmental Manager)	041 506 5206 082 798 9604		rblaauw@mandelametro.gov.za
NMBM: Environmental Health directorate	Patrick Nodwele	041 506 5216 079 490 0361	15 th Floor, Lillian Diedricks Building, Govan Mbeki Ave; P.O. Box 116, Port Elizabeth 6000	pnodwele@mandelametro.gov.za phowes@mandelametro.gov.za
	Buyiswa Deliwe	041 506 5215 066 043 4311		bhumani@mandelametro.gov.za
NMBM: Infrastructure and engineering	Walter Shaidi (ED)	041 506 5438 079 490 0004	10th Floor, Lillian Diedricks Building, Govan Mbeki Ave; P.O. Box 116, Port Elizabeth, 6000	wshaidi@mandelametro.gov.za ; secretary-kmsipa@mandelametro.gov.za
NMBM: Waste management directorate	Annalisa Dyakala	041 506 5403 079 490 0879	15th Floor, Lillian Diedricks Building, 196-200 Govan Mbeki Avenue, Central, Port Elizabeth, 6000	adyakala@mandelametro.gov.za
NMBM: Water and Sanitation directorate	Paul du Plessis	041 506 2314	07 th /10 th Floor, Mfanawasekhaya Gqobose Building, Govan Mbeki Avenue, Central, Port	PDUPLESS@mandelametro.gov.za
	Barry Martin	041 506 5432		secretary-asnyman@mandelametro.gov.za bmartin@mandelametro.gov.za


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COMPANY/DEPARTMENT	CONTACT PERSON	TELEPHONE	ADDRESS	EMAIL
			Elizabeth, 6001	
NMBM: Electricity and Energy directorate	Tando Tsepene (Projects)	041 392 4206 084 304 9589	Munelek Building, 46 Harrower Road, North End, Port Elizabeth, 6001	ttsepene@mandelametro.gov.za
	Corrie Schmidt (Special Services - Renewable Energy)	041 392 4304 082 711 2612		cschmidt@mandelametro.gov.za
	Roark Prinsloo	041 392 4497 079 490 1405		rprinsloo@mandelametro.gov.za
NMBM: Roads, Stormwater and transportation directorate	Yussuf Gaffore	041 506 2109	5th Floor, Lilian Diedericks Building, Govan Mbeki Avenue, Central, Port Elizabeth, 6000	ygafore@mandelametro.gov.za svanrensborg@mandelametro.gov.za
NMBM: Planning directorate and Land use Management	Schalk Potgieter Simiso Thebe Mthulisi Msimanga Ntombesibini Mtshekexxe Nyasha Bhebhe Nyasha Chamburuka	041 506 2201	-	spotgiet@mandelametro.gov.za sthebe@mandelametro.gov.za mmsimanga@mandelametro.gov.za nmtshekexxe@mandelametro.gov.za nchamburuka@mandelametro.gov.za
NMBM: Human Settlements	Tabiso Mfeya (ED)	041 506 2882	-	tmfeya@mandelametro.gov.za
EC Department of Roads and Public Works / Department of Transport	Randall Moore	041 403 6001	PO Box 1110, Algoa Park, Port Elizabeth	Randall.Moore@dpw.ecape.gov.za
	Khulile Siqiti	078 326 9947		Khulile.Siqiti@ectransport.gov.za
Ward 12	Councillor: Sharlene Denise Davids	041 457 2944 086 506 6403 060 658 8857	19 Saliehout Street, Malabar, Port Elizabeth	ward12@mandelametro.gov.za
Eskom	Sterk Hibana (Land Rights Officer)	043 703 2735 078 749 7749	Private Bag X1, Beacon Bay, 5241	HibanaS@eskom.co.za
	Manager Environmental Management, Land Development and Environment: Angelina Shalang	012 421 3353		ShalanAR@eskom.co.za SiyongZA@eskom.co.za
	Environmental Officer: Zandi Siyongwana	043 703 5443 083 343 5119		

