

**ENVIRONMENT AND SOCIAL MANAGEMENT AND MONITORING PLAN**  
**GOLOLE WATER SUPPLY SCHEME IN MOYALE LOCATION, MARSABIT COUNTY GOLOLE**

E & S impacts and their Sources	Proposed Mitigation Measure	Monitoring and Measurement	Responsible Entity	Supervising Agency
<b>Preconstruction Phase</b>				
<b>Land acquisition</b> Loss of pasture land Fencing of land restrict free movement of animals and people. Grievances related to land take/transfer  The proposed pipelines, solar farm, storage tanks, water kiosks, administration buildings, control room, pump house, guardhouse, sanitation facilities and livestock troughs for Golole Water Supply Scheme will require approximately 2.4 acres. The land is expected to be transferred from community to public ownership.	<ul style="list-style-type: none"> <li>The project alignment must avoid private land as the project component include outright land acquisition</li> <li>Align water pipelines along public roads and spaces to avoid any physical and/or economic displacement as much as possible, or infringement on the land rights holders</li> </ul>	Approved project design that is not affecting private land owners	Engineering consultant E&S Specialists	WSTF MoWSI
	<ul style="list-style-type: none"> <li>Complete the process of land transfer from community to public before the operation of the project</li> </ul>	Valid allotment letters/title deeds for the scheme	MARWASCO County Government of Marsabit	WSTF National Land Commission
	<ul style="list-style-type: none"> <li>Hold community consultations to discuss the final design of the scheme, the associated impacts and project implementation timelines before construction</li> </ul>	Minutes of disclosure meeting, Agenda and attendance register	MARWASCO County Government of Marsabit	WSTF NEMA
	<ul style="list-style-type: none"> <li>Follow the land take procedures outlined in the project ESMF</li> </ul>	Compliance report	Consultant	WSTF MoWSI National Land Commission
<b>Construction Phase</b>				
<b>Potential soil Erosion</b> Site Excavation, Earthworks for Construction Works:	<ul style="list-style-type: none"> <li>Develop and implement soil erosion control measures</li> </ul>	Number of soil erosion control measures in the program of works, amount of resources set for soil erosion control	Contractor Supervision Consultant	NEMA

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Clearing vegetation for borehole infrastructure, water kiosks, pipelines, and livestock water troughs, Excavation of trenches for foundations and trenches, Storage of excavated spoilt soil and construction materials, Uncontrolled surface run-off from construction site Spillage of water during borehole testing,	<ul style="list-style-type: none"> <li>Minimize and restrict vegetation removal to the project footprint.</li> </ul>	Project design that considers areas with minimal vegetation, Amount of vegetated area spared by the project	Supervision Consultant	
	<ul style="list-style-type: none"> <li>Expedite back-filling and compaction of excavated soil.</li> </ul>	Number trenches that are backfilled and compacted	Contractor	
	<ul style="list-style-type: none"> <li>Use existing access tracks to minimize the need for new tracks.</li> </ul>	Number of enforcement measures to ensure use of the existing routes during site access	Contractor	
<b>Soil and subsurface water pollution</b> Spills of the fuel and hazardous chemicals stored at the site Fugitive spillage of fuel and used oil from equipment Poor management of construction and sanitation waste Poor management of wastewater generated from the reverse osmosis process	<ul style="list-style-type: none"> <li>Develop and implement soil pollution prevention measures to include storage of chemicals, procedure for fuelling at the site and</li> </ul>	Availability of soil pollution measures in the program of works	Contractor/ Supervision Consultant	WSTF NEMA
	<ul style="list-style-type: none"> <li>Ensure the waste oil, fuel, lubricants and other chemicals stores have an impervious surface</li> </ul>	Number or availability of fuel and chemical stores with impervious surface	Contractor/ Supervision Consultant	WSTF
	<ul style="list-style-type: none"> <li>Training workers on handling of the hazardous materials/wastes; provide appropriate tools/equipment for transfer of the hazardous materials</li> </ul>	Training records and plans, attendance lists, number of workers trained	Contractor/ Supervision Consultant	NEMA
	<ul style="list-style-type: none"> <li>Regular maintenance of machinery to control leaks.</li> </ul>	Program of equipment maintenance	Contractor/ Supervision Consultant	WSTF
	<ul style="list-style-type: none"> <li>Engage NEMA registered waste handler</li> </ul>	Valid waste handler license and filled waste tracking sheets	Contractor/ Supervision Consultant	NEMA

