

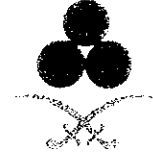
添付資料 H

第3回ワークショップ 関連資料

Workshop Program

Resume of Presentation

Q & A Summary



Meteorology & Environmental
Protection Administration (MEPA)
With the Cooperation of
Japan International Cooperation
Agency (JICA)

مصلحة الأرصاد وحماية البيئة
بالتعاون مع
الوكالة اليابانية للتعاون الدولي

ورشة العمل الخاصة
بدراسة جودة ومراقبة مياه الخليج العربي
Work Shop of
Sea Water quality & monitoring of Arabian Gulf

برنامج حفل الافتتاح
Opening Ceremony Program

الاثنين ١٧/٨/١٤٢١هـ Monday 13/11/2000

<i>The Holy Qur'an</i>	9.00	٩,٠٠	القرآن الكريم
<i>Welcome Speech by MEPA president</i>	9.05	٩,٠٥	كلمة معاحة ونيس عام مصلحة الأرصاد وحماية البيئة أمين عام اللجنة الوزارية للبيئة
<i>H.R.H. Prince Saud Bin Naif Bin Abdulaziz Deputy Governor of E.P.</i>	9.15	٩,١٥	كلمة راعي الحفل صاحب السمو الملكي الأمير سعود بن نايف بن عبد العزيز
<i>Japan Ambassador to Saudi Arabia</i>	9.25	٩,٢٥	كلمة السفير الياباني لدى المملكة العربية السعودية
<i>Mr. Kuniaki NAGATA JICA Representative</i>	9.35	٩,٣٥	كلمة السيد/ كونيكي ناغاتا ممثل الوكالة اليابانية للتعاون الدولي
<i>Mr. Yasuhiro SHIMAZU Head of JICA study team</i>	9.45	٩,٤٥	كلمة السيد/ ياسوهيرو شيمازو رئيس فريق الدراسة الياباني
<i>End of the ceremony</i>	9.50	٩,٥٠	نهاية حفل الافتتاح

MEPA/JICA PROJECT

Sea Water Monitoring and Management Program

Under The Patronage of His Royal Highness
Saud Bin Naif Bin Abdulaziz
Deputy Governor, Eastern Province

Workshop

According to the agreement between JICA (Japan International Cooperation Agency) and MEPA (Meteorology and Environmental Protection Administration), the workshop will be held during 13 – 14 November 2000

Your presence and contribution to the discussion will be greatly appreciated, since this workshop is a full presentation of the project and its results.

PROGRAM

**The Study on Environmental Assessment and Monitoring of Arabian Gulf
in the Kingdom of Saudi Arabia
- Full Presentation and Discussion -**

**Al-Ghosaibi Hotel, Conference Room
Al-Khobar**

Schedule

Day 1 (November 13, 2000)

Session 1 Opening

08:45	Registration	
09:00	Recitation of Holy Quran	
09:05	Dr. Nizar I. Tawfiq (MEPA President)	Welcome Speech
09:15	Deputy Governor of Eastern Province	
09:25	Mr. Shotaro Oshima (Japan ambassador to Saudi Arabia)	Welcome Speech
09:35	Mr. Kuniaki Nagata (JICA Representative)	Role of JICA
09:45	Mr. Yasuhiro Shimazu (Head of JICA Study Team)	Cooperation of Study
09:50	Break	
	Special Speaker	
10:30	Effective Environmental Management in Arabian Gulf	Mr. Masahiro Ohta (JICA Advisor)

Session 2 Scientific Findings

10:50	Mr. Yasuhiro Shimazu (Head of JICA Study Team)	Outline of Study
11:00	Present Sea Water Quality Situation in the Study Area	Dr. Robert Hilliard (JICA Team)
11:15	Sampling Practices	Mr. Khaled S. Al-Rasheed (MEPA)
11:30	Prayer Time	
12:00	MEPA's ongoing GIS & RS Activities	Mr. Mohammed Bukhari (MEPA)
12:10	Sea Water Quality Evaluated by Satellite Data Analyses	Dr. Krishna Mishra (JICA Team)
12:25	Discussion	
13:00	Lunch Sponsored by JICA	All participants are invited

Day 2 (November 14, 2000)

Session 3 MEPA's Role

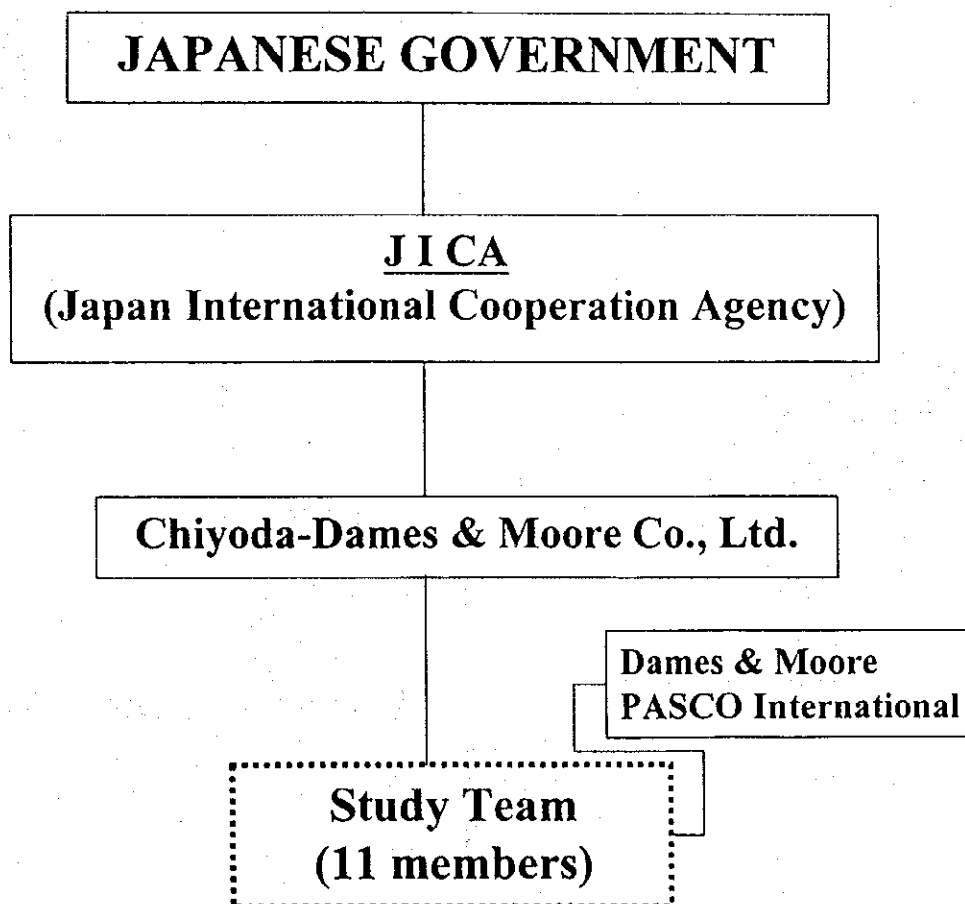
09:00	Phased Approach to Future Sea Water Monitoring	Mr. Tomohiko Ike (JICA Team)
09:20	Importance of the Extending Seawater Monitoring along all of the Eastern Coast of Saudi Arabia	Mr. Adil Qusti (MEPA)
09:35	Laboratory Preparation for Environmental Monitoring	Mr. Hiroyoki Ohi (JICA Team)
09:50	Precautionary measures in the Environmental Analysis	Mr. Jamal Kazim
10:00	Break	
10:20	Aspect of Chemical Pollution in the Arabian Gulf	Dr. Abdul Rahman Al-Arfaj (MEPA)
10:35	Strengthening MEPA's Capability	Mr. Kazutake Tanaka (JICA Team)
10:55	Present Situation and Future Consideration	Mr. Hamdan Al-Ghamdi (MEPA)
11:30	Prayer Time	
12:00	Discussion	
13:00	Summarization and Conclusion	Mr. Aziz Al-Omari (MEPA)
13:15	Closing Speech	Dr. Nizar Ibrahim Tawfiq (MEPA President)

