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**Second Progress Report to  
U. S. AGENCY FOR INTERNATIONAL DEVELOPMENT  
SCIENCE AND TECHNOLOGY DEVELOPMENT PROJECT  
POLLUTION RESEARCH**

**Visit to Tunisia - May 31 - June 13, 1983**

**A. F. Bartsch**

**Contract No. NEB-0300-S-00-3026-00**

**Tunisia**

A. F. BARTSCH  
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CORVALLIS, OREGON 97330  
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July 26, 1983

Technical Office  
Agency for International Development  
Department of State  
Regional Operations Division/NE  
Washington, D. C. 20523

Gentlemen:

In keeping with requirements of my contract No. 664-0300-S-00-3006-00 I am enclosing 1 copy of my Second Progress Report.

Sincerely,

A handwritten signature in black ink, appearing to read "A. F. Bartsch". The signature is written in a cursive style with a large, sweeping flourish at the end.

encl: 1

## Introduction

This progress report is submitted in keeping with article I.C., of the contract and follows the same format as used in the First Progress Report. It relates actions and progress taking place during the specified trip as well as subsequent actions taken in the U.S. up through June 30, 1983.

### Element I. Review of Existing Data on Industrial Pollution in Tunisia.

The GOT Office of Environment, Standards, and Quality Control continues to collect data on Tunisian industries through use of its multi-page questionnaires. A companion effort to improve the format and presentation of information in the "Summary of Industry Problems" continues. This Summary is discussed further in Element III.

### Element II. Review Existing Regulations for Control of Industrial Pollution.

This work Element and Element IV are so closely related that they are discussed together at this point.

The following was stated in the First Progress Report for the period March 25 - April 11, 1983. It still reflects accurately the approach to be followed.

The review of existing regulations contemplated under this element of work will be accomplished largely with the help of a U.S. Short-Term Advisor who is especially experienced and skilled in this area of environmental protection. The advisor will also provide in-depth counsel for two other areas in which a need was expressed by OESQC: (1) how to proceed more effectively in Tunisia's pollution control efforts in the light of the day-to-day managerial procedures, principles and practices that have been used and found effective for industrial waste pollution control in the U.S. environmental program; and (2) the philosophy, procedures, and required technical basis for promulgating and establishing goals to be attained to protect the environment. While obviously, the basic circumstances for efforts to protect the environment are not necessarily the same in Tunisia and the U.S., the technical and procedural principles are sufficiently similar to offer promise of success in this approach.

The Contractor has prepared a Scope of Work and a budget for a PIOT to cover the anticipated activities of the Short-Term Advisor. It is planned that this assistance will be provided in Tunis during the period August 29 - September 12, 1983. Contract negotiations are underway.

### Element III. Review Plans and Priorities of GOT for Future Control of Industrial Pollution.

Past efforts by the Contractor in this work element have consisted of actions to support the International Environment Development Service (IEDS) program of the World Environment Center (WEC). This still continues to be the current emphasis and probably will remain so for the foreseeable future.

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<sup>1</sup>Mr. Donald Dubois, former EPA Regional Administrator, Region X, Seattle, Washington.

Several actions of importance have taken place:

1. Dr. Bassow (WEC) and the Contractor met in Washington, D.C., on June 3 to review progress in the IEDS program and to discuss general goals, coordination procedures, and time schedule. Three discussion points are worthy of mention: (a) survey timing is tremendously important, and it is our mutual desire to see the industrial surveys move forward as briskly as possible for fear that timely competition for available IEDS funds by other countries could diminish the work that can be done ultimately in Tunisia; (b) it is not clear that the "Summary of Industry Problems" provides sufficient and appropriate information for prospective participating U.S. industries, and this question should be pursued; and (c) the available information on the problems at Redeyef and Moulares phosphate mines is not sufficient to judge what kind of survey and industrial expert are needed, and the information should be augmented accordingly, and cabled to Dr. Bassow from Tunis. Subsequent actions have been taken on these three points as reported below.

2. In 1982, a listing of Tunisian industries arranged in order of priority consideration in pollution control was prepared for OESQC by Messrs. Bel Gaid and Darmoul (Attachment I). Further consideration has resulted in some rearrangement of the list, partly because the first three industries have already received survey attention and for other reasons. During the week of June 6 a new schedule of projected industry surveys was developed jointly with Mr. Mahjoub of OESQC as follows:

October 1983 - Compagnie des Phosphates de Gafsa; Phosphate ore cleaning operations at Redeyef and at Moulares.

