

Narok OR19-14 Test Site – Atmospheric Corrosivity

Site OR19-14

Installation: 02-12-2019



Narok Test Site (Image by Geosun).

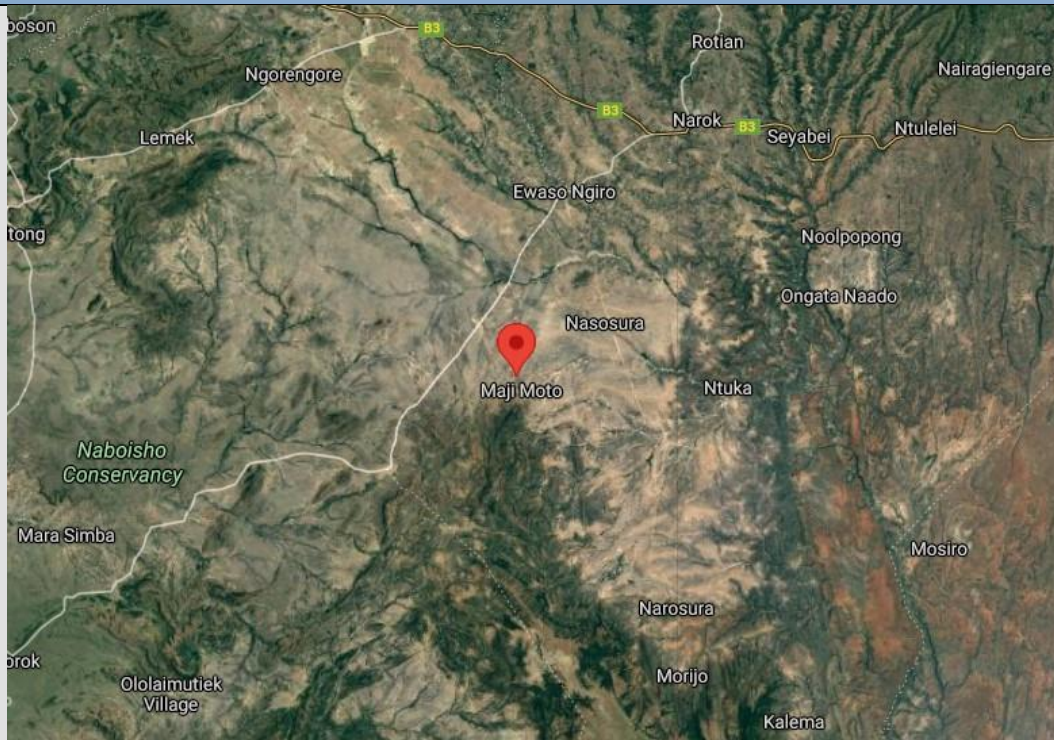
Background:

Narok is in the southern part of the Great Rift Valley in Kenya [1]. According to sources, Narok Town is the primary urban area in the county, with more than 40 000 people that mainly rely on farming, tourism, and mining activities as sources of income [2]. The town's elevation is roughly 1 827 m above sea level [2].

The site is 125 km to the west of Nairobi and near 185 km to the east of Lake Victoria. From a general corrosivity perspective, the atmosphere is typically classified as warm and temperate [3], with a yearly average temperature for the site measured as $18.1 \pm 1.3^{\circ}\text{C}$, fluctuating between 14.2°C and 22.6°C . The mean yearly humidity level is about $86.2 \pm 10.8\%$ and the annual precipitation level near 785 mm, with the rainfall months being November to May, and February being the warmest month of the year [3]. Per the Köppen-Geiger system the area is classified as Cfb [4]. The dry season is June to October, and the average wind speed 3.8 ± 1.3 m/s in a south-easterly direction.

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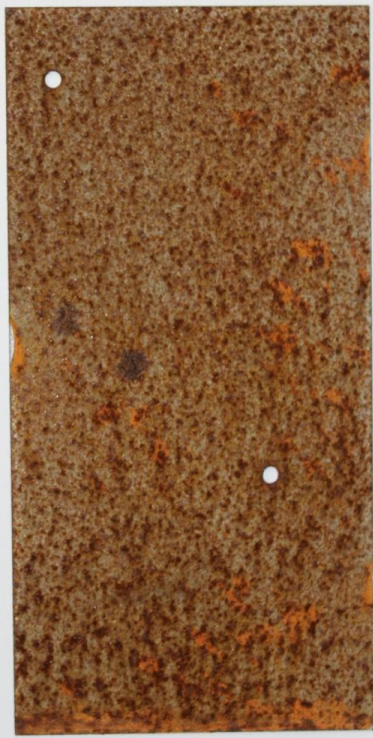
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Google Inc Map of Narok County [5].