JICA/MEPA Workshop III
"Outline of the Study"
Yasuhiro Shimazu

Outline of the Study *by*

Yasuhiro SHIMAZU

JICA Study Team

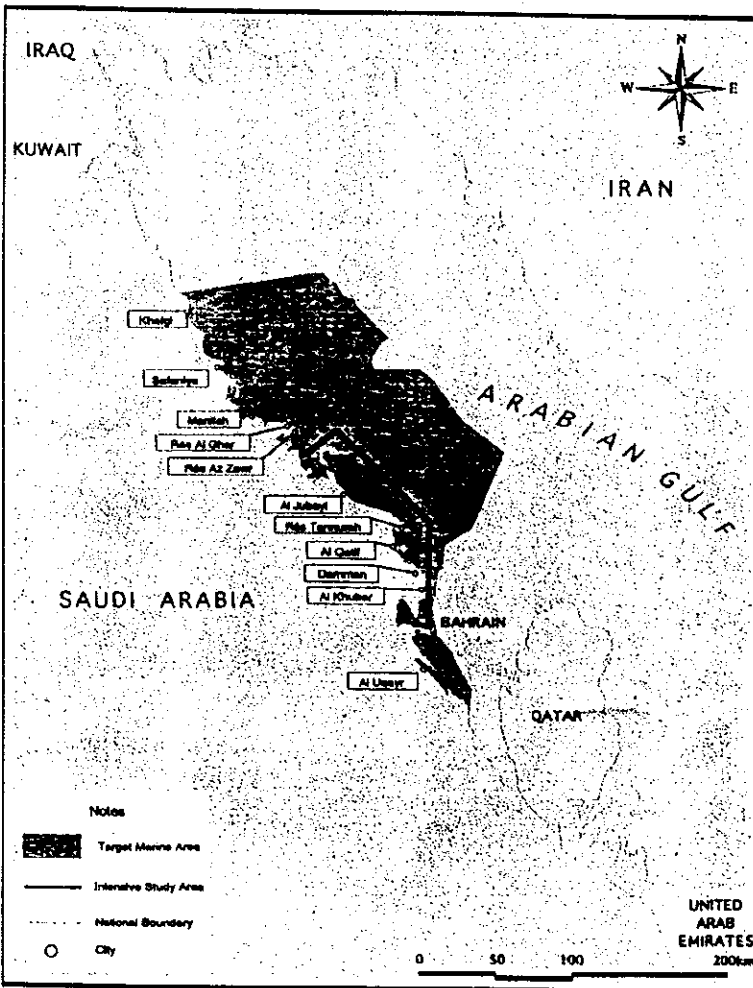


OBJECTIVES

1) Investigate Water Quality & Cause of Degradation

2) Help Develop a Comprehensive Monitoring Program

3) Strengthen MEPA's Capability



Target Area
&
Intensive Study Area

(1999)

March Planning of the Project

June-July Field Pre-survey

Monitoring Plan

Workshop

Sept - Nov Installation of Equipment

1st Sampling & Analysis

Data Analysis

Workshop

(2000)

June-July 2nd Sampling & Analysis

Data Analysis

Nov Evaluation

Final Report

Workshop

Schedule



CHALLENGES IN THE FUTURE

1) Laboratory Management

2) Water Monitoring

Specific Site

Periodical



JICA/MEPA Workshop III
**"Present Seawater Quality Situation
in the Study Area"**
Robert Hilliard

PRESENT WATER QUALITY SITUATION

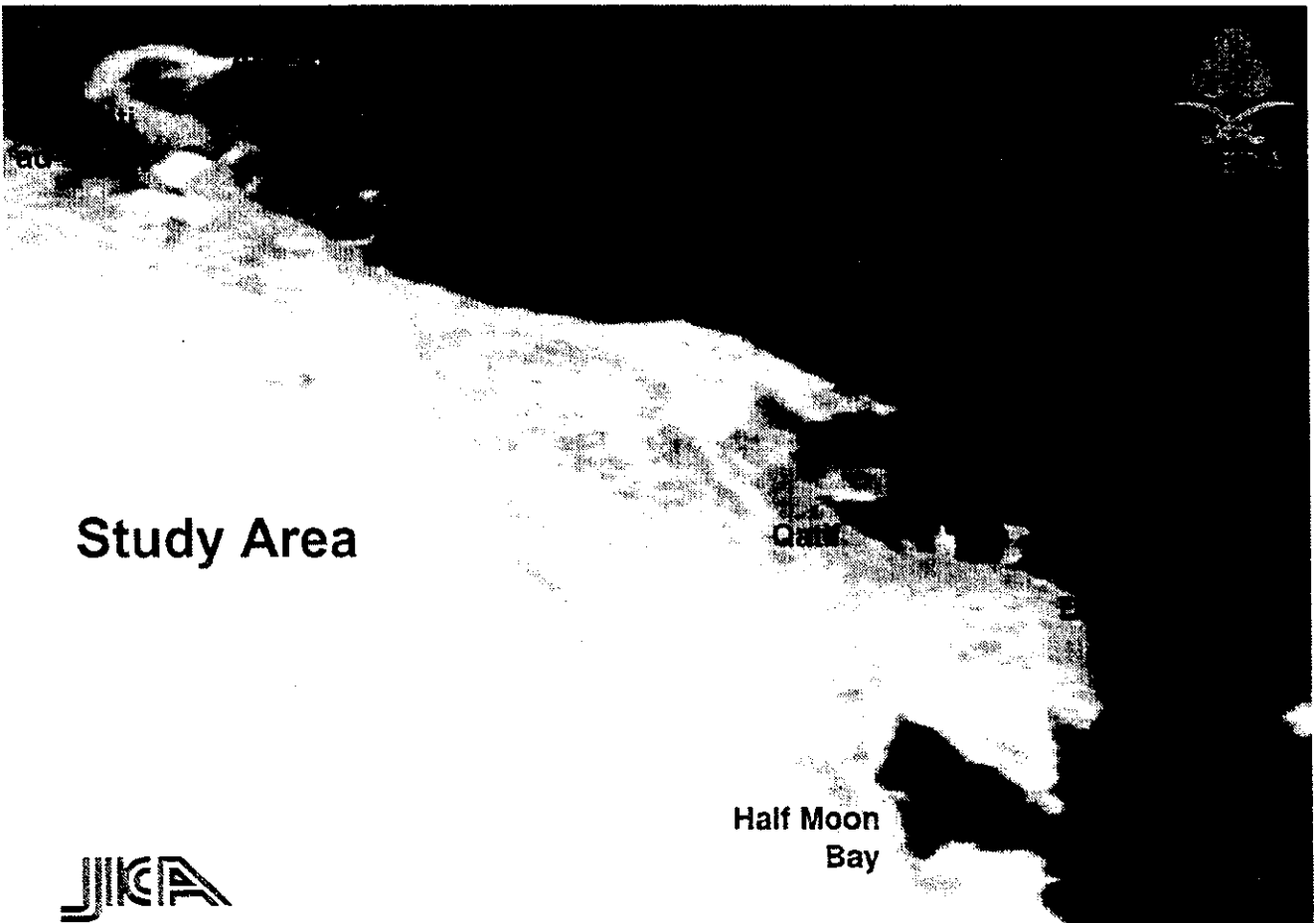
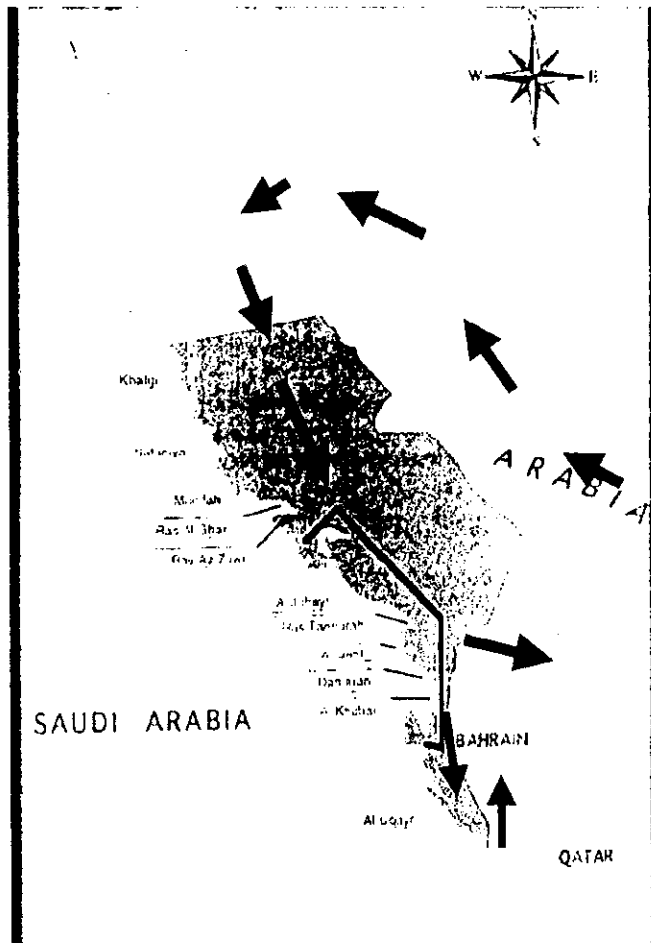
Results from the Baseline Monitoring Surveys of the Intensive Study Area