November 1983 - Societe Tunisienne de Leveure, Beja; Yeast plant at Beja - interest in process modification.

December 1983 - Oil refinery at Bizerte.

February 1984 - Two cement plants as follows:

Societe des Ciments de Gabes, Gabes.  
Les Ciments de Bizerte, Bizerte.

March 1984 - Two textile plants as follows:

Societe des Industries Textiles Reunies, Bir Kassaa.  
Societe des Industries Reunies, 'sar Hillel.

April or May 1984 - Two tanneries as follows:

Tanneries Megiseries du Maghreb, Tunis.  
Tannerie Moderne de la Kanouba, Manouba.

July 1984 - Two steam electric power plants to be selected.

3. In an attempt to assure that the "Summary of Industry Problems" will provide the kind of information that U.S. industries will need to adequately visualize the Tunisian problem and the kinds of expert skills required, WEC has

requested industry help in perfecting the "Summary". A letter dated June 23 (Attachment II) seeks such help.

4. On June 8, Ms. Saida Zouiten of USAID, Mr. Mohamed Mouldi Mahjoub of OESQC and the Contractor visited Mr. Abdelhamid Khaddouma, Mining Engineer of the Office of Mines and Geology, Ministry of National Economy to augment information concerning the problems at the Redeyef and Moulares ore cleaning sites. Mr. Khaddouma was especially helpful and gracious in reviewing with us the information in his files related to these problems. Because of the urgency to move forward with the projected surveys at these sites, the information was summarized and sent forward by cable to WEC (Attachment III).

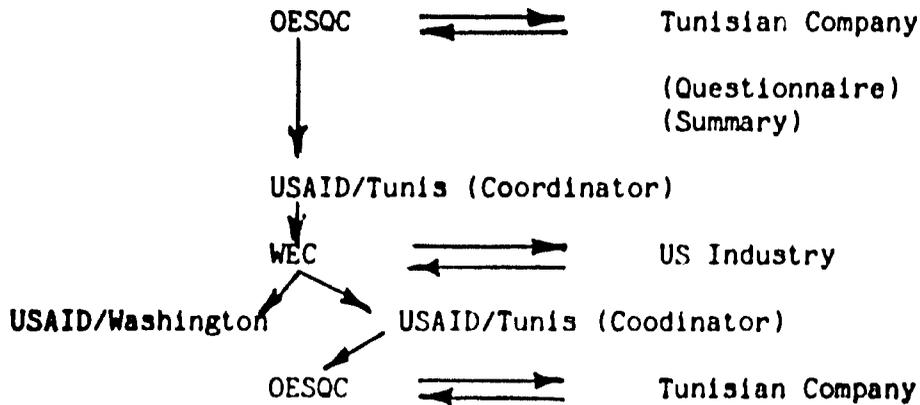
In the light of the more complete and accurate information on the industry problems, it was determined that the most appropriate U.S. industry expert to undertake the plant surveys is Mr. John G. Cladakis, P.E., Manager of Engineering for AMAX Phosphate, Inc., of Lakeland, Florida. Arrangements for him to undertake the surveys are moving forward accordingly.

5. As mentioned in the First Progress Report, the second IEDS project carried out in Tunisia was a survey of the El Fouledh steel plant at Menzel Bourguiba by U.S. experts, E.F. Harchelroad and M.G. Morris. Although their report was available earlier in English, the French translation was presented to Mr. Mohjoub of OESQC on June 6. This now opens the way for intensified attention to the corrections needed at this plant.

