

IMPACT OF THE CONTAMINANT POLLUTANTS IN COASTAL HAMMAM SOUSSE AREA

Nadia HOCINI

Commissariat à l'Énergie Atomique (COMENA), Centre de Recherche Nucléaire d'Alger,
Algérie

ABSTRACT

This work is carried out within the Murex program supported by the European Commission (E.C). This program consists of the strengthening and development of scientific knowledge in Maghreban countries (Morocco, Algeria and Tunisia), mainly in management of quality coastal water.

The main objective of this work is to define a coastal area contaminated by urban releases and to study a physico-chemical behavior of associated contaminants, using a radioactive tracer technique. The experiment was organized by ONAS (Tunisia) in collaboration with CEA (France), CDTN (Algeria) and CNESTEN (Morocco) from October 11 to December 4, 1995.

DESCRIPTION OF THE AREA

A site under study is the sewage treatment plant located at approximately 2 Km North West of Sousse in Tunisia. A release of liquid waste to the sea is performed through a glass fiber pipeline (length of 2200m and diameter of 700 mm). This coast with several beaches is used for tourist purposes during summer station. The average of liquid discharge rate is 300l/s and the concentration of suspended sediment is 70 mg/l.

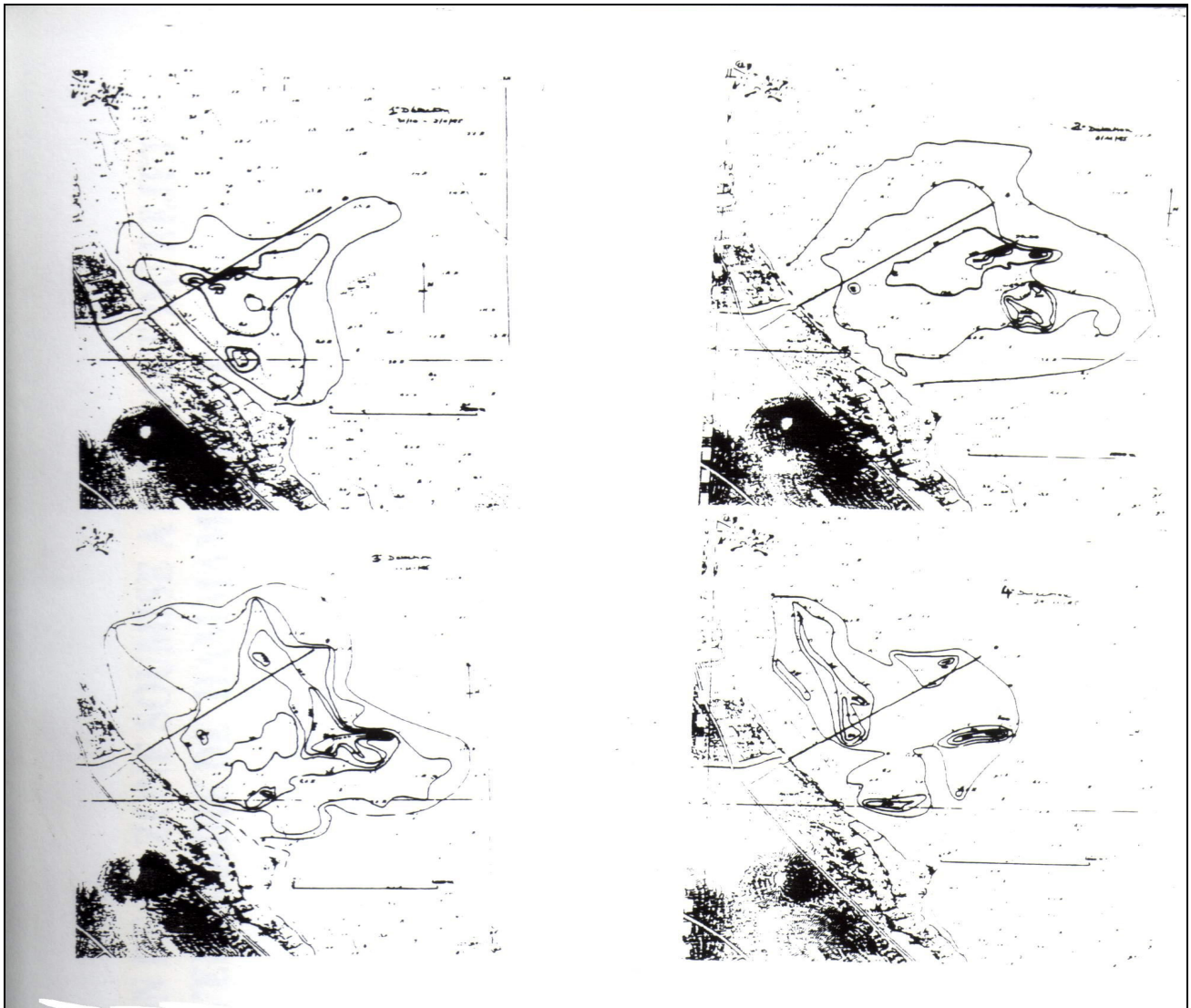
EXPERIMENTAL

In order to identify and determine a behavior of contaminant pollutant particles, radiotracer technique using hafnium isotope ($T_{1/2} = 45$ days) was performed under on site conditions. The radiotracer was injected in continuous mode using a peristaltic pump. The initial (14.8 Ci) and final (9.3 Ci) activities of the injection procedure are respectively performed on October 23 to November 12, 1995.

The area under study (El Kantaoui Harbour, at the North and the limit of Sousse at the South) was scanned using a survey and detection system containing a probe holder sledge towed by boat, with differential G.P.S (Global System Position). The detection results were used to draw a map of deposited solid particles.

RESULTS AND CONCLUSIONS

The detection was carried out using an appropriate counting system. The results obtained in terms of counting rates are shown in figures 1 to 4. The visual analysis of these figures it appears, that the movement of particles to the coast depends on the North-Est dominating winds. According to the obtained results, this campaign showed the interest zone of release and its associated impact.



REFERENCES

[1] P. BRISSET – R. HOSLIN

Etude au moyen de traceurs radioactifs des rejets urbains en mer Méditerranée station de Toulon Est, rapport CEA/ORIS/SAR/S/89-104/B 83, *Mai 1989*.

[2] P. BRISSET- R. HOSLIN - A. POGGI - P. WODLING

Détermination de la zone soumise à l'impact du rejet de l'émissaire de Hammam Sousse (Tunisie), rapport CEA/DAMRI/SAR/S/96-102/B99, *Février 1996*.

[3] N. HOCINI

Etude en zone côtière méditerranéenne des polluants issus des rejets urbains, rapport de mission de la première campagne en Tunisie, CDTN, *Décembre 1995*.

[4] P. BRISSET- R. HOSLIN - A. POGGI - P. WODLING

Détermination de la zone soumise à l'impact du rejet de Al-Hoceima (Maroc), rapport CEA/DAMRI/SAR/S/96-122 /B103, *Octobre 1996*.