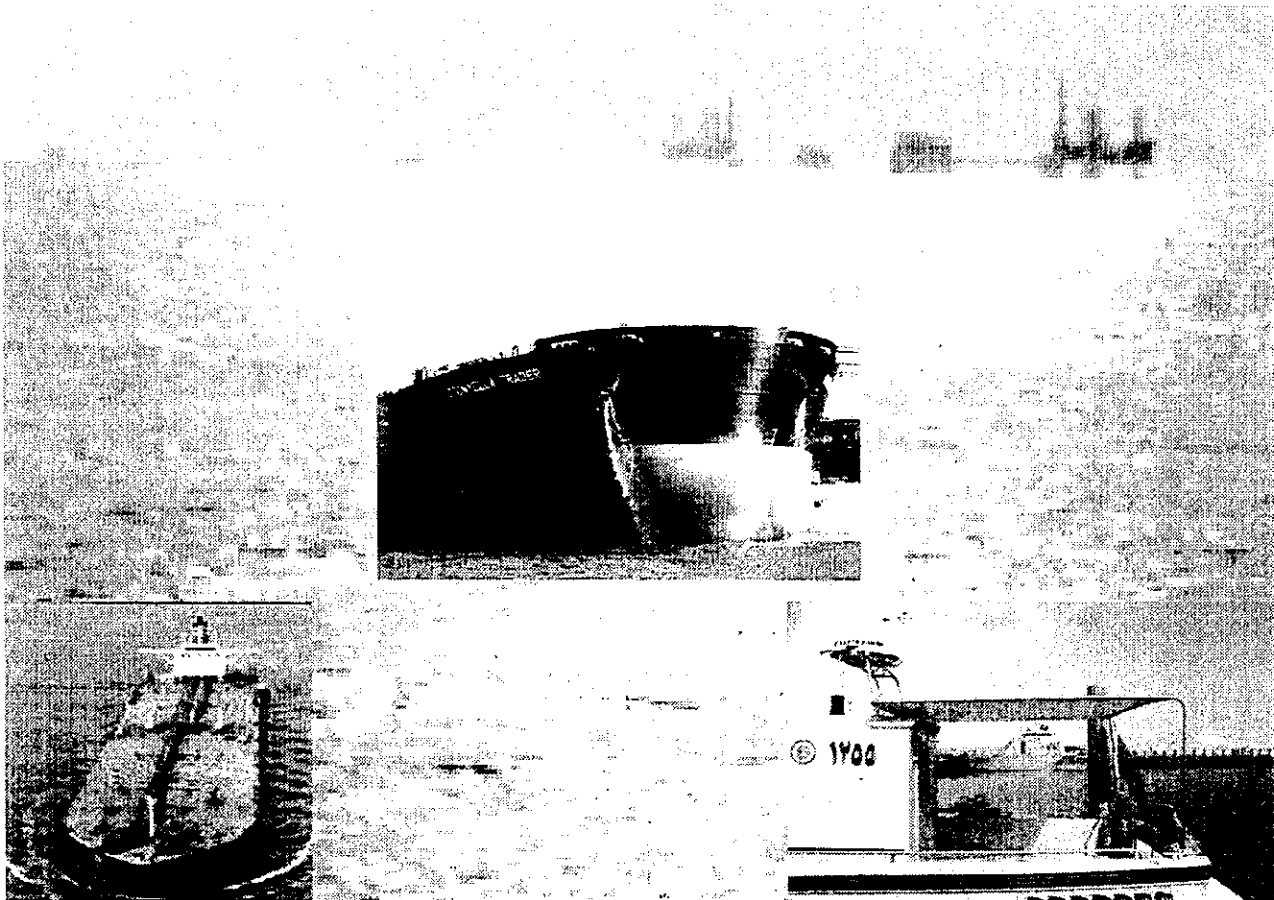
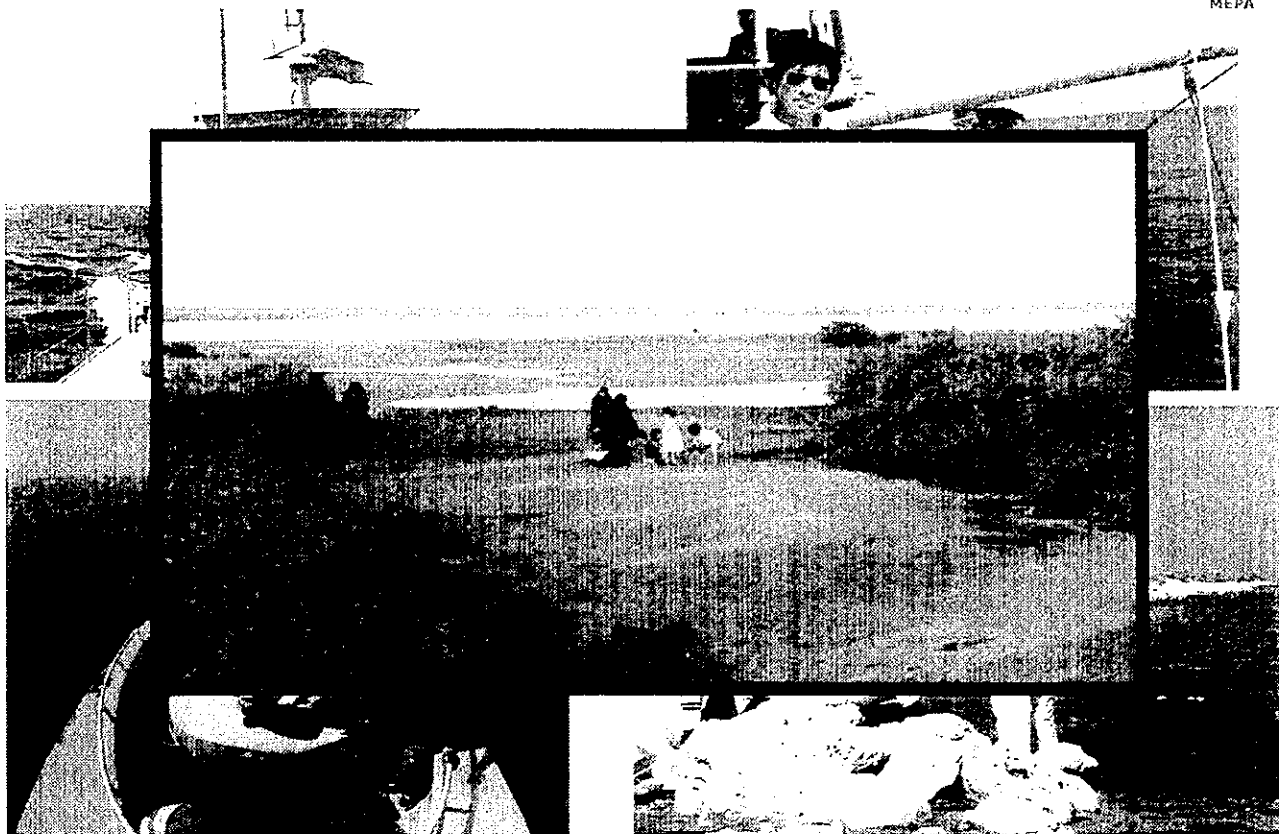
**Dr Robert Hilliard,
MEPA-JICA Study Team**