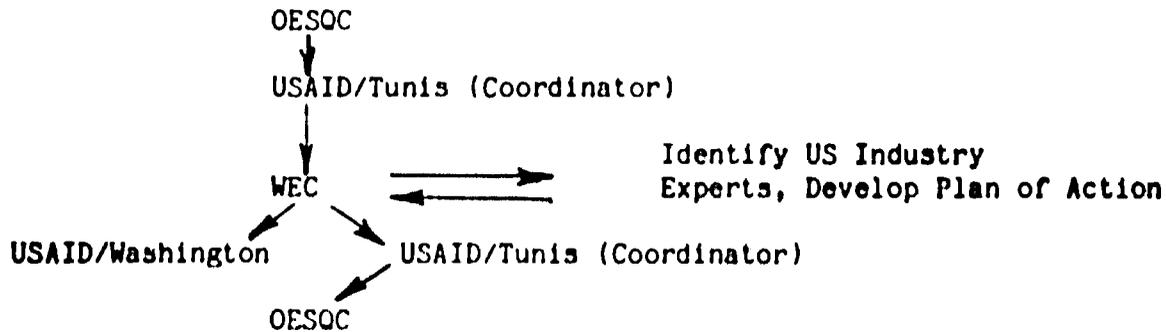
6. A scheme to facilitate communications and coordination in relation to the IEDS program was presented in draft form in the First Progress Report. With a few modifications that reflect the views of AID/Washington and WEC, it appears now in acceptable form to adequately serve the needs of the program. It now includes the following progression of steps:

Communication Steps for the IEDS Program

Step 1 - Developing preliminary service plan.



Step 2 - Formal Letter Request for Service.

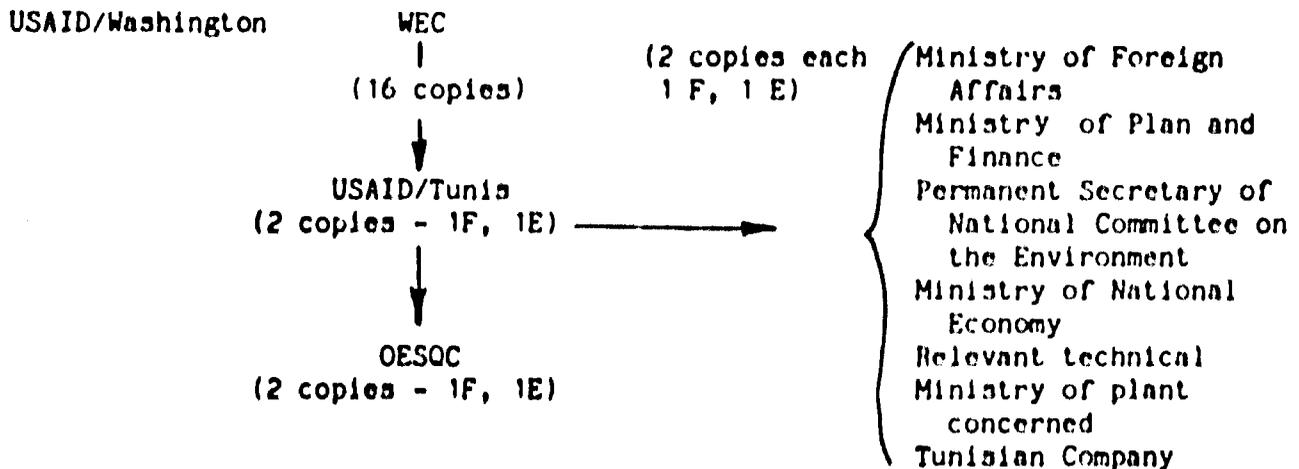


STEP 3 - Service (plant survey) performed in Tunisia.

Step 4 - Pre-departure Seminar, attendance by:

Company, OESQC, USAID/Tunis

Step 5 - Report on Service Provided



Step 6 - Follow up and action by Company and/or GOT.

**Element IV.** The Contractor shall also advise the Office of Environment on legislation, regulations and policies for environmental protection to aid in the choice of practical procedures for the national campaign against industrial pollution. Element IV is discussed jointly with Element II (see page 1).

**Element V.** Advise and assist on establishment of a pollution control reference library.

1. In keeping with discussions with OESOC, the Contractor has identified and AID/Tunis has ordered the following text books that relate to several aspects of environmental pollution and control. They are the following:

Living in the Environment. 1982. G. T. Miller, Jr., Wadsworth Publ. Co., 10 Davis Drive, Belmont, CA. \$29.95

Air Pollution, Vol. 1-5. Authur C. Stern, Academic Press, 111 Fifth, New York, N.Y. 1 set \$335.00

The Treatment of Industrial Wastes. E. B. Besselleure and Max Schwartz, McGraw-Hill Book Co., 1221 Avenue of the Americas, New York, N.Y. 10020. \$26.50

Wastewater Engineering: Treatment Disposal Reuse. Metcalf and Eddy, Inc., revised by George Tchobanoglous. \$39.00

