

ILMENITE CONTENT OF OREGON COASTAL SANDS

Ilmenite has been known for many years to make up a substantial percentage of the black sand deposits along the Oregon coast. The earliest analytical work done by Day and Richards (2) showed that the percentages varied up to 55 percent in a few cases. Many of the analyses showed "ilmenite and/or chromite", but for the portion of the coast north of the Siuslaw River it has been shown that ilmenite is predominant and chromite minor, with the relationships reversed south of Coos Bay. The following mineralogical analyses are those by Day and Richards (2) which show more than 10 percent ilmenite:*

<u>No.</u>	<u>Location</u>	<u>Lbs./ton</u>	<u>Percent</u> <u>(Calc.)</u>
P-443	Marshfield	467	23.0
P-375	Bullards	676	34.0
P-102	Randolph district	216	11.0
P-102	Randolph district	583	29.0
P-102	Randolph district	202	10.0
P-102	Randolph district	893	44.5
P-102	Randolph district	235	11.7
R-3043	Randolph district	1,500	75.0
R-3044	Randolph district	1,100	55.0
R-3042	Randolph district	200	10.0
R-3078	Bandon Beach	300 *	15.0
P-727	Coos Bay	228 *	11.0
P-274 A	Yaquina Bay	540 *	27.0
P-274 A	Yaquina Bay	572 *	28.6
P-274 B	Yaquina Bay	546 *	27.0
P-732 A	Newport	662 *	33.0
P-732 C	Newport	192 *	9.6
R-3065	Oretown	1,100 *	55.0

* Pounds per ton ilmenite alone. Others represent ilmenite and/or chromite.

In the southern portion of the coast, only one analysis for titanium is given (for the Chickamin Mine on South Slough) of "from 10 to 15 percent TiO_2 " (3, 4, 5). It is generally listed as being minor in amount, and considerably less than the chromite and magnetite content.

Estimates given by Twenhofel (7) of the amounts of black sand and ilmenite and/or chromite of the largest of the deposits on the beaches are as follows:

Heceta Beach around Sutton Creek: 7000 to 8000 yards of concentrate, containing 3500 tons of ilmenite and/or chromite.

Beach north of Big Creek: 1000 yards containing 14 percent black minerals.

South of Buckley Creek: 2 feet thick, 1000 cubic yards, containing 25 percent ilmenite and/or chromite.

Newport Beach: 2000 cubic yards containing 55 percent ilmenite and/or chromite (about 2750 tons).

North of Jump-Off-Joe: 8000 cubic yards containing 53.45 percent ilmenite and/or chromite (about 12,800 tons).

Yaquina Bay: 1000 to 15,000 yards, containing 31.5 percent ilmenite and/or chromite (about 6300 tons).

Mouth of Columbia River: 15,000 to 30,000 yards containing 15 percent ilmenite.

Deposits at the mouth of the Columbia River were investigated in 1941, with the following results:

McGowan deposit, north side of mouth of Columbia River, Wash. Reportedly 300,000 tons of black sand, composed of 35 percent ilmenite and 52 percent magnetite (calculated).

Hammond deposit, in town near boundary of Fort Stevens (1) Lens of black sand at least 300 x 800 feet, from 3 to 4 feet thick.

Twenhofel sampled the beach sand concentrations along the northern coast (7) and his mineralogical results, when they show ilmenite and/or chromite amounting to more than 25 percent, are given as follows:*

Near Peter Iredale wreck, Clatsop Spit (7)

Dune sand concentration, 40.24 percent ilmenite and/or chromite.

South jetty, Columbia River (7)

Dune sand concentration, 34.5 percent ilmenite and/or chromite.

North side of south jetty, Columbia River (7)

Dune sand concentration, 22.5% ilmenite and/or chromite.

Top of jetty on north side of Columbia River (7)

Dune sand concentration, 23.3 percent ilmenite and/or chromite.

Northeast of south jetty, Columbia River (7)

Dune and wave concentration, 25 percent ilmenite and/or chromite.

East side of Trestle Bay, 2 foot channel sample (7)

25.46 percent ilmenite and/or chromite.

Dock on Sand Island, high tide level. (7)

27.53 percent ilmenite and/or chromite.

Netarts Bay, east end, high tide level. (7)

43.95 percent ilmenite and/or chromite.

Four miles north of Neskowin Creek (7)

25.85 percent ilmenite and/or chromite.

Beach south of Terra Del Mar (7)

6 inch channel, high tide level. 52.04 percent ilmenite and/or chromite.

Terra Del Mar, little creek at north end. (7)

6 inch channel, 30.1 percent ilmenite and/or chromite.

South of Cape Lookout (7)

Beach at foot of cliff, 29.92 percent ilmenite and/or chromite.

Delake, bank of stream, high tide level (7)

25.65 percent ilmenite and/or chromite.

* Location map in Twenhofel (7)

Delake, 1800 feet north, foot of cliff (7)
46.8 percent ilmenite and/or chromite.

Surf Tides Hotel, one-half mile north. (7)
Deposit 20 x 100 feet, 79.35 percent ilmenite and/or
chromite.

Surf Tides Hotel, 2 miles north. (7)
33.52 percent ilmenite and/or chromite.

South of Cascade Head, foot of cliff (7)
44.64 percent ilmenite and/or chromite.

South Beach, Yaquina Bay (7)
50.5 percent ilmenite and/or chromite
26.20 percent ilmenite and/or chromite
36.55 percent ilmenite and/or chromite
26.12 percent ilmenite and/or chromite
33.60 percent ilmenite and/or chromite
38.15 percent ilmenite and/or chromite
31.50 percent ilmenite and/or chromite

Agate Beach, 600 feet north of Big Creek (7)
67.12 percent ilmenite and/or chromite.

Agate Beach, 1000 feet south of Big Creek (7)
62.84 percent ilmenite and/or chromite.

Agate Beach, at Big Creek (7)
44.72 percent ilmenite and/or chromite.

Agate Beach, south end, south of Big Creek (7)
39.15 percent ilmenite and/or chromite.

Newport Beach at pavilion (7)
55.0 percent ilmenite and/or chromite.

Seal Rock, one mile north (7)
Bed 3 feet 6 inches thick, 50.53 percent ilmenite and/or
chromite.

Buckley Creek, south of Seal Rock (7)
34.24 percent ilmenite and/or chromite.

Alsea River mouth, south side (7)
Bed 1 foot thick, 54.93 percent ilmenite and/or chromite.

Big Creek, first creek north of (7)
42.8 percent ilmenite and/or chromite.

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