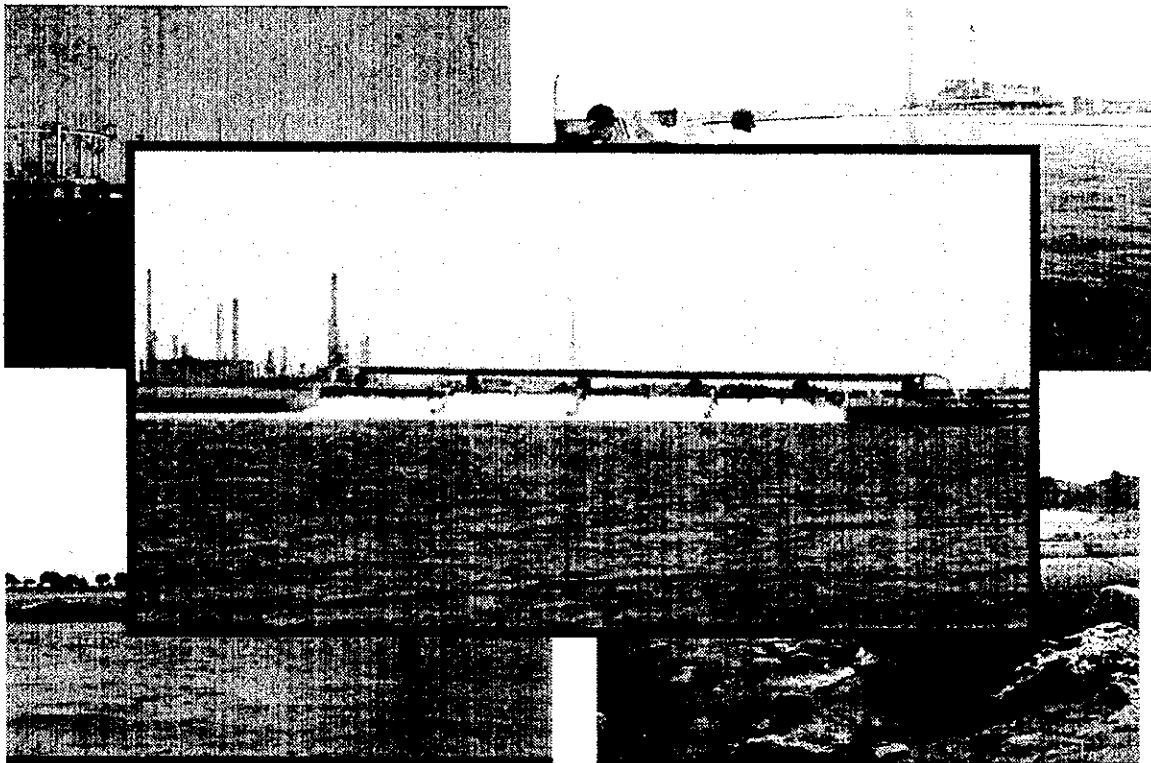
OBJECTIVES OF THE BASELINE SURVEYS:

- **To facilitate the Technology-Transfer Project by providing practical, 'hands-on' training.**
- **To examine Coastal Seawater Quality and identify causes of Water Quality Degradation.**
- **To help MEPA develop a more integrated, comprehensive and appropriate Water Quality Monitoring Program.**

Water Circulation in the Gulf







Numbers of regions, sites, field records samples, parameters and analyses per survey

Regions	Sites	Field Data Records	Parameters Analysed	No. of Lab Analyses
6	34	544	33	353

RECORDED FIELD WATER PARAMETERS									
GPS & Met Data	°C	pH	DO	Sal.	Free Cl	Clarity	Current Flow	Directn	Sediment Descriptn
34	34	34	34	34	34	34	22	22	24

LABORATORY WATER ANALYSES									
Plankton	TDS	TSS	Total KN	Total P	NH4	Chlor. A	TOC/ COD	Mg ⁺⁺	As
28	9	21	20	20	12	15	16	5	8
Cr	Hg	8 other metals	CN	Oil + Grease	TPH	BTEX	Phenol	Resid. Cl	Total Coliform
8	5	11	4	9	4	3	3	8	9

LABORATORY SEDIMENT ANALYSES									
PSA	Ign. Loss	TOC	As	Cr	Hg	Vn	8 other metals	TPH	BTEX
21	13	16	14	16	5	10	22	13	5



