

5 December 1962

Mr. Fred C. Francis
Industrial Indemnity Company
1406 Sixth Avenue
San Diego 1, California

re: [REDACTED]
3184 Valley, San Diego
Former employee of Wunderlich Corporation
1467 State Street, San Diego 1, California

Dear Mr. Francis:

I was asked to evaluate Mr. [REDACTED] at the request of Dr. G. A. Garbaugh because of the possibility of chronic lead intoxication due to exposure to tetraethyl lead during this man's employment with the Wunderlich Corporation. I first saw the patient in my office on November 10, 1962.

HISTORY OF PRESENT COMPLAINTS: 1) The patient first consulted his L.M.D., Dr. Pedro Vilcanueva of 1012 South Evans Street, San Diego 13, in January, 1962 with symptoms of tinnitus in both ears and frontal headaches (it should be noted that the patient is a poor historian and we are not exactly certain as to the validity of the dates named). This was not associated with hearing loss. He states that this was intermittent until March, 1962 when it became almost continuous. He has also complained of dizziness intermittently over this same period of time. He believes that he became most dizzy with the most tinnitus and chills and fever only while working in the north heading in the Wunderlich tunnel project. He states that his L.M.D. gave him a bitter medicine to take in the evenings for his headaches commencing about May, 1962 which helped them considerably. He states that the chills and fever which have been present for approximately the last five months occurred almost only when he was working in the tunnel and were relieved almost immediately by placing a fan in his face.

The patient also claims to have had insomnia since July. Immediately after the possibility of lead intoxication was made known to himself and the other workers, he consulted his LMD who implied that the patient might have lead intoxication in July, 1962.

The patient has also complained of his head feeling stopped up especially in the left nostril, maxillary and supraorbital areas

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since October 26, 1962. He states that this is better since he has been given pills by Dr. Harbaugh.

The patient states that he was last employed on the 29th of October, 1962 when he was dismissed from work because of absenteeism. He claims that his absenteeism was due to his seeing his family doctor, Dr. Vilosmueva for the nasal congestion from which he was suffering.

Other pertinent information are that the patient has had sweats since March, 1962 and cramping of his hands on exertion without a feeling of pins or needles being present. For approximately the same period of time, he has had intermittent episodes of precordial pain with radiation into his left arm lasting a few minutes.

PHYSICIAN REVIEW reveals no history of significant weight loss or gain in the past year. The patient denies headaches prior to 1962 other than an occasional hangover. He also denies cough, wheezing, dyspnea and orthopnea. He has had belching since approximately March, 1962 but no diarrhea, cramping or colons and no past history of jaundice. He denies dysuria, frequency or nocturia. He denies weakness, nervousness or vertigo prior to the present illness. There is no history of heat intolerance, disorders of the joints or of the skin.

PAST HISTORY reveals no significant childhood diseases and no history of rheumatic fever, typhoid fever, tuberculosis, pneumonia or venereal disease. Past history includes an appendectomy and removal of all his teeth in 1959 because of pyorrhea.

FAMILY HISTORY revealed that his father died at 82 of old age and his mother died at an unknown age of old age. The patient has 17 siblings, four dead of unknown causes, and the patient is unaware of any family history of diabetes, heart trouble, allergies, hypertension, mental disease or gout.

PERSONAL HISTORY reveals the patient is living with his common-law wife and has two children by a former marriage whom he in part supports as well as his common-law wife's ten children. He does not smoke and admits to drinking approximately one pint of whiskey a week but states that he has never been intoxicated in his life. He drinks no coffee and says he sleeps approximately four hours a day, which is his normal amount of sleep.

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PHYSICAL EXAMINATION REVEALED:

A stocky, muscular colored male in no distress. The patient seemed somewhat agitated and hostile towards inquiries and did not seem to comprehend the type of information we were trying to elicit many times.

Height: 5 feet 9 inches, weight 212 pounds, temperature 98.6, pulse 80 and regular, blood pressure EAR 160/104.

Skin negative. No lesions seen.

Eyes: Pupils round, react well to light and accommodation. Fundi grade two arteriosclerotic changes only.

Ears: Normal canals and membranes. Nose negative. Throat: Artificial dentures. No lesions seen. Tongue and gums negative.

Neck: Thyroid not enlarged or nodular. No carotid bruits. Nodes: None significantly palpable in neck, supraclavicular, axillary or inguinal areas.