Chemistry for Environmental Engineering. Claire N. Sawyer, Perry L. McCarty. \$34.95

Solid Wastes: Engineering Principles and Management Issues. George Tchobanoglous, H. Theisen, H. Eliassen. \$37.50

Microbiology for Environmental Scientists and Engineers. A. F. Gaudy, Jr., and E. Gaudy. \$37.50

Applied Stream Sanitation. C. J. Velz, John Wiley and Sons, Wiley Interscience, 605 Third Ave., New York, N.Y. 10016. \$71.95

Introduction to Environmental Science and Technology. G. M. Masters \$30.95

Environmental Engineering and Sanitation. J. A. Salvato. \$55.00

Additional books that are especially useful in air pollution sampling and related problems have been identified and proposed for procurement by WEC. This group includes the following:

Flue Gas Monitoring Techniques, Driscoll, John N., 1974, Manual Determination of Gaseous Pollutants, Ann Arbor Science, P.O. Box 1425, Ann Arbor, MI, 313-761-5010.

Measurement of Solids in Flue Gases. Hawksley, P. G. W., Badzioch, S., and Blackett, J. H., 1961, BHM Ltd., Cowper Works, 4 Midland Rd., Olney Bucks, MK464BN, England. Check with British American Books, P.

O. Box 302, Willits, CA, or British Book Center, Fairview Park,  
Elmsford, N. Y. 10523, 919-592-7700.

Pollution Detection and Monitoring Handbook. Sittig, Marshall, 1974,  
Noyes Data Corp., Mill Road at Grand Ave., Park Ridge, N. J. 07656,  
201-391-8484.

Industrial Dust, Hygiene Significance, Measurement and Control. Drinker,  
Philip and Hatch, Theodore, 1936, McGraw Hill Book Co., 1221 Avenue  
of the Americas, New York, N. Y. 10020, 212-997-1221; (I understand  
it is out of print).

AP-40 Air Pollution Engineering Manual - Prepared for EPA by LAPCD,  
Defines industrial processes, emissions factors, and pollution  
control equipments for typical light and medium industries. ESEPA,  
1973; (I understand it is out of print):

2nd Edition, by John A. Danielson, Order No. PB-225132, National Technical  
Information Service, 5285 Port Royal Rd., Springfield, VA, 22161.

Modern Pollution Control Technology Vol. I, II., 1980, Research and  
Education Association, 505 Eighth Avenue, N. Y. 10018, 212-695-9487;  
(I understand it is out of print).

Gas Sampling and Chemical Analysis in Combustion Processes, G. Tine, 1961,  
Pergamon Press, Maxwell House, Fairview Park, Elmsford, N. Y. 10523,  
914-592-7700; (I understand it is out of print).

2. The need in OESQC for publications by U. S. industry that relate  
to industrial wastes, waste handling, treatment and pollution prevention  
and control was discussed with Dr. Bassow of WEC. At the moment it  
appears likely that at least some industry reports of this kind will be  
made available to both OESQC and Tunisian industries as a functional  
element of the IEDS.

3. Information from the U. S. Environmental Protection Agency.

(a) On June 6, 1983, steps were taken by OESQC to become a  
subscriber to EPA's Research Quarterly--thus setting the stage to obtain  
current and future reports on environmental research findings.

(b) On June 3, while visiting the EPA Andrew Breidenbach Research  
Center in Cincinnati, Ohio, the Contractor arranged for shipment to AID  
Tunis of the five volume Treatability Manual developed by that Agency.  
Upon arrival in AID Tunis the set will be turned over to OESQC for the  
national library. First published in 1980 and updated since the  
Treatability Manual focuses on waterborne industrial wastes and consists  
of the following volumes:

Volume I - Treatability Data  
Volume II - Industrial Descriptions  
Volume III - Technologies  
Volume IV - Cost Estimating  
Volume V - Summary

It is a potentially very useful addition to the library because it provides vitally needed information applicable to practically all of Tunisia's industries that produce waterborne wastes. A corresponding publication devoted to air polluting industries does not appear to be available.

(c) Under U. S. environmental pollution control law, the EPA is required to write rules for promulgation of effluent guidelines to control waterborne industrial wastes. A series of reports--designated as "Draft", "Proposed", "Interim Final", and "Final"--mark key steps in the formal process of establishing the effluent guidelines. These reports are instructive in terms of what is possible and reasonable in controlling pollution from specific industries. The 74 major industrial categories covered include essentially all of Tunisia's water-using industries.