Oil pollution is widespread, serious problem

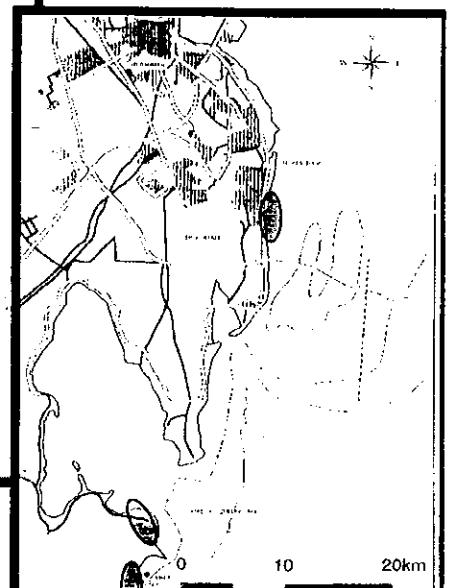
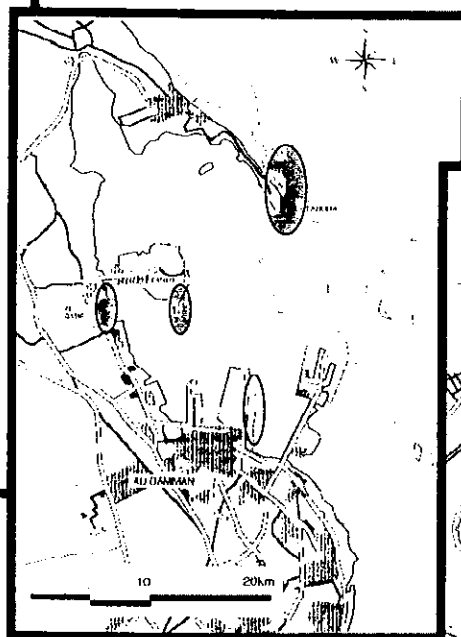
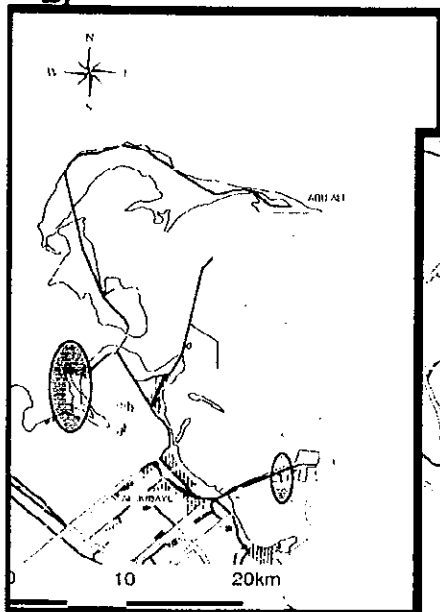


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Oil Contamination

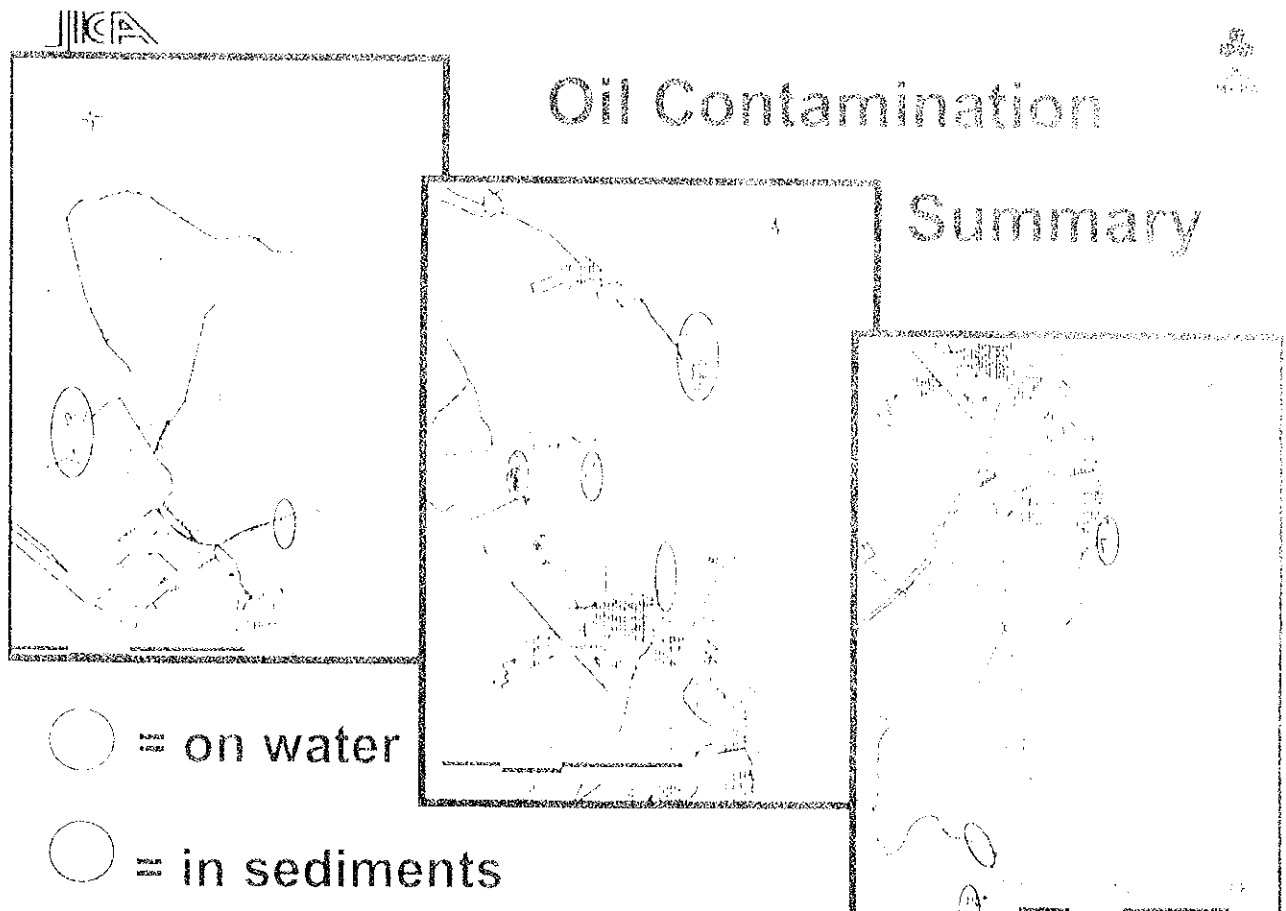
Summary



 = on water

 = in sediments

Pollution by plastic debris
and other litter remains a
widespread, serious problem