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	<ul style="list-style-type: none"> <li>Maintain spill response kits at the site.</li> </ul>	Availability of a complete spill kit at the site	Contractor/ Supervision Consultant	WSTF
	<ul style="list-style-type: none"> <li>Use of drip trays when carrying out minor servicing of equipment and fueling at the site</li> </ul>	Availability of operational drip trays at the equipment servicing area	Contractor/ Supervision Consultant	NEMA
<b>Air pollution through generation of excess dust</b>  <b>Nuisance to neighbors</b>  <b>Impaired visibility;</b> Construction activities including Clearing vegetation, grading, and excavation works, use of cement, movement of vehicles and equipment.  Wind blowing on bare surfaces and potential dust storms  <b>Demolition works:</b> Removal of old, worn-out infrastructure or equipment	<ul style="list-style-type: none"> <li>Sprinkle water on dusty surfaces to suppress dust at the site and when working near dust sensitive receptors</li> </ul>	Evidence of watered working areas where applicable	Contractor/	WSTF  NEMA
	<ul style="list-style-type: none"> <li>Equip workers who are directly in the location where dust is dispersed with dust masks.</li> </ul>	Number of workers with appropriate dust masks	Contractor	
	<ul style="list-style-type: none"> <li>Training the workers on air quality hazards</li> </ul>	Air Quality Training included in the EHS staff induction  Training records	Contractor  Supervision Consultant	
<b>Exhaust emissions</b> from vehicles, including particulate matter (PM), carbon monoxide (CO), and nitrogen oxides (NOx), can contribute to air quality deterioration and pose health risks	<ul style="list-style-type: none"> <li>Scheduled maintenance of the machinery to reduce emissions including carbon monoxide, oxides of nitrogen.</li> </ul>	Evidence of site-specific equipment planned maintenance schedule	Contractor/ Supervision Consultant	WSTF  NEMA
<b>Noise and vibrations</b>	<ul style="list-style-type: none"> <li>All Construction near noise sensitive receptors like schools, hospitals and residential houses should implement measure to minimise production of extra noise.</li> </ul>	Noise control measures included in the program of works	Contractor/ Supervision Consultant	NEMA

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Material transportation: Movement of trucks and loaders. Excavation and construction: Digging and concrete works. Use of powered equipment. Borehole testing: Noise from pump flow tests.	<ul style="list-style-type: none"> <li>All equipment should be maintained in good mechanical order and fitted with the appropriate silencers, mufflers, or acoustic covers where applicable. Lubricating and regular repair of equipment and machinery.</li> </ul>	Relevant planned maintenance scheduled of the equipment available at the site Noise rating of the equipment	Contractor/ Supervision Consultant	County Department of Environment
	<ul style="list-style-type: none"> <li>Pneumatic drills and other noisy appliances should not be used after normal working hours.</li> </ul>	Evidence of no night working policy at the site	Contractor/ Supervision Consultant	
	<ul style="list-style-type: none"> <li>Workers exposed to occupational noise should be given noise protection equipment such as earmuffs and be taught how to use them and supervised to ensure such safety procedures are being adhered to.</li> </ul>	Number of workers working in noisy environment with appropriate PPE for noise	Contractor/ Supervision Consultant	
	<ul style="list-style-type: none"> <li>The public should be informed that short periods of noise may be inevitable but prior warning of when noisy activities are to take place and the days and times noise of when they could be expected should be widely publicized before the activity takes place.</li> </ul>	Noise warning signs where applicable, evidence of noise agenda in the community consultation meeting	Contractor Supervision Consultant	
<b>Loss and disturbance of the vegetation</b> Introduction of alien invasive species Site clearing, Excavation works, and pipeline laying disrupt habitats. Movement of vehicles on the vegetated areas	<ul style="list-style-type: none"> <li>Mature trees and vegetation outside project site will not be cleared.</li> </ul>	Evidence of Measures implemented to avoid clearing mature trees and vegetation outside project site	Contractor/ Supervision Consultant	Kenya Forest Service/ NEMA/ County Department of Environment
	<ul style="list-style-type: none"> <li>No use of herbicides/ pesticides for vegetation clearing</li> </ul>	Evidence of proper methods applied to clear vegetation		
	<ul style="list-style-type: none"> <li>Re-vegetation of disturbed areas with native plant species.</li> </ul>	No of tree seedling planted		
	<ul style="list-style-type: none"> <li>Control of invasive alien plant species through monitoring and physical/manual removal of invasive species as they appear as well as routine cleaning of newly deployed machines to the sites</li> </ul>	Availability and implementation of measures to identify and control alien species		