GPS Coordinates of Site:	1°19'15.6"S 35°42'36.0"E	Elevation above Sea Level (m):	1946 m	Distance from Ocean (km):	~525 km
ISO 9226 Corrosion Rates and ISO 9223 Corrosivity Classification					
12-month R_{CORR} Mild steel (µm/yr)	3.6 ± 0.2 µm/yr				
12-month R_{CORR} Aluminium (µm/yr)	< 0.1 µm/yr (Negligible)				
12-month R_{CORR} Hot Dip Galvanised Steel (µm/yr)	0.5 ± 0.1 µm/yr				
12-month R_{CORR} Copper (µm/yr)	0.5 ± 0.1 µm/yr				
ISO 9223 Corrosivity Classification	Low (C2)				
Typical surface contaminants	<testing still in progress>				

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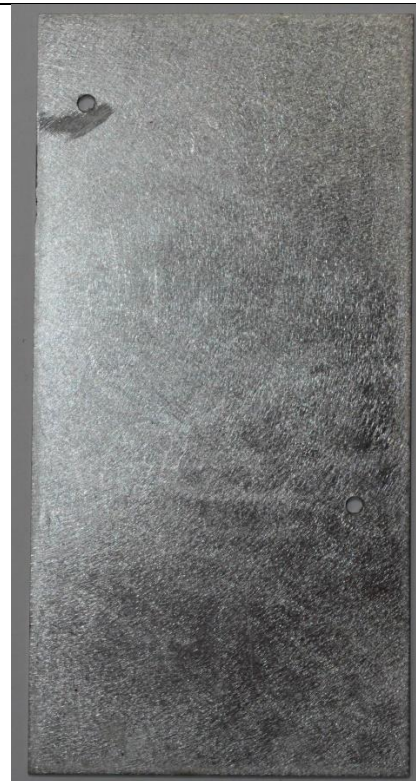
Mild steel – 12 months



Mild steel – 12 months



Aluminium – 12 months



Aluminium – 12 months

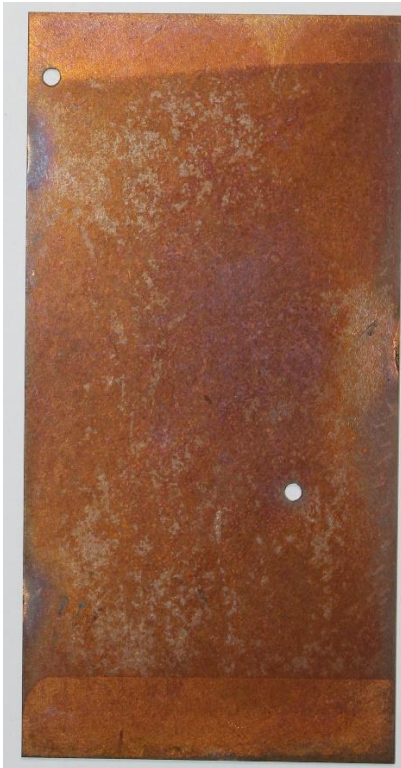
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HDG – 12 months



HDG – 12 months



Copper – 12 months



Copper – 12 months

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Works Cited

- [1] Wikipedia, "Narok County," 7 April 2021. [Online]. Available: https://en.wikipedia.org/wiki/Narok_County. [Accessed 28 April 2021].
- [2] Wikipedia, "Narok," 28 April 2021. [Online]. Available: <https://en.wikipedia.org/wiki/Narok>.
- [3] Climate-Data.Org, "Narok Climate - Kenia," 28 April 2021. [Online]. Available: <https://en.climate-data.org/africa/kenya/narok/narok-11128/>. [Accessed 28 April 2021].
- [4] Wikipedia, "Köppen climate classification," Wikipedia, 28 April 2021. [Online]. Available: https://en.wikipedia.org/wiki/K%C3%B6ppen_climate_classification. [Accessed 28 April 2021].
- [5] Google Inc, "Google Maps," 28 April 2021. [Online]. Available: <https://www.google.com/maps/place/1%C2%B019'15.6%22S+35%C2%B042'36.0%22E/@-1.3201849,35.5497617,134496m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d-1.32114d35.71>. [Accessed 28 April 2021].