

PREFERRED ALTERNATIVE: BONATHABA DAM: THE PROPOSED DEVELOPMENT OF AN INSTREAM DAM ON PORTIONS 2 AND 3 OF FARM NO. 1100, BONATHABA, MALMESBURY, WESTERN CAPE															
Nature of Impact			Without Mitigation (Baseline)					With Mitigation					Proposed Mitigation		
Number	Aspect	Impact	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Consequence)	Without Mitigation Score (Baseline)	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)		Receiving Environment (Consequence)	With Mitigation Score (Impact Assessment)
CONSTRUCTION PHASE															
1	Botanical	Loss of Swartland Shale Renosterveld (CR)	-8	-1	-8	-8	-4	-6	-2	-2	-2	-2	-2	-2	* Implementation of the EMP: " A suitably qualified ECO must be appointed; " Environmental Awareness training to be conducted with all workers; " Ensure construction activities are restricted to the demarcated footprint, strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area " Access roads to the dam should be limited to a single circular route in and out. Ensure construction vehicles stay on existing roads and erect signs to remind workers not to deviate from the roads.
2		Loss of ESAs	-8	-2	-4	-8	-4	-6	-2	-1	-2	-8	-2	-3	Implementation of the EMP: " Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.
3		Soil Contamination	-4	-2	-4	-2	-4	-4	-4	-2	-1	-2	-2	-2	* Implementation of the EMP: " Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area. "Concrete mixed on site as per the EMP and surplus must be disposed of in the correct manner". " Inspect all vehicles daily for the early detection of deterioration or leaks. " The contractor should ensure drip trays are placed under stationary vehicles. " Spill kits must be available. Workers should be trained how to use spill kits to rectify a spill immediately. Records must be kept of any spills. " Portable toilets must be placed no less than 32m from any watercourse/ stream and serviced regularly in order to prevent leakage/spillage. No portable toilets to be placed in watercourse 1 where the weir it to be rehabilitated.
4	Freshwater	Loss of Riparian Habitat	-2	-2	-8	-8	-4	-5	-1	-2	-2	-4	-2	-3	* Ensure construction activities and vehicles are restricted to the demarcated areas to prevent further degradation. Access roads to the dam should be limited to a singular route in and out. " Vehicles will not be permitted to drive through the streams; " Ensure construction footprint is kept as small as possible.
5		Alteration of Hydrology of the drainage line	-2	-2	-8	-8	-4	-5	-2	-1	-2	-2	-2	-2	* Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area. " No concrete will be mixed on site and surplus must be disposed of in the correct manner". " Construction should be limited to the dry season " Ensure no building material allowed to wash down stream " Line the spillway with natural stone rather than concrete. " Ensure construction footprint is kept as small as possible;
6		Surface water & ground water contamination	-2	-2	-8	-8	-4	-5	-2	-1	-2	-2	-2	-2	* Implementation of the EMP: " Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area. "Concrete mixed on site as per the EMP and surplus must be disposed of in the correct manner". " Inspect all vehicles daily for the early detection of deterioration or leaks. " The contractor should ensure drip trays are placed under stationary vehicles.
7	Heritage	Erosion & Sedimentation	-8	-2	-8	-8	-4	-6	-4	-2	-2	-4	-2	-3	Erosion mitigation measures, as outlined in the EMP, must be implemented to reduce the susceptibility of the area to erosion.
8		Loss of Heritage Resources	-2	-1	-2	-2	-2	-2	-2	-1	-2	-2	-2	-2	* Spill kits must be available. Workers should be trained how to use spill kits to rectify a spill immediately. Records must be kept of any spills. " Portable toilets must be placed no less than 32m from any watercourse/ stream and serviced regularly in order to prevent leakage/spillage. No portable toilets to be placed in watercourse 1 where the weir it to be rehabilitated.
