

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأقراص المدمجة قد أعدت دون أية تغيرات



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بالرسالة صفحات

لم ترد بالأصل



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بسم الله الرحمن الرحيم

"وهو الذي سخر البحر لتأكلوا منه

لحماً طرياً وتستخرجوا منه

حلياً تلبسونها وترى الفلك مواخر فيه ولتبتغوا من فضله

ولعلمكم تشكرون"

صدق الله العظيم

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Index

	<i>Page</i>
Introduction	1
Aim of work	18
Material & Methods	24
Area of study	25
Sampling locations	25
Physico – Chemical analysis	25
Physical analysis	25
1. Temperature	25
2. pH	25
Chemical analysis	25
1. Dissolved Oxygen	25
2. Alkalinity	26
3. Chemical Oxygen Demand	26
4. Ammonium salt	26
5. Dissolved inorganic phosphate	26
Toxicity tests	27
1. Pilot test	27
Plant Fertilizer north unit	28
Plant Fertilizer south unit	29
Misr – Iran of Textile	29
Slaughter house	29
Ammonium chloride	30
Soda ash	30

The raw effluent of north drain	30
The raw effluent of south drain	30
2. Toxicity of 96 h LC ₅₀	31
Histological Observations	32
Results	34
Physical analysis	35
1. Temperature	35
2. PH	36
Chemical analysis	36
1. Dissolved Oxygen	37
2. Alkalinity	38
3. Chemical Oxygen Demand	39
4. Ammonium salts	40
5. Phosphate salts	41
Toxicity tests	42
1. Fertilizer plant (N. unit) 96 h. LC ₅₀	42
2. Fertilizer plant (S. unit) 96 h. LC ₅₀	44
3. Misr -Iran of textile 96 h. LC ₅₀	46
4. Slaughter house 96 h. LC ₅₀	48
5. Ammonia chloride 96 h. LC ₅₀	50
6. Sodium hydroxide 96 h. LC ₅₀	52
7. North drain effluents 96 h. LC ₅₀	54
8. South drain 96 h. LC ₅₀	56
Histological Observations	59
I. Gills	59
Normal gills	59
Treated gills	59

1. Effect of the north drain effluents	59
2. Effect of south drain effluents	64
3. Effect of Misr-Iran Textile effluents	67
4. Effect of Slaughter house effluents	70
II. Liver	73
Normal liver	73
Treated Liver	73
1. Effect of the north drain effluents	73
2. Effect of south drain effluents	76
3. Effect of Misr – Iran of Textile effluents	76
4. Effect of Slaughter house effluents	76
III. Intestine	80
Normal Intestine	80
Treated Intestine	80
1. Effect of the north drain effluents	80
2. Effect of south drain effluents	84
3. Effect of Misr – Iran of Textile effluents	84
4. Effect of Slaughter house effluents	88
IV. Spleen	88
Normal Spleen	88
Treated spleen	88
1. Effect of the north drain effluents	88
2. Effect of south drain effluents	92
Discussion	94
Summary	119
References	126
Arabic Summary	

INTRODUCTION

Introduction

Suez Bay locates between longitudes ($32^{\circ} 28'$ and $32^{\circ} 34'$) and latitudes ($29^{\circ} 52'$ and $29^{\circ} 57'$) (Fig. 1). It is a northern shallow extension of the Gulf of Suez, roughly elliptic in shape. The surface area is about 77.13 km^2 with a major axis (N-S) about 13.2 km. The average width along the minor axis (E-W) is about 8.8 Km. Considering navigational purposes, a channel dredged to a depth of around 20 m extends north from the Gulf of Suez through the Bay to Suez Canal. Suez City lies on the northwestern side of the Bay where several industries extend along the same side.

Morcos (1960) reported that the water level in Suez Bay rises during autumn, reaching its maximum in September. It decreases again gradually and reaches its mean level in May and June on its way down. Moreover, the author found that the annual variations of the water level due to tides, varies between 80 cm at neap tide and 150 cm in spring tide.