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COMPANY/DEPARTMENT	CONTACT PERSON	TELEPHONE	ADDRESS	EMAIL
SA Civil Aviation Authority (SACAA)	Lizell Stroh	011 545 1232 083 461 6660	-	Strohl@caa.co.za
Groot Kloof Nature Reserve	Clyde Scott	-	-	cjscott@mandelametro.gov.za
REGISTERED I&APs				
Afrimat	Jeff Hoffman	041 398 9300 082 657 0584	E6 Mission D85 Rd, Greenbushes X 1, Port Elizabeth	jeff.hoffman@afrimat.co.za
Department of Agriculture, Land Reform and Rural Development (DALRRD)	Babalwa Layini	041 407 4051	Private Bag x9087, Cape Town, 8000	Babalwal@daff.gov.za
Eskom	Sterk Hibana	043 703 2735 078 749 7749	Private Bag X1, Beacon Bay, 5241	HibanaS@eskom.co.za
EC Department of Roads and Public Works / Department of Transport	Randall Moore	041 403 6001	PO Box 1110, Algoa Park, Port Elizabeth	Randall.Moore@dpw.ecape.gov.za
	Khulile Siqiti			khulile.siqiti@gmail.com

Below is a copy of the email notifications sent out. A copy of the Letter of notification is also included:

 **BLUELEAF**
ENVIRONMENTAL

Mr Roy de Kock M.Sc (Pri.Sci.Nat)
Executive: Environmental
38 Tulip Avenue
Sunridge Park
Port Elizabeth, 6001
(Cell) +27 76 281 9660
(Email) roy@blueleafenviro.co.za

Registration Number 2020/833989/07

25 August 2023

Dear Stakeholders/Interested and Affected Parties

NOTICE OF WATER USE APPLICATION AND PUBLIC REVIEW – PARSONS POWER PARK SOLAR PV FACILITY, GREENBUSHES, GQEBERHA

BlueLeaf Environmental (Pty) Ltd has been appointed by Parsons Power Park (Pty) Ltd to undertake a Water Use Application (WUA) in terms of the National Water Act (No. 36 of 1998; NWA), as amended, and their associated Regulations regarding the activities related to the construction of a new Solar PV Facility on Erf 5704, Greenbushes, Gqeberha.

Parsons Power Park is in the process of applying for Section 21 (c) & (i) water uses in terms of the NWA. You are hereby invited to a 60-day review period of the WUA Technical Report starting on the 25th August 2023 and ending the 25th October 2023. A copy of the Technical Report will be made available on both www.blueleafenviro.co.za/ and www.natura-energy.com/ for download. Alternatively, a copy can be requested via email below.

For more information, registration as an Interested and Affected Party (I&AP), or the submission of written comments, please contact the person listed below via telephone, post, or email within 60 days of this notice.


Attention: Mr Roy de Kock
PO Box 28924, Sunridge Park, Gqeberha
Tel: 076 281 9660
E-mail: roy@blueleafenviro.co.za

We look forward to hearing from you.

Kind Regards



Mr Roy de Kock
Environmental Specialist
BlueLeaf Environmental (Pty) Ltd



[Picture to be included at a later stage]

Below is a copy of the page where the newspaper advert appeared in on the [DATE]. All relevant information including location, project description, water uses, applicable legislation, invitation to register and comment, 60 day commenting period, as well as contact details of the consultant, were all displayed in the newspaper advert.

[Picture to be included at a later stage]

Below is a picture and copy of the site notice that was placed at [GPS coordinates] to be included at a later stage]:



NOTICE OF A WATER USE APPLICATION

Parsons Power Park Solar PV Facility on Erf 5704, Greenbushes, Gqeberha

Notice is hereby given for the intention to submit a Section 21 (c) and 21 (i) Water Use Application (WUA), in terms of the National Water Act (No. 36 of 1998; NWA) to the Department of Water and Sanitation (DWS).

Parsons Power Park (Pty) Ltd received an environmental authorisation from DEDEAT to develop a new Solar PV Facility on Erf 5704 in Greenbushes, Gqeberha. Certain listed activities will be located within 500 m of a wetland and/or 100 m of a river and will therefore require approval from the DWS.