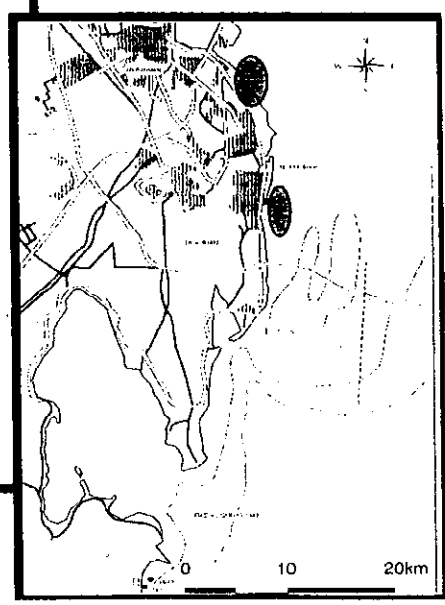
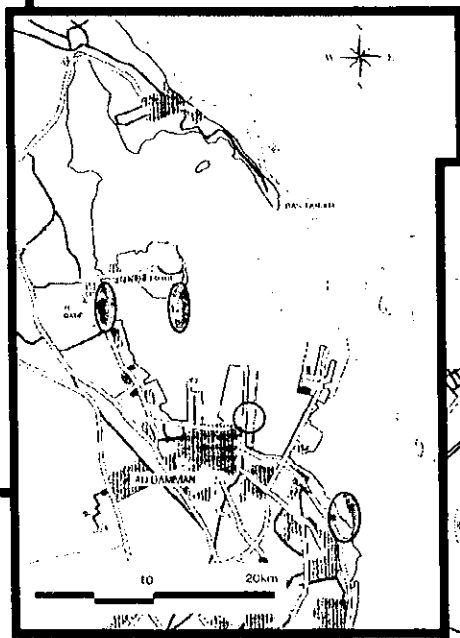
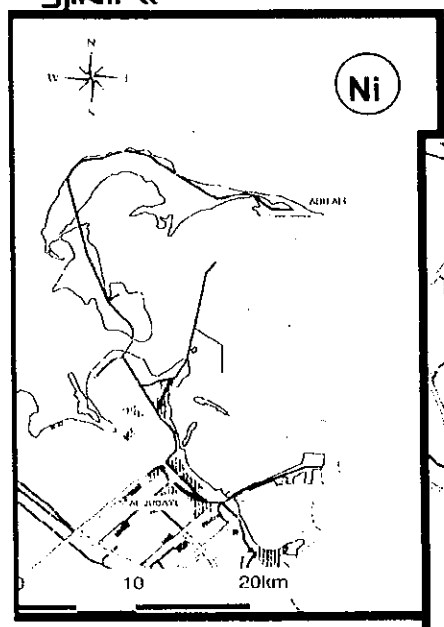
Threat of Oil Spill accidents from Shipping, Production Facilities and Terminals is always present



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Metal Contamination Summary

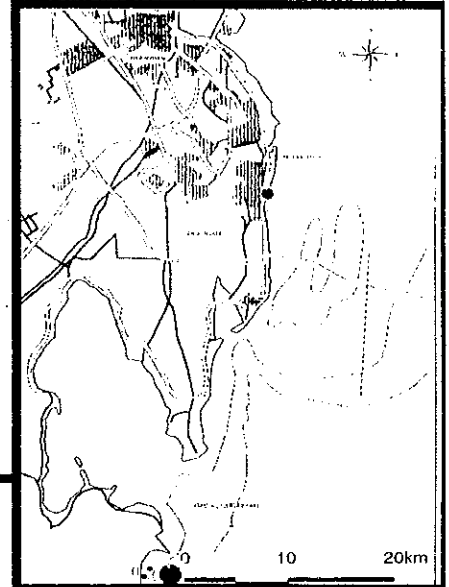
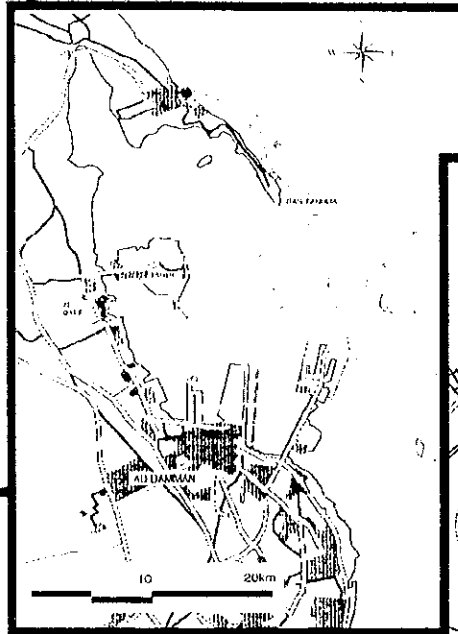
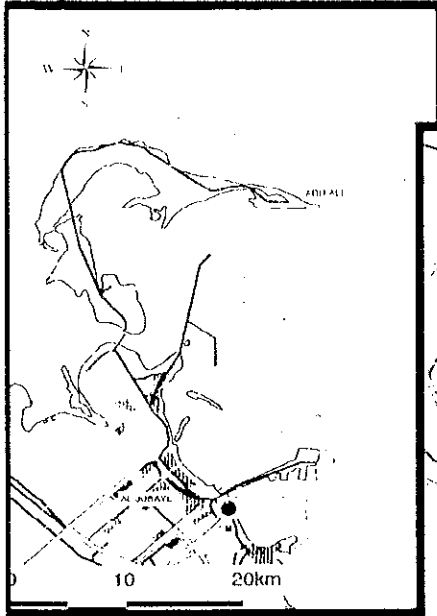


= includes Hg



= in sediments (Cu, Ni, Pb, Zn)

Residual Free Chlorine Summary

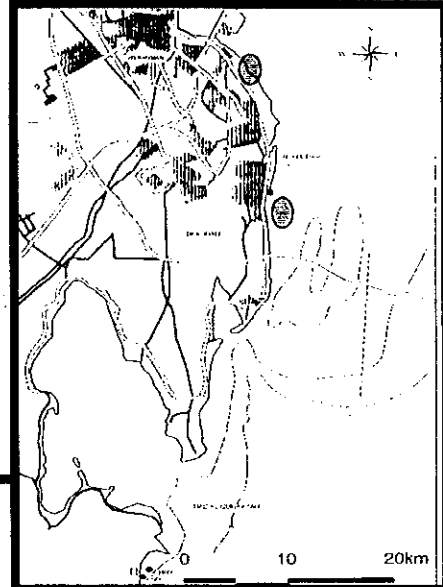
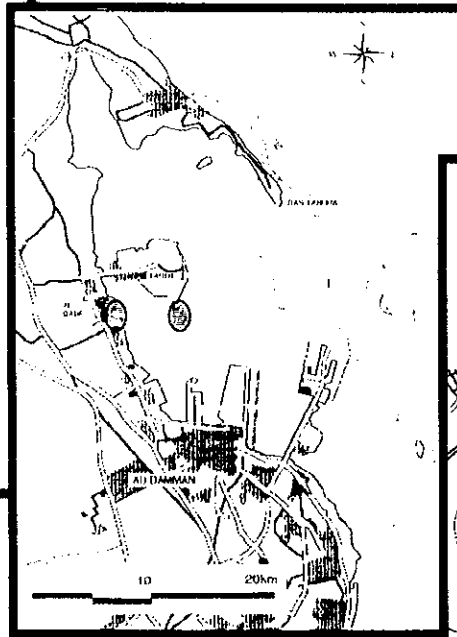
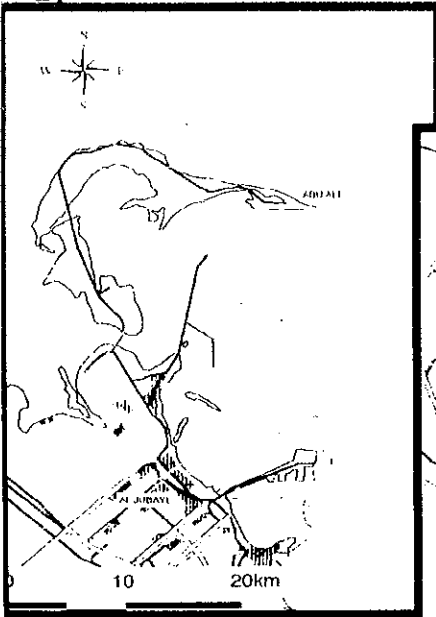


