

PATTERN F

SANDY COASTLINE

Water regime

The facet remains saturated with sea water as it is submerged during high tides. During the low tide, its surface is exposed to atmosphere; remains mostly moist. Because of high porosity and permeability, confined drainage is absent.

Associated Features

Position in landscape: Lowest in the surrounding landscape.

Soil : Nil

Vegetation: Nil. Facet is barren.

Land use : Nil. Wasteland

Genesis : Formed by deposition and rearrangement of sand due to action of sea waves and tidal currents.

Airphoto Interpretation Aids

A thin white streak parallel to the water line is seen on airphotos. With the help of magnifying lens of stereoscope, this foreshore facet is better recognised.

Comments and Reference

The facet is present in the Toposheet Nos. 41 B/15, B/16, F/4. The surface is inclined sloping towards sea. Being wet easy to walk over but is difficult for vehicles.

FACET NO. : F₂ NAME : Sand Dune
LOCATION : Mithapur Coast COMPILER : Geology Department
GEOREF : 41 B/15 M.S. University
DATE : April, 1977 Baroda.



Morphology

It is a crescent shaped accumulation of sand formed by wind action. The horns of the crescent point in the lee-ward direction. Dimensions vary from a few cm to hundreds of metres. Towards the points of the horn the dune progressively shows a tapering. The main body portion of the dune faces the wind direction. The horns give the effective wind direction. Dunes may be longitudinally or transversely oriented. Its surface shows ripple marks. Sometimes some vegetation appears in patches.

Surfacial deposits

The surface is covered with salt encrusted fine sand. These deposits are constantly being reworked by wind. The sand is calcareous white in colour and fine to medium-grained.

Water regime

The facet comprising loose sand, the porosity and permeability is very high. Becomes wet with rain water which easily percolates down. Hence no formation of rills, channels etc. on the surface; the facet is dry throughout the year except during the actual rains. No drainage.

Associated Features

Position in landscape: Highest in the surrounding landscape; found over the coastal ridge.

Soil: No soil except some blown fine dust deposited over sand.

Vegetation: Mostly barren, though at places some sandy flora may be encountered.

Land use : Wasteland.

Genesis : Wind borne sand deposits.

Airphoto Interpretation Aids

The feature being small cannot be clearly seen on the airphotos. As these are located over the sandy ridge which is seen as a white strip running parallel to the coastline, the presence of these dunes can be inferred only.

Comments and Reference

The facet is marked on Toposheet Nos. 41 F/15, F/4, B/16. A small structure on sandy ridge crescentic in shape distinguishable from the main sand ridge body. Can be walked over with difficulty; non-trafficable for vehicle.

FACET NO. : F₃ NAME : Sandy Ridge
LOCATION : South of Dwarka
GEOREF : 41 B/16 COMPILER : Geology Department
DATE : March, 1977 M.S. University
Baroda.



Morphology

The facet occurs on the coastline from Okha to Okha Madhi (except around Dwarka City) and forms a ridge parallel to the coastline with width of 50-60 m. It's top is convex, sloping rather steeply seaward, and gently landward side. Landward it slopes at 4 to 5° while seaward slopes 15 to 20°. The sand is calcareous, white coloured, coarse to medium grained.

Surfacial deposits

Nil.

Water regime

The facet remains dry except during monsoon. During rainy season, it becomes wet but does not hold much water.

Associated Features

Position in landscape: Higher in the landscape.

Soil: No soil cover developed

Vegetation: Small flowering plants grow only during monsoon.

Land use : The calcareous material is used in the manufacture of Portland cement.

Genesis : Wind and water erosion of limestones and deposition along the coastline by wind action.

Airphoto Interpretation Aids

The facet is as an elongated strip of very light gray to almost white tone, running parallel to water line is clearly recognised on airphotos. It has a sharp tonal contrast with sea, the landward border is not well-defined and rather irregular.

Comments and Reference

The facet is present in the Toposheet Nos. 41 B/15, B/16, F/3, F/4. Quite difficult to cross over either by vehicles or by walking.

FACET NO. : F₄ NAME : Aeolian Ripple
Marks
LOCATION : Mithapur Coast
GEOREF : 41 B/15 COMPILER : Geology Department
M.S. University
DATE : April, 1977 Baroda.

Morphology

The facet occupies highest position on the sandy ridge. The surface is smooth undulating in a definite pattern. The amplitude of undulations is about 2-3 cm, wave length varies from 5 to 20 cm, and the length of crest axis or trough axis varies between 10 cm to 100 cm and more. Crest axes are nearly straight and parallel to one another. The ripple marks are preserved on account of hardening of the top surface due to salt encrustation.

Surfacial deposits

The facet is formed by the deposition of wind borne sand. Sometimes sand is mixed with clay and dust.

Water regime

The facet holds water for a very short time after the rains. Remains dry in fair weather. No drainage.

Associated Features

Position in landscape: Highest in the surrounding landscape.

Soil: No soil

Vegetation: Barren

Land use : Wasteland

Genesis : Coastal sediments carried by wind are deposited and reworked on the top of the sandy ridge.

Airphoto Interpretation Aids

The features being very small, cannot be identified on the airphotos. However, they are located on the sandy ridge along the coast and which is easily recognized on the airphotos.

Comments and Reference

The facet is present in Toposheet No. 41 E/3, E/4 and B/16. The surface being of loose sand, it is a bit difficult to walk over and also non-trafficable.

FACET NO. : F₅ NAME : Vegetated Sandy Terrain

LOCATION : Northwest of Okha Madhi

GEOREF : 41 F/4 COMPILER : Geology Department
M.S. University

DATE : April, 1977 Baroda.



Morphology

The facet ~~is~~ comprises the landward slope of the sandy ridge. Its areal extent varies from a few sq.m. to several km. It's essentially formed of a thin blanket of sandy soil over a plain. It thus supports a sparse vegetation in the form of grass and small bushes; devoid of big trees. Blanket of grass increases in monsoon.

Surfacial deposits

Sometimes calcareous sand is mixed with clay and dust particles. The sand and clay deposited mainly by wind action.

Water regime

The surface remains dry in fair weather. During monsoon it becomes wet and holds water for a short duration due to

which growth of grass takes place. Bushes remain green for sometime after monsoon. No external drainage. High water table during monsoon only.

Associated Features

Position in landscape: Intermediate to surrounding landscape.

Soil: Soil is transported and mixed with sand, fine grained, light brown coloured and homogeneous.

Vegetation: The facet is covered with scattered patches of grass and bushes with remaining open spaces.

Land use : Used as pastures.

Genesis : The facet is formed by the deposition of wind borne sand and clay particles over a plain ground.

Airphoto Interpretation Aids

The facet shows a very light gray tone for non-vegetated patches and light gray tone for patches of vegetation. The surface is smooth plain without any features. Drainage is totally absent.

Comments and Reference

The facet is present in Toposheet Nos. 41 F/3, F/4, B/15. Generally, the facet is associated with a sandy ridge on its landward side. Other limit is marked by either agricultural land or wasteland. The surface being made up of loose sandy soil, it is a bit difficult to walk over, though not impossible.