The "Availability Report of Technical Publications for the (EPA) Effluent Guidelines Division" which lists all of these reports was reviewed with OESQC to jointly select publications applicable to Tunisia's problems. The list of reports desired numbers 59 titles; it has been forwarded to WEC with a request that they be procured for the national library.

4. National Academy of Science. On June 3, the Contractor visited the National Academy of Science offices in Washington, D.C., for the purpose of identifying Academy publications that would be valuable additions to the national library. Ms. C. Corillon of the Academy staff was most helpful in identifying pertinent publications. The list of available publications was later reviewed with OESQC and the following list of titles was developed jointly.

Testing for Effects of Chemicals on Ecosystems. ISBN 0-309-03142-7; 1981, 128 pages, paperback, \$8.50.

Health Effects of Exposure to Diesel Exhausts. ISBN 0-309-03130-3; 1981, 169 pages, paperback, \$10.25.

Quality Criteria for Water Reuse. ISBN 0-309-03326-8; 1982, 145 pages, paperback, \$11.25.

Assessing Potential Ocean Pollutants. -02325-4. 1975, 438 pp., 6 x 9, P, \$10.95.

An Assessment of Mercury in the Environment. -02736-5, 1978, 185 pp., 6 x 9, P, \$9.50

Lead in the Human Environment. -03021-8, 1980, 525 pp., 6 x 9, P, \$13.95

#### A Series

Arsenic. -02604-0, 1977, 322 pp., 6 x 9, P, \$14.25.

Carbon Monoxide. -02631-8, 1977, 239 pp. 6 x 9, P, \$11.25.

Chlorine and Hydrogen Chloride. -02519-2, 1976, 282 pp., 6 x 9, P, \$11.50.

- Copper. -02536-2, 1977, 115 pp., 6 x 9, P, \$8.50
- Lead: Airborne Lead in Perspective. -01941-9, 1972, 330 pp., 6 x 9, P, \$10.95.
- Manganese. -02143-X, 1973, 192 pp., 6 x 9, P, \$10.50.
- Nickel. -02314-9, 1975, 277 pp., 6 x 9, P, \$16.50.
- Nitrogen Oxides. -02615-7, 1977, 333 pp., 6 x 9, P, \$14.95.
- Ozone and Other Photochemical Oxidants. -02531-1, 1977, 719 pp., 6 x 9, P, \$19.50.
- Particulate Polycyclic Organic Matter. -02027-1, 1972, 368 pp., 6 x 9, P, \$12.95.
- Platinum-Group Metals. -02640-7, 1977, 232 pp., 6 x 9, P, \$11.25.
- Selenium. -02503-6, 1976, 203 pp., 6 x 9, P, \$11.75.
- Vapor-Phase Organic Pollutants. -02441-2, 1976, 411 pp., 6 x 9, P, \$14.50.
- Mineral Resources and the Environment. -02343-2, 1975, 348 pp., 8 1/2 x 11, P, \$9.75.
- Nitrates: An Environmental Assessment. -02785-3, 1978, 733 pp., 8 1/2 x 11, P, \$16.75.
- Odors from Stationary and Mobile Sources. -02877-9, 1979, 491 pp., 6 x 9, P, \$21.95.
- Polychlorinated Biphenyls. -02885-X, 1979, 182 pp., 6 x 9, P, \$8.75.
- Radionuclides in Foods. -02113-8, 1973, 97 pp., 6 x 9, P, \$6.75.
- Redistribution of Accessory Elements in Mining and Mineral Processing.
- Part I Coal and Oil Shale. -02897-3, 1979, 180 pp., 8 1/2 x 11, P, \$10.75
- Part II Uranium, Phosphate, and Alumina. -02899-X, 1979, 169 pp., 8 1/2 x 11, P, \$13.75.
- Sulfur Oxides. -02862-0, 1978, 209 pp., 6 1/2 x 9, P, \$10.50.
- Atmospheric and Water Pollutants: Research, Control Programs, Policy Issues
- A Series
- V.X. Disposal in the Marine Environment: An Oceanographic Assessment. -02446-3, 1976, 76 pp., 8 1/2 x 11, P, \$6.50.
- Controlling Airborne Particles. -03035-8, 1980, 114 pp., 6 x 9, P, \$9.50.

