PLAINTIFF'S EXHIBIT
EXX 136
PENGAD-Bayonne, N.J.

INTER-OFFICE CORRESPONDENCE

LOUISIANA DIVISION

BATON ROUGE, LA.

PLEASE
HANDLE
NOTE
FEB 12 1954
H. J. VOORHIE

February 4, 1954

Atmospheric Survey
Drs. Choppin and West

Mr. J. P. Warner
Main Office

Dear Mr. Warner:

Drs. A. R. Choppin and P. W. West have been conducting analytical studies of the atmosphere in the Refinery for the past ten months in accordance with a one-year contract we have with them. Under the provisions of the contract they were to make analyses for a number of different atmospheric constituents twice monthly at six different points in the Refinery, including Anchorage and Maryland. In addition certain other studies such as corrosion rates of various materials, total dust fall and analytical development on some special analyses were to be made. The contract provided for an option to renew at a total cost of $7,250 for the second year. The cost of the first year was $11,800, which included the cost of the mobile laboratory and other initial expenses.

Drs. Choppin and West met with several members of the Technical Division and Dr. J. E. Miller on January 15 to review the results of their work to date and to make recommendations regarding future work. A summary report is attached for your information.

Their findings may be summarized as follows:

1. The operation of the mobile laboratory has been very good.

2. Analytical methods initially used or later developed have in general been quite satisfactory and reliable.

3. Sufficient data have not been obtained to draw firm conclusions, but based on the available data the following tentative conclusions can be drawn:

   a. The quantity of material over the area investigated is not sufficiently great to be hazardous to health. All of the concentrations of contaminants have been well below the limits established by the various health agencies.

b. The atmosphere does contain certain materials conducive to corrosion. Traces of chlorine, chloride, ammonia, sulfur dioxide and alkali have been found on a number of occasions. The greatest amount of corrosion was found at the position north of the main Cafeteria.

c. Data obtained gives fairly accurate information as to what the situation is at the sampling locations. Contamination within the plant area is likely to occur from sources other than Esso and we are apparently getting a measure of what is happening to Esso as a result of other industry. We are not, however, getting too much information as to what Esso plant operations are contributing to the atmosphere outside the Refinery.

4. Total dust fall data have been unsatisfactory due to large amounts of rain and other factors. Because of the importance of these data efforts are being made to devise a method which will be satisfactory.

Drs. Choppin and West made the following recommendations for future work.

(1) Since sufficient data are not yet available to draw firm conclusions the study should be continued for at least one more year.

(2) The test schedule and points of sampling should be revised, in view of the results to date, to obtain data of greatest value.

(3) Since present results do not give us a measure of what might be the situation in residential areas some distance away from the plant, consideration should be given to carrying on some planned studies outside the plant area. Specifically they proposed that they retain a full-time qualified man for this and for analytical development studies at an additional cost to Esso of $5,000 - $7,000 per year.

It is our recommendation that the present studies be continued for another year, with suitable revisions in sampling points and schedules. Although information on atmospheric analyses in outlying areas, under conditions suggested by Drs. Choppin and West, is important, we do not feel that it is desirable to extend the scope of the studies at this time. If you are in agreement with this recommendation we shall make the necessary arrangements to have the contract extended for an additional year, beginning April 1.

Very truly yours,

G. R. MURRELL

EMH:mab

Attachment

MEETING WITH DRS. CHOPPIN AND WEST ON THE AIR ANALYSIS PROGRAM -

Drs. A. R. Choppin and Philip W. West met with the following on January 15th to discuss the work they had been doing for Esso:

M. B. Amis R. K. Dix J. E. Miller H. E. Westbrook J. E. Wood

Dr. West presented a survey of their work. The principal points covered were as follows:

1. The operation of their mobile laboratory had been very good. Results were better than they had expected.
2. The dust determinations are significant and reliable.
3. The dust identification has been good and different observers have been able to check each other.
4. Dustfall has been unsatisfactory because of large amount of rain and due to mold growths. (See below)
5. Methods of determining chemicals have been fairly satisfactory with lower limits of accuracy about as follows:

Ammonium, chloride and sulphate	0.1 mg/cm
SO2 -	0.01 p.p.m.
Aromatic Hydrocarbons	4.0 p.p.m.
H2S	.01 p.p.m.
Oxides of nitrogen	.02 p.p.m.

pH - Now checking this. pH seems signficant but the limit of accuracy has not been determined.

6. Corrosion samples in the refinery have been good and seem to be significant indicating a very much greater rate of corrosion of cu, al, galvanized iron and iron just north of the main cafeteria. The samples at Anchorage and Maryland were torn down by the men who cut the grass. They have now been replaced, however.

In the general discussion it was pointed out that the dustfall data were very important. Drs. Choppin and West thought they could modify their apparatus to get better data. They will either use a 1/4 sq. ft. funnel area in place of 1 sq. ft. or will change the samples more often.