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<b>Disruption of existing minimal fauna</b> in the project area through excavation, vegetation clearing, and pipeline laying activities	<ul style="list-style-type: none"> <li>Avoid clearing mature trees that are important habitats for birds and other small animals</li> </ul>	Evidence of Measures implemented to avoid clearing mature trees and vegetation outside project site	Contractor/ Supervision Consultant	Kenya Forest Service/ Kenya Wildlife Service
	<ul style="list-style-type: none"> <li>Create awareness among project staff (esp. plant operators) and local community on animal welfare and against animal harassment.</li> </ul>	No of workers sensitized on protection of animals	Contractor	Kenya Wildlife Service
	<ul style="list-style-type: none"> <li>Protection of the encountered wild animals</li> </ul>	Availability, Awareness and implementation of measures to protect stray animals	Contractor	Kenya Wildlife Service
<b>Traffic incidents and accidents</b>  Increased vehicles: More construction and supply vehicles on local roads.  Narrow roads: Existing roads unable to accommodate increased traffic.  Construction activities: Blockage or diversion of roads during works.  Heavy equipment: Slow-moving machinery disrupting traffic flow.	<ul style="list-style-type: none"> <li>Engage the road authority where the project will undertake road crossing and use of road reserve.</li> <li>Excavation of trenches should be carried in consultation with the concerned road authorities.</li> </ul>	Evidence of consultation with relevant road departments and agencies where applicable	Contractor/ Supervision Consultant	Kenya Highways Authority (KeNHA)  Kenya Rural Roads authority (KERRA)  County Government of Marsabit
	<ul style="list-style-type: none"> <li>Erect warning signs of on-going works when pipeline crosses the road.</li> </ul>	Availability of appropriate safety signs at the road crossing point	Contractor	County Government of Marsabit
	<ul style="list-style-type: none"> <li>Adequate care/caution is taken so as not to cause any hindrance to the movement of traffic.</li> </ul>	Traffic (vehicle, human and livestock) control measures where applicable	Contractor	County Government of Marsabit

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	<ul style="list-style-type: none"> <li>Alternatives access ways should be communicated to the community where road cutting is taking place</li> </ul>	Number and condition of the provided alternative routes	Contractor	County Government of Marsabit
<b>Short-term disruption of community activities</b>  Excavations along home accesses, business access and roads.	<ul style="list-style-type: none"> <li>Implement the stakeholder engagement plan to ensure timely project information sharing with the community and stakeholders.</li> <li>Alternatives access ways should be communicated to the community.</li> </ul>	Community consultation plan, Number of consultation meetings	Contractor/ Supervision consultant MARWASCO	MARWASCO
	<ul style="list-style-type: none"> <li>Hoarding and installation of safety signs on road crossings.</li> </ul>	Number of appropriate road signs installed	Contractor/ Supervision consultant MARWASCO	
	<ul style="list-style-type: none"> <li>Provide diversions or temporary passages where roads are closed due to works.</li> <li>Provide temporary accesses to business and homes on excavated sections.</li> </ul>	Number and condition of the provided alternative routes	Contractor/ Supervision consultant MARWASCO	
<b>Labour conflicts and forced labour</b>  Recruitment and pay conflicts, working conditions and forced labour	<ul style="list-style-type: none"> <li>Implement site Labor Management Procedures (LMP) for the project based on the project LMP</li> </ul>	Availability of the site specific LMPs	Contractor supervision consultant	WSTF
	<ul style="list-style-type: none"> <li>Contractors to be trained on the LMP for the project before site mobilization</li> </ul>	Training records and attendance list	supervision consultant	WSTF
	<ul style="list-style-type: none"> <li>Developing and implementing criteria (skills and qualifications) for all positions due for recruitment.</li> </ul>	Availability of recruitment criteria  Number of workers engaged through the criteria	Contractor	WSTF
	<ul style="list-style-type: none"> <li>All the project workers to undergo induction and to be engaged formally via contract with start date, end date, job description, wage, disciplinary measures among others</li> </ul>	Formal contracts the workers  Number of workers with contract	Contractor	WSTF