● = in water

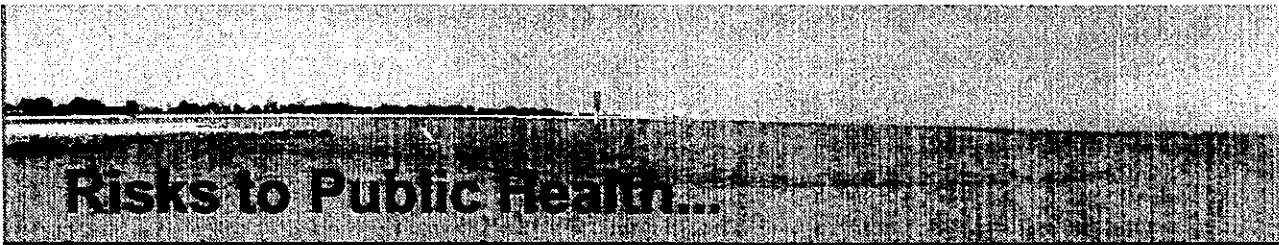
The first baseline data indicate that the major industrial outfalls are not

Coliform Bacteria

Summary

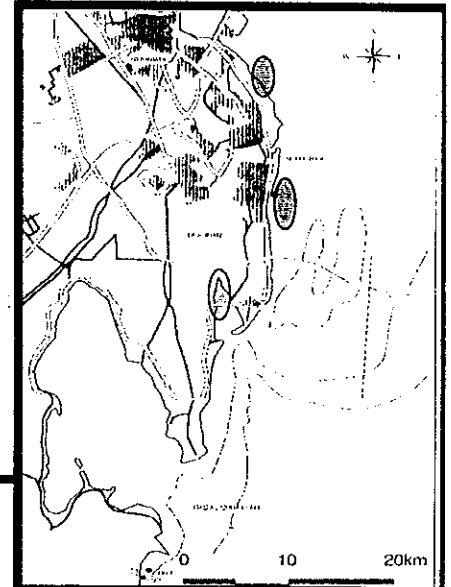
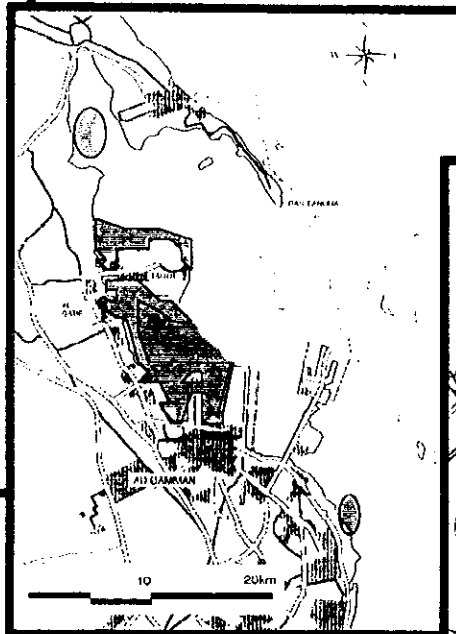
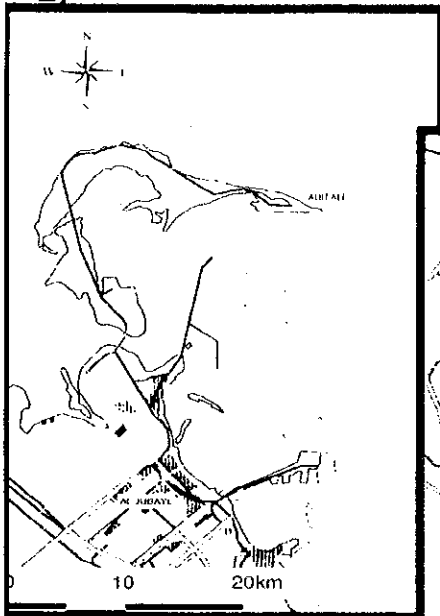