Meshal (1970) observed that northerly winds prevail during most of the year; in general they are weak or moderate. When wind blows violently from northwest, water in the northern 50 Km of the Gulf of Suez does not agitate because it lies in the wind shade of Ataq Mountains on the western side of the Gulf. In winter, winds come from the west most of the time. When they come from the southwest, they become sufficiently strong as to produce high agitation in the Gulf of Suez. Water of the Gulf of Suez enters the Bay along the eastern coast (Sinai side)

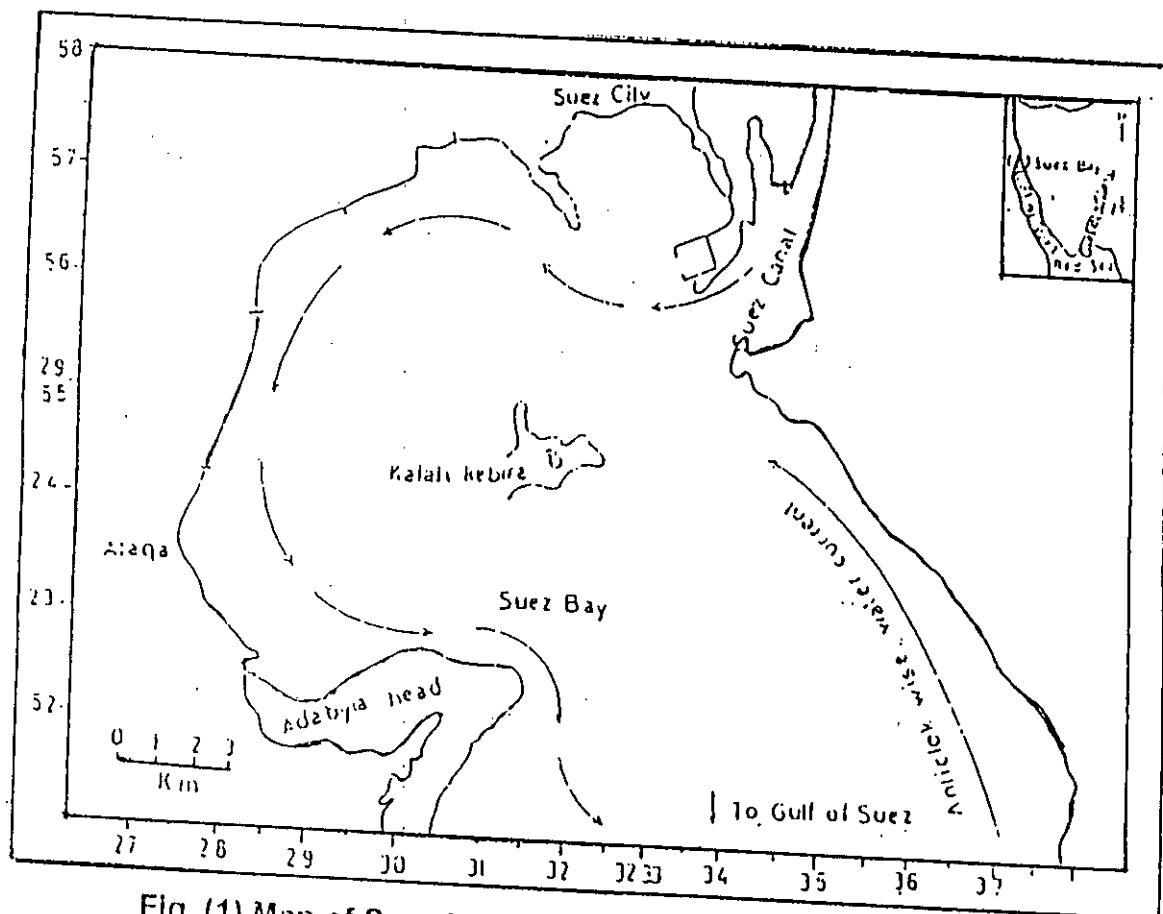


Fig. (1) Map of Suez Bay showing the main water currents.