**Decision Making for Regulating Chemicals in the Environment. -02401-3, 1975, 232 pp., 6 x 9, P, \$14.25.**

**Measurement and Control of Respirable Dust in Mining. -03047-1, 1980, 405 pp., 8 1/2 x 11, P, \$12.50.**

**Surface Mining of Non-Coal Minerals. -02942-2, 1979, 339 pp., 8 1/2 x 11, P, \$11.95.**

**Surface Mining of Non-Coal Minerals: Appendix I, Sand and Gravel Mining, and Quarrying and Blasting for Crushed Stone and Other Construction Minerals. -03020-X, 1980, 91 pp., 8 1/2 x 11, P, \$7.95.**

This list has been forwarded to WEC with a request that the publications be procured for the national library.

Element VI. Advise on establishment of a program of practical training in the U.S. for personnel of the Office of the Environment.

Plans have been developed jointly with OESOC for training of two staff members. The following summarizes the scope of training and scheduling contemplated.

Mr. Mohamed Mouldi Mahjoub , Director, OESOC

Period of Training: August 25 - September 14, 1983

Scope: The principal thrust of this training will be to seek benefit from the operating experiences in the United States as State and Federal laws, organizations and programs to deal with environmental pollution were put into place. At least some of this experience will be applicable to the challenges and problems that face Tunisia as it goes forward with its own pollution control activities. Visits with selected officials in industry, in EPA and state regulatory agencies will give opportunities to explore these subjects with professionals who deal with them on a daily basis.

In addition, there will be an orientation visit at WEC headquarters and at several industries of interest.

Mrs. Nessima Rejelbi , Specialist, Chemical and Petroleum Industries, OESOC

Period of Training: August 24 - October 2, 1983

Scope: Arrive Washington August 24; orientation AID/Washington August 25-26; on-the-job industry training tour: August 27 - September 3; on-shore and offshore oil production; September 4-10; Oil refining and petrochemical production; September 11-15; Oil spill contingency planning at EPA HQ and Edison, N.J. Laboratory. September 16 fly to St. Louis; September 17 - October 1; attend Layton and Associates course - International Waste Water Systems and Operations Maintenance and Management. October 2 return Tunisia.

Industry tours will be arranged by WEC.

Element VII. The Contractor is expected to discuss and agree with the GOT and USAID/Tunis on a schedule of subsequent visits.

This action has been accomplished.

Element VIII. To advise on and expedite the procurement of simple, portable, hand-held instruments for sensing or measuring industrial pollutants.

The Contractor, in consultation with State and USEPA practitioners, has identified the most reputable instruments of these kinds and brought to Tunisia in June 1983 a proposed list for review with OESOC and purchasing action by USAID/Tunis. The following instruments for analyzing waterborne wastes are being ordered by AID/Tunis from the Hach Co., Loveland, Colorado, for transfer to OESOC. The total cost for these instruments, including estimated air freight and insurance, totals \$5476.

<u>Products for Analysis</u>	<u>Unit Price</u>
2 Portable spectrophotometers DR/3 Cat. No. 417-00-00	\$ 850.00
2 Handbooks Cat. No. 418-14-00	20.00
PortaLab turbidimeter Cat. No. 16800-00	725.00
Sample Cell Cat. No. 402-66-00	1.75
COD Reactor Cat. No. 165-00-10	450.00
2 COD Vial adapters for DR/3 Cat. No. 166-72-00	32.50
6 COD digestion reagent vials Cat. No. 212-59-25	25.95
Mini conductivity meter Cat. No. 172-50-00	250.00
Dissolved oxygen meter Cat. No. 89160-46-00	775.00
Digital pH meter Cat. No. 19-000-00	325.00
300 Copper analysis-cusens No. 1, 25 ml. Cat. No. 14188-66	per 50 8.25

Ammonia anal. - Nessler reagent, 960 ml. Cat. No. 151-11	14.00
Chloride anal. - Chloride Std. Sol., 946 ml. Cat. No. 291-16	8.25
2 Chloride anal. - Spadns reagent, 1 pt. Cat. No. 444-11	7.00
Iron (total), Ferrover, Iron reagent P Cat. No. 854-28	per 1000 units 75.00
3 Oil in Water, 1,1-1 Trichloroethane Cat. No. 21547-11	8.90
2 Phosphorus, reactive Phosver No. 3 Cat. No. 2125-28	99.00