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	<ul style="list-style-type: none"> <li>Documenting relevant worker information including terms of employment.</li> </ul>	Well documented worker information	Contractor	
	<ul style="list-style-type: none"> <li>Ensure equal opportunity and fair treatment during recruitment.</li> </ul>	Formal commitment by the consultant to offer equal opportunities  Number of workers recruited through transparent process	Contractor	
	<ul style="list-style-type: none"> <li>Protection of workers' legal right to form unions or other workers' organizations of their own choosing and to bargain collectively with their employers.</li> </ul>	Human Resource Policy with workers' rights	Contractor	
	<ul style="list-style-type: none"> <li>No employment of underage persons (under 18 years).</li> </ul>	ID for all the employed persons  Evidence of no child engaged	Contractor	
	<ul style="list-style-type: none"> <li>Implement the workers grievance mechanism for all direct workers and contracted workers.</li> </ul>	Availability of GRM that is relevant to Golole site	Contractor	
	<ul style="list-style-type: none"> <li>Compliance to labour relations practices as provided for by Kenya legislations and International Labour Organisation (ILO)</li> </ul>	Legal register for the lot	Contractor	
	<ul style="list-style-type: none"> <li>Advertising at the local villages and markets for any position that needs to be filled; and</li> </ul>	Number of job adverts placed in the chief's office or common public area	Contractor	
	<ul style="list-style-type: none"> <li>Sub-contractor requirement to submit a past forced labor performance declaration, and a declaration of ongoing Bidder commitment to prevent, monitor and report on any forced labor.</li> </ul>	Evidence of submitted forced labor performance declaration	Contractor	
	<ul style="list-style-type: none"> <li>Include in contracts with subcontractors/ suppliers/ manufacturers of materials (pipes,</li> </ul>	Formal commitment to prevent forced labour	Contractor	

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	fittings, solar panels and equipment) obligations to prevent Forced Labor among the staff, employees, workers and any other person employed or engaged by the Subcontractor/ supplier/ manufacturer.			
<b>Potential tension/conflicts between local communities and incoming workers over jobs, resources, or land.</b>	<ul style="list-style-type: none"> <li>Prioritize local labour force.</li> </ul>	No of workers from Golole area employed in the project	Contractor/Supervision consultant MARWASCO	WSTF
Influx of workers leading to the spread of infectious diseases	<ul style="list-style-type: none"> <li>Regular community engagements.</li> </ul>	No of community engagements	Contractor/ MARWASCO	WSTF
Increased competition for local resources: food, water, and other community resources.	<ul style="list-style-type: none"> <li>Regular community and project workers training, awareness and sensitization on HIV/AIDS.</li> </ul>	Training Plan Number of the workers trained.	Contractor/ MARWASCO	WSTF
Social tensions:				
Unresolved workers grievances	<ul style="list-style-type: none"> <li>Implement clear and culturally sensitive GM and SEAH/GBV procedures at the project site.</li> </ul>	Clear and culturally sensitive GM and SEAH/GBV procedures at the project site.	Contractor/ MARWASCO	WSTF
Hiring of workers outside the project area				
Increased demand on infrastructure: Strain on local transport, sanitation, and healthcare facilities.	<ul style="list-style-type: none"> <li>Provide adequate and appropriate welfare conveniences for the staff-including washrooms, rest area and changing room</li> </ul>	Number of sanitation conveniences and changing rooms for both genders Appropriate rest area	Contractor/ MARWASCO	WSTF
Cultural disruption: Cultural differences between workers and the local community	<ul style="list-style-type: none"> <li>Ensuring that children and minors are not employed directly or indirectly on the project.</li> </ul>	Policy against child labour, Identification Numbers for all the employees	Contractor/ MARWASCO	WSTF
<b>Insecurity</b> Existing Intra and inter community conflict	<ul style="list-style-type: none"> <li>Prepare and implement a site Security Management Plan (SMP) in accordance with project Security Management Plan and SOPS.</li> </ul>	Availability of approved site specific SMP.	Contractor/ MARWASCO	WSTF County Government of Marsabit



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Unresolved project, land and intertribal conflicts	<ul style="list-style-type: none"> <li>The site specific SMP must be cleared by the E&amp;S Team at the CPU before site mobilization</li> <li>Have sufficient emergency response plan before mobilizing to the field</li> </ul>		Contractor/ MARWASCO	WSTF
	<ul style="list-style-type: none"> <li>Use the county and community as entry points before mobilizing to the field</li> </ul>	Evidence of consultation with CC	Contractor/ MARWASCO	WSTF
<b>Occupational Safety and Health (OSH) hazards</b>  Physical hazards: slips, trips, falls, and injuries from machinery or tools.  Exposure to intermittent and occupational noise, dust, heat and chemicals, exposure to harsh climatic conditions, manual handling hazards, electrical hazards: Risks from installing solar panels and working with electrical systems, fall from height heights, falling objects hazards during steel tank erection  Poor sanitary facilities may result in waterborne or communicable diseases.  Traffic incidents and accidents at the site	<ul style="list-style-type: none"> <li>Develop and implement a site-specific Health and Safety Action Plan based on the project Health and Safety Action Plan</li> </ul>	Availability and implementation progress of the HSAP	Contractor/ Supervision consultant	DOSHS
	<ul style="list-style-type: none"> <li>Register the construction site with DOSHS</li> </ul>	Valid construction workplace certificate from DOSHS	Contractor	
	<ul style="list-style-type: none"> <li>Undertake an appropriate Health and safety risk assessment and submit the report to DOSHS Marsabit</li> </ul>	DOSHS signed copy of RA report	Contractor	
	<ul style="list-style-type: none"> <li>Induction of workers on health and safety before commencing works</li> </ul>	Number of workers inducted	Contractor	
	<ul style="list-style-type: none"> <li>Engage a qualified and competent health and safety officer for the lot</li> </ul>	Qualification of the Health and safety officer at the site	Contractor	
	<ul style="list-style-type: none"> <li>Ensure there are trained first aider and fire Marshalls</li> </ul>	Number of trained first aider and fire marshals	Contractor	
	<ul style="list-style-type: none"> <li>Conduct daily toolbox talks</li> </ul>	Records of Tool Box Talks	Contractor	
	<ul style="list-style-type: none"> <li>Provide appropriate personal protective equipment (PPE) to workers and training on appropriate use. (Reflective jackets, helmets, face masks, ear plugs gloves, safety boots, etc.)</li> </ul>	No of workers with appropriate PPEs	Contractor	