BlueLeaf Environmental (Pty) Ltd has been commissioned by the proponent to undertake the WUA on their behalf. You are hereby invited to register as an Interested & Affected Party (I&AP).

For more information, registration as an I&AP and/or submission of written comments contact by phone or e-mail no later than **25 October 2023**

Mr Roy de Kock, Environmental Specialist, BlueLeaf Environmental, Sunridge Park, Gqeberha at:

Tel: 076 281 9660

E-mail: roy@blueleafenviro.co.za

[Picture to be included at a later stage]

No comments were received to date.

Appendix A – Stormwater Management Plan

Appendix A

RAW RENEWABLES (PTY) LTD

PARSON POWER PARK STORMWATER MANAGEMENT PLAN

Report Ref: AFR1289

Date: 20 June 2023

Revision: 0

Prepared for:

Raw Renewable (Pty) Ltd
1st Floor Equity House
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Prepared by:

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 AFRICOAST CONSULTING ENGINEERS	QUALITY DOCUMENTATION DOCUMENT VERIFICATION FORM	23SF28	
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The purpose of this form is to ensure that documents are reviewed and approved prior to issue. The form is to be bound into the front of all documents to be released by the Client.

PROJECT NUMBER: AFR1289

CLIENT: **PARSONS POWER PARK (PTY) LTD**

PROJECT NAME: **PARSON POWER PARK: STORMWATER MANAGEMENT PLAN**

DOCUMENT TITLE: Stormwater Management Plan

DOCUMENT NUMBER: AFR1289

Revision Record

Revision	Date	Description / File name	Prepared	Checked	Approved
0	2023/07/13	Original Report	N.M	T.J	

Prepared by: _____

Name: Nopasika Mhlana

Date:

Designation: Civil Engineering Technologist

Checked by: _____

Name: Thomas Jachens

Date:

Designation: Technical Director

Approved by: _____

Name:

Date:

Designation

PARSONS POWER PARK (PTY) LTD

STORMWATER MANAGEMENT PLAN

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PARSONS POWER PARK (PTY) LTD

STORMWATER MANAGEMENT PLAN

1. TERMS OF REFERENCE

Africoast Consulting Engineers was appointed by Co-developers RAW Renewables (Pty) Ltd and Natura Energy (the Client) to provide a Stormwater Management Plan for the proposed Solar PV Facility on a Portion of Erf 1 Parsons Vlei Port Elizabeth located in the Nelson Mandela Bay Municipality, as per the terms of the Environmental Authorisation dated 14 March 2022 with Ref: ECm1/C/LN2/M/15-2021.

This scope of this study includes the following:

- quantification of stormwater runoff and peak flows;
- development of strategies for stormwater management and waste water management;
- preparation of design concepts to accommodate the anticipated flows, while ensuring continuity of natural drainage paths; and
- determination of appropriate mitigation measures, including erosion management, attenuation of flood peaks and pollution control.

This report is for the stormwater management plan to manage stormwater discharge over the development in a way that is not harmful to the development or to the environment. The stormwater flow will be analysed at both pre and post development.

2. DESCRIPTION OF SITE

The proposed development is located on a 106-hectare site located between Bridgemeade and Greenbushes along the western outskirts of Gqeberha, Eastern Cape as indicated on Figure 1: Locality.