9	Agricultural Land	Loss of approximately 10.0ha of agricultural land.	-8	-2	-8	-8	-4	-6	-4	-2	-2	-4	-2	-3	Implementation of the EMP: " A suitably qualified ECO must be appointed; " Environmental Awareness training to be conducted with all workers; " Ensure construction activities are restricted to the demarcated footprint, strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area " Access roads to the dam should be limited to a single circular route in and out. Ensure construction vehicles stay on existing roads and erect signs to remind workers not to deviate from the roads. Please refer to Section 6.6 of the Environmental Impact Report (EIR)
10	Dust	Dust from site topsoil removal, construction, rehabilitation	-2	-1	-2	-4	-2	-3	-2	-1	-2	-2	-2	-2	Dust will be monitored. If dust becomes a problem, dust will be controlled by means of water spray vehicles. No over watering of the site area or roads surfaces should occur. Speed limits must be enforced in all areas to limit the levels of dust pollution. Max speed of 40km/h must be maintained. Protect stockpiled topsoil using tarp or erosion blankets. Stockpile topsoil within an area where no stormwater runoff is expected
11	Visual	Negative visual impact of the proposed development	-2	-1	-2	-2	-2	-2	-2	-1	-2	-2	-2	-2	Construction related activities should remain within the demarcated footprint
12	Socioeconomic Impact	Employment and skill development opportunities	4	2	8	4	4	5	4	2	8	4	4	5	This is a positive impact.

OPERATIONAL PHASE															
13	Erosion	Erosion of areas surrounding the proposed dam.	-4	-2	-8	-8	-4	-6	-2	-2	-2	-2	-2	-2	Erosion mitigation measures must be implemented where applicable. Install erosion and sediment controls where applicable. Inspect and maintain erosion and sediment controls regularly. Rehabilitate any areas affected by construction activities. Erosion mitigation measures, as outlined in the EMP, must be implemented to reduce the susceptibility of the area to erosion. Mitigation measures must be monitored, especially after heavy rainfall events.
14	Water supply	Water supply for irrigation activities and agricultural productivity. The water use rights will be realized.	4	2	8	4	4	5	4	2	8	4	4	5	The proposed operation of the proposed dam will ensure water supply for irrigation activities. The water use right will be realized. This is a positive impact.
15	Water: Alteration of the hydrology of the Berg River	Alteration of the hydrology of the Berg River.	-2	-2	-8	-8	-4	-5	-2	-1	-2	-2	-2	-2	Strict monitoring must be put in place with regards to water abstraction. The local irrigation board as well as the DWA has most likely already defined the schedule according to which water is to be taken from the Berg River. The DWS, according to its legal mandate, is already monitoring the Berg River water quality and water levels in terms of a long-standing national program. All that remains for Bonatamba is to operate within the ambit of their water use license. Do not over-irrigate agricultural areas. Please refer to recommendations made by the Freshwater Specialist (Appendix B.2). Mitigation measures as outlined in the EMP must be complied with. Erosion mitigation measures must be complied with where applicable to reduce sedimentation of watercourse. No stockpiling is permitted within 32m of any watercourse. Ensure no material is allowed to wash down stream.
16	Water: Erosion and sedimentation of watercourse	Erosion and sedimentation of watercourse.	-2	-2	-8	-8	-4	-5	-2	-1	-2	-2	-2	-2	Erosion mitigation measures, as outlined in the EMP, must be implemented to reduce the susceptibility of the area to erosion. Mitigation measures must be monitored, especially after heavy rainfall events.
17	Visual Impact	Site may be not aesthetic amid natural background.	-2	-1	-2	-2	-2	-2	-2	-1	-2	-2	-2	-2	Operation-related activities will be limited to the developed area.
18	Socioeconomic	Retention of existing jobs.	4	2	8	4	4	5	4	2	8	4	4	5	Insurance of water supply will improve farm productivity. This will enable existing jobs on the farm to be retained. This is a positive impact.
DECOMMISSIONING PHASE															
19	Waste	Demolition of infrastructure resulting in waste accumulation on-site and surrounding area.	-8	-2	-8	-8	-4	-6	-2	-1	-2	-2	-2	-2	It is not envisioned that the proposed development will be decommissioned. However, mitigation measures as outlined in the EMP must be complied with. No stockpiling of material must take place within 32m of any watercourse. General and hazardous (if applicable) waste must be collected, consolidated, and disposed of accordingly at a registered general or hazardous disposal facility. A waste receipt is required as proof of safe disposal.
20	Soil	Exposed soil becoming prone to erosion	-2	-2	-8	-8	-4	-5	-2	-1	-2	-2	-2	-2	It is not envisioned that the proposed development will be decommissioned. However, erosion mitigation measures, as outlined in the EMP, must be complied with.