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	<ul style="list-style-type: none"> <li>There should be adequate provision of the requisite sanitation facilities for human waste disposal</li> </ul>	Clean and convenient sanitation facilities	Contractor	
	<ul style="list-style-type: none"> <li>Recording of all injuries that occur on site in the incident register, corrective actions for their prevention are instigated as Appropriate</li> </ul>	Availability of incident register at the site Well filled incidents	Contractor	
	<ul style="list-style-type: none"> <li>The contractor should have a WIBA insurance policy to cushion self and workers against loss of income or an accident on site</li> </ul>	Workers with WIBA	Contractor	
	<ul style="list-style-type: none"> <li>Ensure that all site personnel are provided with an adequate supply of safe drinking water, which should be at accessible points at all times.</li> </ul>	Number of water points for the workers	Contractor	
	<ul style="list-style-type: none"> <li>Provide conveniently accessible, clean, orderly, adequate and suitable washing facilities within the site.</li> </ul>	Clean and convenient sanitation facilities	Contractor	
<b>Community Health and Safety</b> Traffic accidents and incidents. Noise Nuisance from Construction activities Dust and air pollution: Excavation and material handling can affect air quality, leading to respiratory issues. Spread of diseases: Interaction between workers and the	<ul style="list-style-type: none"> <li>Ensure the safety of residents by providing safety signs at strategic places around the access roads.</li> </ul>	No of road appropriate safety signs provided	Contractor/ Supervision consultant E & S Specialists MARWASCO	
	<ul style="list-style-type: none"> <li>All trenches must be barricade using the appropriate safety tape</li> </ul>	Trenches with barricading tape		
	<ul style="list-style-type: none"> <li>Cordoning off working sites to protect the public or unauthorized persons</li> </ul>	Area cordoned off		

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<p>community may increase the risk of communicable diseases.</p> <p>Open trenches, unprotected construction area, and unsecured equipment pose safety risks to nearby residents and livestock</p> <p>Structural hazards: Poorly constructed facilities, such as water kiosks or tanks, may lead to accidents post-construction.</p> <p>Disruption of services: Temporary interruptions in water supply or access due to pipeline works.</p>	<ul style="list-style-type: none"> <li>Use of signs and warnings on sites with high risks such as the elevated tank site</li> </ul>	Number of appropriate safety signs installed at the construction site		
	<ul style="list-style-type: none"> <li>Reduce unnecessary speeding to control for accidents from the movement of pedestrians or livestock in the area.</li> </ul>	Speed limit at the site and within the project area		
	<ul style="list-style-type: none"> <li>The elevated water tank to be installed a safe distance from human activities or property</li> </ul>	Evidence of the consideration of community settlement in tank design		
	<ul style="list-style-type: none"> <li>The design and construction of the elevated steel tank to consider the changes in wind force in the area.</li> </ul>	Approved design and construction methods		
<p><b>Sexual exploitation and harassment (SEA-H)</b></p> <p>Potential SEAH risk among the workers at the project site</p> <p>Workers may take advantage of power imbalances to exploit local women or vulnerable individuals in the project area</p> <p>Lack of reporting mechanisms: Without proper channels, victims of SEAH or GBV may not report incidents due to fear of retaliation or lack of support.</p>	<ul style="list-style-type: none"> <li>Engage competent GBV / social safeguard officer</li> </ul>	<ul style="list-style-type: none"> <li>Qualification of the GBV / social safeguard officer</li> <li>Number of incidences (both reported and unreported), their investigation, solution and closure according to the SEAH Response Plan</li> </ul>	Consultant  Contractor/Supervision Consultant  Local Community Leaders  MARWASCO  SEAH Expert  MOWSI	MoWSI WSTF
	<ul style="list-style-type: none"> <li>Conduct SEA-H sensitization to the workers during induction</li> </ul>	No of workers sensitized		MoWSI WSTF
	<ul style="list-style-type: none"> <li>Background checks for the workers, subcontractors and suppliers.</li> </ul>	Well documented procedures for background checks		MoWSI WSTF