= in water



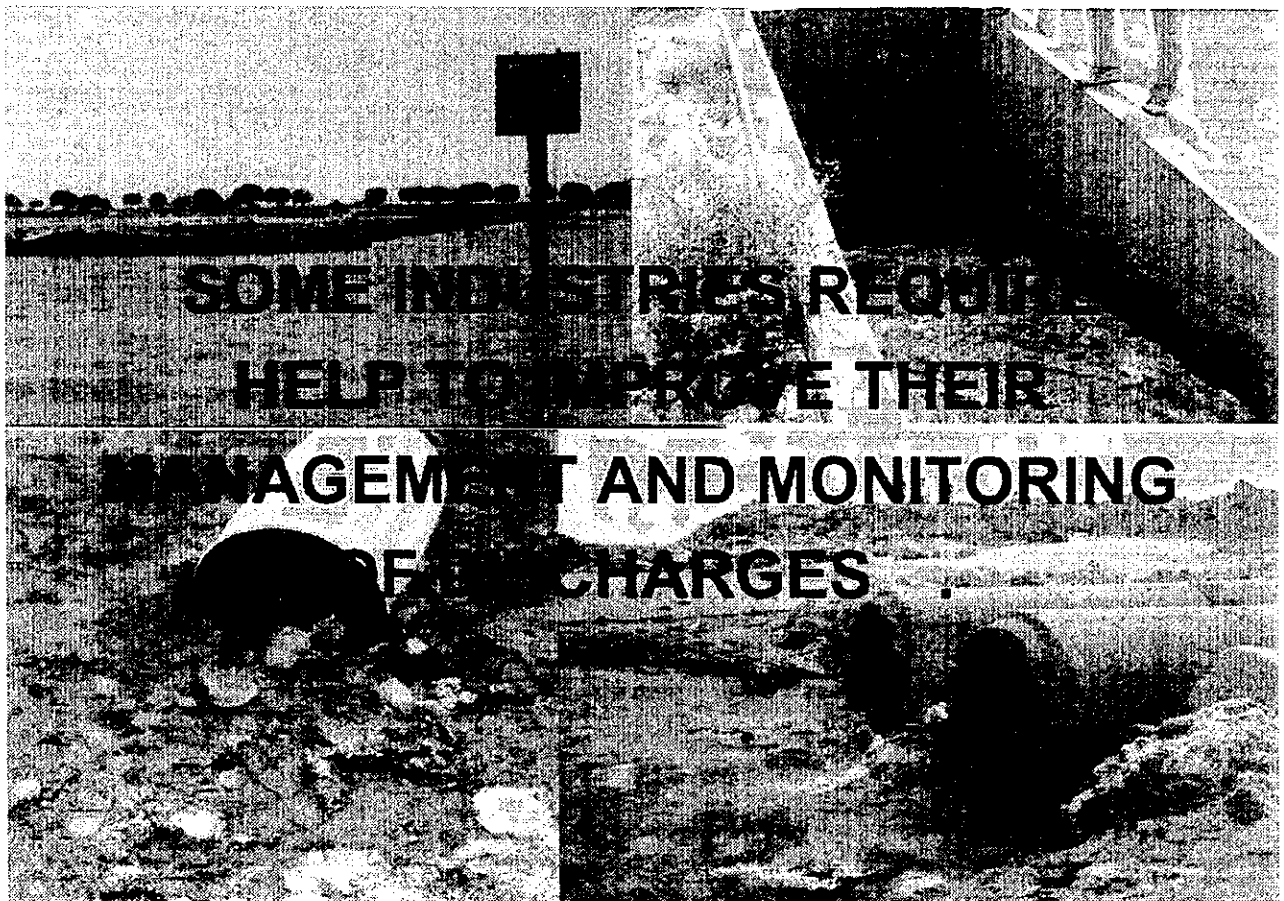
Eutrophication Signs

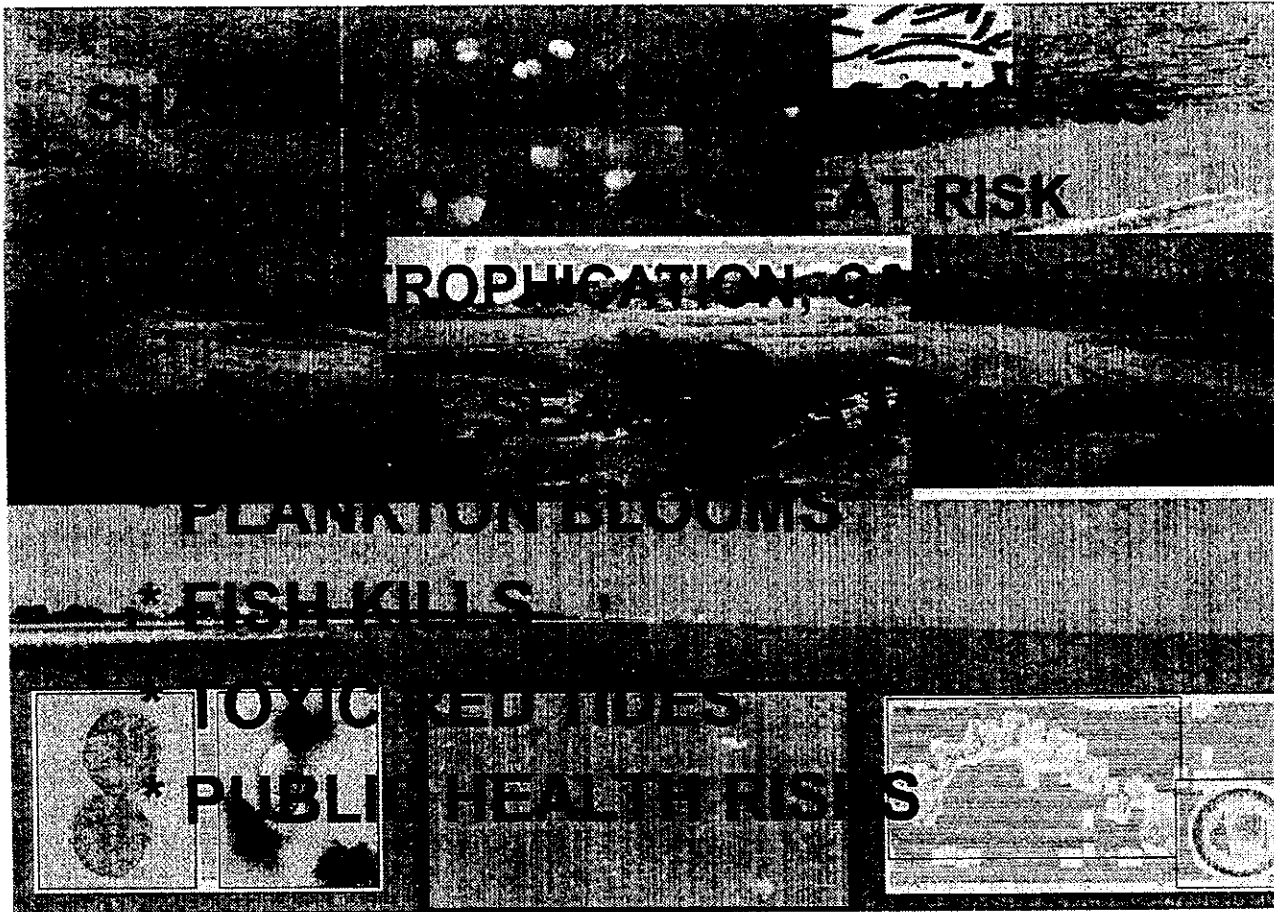
Summary



 = suspected

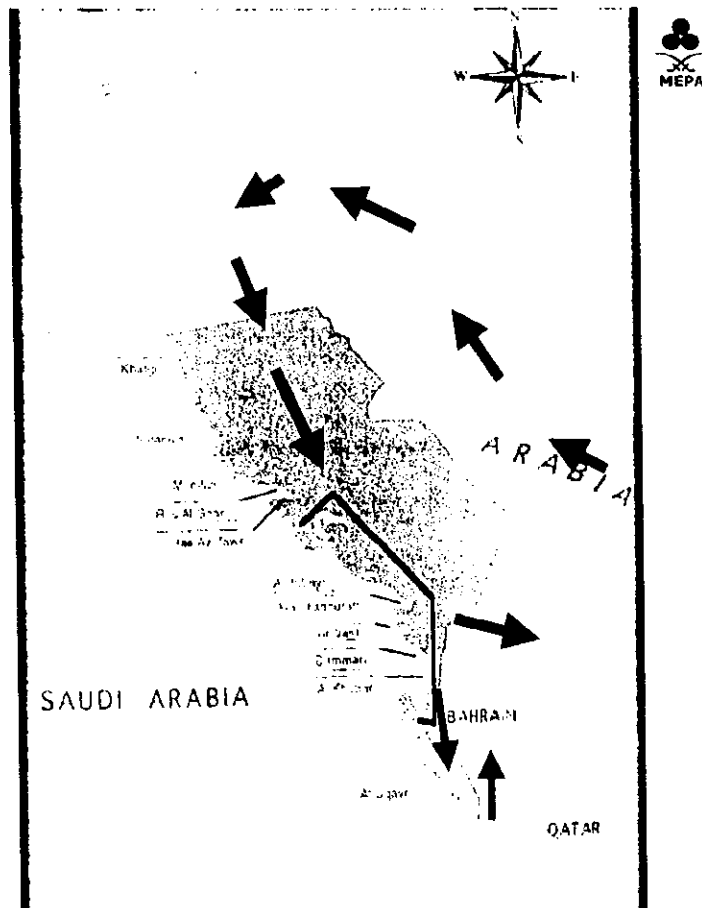
 = includes TKN, NH₃, TP, Chlor. α





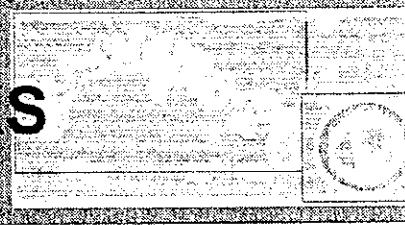
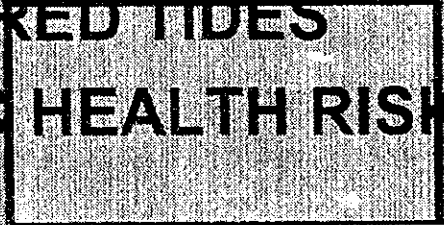
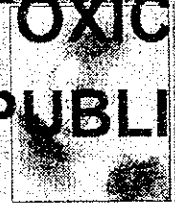
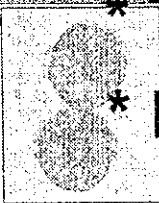
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Water Circulation in the Gulf



SHALLOW INSHORE AREAS SUCH AS
TARUT BAY ARE AT GREAT RISK
FROM EUTROPHICATION, CAUSING:

- * LOSS OF SEAGRASS MEADOWS
- * PLANKTON BLOOMS
- * FISH KILLS
- * TOXIC RED TIDES
- * PUBLIC HEALTH RISKS



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Water Circulation
in the Gulf