Procurement action is underway for several air pollution related instruments as follows:

1 Miran Gas Analyzer From Wilks Scientific Corporation 140 Water Street South Norwalk, Connecticut 06856	\$8317.00
1 Air Velocity Meter and 1 Thermocouple Thermometer - 168570-45 From Cole-Parmer Instrument Company Chicago, Illinois 60648	745.00 305.00

## ANNEX II

COMPANIES SELECTED FOR PRIORITY CONSIDERATION  
IN POLLUTION CONTROL

by

Messrs. Bel Gaied and Darmoul

1. Societe Tunisienne de Levure, Beja (yeast from sugar products). Phosphoric acid and air pollution are problems. Need to clean up for reuse of the wastewater in irrigation.
2. Societe Nationale Tunisienne de Cellulose, Kassarine (paper products from alpha grass). Sodium hydroxide wastes in black liquor, mercury from electrolysis plant. Want to reuse the water for Eucalyptus tree irrigation.
3. El Fouledh, Societe Tunisienne de Siderurgique, Menzel Bourguiba. (Steel from Tunisien and Moroccan ores and scrap). Air pollution from blast furnace and power plant. Gases from burning coke are to be recycled, dust is problem.
4. Societe des Ciments de Gabes, Gabes. (Cement, clinker production). Electrostatic filters do not work properly. Air pollution.
5. Industries Chimiques Magrebines, Gabes. (Sulfuric acid, phosphoric acid, triple superphosphate, calcium phosphate production). Wash water, acids, sulfur oxides, fluorine, gypsum are problems, as is dust.
6. Societe Industrielle D'Acide Phosphorique et D'Engrais, Sfax. (Sulfuric acid, phosphoric acid, triple superphosphate) Acids, fluorine gas and dust are problems.
7. Compagnie de Phosphates et du Chemin de Fer de Gafsa, Metlaoui. (Phosphates). Washing phosphates, dust, fuel handling are all problems. Mines at Metlaoui, Redeyef, Koulares, Mdilla.
8. Penarroya Tunisie, Societe Miniere et Metallurgique de Tunisie, Tunis. (Lead and silver production from ores). Dust and heavy metals housekeeping are problems.
9. Les Ciments de Bizerte, Bizerte. (Cement, clinker, gravel). Electrostatic filters do not work properly.
10. Les Ciments Artificiel Tunisiens, Tunis. (Cement, hydrated lime). Electrostatic filters do not work properly.
11. Industrie Chimique du Fluor, Gabes. (Aluminum fluoride). Hydrofluoric acid, gypsum, calcium fluoride are lost.
12. Resources Tunisie, Gabes. (Monoammonium phosphate). Monoammonium phosphate dust and washwater, phosphoric acid, ammonia are problems.

13. Societe Granuphos, Sfax. (Phosphate fertilizers, ammonium sulfate, potassium chlorate). Problems from dust, combustion gases, ammonia. Water is recycled.
14. Societe Tunisienne D'Engrais Chimiques, Gabes. (Superphosphate). Problems from fluorides, dust, high water temperature.
15. Tanneries Megisseries du Maghreb, Tunis. (Leather from goat, sheep and cowhides). Waste water should be purified for use in irrigation.
16. Tannerie Moderne de la Manouba, Manouba. (Tanning, finishing, specialty leather products). Waste water.
17. Societe des Industries Textiles Reunies, Bir Kassa. (Dyeing, printing, finishing cloth). All water goes into pond and out without treatment.
18. Societe des Industries Textiles Rounies, Ksar Hillal. (Spinning mill). Dust noise problems.
19. Offshore Drilling
20. Slaughterhouses
21. Cheese Production
22. Olive Oil Production
23. Paints and Inks Production



# WORLD ENVIRONMENT CENTER

605 THIRD AVENUE - 17th FLOOR, NEW YORK, NY 10158 (212) 986 7200 CABLE ADDRESS ENVIRUCENT NEWYORK

## INTERNATIONAL ENVIRONMENT AND DEVELOPMENT SERVICE

June 23, 1983

THIS LETTER SENT TO: John G. Cladakis, AMAX, Lakeland, Fla.; Lee Patterson, Tenneco, Houston; Charles Brush, Koppers Company, Pittsburgh; J. William Haun, General Mills, Minneapolis; J. LeRoy Balzer, Utah International, San Francisco; and Harold L. Gensen, Warner-Lamber Co., Morris Plains, N.J.