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	<ul style="list-style-type: none"> <li>Conduct SEA-H sensitization to the community in the project area</li> </ul>	No of community sensitization meeting		MoWSI WSTF
	<ul style="list-style-type: none"> <li>Ensure all the workers signs the CoC developed for the project and sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;</li> </ul>	Number of the signed CoC		MoWSI WSTF
	<ul style="list-style-type: none"> <li>Implement the project SEAH action plan with an Accountability and Response Framework as part of the C-ESMP.</li> </ul>	Level of the SEAH plan implementation at the site		MoWSI WSTF
	<ul style="list-style-type: none"> <li>Response to SEA-H: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures</li> </ul>	Effective SEAH response plan		MoWSI WSTF
<b>Infringement of Children rights</b>  Engagement of children in construction works  Sexual abuse of children in the project area by the project workers  Exposing Drug and alcohol to children  Workers working with the school	<ul style="list-style-type: none"> <li>Domesticate the Labor Management Procedures (LMP) as part of the CESMP;</li> </ul>	Level of the LMP implementation at the site	Contractor, Consultant WSTF	County Children's Department
	<ul style="list-style-type: none"> <li>Develop and implement a Children Protection Strategy that will ensures minors are protected against negative impacts associated by the Project.</li> </ul>	Availability and implementation status of Children Protection Strategy for the Lot	Contractor, Consultant WSTF	
	<ul style="list-style-type: none"> <li>Training and signing of CoC by the project team sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable behaviour;</li> </ul>	Number of workers trained on and signed CoC	Contractor/ Supervision consultant	
	<ul style="list-style-type: none"> <li>Children under the age of 18 years shall not be hired on site as provided by Child Rights Act (Amendment Bill) 2014.</li> </ul>	No of the workers with national identification card numbers at the site	Contractor/ Supervision consultant	

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<b>Infringement on Vulnerable and Marginal Groups (VMGs) rights</b>  Exclusion of vulnerable groups from consultations and inclusion in designs  Failure to implement the Stakeholder Engagement Plan (SEP)	<ul style="list-style-type: none"> <li>Schedule meetings at convenient times and locations to accommodate women, persons with disabilities, and other vulnerable groups.</li> </ul>	Plan of public consultation that is appropriate for community	Contractor/ Supervision consultant	
	<ul style="list-style-type: none"> <li>Focused engagements with the vulnerable groups. This will include dedicated consultations with the PWDs to understand their needs.</li> </ul>	Number of VMGs identified and number of consultation	Contractor/ Supervision consultant	
	<ul style="list-style-type: none"> <li>Apply universal design in infrastructure to ensure accessibility for persons with disabilities to the water points.</li> </ul>	Design that is user friendly to PWD	Supervision consultant	
	<ul style="list-style-type: none"> <li>Ensure that consultations are culturally appropriate, accessible, including the use of sign language interpreters, braille, and vernacular languages.</li> </ul>	Site specific GRM Involvement of site GRC	Supervision consultant	
<b>Water losses</b> through Water system leaks and loss of pressure  Improper installation or maintenance, inadequate corrosion protection, stress from traffic and vibrations and overloading	<ul style="list-style-type: none"> <li>Develop and implement a predictive scheme maintenance plan including sectional meters and pressure management systems, Regular pipeline surveillance and Burst reporting and response mechanism</li> <li>Prompt repair of detected leaks, and using high-quality pipes with appropriate materials.</li> <li></li> </ul>	Availability of predictive scheme maintenance plan	MARWASCO Contractor/ Supervision consultant	
<b>Depletion of groundwater resources due to over abstraction</b>  Over abstraction of ground water resources due to Excessive pumping	<ul style="list-style-type: none"> <li>Ensure there is water abstraction permit all the time</li> </ul>	valid water abstraction permit	MARWASCO	WRA
	<ul style="list-style-type: none"> <li>Install the WRA approved telemetric meter and ensure monitoring of the yield.</li> </ul>	Presence and/or number of working and calibrated telemetric meters	MARWASCO	WRA
	<ul style="list-style-type: none"> <li>Ensure quarterly payment of water use fee to WRA</li> </ul>	Evidence of payment	MARWASCO	WRA