Dr. Choppin felt that the data to date indicated that Esso was doing no harm to anything in the refinery. He suggested, however, extending the program to have a full time man take samples three days per week in and outside the plant to be sure that Esso was not causing trouble to those on the outside. This plan would cost $5,000.00 - $7,000.00 more than the $7,200.00 per year for continuing the present sampling schedule. Drs. Choppin and West felt the present sampling schedule was significant and should be continued even if the work outside the refinery was not done.

They suggested Esso allowing them more leeway in changing sample points if a particular discharge could be checked by sampling in another location. They said that they could not personally spend any more time on the project than they are now spending. We gathered the impression that they would like to continue, however. (Dr. West stated that they had not made a cent out of the work this year because of the high cost of the equipment.)

It was suggested that Drs. Choppin and West include more data concerning the prevailing direction of the wind for the hour preceeding their analyses.

Esso representatives are to let Drs. Choppin and West know soon what program they want to carry out on air analyses.

J. E. MILLER

JEM:ck
Oil Conservation Department
January 18, 1954

SOUTH GATE STATION

1954 TESTS	WIND	DUST MM/M³	ALUM. OXIDE	SILICA	SODIUM CHL.	UNIDENT.	AMMON. MG/M³	CHLORIDE MG/M³	CHLORINE PPM	H_2S PPM	SULFATE MG/M³	SO_2 PPM	AROMI HYDRO P.P.M	N_2O_3 PPM	pH	REMARKS
No. 1	NW	5.7										0.5				
2	SE	6.9										0.0				
3	S	5.0										0.0				
4	SE	4.4										0.02				
5	N-NW	4.4										0.00				
6	S-SE	6.3										0.00				
7	NW-N	14.5										0.00				
8	NNE	8.2										0.00				
9	NW-W	6.3										0.00				
10	SW	10.7										TR.				
11	SE-E	8.8										TR.				
12	SW	8.2										0.0				
13	E-NE	13.2										0.00				
14	N-NE	9.5										0.00				
15	S	3.8										0.00				
16	SW	8.2										0.00				
17	N.NW	6.9										0.00				
18	NE	9.5										0.00				
19	NE	8.8										0.00				
20	N-NW	11.7										0.00				
21	SSW	10.3										0.09				

GENERAL REMARKS: With two exceptions, the highest dust counts are when the wind is from a northerly direction.

EM003751

apr 30 5 4 0.2% H_2S - N.E. corner wind S/S
may 19 5 4 0.2% H_2S

3030

ESSO STANDARD OIL COMPANY
LOUISIANA DIVISION - PURCHASING DEPARTMENT
P. O. BOX [illegible], BATON ROUGE 1, LA.

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J. M. SITLER — DIRECTOR OF PURCHASES
A. J. KELLY — GENERAL PURCHASING AGENT
BATON ROUGE OFFICE
F. C. WALTERS — DIV PURCHASING AGENT

DATE 12-18-53

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To [illegible]

KEM TECH LABORATORY
AUBIN LANE
ROUTE 2
BATON ROUGE, LA.

Special Tests

Above ORDER NUMBER must appear on all invoices, lading, express receipts and correspondence. On L. C. ments, mark all shipping tags and packages with above

CARLOAD SHIPMENTS — On date of shipment, telegr office, order number, point of origin, car number, and routing. Airmail copy of bill of lading and shipping m dum showing detailed contents of car to Division Pu Agent.

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ESSO STANDARD OIL COMPANY, NORTH BATON ROUGE, LA.

ATTENTION:

VIA:

THIS CODE NO MUST APPEAR ON ALL INVOICES & PACKING LISTS	QUANTITY	DESCRIPTION
		TO COVER COST OF PERFORMING SPECIAL ANALYTICAL WORK AT THE BATON ROUGE REFINERY DURING THE APPROXIMATE PERIOD OF DECEMBER 21, 1953 TO JANUARY 22, 1954. CHARGES WILL BE AT THE RATE OF $10.00 PER HOUR FOR TIME SPENT IN PREPARATION OF MATERIALS, IN TRAVELING TO AND FROM THE REFINERY AND IN ACTUAL ANALYTICAL WORK AT THE REFINERY. THIS RATE INCLUDES ALL OPERATIONAL COSTS INVOLVED IN THE WORK. CONFIRMING 'PHONE ORDER OF 12-18-53. CONTRACTOR SHALL CARRY WORKMEN'S COMPENSATION INSURANCE AND PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE IN AMOUNTS SATISFACTORY TO ESSO. EVIDENCE OF INSURANCE IS ON FILE, AND IT IS NOT NECESSARY TO SEND AN ADDITIONAL CERTIFICATE. CONTRACTOR IS TO CONTACT MR. J.W. CARMENA, OUR FIELD CONSTRUCTION COORDINATOR, AT TELEPHONE 7-4321, EXTENSION 318, IN ADVANCE OF STARTING WORK.

CHARGE

EMH

1710-663
MESSRS. A.R. CHOPPIN AND PHILLIP WEST DOING BUSINESS AS KEM TECH LABORATORY

EM003753