Thorax normal shape. Lungs clear to percussion and auscultation

Heart: S1 soft, grade two apical systolic murmur which ends before M1. A2 and P2 distinct. A2 of higher and sharper quality than P2 without splitting, thrills or extra sounds being noted. PMI not noted and apex beat not palpable. Heart not enlarged to percussion but in view of the patient's thick thorax, this is not surprising.

Spine: No deformity or tenderness.

Abdomen: Soft, muscular. No palpable organs, masses or herniae.

Genitalia normal. Rectal: Soft brown stool. Prostate mildly enlarged without abnormal masses. No tenderness.

Extremities: Dorsalis pedis pulse is palpable and strong bilaterally. No edema, varices or discoloration.

Neurologic: Sensorium, cranial nerves, sensory, motor and cerebellar systems all grossly intact. Decreased perception in left ear by the Rinne test with equivocal decreased perceptive loss by the Weber test.

Subsequent studies were obtained upon the patient's admission to Sharp Hospital. The patient was very loathe to go and stayed only one day. Approximately one week prior to going to the hospital, a BOP report was obtained as an outpatient and I was verbally told by Dr. Harry Moss that the patient appeared belligerent and intoxicated to him. Nevertheless, the patient was admitted. The physical findings on admission were essentially the same as those obtained in my office and a persistent hypertension of approximately 160 to 170 over 110 was noted.

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LABORATORY VALUES included the following: The BSP was 7%. Serology VDRL weakly reactive 1:1 dilution, negative at 1:2 dilution. Kolmer negative 1:2 dilution. RPR negative. Urine: specific gravity 1.013, negative for albumin, sugar and negative sediment. Hemoglobin on 11-23-62, 12.6 with hematocrit 37, and hematocrit on 11-24-62 of 43. WBC 5,440 consisting of 61 segs, 5 bands, 3 eosinophiles, 29 lymphocytes, and 2 monocytes. Platelet morphology normal. Reticulocyte count 1.2%. Morphology of red cells and other elements normal. I searched these slides carefully for evidence of basophilic stippling and was unable to find any. Sed rate 22 corrected to 17 Wintrobe units.

Chest x-ray showed some tortuosity of the descending aorta which would be consistent with left ventricular hypertrophy but was otherwise negative. ECG showed sinus bradycardia, first degree heart block and left ventricular hypertrophy.

Lumbar puncture was performed on 11-23-62, the opening pressure being 33 cms. of water and the closing pressure 200 cms. of water. Approximately 15 cc's of faintly opalescent fluid was obtained. The cell count on this fluid consisted of 67 red cells and 1 white cell. The protein was 43 mg.%, the VDRL non-reactive and the lead content 10 mcg.%. The patient felt relieved of his headache for several hours after the LP was performed. The blood lead level of 11-12-62 was 30 mcg.%, the normal value being up to 50 mcg.%. A repeat serum lead level of 11-24-62 was 10 mcg.%, normal being up to 30 mcg.%. A 24 hour specimen for quantitative lead showed a total volume of 2700 ml. with a total quantity of 130 mcg. or 50 mcg./liter, the normal values being up to 80 mcg./liter. A cephalin flocculation test was negative at 24 hours.

You will recall that in my letter to you of July 16, 1962 I noted that at that time Mr. Mason's urinary lead level was 50.2 mcg. per 100 ml. as of July 3 and that a repeat lead level obtained on July 13 for Mr. Mason was 29.3 mcg./100 ml. These tests were apparently done in a different fashion than the tests obtained in November and hence the normal values are different. It should, however, be noted that in none of these cases did Mr. Mason's blood or urinary levels exceed the upper limit of normal values.

My final IMPRESSIONS are: 1) Hypertensive cardiovascular disease causing headaches and tinnitus. 2) Chronic exposure to tetra-

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ethyl lead which I do not feel is significant in producing the patient's present complaints.

The patient is to receive therapy for his hypertension which I will attempt to arrange via the Mercy-Guadalupe Clinic. Additional copies of this letter will be sent to the same people who received copies of my report of July 12, 1962 for their information and comments.

Respectfully submitted,

Donald L. Schmidt, M.D.