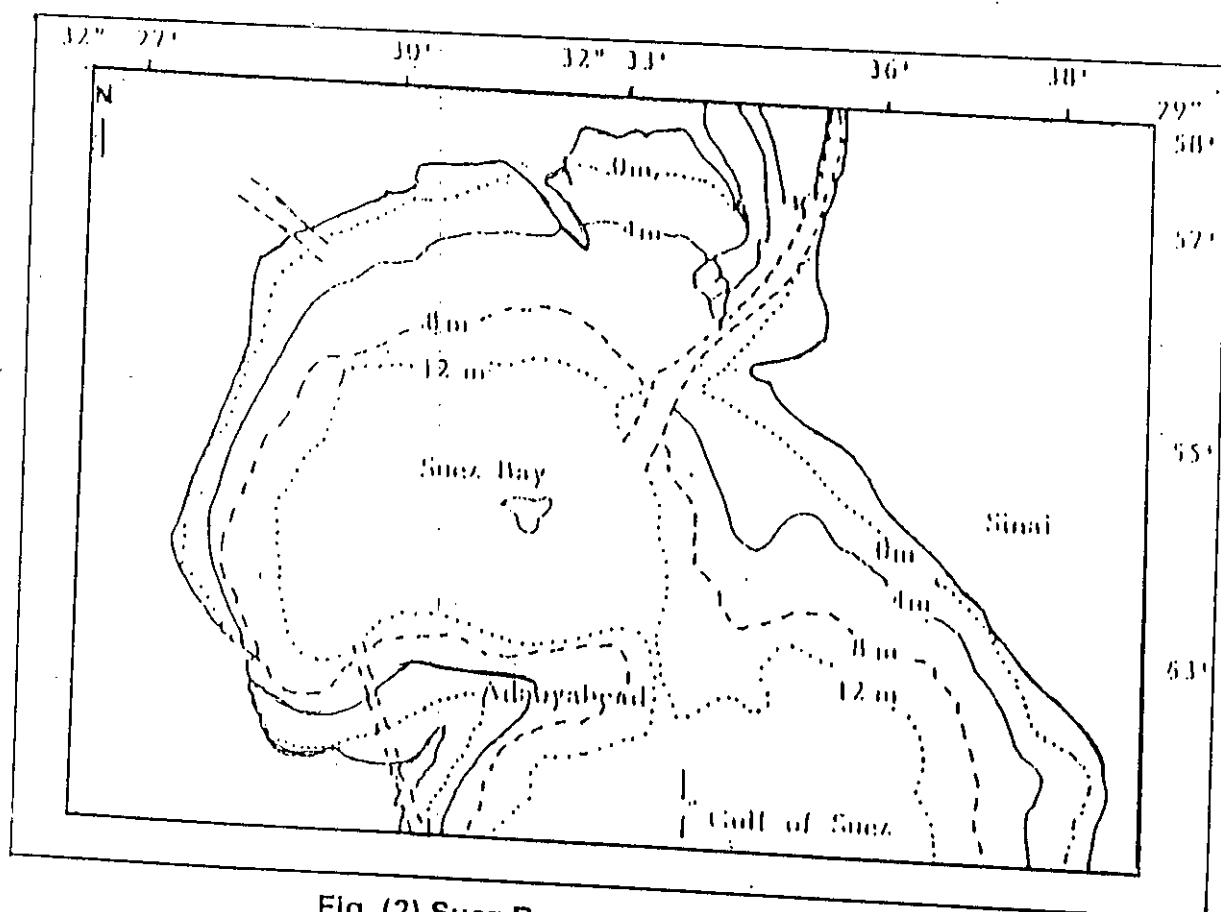


Fig. (2) Suez Bay and depth contours.

while it leaves it through the western side. The water flowing from the Suez Canal is generally deflected to the western coast. This indicates a persistent anticlockwise circulation in the Bay (Fig. 2), as a result of the Coriolis force.

Morcos (1970) reported that non-tidal currents may also be created in the surface water by local wind which decrease considerably with depth. With the persistence of the southeast winds such currents may attain high velocities up to 30-35cm/Sec., they remain feeble in the presence of northwest wind.

The Bay (Fig. 3) receives sewage and garbage both from the city of Suez and from ships awaiting transit through the Suez Canal. The Bay also receives waste effluents from the industrial complex south of Suez, which includes oil refineries, fertilizer plants, and other small industries (Mancy, 1983). In addition, the new industries, such as a Textile company, oil plant and grain manufactory drain into the Bay.

Said (1992) found that, Al-Nasr and the Suez Petroleum companies discharge $16 \times 10^3 \text{ m}^3 / \text{hr}^{-1}$ of oil contaminated marine water and the fertilizer factory drains about $592 \text{ m}^3 / \text{hr}^{-1}$ of polluted fresh water. Due to the existing industries and the planned expansions in Suez area along the western coast of the Bay, beaches from Suez city to Adabyia harbor on the western side are doomed (Meshal, 1967).

Gulf of Suez enters the Bay along the eastern coast (Sinai side) while it leaves it through the western side. The water flowing from the Suez Canal is generally deflected to the western coast. This indicates a persistent anticlockwise