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Failure to comply with WRA	<ul style="list-style-type: none"> <li>Promote efficiency in water use among the beneficiary communities through consultation</li> </ul>	Number of sensitization meetings	MARWASCO	County Government of Marsabit
	<ul style="list-style-type: none"> <li>Conduct regular borehole discharge and water quality analysis.</li> </ul>	Water quality analysis reports	MARWASCO	
<b>Contamination of water supply</b> Exposure of water to pathogens at the storage facilities and from external sources Contamination of water sources by the livestock waste	<ul style="list-style-type: none"> <li>The animal trough should be located at least 100m away from the boreholes.</li> <li></li> </ul>	Approved design and construction with the animal trough located	Contractor MARWASCO	
	<ul style="list-style-type: none"> <li>Fencing and protection of the borehole from livestock and wild animals.</li> <li>All the water tank areas should be fenced and have controlled entry</li> </ul>	Well fenced and protected borehole area	Contractor MARWASCO	
	<ul style="list-style-type: none"> <li>The borehole area should be manned and should have controlled access</li> </ul>	Availability of the security personnel at the borehole area	Contractor MARWASCO	
	<ul style="list-style-type: none"> <li>Community health and safety awareness meetings</li> </ul>	No of meeting	Contractor MARWASCO	
<b>Outbreak and spreading of livestock diseases</b> Presence of large herds of livestock at the watering area Animal movement: livestock moving between regions, spreading diseases and pests. <b>Lack of vaccination:</b> Insufficient vaccination programs leaving animals vulnerable.	<ul style="list-style-type: none"> <li>Regular disease surveillance by the veterinary department and community</li> </ul>	No of disease surveillances undertaken	County Department of Livestock MARWASCO	
	<ul style="list-style-type: none"> <li>Sensitization of the community on disease spread, monitoring and control</li> </ul>	No of meetings	County Department of Livestock MARWASCO	
	<ul style="list-style-type: none"> <li>Livestock disease management plan be put in place by the veterinary department to ensure disease incidences are promptly responded to and addressed</li> </ul>	Livestock Disease management plan in place	MARWASCO	

E & S impacts and their Sources	Proposed Mitigation Measure	Monitoring Measurement	and Responsible Entity	Supervising Agency
<b>Vandalism of the water supply equipment</b>  Damages and recovery of valuable materials from the project infrastructure.	<ul style="list-style-type: none"> <li>Sturdy fences and gates to limit access to vulnerable areas;</li> </ul>	Well maintained fence	MARWASCO	
	<ul style="list-style-type: none"> <li>Proper lighting in public spaces to deter activity in darkness;</li> </ul>	No of installed security lights where necessary	MARWASCO	
	<ul style="list-style-type: none"> <li>Ensure consistent follow-up with reporting and addressing vandalism to maintain deterrence;</li> </ul>	Evidence of insecurity response measures at the scheme	MARWASCO	
	<ul style="list-style-type: none"> <li>Educational programs in schools to teach responsible behavior;</li> </ul>	Number of the educational programs implemented	MARWASCO	
	<ul style="list-style-type: none"> <li>Public awareness campaigns about the harms of vandalism and supporting community policing.</li> </ul>	Number of public awareness meetings	MARWASCO	
<b>Water-related conflict</b>  Resource scarcity especially during the dry periods: Limited availability leading to tensions between users.  Environmental changes: Climate change or natural disasters exacerbating resource shortages.	<ul style="list-style-type: none"> <li>Regular stakeholder engagements to facilitate open dialogue with community leaders and residents to address concerns and incorporate feedback into project design.</li> <li>Community awareness campaigns through training communities about project safety protocols, emergency procedures, and reporting mechanisms;</li> </ul>	Number of public awareness meetings	MARWASCO	WSTF County Government of Marsabit
	<ul style="list-style-type: none"> <li>Develop and operationalize grievance redress mechanism;</li> </ul>	Availability of site specific GRM, Grievances recorded, addressed and closed	MARWASCO	WSTF County Government of Marsabit
	<ul style="list-style-type: none"> <li>Promoting equitable access to water resources and services;</li> </ul>	Evidence of involvement of the communities in	MARWASCO	WSTF County Government of Marsabit