Thorax

CC: Robert A. Schae, M.D.
Metzger Laboratory
University of Cincinnati College of Medicine
Cincinnati 10, Ohio

Underlock Corporation
1467 State Street
San Diego 1, California

Dr. Frank Princi, Medical Director
Ethyl Corporation
University of Cincinnati College of Medicine
Cincinnati 10, Ohio

Mr. John H. Dupre, District Safety Engineer
California Division of Industrial Safety
1451 4th Avenue
San Diego 1, California

RE 0012579

August 26, 1963

Donald L. Schmidt, M.D.
233 A Street, Suite 911
San Diego 1, California

Dear Doctor Schmidt:

I have reviewed all of the information which you transmitted to me in your letter of August 15th, concerning Mr. [REDACTED] a former employee of the Wunderlich Company of San Diego, California, and I have also gone through the other information available to me in relation to the difficulties experienced by employees of this Company during the period under discussion.

In specific reply to your question concerning the significance of complaints registered by Mr. [REDACTED] in May of 1963, I am constrained to say that I cannot associate these complaints with any toxic effects of the absorption of tetraethyllead which may have been sustained by this employee in 1962. This opinion flows naturally out of a very considerable experience with persons certainly intoxicated (and in many instances severely intoxicated) by tetraethyllead. The characteristic course of this disease, as seen over and over again, is that, primarily, of a self-limited and completely reversible functional disturbance of the central nervous system. In mild cases the symptomatology may disappear in a few days, or may persist for several weeks. In more severe cases, there may be some persistent evidence of intoxication for as long as eight to ten weeks. It is obvious that apprehension and introspection are likely to follow upon a toxic episode, and that certain individuals will have difficulty in shaking off their concern for minor and common deviations from well-being. It is a fact, however, that no chronic form of this disease has been seen, and that no residual disease or sequelae have been found, even in association with the more severe types of intoxication which barely permitted survival. It is simply impossible, therefore, to give serious credence to any persistent relationship between tetraethyllead intoxication, as complained of by Mr. [REDACTED] in 1962, and the symptoms of which he complained of in May of 1963. There is only one complaint among those cited as having existed in May of 1963 - namely, insomnia - which has suggestive implications, and it is all too well known that insomnia in varying degree is a not uncommon complaint of human kind under a variety of conditions, not the least important of which is hypertensive vascular disease. The other present complaints do not fit into the pattern of tetraethyllead poisoning in any stage.

I shall not submit a bill for the opinion and service rendered in this manner. I and my associates have written and advised on this subject previously, and I do not object to giving such advice on this occasion.

N13182.01

KE 0012500

Donald L. Schmidt, M.D. - (2) - August 26, 1963

Moreover, I trust that I shall not be asked to give a deposition or otherwise to enter formally into the consideration of this case, although I should not refuse to do so under appropriate conditions.

Sincerely yours,

RAK:vr

Robert A. Kehce, M.D.

KE 0012581

DONALD L. SCHMIDT, M.D.
INTERNAL MEDICINE AND HEMATOLOGY
233 A STREET, SUITE 911
SAN DIEGO 1, CALIFORNIA
BELMONT 2-6181

August 15, 1963

Robert A. Kehoe, M. D.
Kettering Laboratory
Department of Preventive Medicine and Industrial Health
College of Medicine
University of Cincinnati
Cincinnati, Ohio

Dear Doctor Kehoe:

This is a letter to follow up our telephone conversation of August 14, 1963.

Mr. [REDACTED], formerly an employe of the Wunderlich Company of San Diego, California, was allegedly exposed to tetraethyl lead between the period of March 26 and October 26, 1962. At that time he was discharged for failure to report for work.

Symptoms which the patient claimed to have during the period of exposure included ringing in the ears, headaches, insomnia, vomiting without abdominal pain, constipation, night sweats, intermittent dizziness, swelling of the lower lip and dryness of the mouth.

Six months later, on May 16, 1963, after no further known exposure to tetraethyl lead, Mr. [REDACTED] continued to complain of poor memory, left-sided nasal stuffiness, headaches, insomnia, night sweats and constipation, and numb feelings which migrated over his body.

A urinary lead determination of November 25, 1963, was 50 micrograms per liter, the normal range by the method used being 0 to 80 micrograms per liter.

Mr. [REDACTED] has severe hypertensive cardiovascular disease which antedated his employment by the Wunderlich Company.

I am interested to know whether you believe that the symptoms of which Mr. [REDACTED] complained in May, 1963, are attributable to his exposure to lead between March and October, 1962.

Your fee for your comments may be submitted to Arthur W. Jones, Attorney at Law, c/o Higgs, Fletcher and Mack, 2250 Third Avenue, San Diego 1, California.

Your comment will be greatly appreciated in this case.