We need your help in designing a questionnaire that will be completed by all Tunisian companies requesting the services of IEDS and your experts. A sample is enclosed. Please review it and send me whatever comments, changes, and additions you feel are appropriate. Please remember, this form is what you will receive and base your judgment on as to whether or not you would want to send one of your own staff to survey the plant or mine.

The basic question is whether it provides sufficient and detailed information.

Please let me know as quickly as possible. Your comments will be factored into the questionnaire and the final version will be sent to the Tunisian Office of Environmental Standards and Quality Control (OESQC). This is the government agency that supervises all requests for assistance to the IEDS.

Many thanks for your assistance.

Sincerely,

Whitman Bassow

WB/pm

Encl.

CC: S. Lintner/B. Ormond, AID Washington  
 A. F. Bartsch  
 R. Stevenson, AID Tunisia

**SUMMARY OF INDUSTRY PROBLEMS**

**Office of Environment, Standards and  
Quality Control - GOT**

**Name of Tunisian Company.**

**Location.**

**Number of Employees.**

**Products:**

**Kinds -**

**Quantities produced/year**

**Raw Materials used:**

**Kinds (include water) -**

**Quantities per year -**

**Summary of Process(es) (Identify manufacturer and model of equipment or  
machinery used in each major processing step):**

**Sources of Wastes:**

**Waterborne -**

**Airborne -**

**Solid Wastes -**

**Existing industrial hygiene (in plant) or environmental pollution problems;  
describe specifically but briefly.**

**Corrective Action:**

**Type of assistance desired from International Environment & Development Service -  
WEC, i.e., what are the specific problems to be solved.**

**Time when assistance is desire (Month and Year).**

# DEPARTMENT OF STATE TELEGRAM

014418

091348Z Jun 83

APPROVED BY: *Plutonium*  
CLASSIFICATION: UNCLASSIFIED

FROM: Embassy TUNIS CLASSIFICATION: UNCLASSIFIED

JUN 9 1 26 PM '83 7

ACTION: SecState WASHDC *1481*

UNCLAS TUNIS 4418

AIDAC DIRECT RELAY

INFO S. LINTNER NE/PD/PDS

E.O. 12356 N/A

To: Whitman Bassow

World Environment Center

605 Third Avenue

New York, N.Y. 10158

Tel: (212) 986-7200

1. From Dr. A. F. Bartsch to Dr. Whitman Bassow.
2. Redeyef and Moulares mines of Compagnie des Phosphates de Gafsa, 9 Rue du Royaume d'Arabie Séoudite.
3. Mine at Redeyef is shaft mine, 800,000 T/year calcium phosphates ore cleaned on site by typical dry physical separation processes using air ventilation in two (2) cyclone stages after grinding, followed in part by further counter current air separation. Course reject<sup>ca</sup> stored in graded piles on site. Fine dust exhausted

AMB  
DCM  
ECON  
CHRON

AID  
D.  
D.D  
PROG  
CONT  
S&T  
CF

DRAFTED BY S&T:AFBartsch:jp	DRAFTING DATE 6/8/83	TEL EXT 2183	CONTENTS AND CLASSIFICATION APPROV DIR:JRPhippard <i>AW</i>
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CLEARANCES  
D/DIR:GKlein *[Signature]*  
S&T:RSStevenson *[Signature]*

6/9/83 10:20AM

Form No. 1

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OUTGO

4418

through stack without further modification. Workers on site 2330. Principal problem is pneumoconiosis among workmen in plant, mine and village. Survey assistance related principally to dust aspect desired in early October.

4. At Moulares one shaft mine yielding 600,000 T/year calcium phosphate ore; one open pit mine - 200,000 T/year; cleaned on site, 30% by dry process as at Radeyef, with reject dust vented to atmosphere. Remainder by usual wet process including grinding, physical wet separation, cyclone, flocculation with chemical additives, water recovered for recycling. Sludge water - thinned, discharged to intermittent stream without objection by locals. Working force 1650. Principal problem is pneumoconiosis. Survey assistance related principally to dust aspect desired in early October.

5. Information on yeast plant and Bizerte refinery to follow.

USAID Mission

American Embassy

Tunis, Tunisia

ANDERSON *aw*