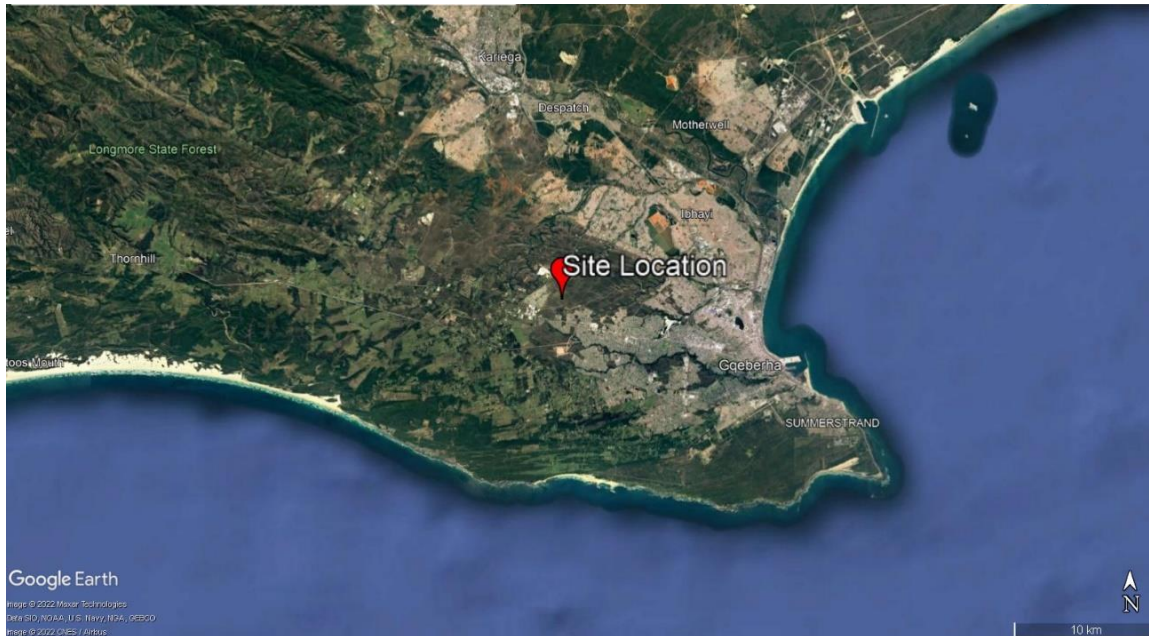


Figure 1: Locality

2.1 Climate

The climate in Port Elizabeth is recognised as a subtropical oceanic, with very mild winters and quite warm summers. The rains are not abundant and are slightly more frequent in spring and autumn. The Mean Annual Rainfall Precipitation is approximately 563 mm (www.climate-data.org). The maximum average monthly temperature is approximately 24°C in the summer months while the minimum average monthly temperature is approximately 13°C during the winter.



Figure 4: Vegetation

As per the geotechnical report prepared by SRK, the vegetation across the site is covered by short grass with scattered trees and bushes. Scattered quartzitic sandstone rock outcrops is present towards the southern boundary of the site and a rock 'koppie' towards the north-western section of the site. See Figure 4.

3. METHOD OF RUN OFF CALCULATIONS

The catchment was split into three sub-catchments for modelling purposes (as shown on Figure 5)

The rational method was used in the hydrological assessment. This method is used for catchment areas smaller than 1500ha. The rational method is based on physical characteristics of run-off generated by rainfall and allows for catchment characteristics such as size of catchment, topography and permeability of the soil and vegetation cover. The physical characteristics are combined with rainfall depth - duration – frequencies to yield peak run off. The rational method is as follows:

$Q = CIA/3.6$ where:

Q = peak rate of run off in m^3/s

C = run off coefficient

I = average intensity of rainfall in millimetres per hour(mm/hr)

A = catchment area km^2

The catchment draining towards the site is shown on Figure 5. Catchments covers an area of 1.06km² and drains via the site. The area's stormwater drainage is shown in Figure 5 below.

Figure 5: Catchment Areas / Drainage Patterns (Pre-Development)



3.1 Pre-Development Runoff

Based on the catchments the runoff rates on a 1 in 5 year is indicated in Table 1 below:

CATCHMENT AREA	AREA (km ²)	RUNOFF (m ³ /s)
A	0.29	0.35
B	0.42	0.50
C	0.35	0.40
TOTAL	1.06	1.25

Table 6: Catchment Areas and Runoff Pre-Development

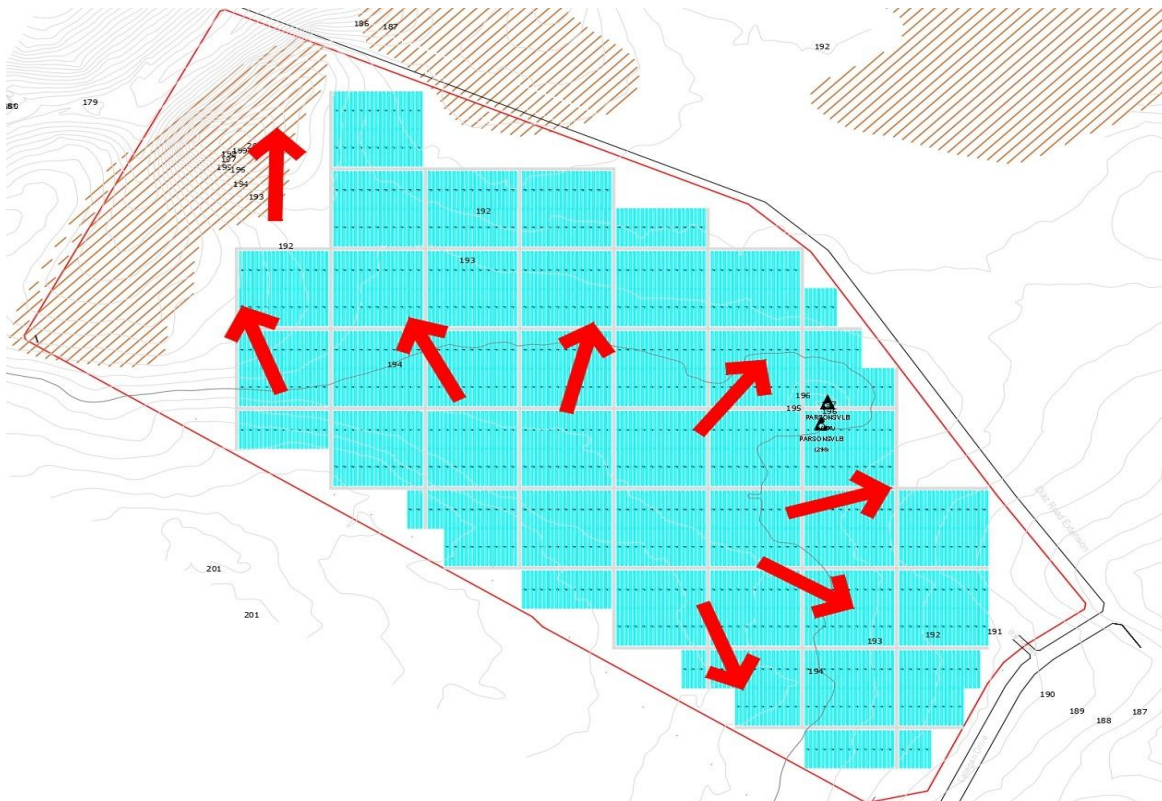
3.2 Post-Development Runoff

The primary difference between the pre-development and the post-development scenarios is the presence of the solar PV panels and associated infrastructure. The solar PV panels themselves are impervious, but since they are widely distributed and raised above natural ground level, they will not behave like typical hardened surfaces. Essentially, they do not interfere with infiltration to any significant degree and do not obstruct existing flow paths.

CATCHMENT AREA	AREA (km ²)	RUNOFF (m ³ /s)
A	0.29	0.40
B	0.42	0.66
C	0.35	0.49
TOTAL	1.06	1.55

Table 7: Catchment Areas and Runoff Post-Development

Figure 8: Drainage Patterns (Post-Development)



4. EXISTING CONDITIONS

4.1 Existing Infrastructure

The site will be accessed via a gravel road extension to be constructed in Lategan Road. There is no formal stormwater infrastructure on the site. The stormwater is conveyed overland via informal preferential drainage paths and there are existing wetlands on the north west and eastern side of the site respectively.