Very sincerely yours,

Donald L. Schmidt

Donald L. Schmidt, M. D.

KE 0012582

N13182.02

DLS:awh

July 24, 1962

John R. Kiser, M.D.
2290 Sixth Avenue
San Diego 1, California

Dear Doctor Kiser:

I acknowledge with thanks your letter of July 9, to which I would have replied at once had it appeared to be necessary. Being pressed for time, I delayed writing until I had put some other matters behind me. A letter from Dr. Schmidt, of which you have a copy, came this morning, and I think it advantageous to make a few comments on the situation involved in this correspondence, while it is fresh in the mind of all concerned. Lest my words should appear to have a critical aspect, let me say that this situation was dealt with in a very satisfactory manner.

My comments refer to certain characteristics of poisoning with tetraethyl lead which seem not to be reckoned with in an entirely clear manner. It is not strange that this is the case, considering the negligible opportunity (fortunately) that has been afforded to physicians to observe this form of lead intoxication. Nevertheless, it is of some importance that there be physicians who have some knowledge of peculiarities of tetraethyl lead poisoning, for certain diagnostic procedures should be followed out at the proper time.

Aside from the acute nervous manifestations of tetraethyl lead poisoning which are its outstanding characteristic, there is little or nothing (except, of course, the history of exposure, when fully elicited) to suggest intoxication by lead. The encephalopathy bears little resemblance, symptomatically, to that induced by the absorption of large quantities of inorganic lead, and is not to be thought of in the same category. There are, moreover, no cases of peripheral neuropathy on record. It is also true that no chronic form of tetraethyl lead poisoning exists, the symptoms, whether occurring in response to a brief, severe exposure, being essentially the same when induced by prolonged, mild but significant, exposure.

The most striking peculiarity, however, from both the physiological and the clinical viewpoints, lies in the fact that there is practically no hematological evidence, microscopically or chemically, of the presence or effect of lead in the blood. The usual microscopic findings (increase in reticulocytes and "stippled" erythrocytes) in inorganic lead

July 24, 1962

poisoning are completely lacking, and, in addition, there is no change in the porphyrin metabolism. There is also a slight to moderate, often negligible, increase in the lead content of the blood (the conversion of tetraethyl lead in the body to inorganic lead is slow and slight, while the intermediate degradation products of tetraethyl lead are not taken up by the erythrocytes as is lead in inorganic form). On this account, the determination of the lead in the blood provides no indication of the extent of the absorption of tetraethyl lead, and is, therefore, of no use, by itself, in the diagnosis of tetraethyl lead poisoning. The rate of the excretion of lead in the urine, on the other hand, following the absorption of tetraethyl lead, is clearly indicative of the relative extent of the absorption. (This is not to say that the blood should not be examined, for, in fact, the low concentration of lead in the blood, in association with a very high level of concentration of lead in the urine, is a typical finding in tetraethyl lead intoxication).

You will recognize from these facts, that the only useful medical measures in the supervision of men who may be subjected to exposure to tetraethyl lead, are (1) the observation of the men for the appearance of the first symptoms of intoxication, and (2) the analyses of the urine for lead (including the use of a method of preparation which insures the chemical conversion of any organic lead in the urine to inorganic). Obviously, the monitoring of the atmospheric lead is important, but the surveillance of the men is imperative unless the lead in the air is of negligible proportions.

I believe this information will be of interest to you, and while I trust you will not encounter situations that require its use, it may be that you will do so.

Cordially yours,

RAK:wp

Robert A. Kehoe, M.D.

cc: Dr. Schmidt
Dr. Doty

RE 0012584

JAMES F. CHURCHILL, M.D.
L. H. REDELINGS, M.D.
JOHN C. SCHLAPPI, M.D.
DONALD G. LANDALE, M.D.
JOHN R. KISER, M.D.

2290 SIXTH AVENUE
SAN DIEGO 1, CALIFORNIA

9 July 1962

Robert A. Kehoe, M.D.
The Kettering Laboratory
College of Medicine - Eden Avenue
Cincinnati 19
Ohio

Dear Doctor Kehoe:

Thank you very much for your kind letter and for forwarding twelve blood kits to me. I have delayed answering you until our situation here became more clarified and I could give you some detailed information.