E & S impacts and their Sources	Proposed Mitigation Measure	Monitoring Measurement and	Responsible Entity	Supervising Agency
	<ul style="list-style-type: none"> <li>Establishing systems to identify potential conflict triggers and respond proactively;</li> </ul>	Effective GRM and SMP available at the site	MARWASCO	WSTF County Government of Marsabit
	<ul style="list-style-type: none"> <li>Promoting responsible reporting and raising awareness of conflict issue; and</li> </ul>	Number of public awareness meetings	MARWASCO	WSTF County Government of Marsabit
	<ul style="list-style-type: none"> <li>Adopting the inter-community conflict resolution mechanisms; and</li> </ul>			WSTF County Government of Marsabit



Monitoring & Measurement		Frequency
GRC reports Public forums		Quarterly
Reports on erosion incidents. Volume of disposed fill (m <sup>3</sup> /month). Regular status updates. Evidence of erosion control structures in place		Monthly
Hazardous Waste Chain of Custody Forms. Incident response procedures. Water quality monitoring reports. Incident reports. Evidence of secondary containment structures; evidence of training on handling of hazardous materials		Monthly
Air Quality Monitoring Report Reports on induction of drivers on site operation requirements Results from routine community engagement on dust concerns		Daily inspections Monthly reports on monitoring status
Air Quality Monitoring Report		Annual audits
Noise Monitoring Reports Reports on induction of drivers on speed limits Results from routine community engagement on noise and vibrations concerns		Monthly
Tree planting Plan Report of Tree Planting Exercise		Quarterly
Reports on programme to implement recommendations		Monthly

Monitoring & Measurement	Frequency
Traffic Management Plan Results from routine community engagement on traffic concerns	Monthly
Number of community meetings Grievance related to access and livelihoods Traffic management plan Number of temporary accesses provided	Monthly
Well documented LMP at the site Training records with evidence of workers induction in labour and working conditions Well documented copies of Employment contracts with JD and terms of contract Formal human resource policy with commitment to offering equal employment opportunities to all gender Number of women employed at the site Site specific workers grievance redress mechanism Job advertisements posted in both print and electronic media Formal and documented commitment against forced labour	Monthly
Number of workers at the site from the project area Number of public consultation meeting with influx agenda Formal GRM that is applicable to the site Availability of clean and well-maintained sanitation facilities for both genders	Prior to Commencement of Construction works Monthly Reporting on status
OSH training records and plans No. of workers trained, Available incident register report, Workers GRM	Monthly reporting on status Periodic OSH audits and inspections

Monitoring & Measurement	Frequency
Availability of safety procedures Training reports/tool box talks Workers wearing appropriate PPE Availability of adequate first aid facilities and trained first aiders on sites Records of Inspections and periodic OSH audits. Existence and validity of the WIBA policy	
Availability of appropriate road signs Barricading tapes and appropriate access restriction measures	Daily Regular Checks
GBV training records for the consultant GBV officer GBV sensitization records and plans for workers and community Signed CoCs for all the workers and subcontractors Site specific SEA-H prevention and control plan with clear reporting procedures Log frame to register SEA cases at the site with GBV cases reported, %/resolved/ referred Well documented SOP for GBV/SEAH at the site Updated County specific referral pathway	Daily Regular Check Quarterly Reporting on Status
Labour Management Procedures Signed CoCs No underage project workers Engagement with the sub county children department HIV/AIDS training plan, Records of VCT training. No. of workers trained and sensitized Presence of IEC materials.	Monthly

Monitoring & Measurement	Frequency
Presence of condom dispensers	
Evidence that the project was built as designed Water Scheme Operation and maintenance programs Meetings held with the community and relevant stakeholders Monthly records on non-revenue water	Routine checks Monthly reporting
Water Scheme Operation and maintenance programs Valid water abstraction permit Evidence of Telemetric meter and quarterly report. Community Burst reporting protocols	Quarterly
No. of Complaint Scheme specific GRM Training records Community water users plan	Monthly
Carry out analysis of physico- chemical and bacteriological parameters for water quality.	Routine checks Monthly reporting
Number of disease surveillance conducted No of Sensitization meetings held A livestock disease management plan	Routine Checks especially during drought periods when there is influx of livestock at watering points
Number of disease surveillance conducted No of Sensitization meetings held A livestock disease management plan	Routine checks
Number of community consultation meetings	Monthly reporting on status

Monitoring & Measurement	Frequency
Fences with gates Security lighting Awareness creation activities	
Number of community consultation meetings Effective GRM Community awareness programmes Updated conflict management plan	Regular Checks
Number of disease surveillance conducted No of Sensitization meetings held A livestock disease management plan	Routine checks
Number of community consultation meetings Fences with gates Security lighting Awareness creation activities	Monthly reporting on status
Number of community consultation meetings Effective GRM Community awareness programmes Updated conflict management plan	Regular Checks