5. PROPOSED INFRASTRUCTURE

5.1 Proposed Infrastructure

It is anticipated that the Solar PV facility will contain the following infrastructure:

- Vegetation clearing
- Transformer and internal electrical reticulation (Underground cabling)
- PV solar panels;
- Internal roads, access road, fencing and stormwater management;
- Auxiliary building (such as guard house);
- A maintenance and control room;
- On-site Inverters;
- On-site transformers;
- Solar plant switching station;
- Rainwater tanks; and
- Other associated infrastructure as contained within the Final Environmental Impact Report

5.2 Pre-Construction Conditional Assessment

A pre-construction walkthrough with an aquatic specialist is recommended to assist with the development of the stormwater management requirements and Aquatic Rehabilitation and Monitoring plan.

5.3 Proposed Stormwater Mitigation Measures

To avoid creating downstream issues, it is essential that any disturbance of the areas earmarked for development must be minimised. In this regard, vegetation must be preserved; overland runoff must be permitted to continue unimpeded as far as possible; and concentration of flow must be avoided.

5.3.1 Internal and Access Roads

Gravel access roads should be constructed at-grade to allow continuity of flow from upstream to downstream. Stormwater runoff be directed to the lower side of the gravel roads. Only include side drains where damage may occur as the side drains will interrupt and concentrate the natural flow paths.

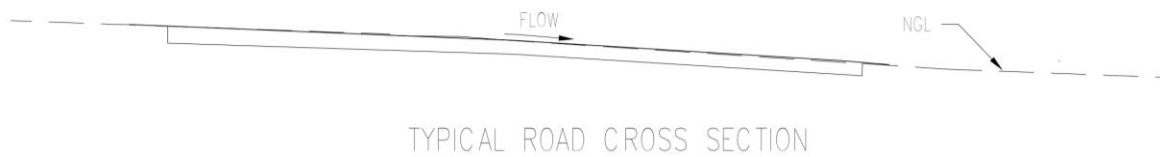


Figure 9: Internal Roads Cross Section

5.3.2 PV Panels

The supports to the PV panels should be designed to limit their impact on natural drainage patterns. Owing to their smooth, impermeable surfaces, the runoff from each individual panel will be close to 100%. However, since each panel is separate, there will be no accumulation of runoff and the rainwater will be routed directly to the ground where it can infiltrate. In practical terms, there will be no significant increase in runoff. Furthermore, if the panels are constructed close to ground level, the runoff from individual panels will not increase the risk of erosion, irrespective of the panel orientation.

5.4 Operation Phase Management of Stormwater Impacts

5.4.1 Detention

On-site treatment of stormwater will be by means of informal infiltration. The construction of formal structures such as detention ponds will interfere with natural drainage paths and should be avoided.

5.4.2 Cleaning Operations

The washing / cleaning of the solar panels will take place only every 2 months using clean water to remove wind-blown dust and accumulated residue. It is the intention of the client to either use truck water or rainwater tank and hose system for cleaning of the solar panels. If no detergents are used, there is consequently no risk of groundwater pollution, as the material that will collect on the panels currently settles directly on the ground surface and/or vegetation in the area.

The volume of water required for cleaning the panels is approximately 380m³ per cleaning operation for 50MWp of installed PV capacity. This translates into an average of 2 280 m³ for the entire site per year. The flow is therefore negligible when compared to the runoff from design storm events and can be ignored. In this regard, the cleaning of panels is also not likely to take place during rainfall events of any significance.

The low flow rates mean that there is no erosion risk from the cleaning operation. Furthermore, owing to the high infiltration potential of the soil, the cleaning water will be absorbed directly into the soil and no additional collection or treatment will be required.

6. CONCLUSIONS

It may be concluded that:

- If the proposed new infrastructure is designed to maintain existing drainage patterns, the requirement for formal stormwater interventions will be limited;
- A pre-construction assessment will be necessary to ensure that construction and operational stormwater impacts are managed; and
- For most storm events, overland flow via poorly-defined drainage paths will be the primary form of conveyance.
- Should any erosion area be identified, the erosion control plan should be immediately implemented.
- The strategy is to follow the existing contours to minimize impacts on the existing drainage patterns.