I contacted you initially at the suggestion of Doctor Earl W. Doty, the Southern California Medical Consultant for the Ethyl Corporation. Doctor Doty was in San Diego at the request of the Ethyl Corporation and left some urine containers for urine analysis for lead and suggested that we obtain also some blood sample containers in the event they were necessary. Doctor Doty, I presume, was called to San Diego at the request of the Wunderlich Construction Company through the Ethyl Corporation who was consulting on this problem. I became interested at the request of the Wunderlich Company as a medical consultant for their company although I am a private practitioner in the specialty of Internal Medicine in San Diego.

Our problem was that the Wunderlich Company is building a tunnel to house a large underground sewer line. In the course of their mining the workmen went through a strata of earth which apparently had collected a high concentration of gasoline containing tetra-ethyl lead. Random samples of this tunnel atmosphere were shown to contain 15 micrograms per cubic foot of tetra-ethyl lead where I understand a tolerance of 4 micrograms is allowed. Approximately thirty men were exposed to this concentration over a period of more than 50 hours. The job was shut down promptly upon finding this hazard and arrangements were made to clear the tunnel of the noxious vapors.

In the event any of the men presented with symptoms of organic lead poisoning it was necessary to have some check of their lead excretion and blood concentration. Arrangements were made at the large general hospital locally for urine lead determination on the thirty exposed men. It was felt essential that some method of accurately checking our laboratory results was necessary so that Doctor Doty suggested that we submit urine samples to your laboratory as well as blood samples. For this reason the blood kits were requested.

KE 0012585 N13182.04

JAMES F. CHURCHILL, M.D.
L. H. REDELINGS, M.D.
JOHN C. SCHLAPPI, M.D.
DONALD G. LANDALE, M.D.
JOHN R. KISER, M.D.

2290 SIXTH AVENUE
SAN DIEGO 1, CALIFORNIA

9 July 1962

Robert A. Kehoe, M.D.
The Kettering Laboratory
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Fortunately, none of the men exposed revealed any abnormal level of lead in their urine as tested by our local laboratory. Only one individual had any subjective complaints and careful examination revealed these not to be related to his industrial exposure.

For the present, our problem has been resolved. The tunnel is almost completed and the men are avoiding exposure by working with closed oxygen breathing apparatus which they will use until completion of this section of the tunnel. I would like to retain the blood kits for the next several weeks until any possibility of late symptomatology has passed and the studies at our local laboratory have proven accurate and adequate.

Thank you very much again for your kind cooperation and interest in our problem.

Yours sincerely,



John R. Kiser, M.D.

JRK:jb1

cc to Doctor Donald Schmidt

KE 0012586

July 2, 1962

John R. Kiser, M.D.
2290, 6th Avenue
San Diego
California 1

Dear Doctor Kiser:

Your telegram came too late on Saturday to enable us to respond to your request for containers for the collection of samples of blood for analysis for lead. The containers are now on their way and you should receive them shortly after, if not before, you receive this letter.

I write to let you know that we do not, as a rule, accept samples of anything for analysis without knowing exactly what we are doing and why we are doing it. This is in no sense a service laboratory; we have certain specialized facilities for research, and since we are concerned with medical problems, including diagnostic procedures, we make ourselves and our facilities available to our colleagues in medicine under suitable conditions. However, since our funds are earmarked for research, we undertake to be reimbursed for what it costs us to do these things, so long as the charge is not burdensome to the patient. In the latter instance, on the word of the physician, no charge is made.

The service, however, is not an analytical, but rather a medical (consultation) service. Accordingly we expect to be advised of the situation which calls for diagnostic services (or those of industrial hygiene) so as to suit the service to the needs and to interpret the findings in that relationship. We do not analyse any material until we have the information which justifies such analysis (or analyses).

Since I do not know your problem, I should like for you to let me know by return mail just what we are to be concerned with in conducting these analyses. If you are dealing with persons who are being subjected to exposure to lead in their occupation or otherwise, let me know the nature of the work, the nature and severity of the presumed exposure, the duration of employment in such exposure, and the last day (or time) of exposure prior to the collection of the samples. If the patients are ill let me have the account of their illness.

N13182.05

Cordially yours,

KE 0012587

Robert A. Kehoe, M.D.

RAK:SS

18 July 1962

Wunderlich Company
1467 State Street
San Diego 1
California

Gentlemen:

This is to report to you the results of my investigation of the exposure of your men to dangerous levels of Tetraethyl lead between the period of June 28 and July 16, 1962. As nearly as I can evaluate, there is now no danger of overexposure to either Tetraethyl lead or gasoline fumes in the central area tunnel of the Metropolitan Sewer System. I shall, however, continue to maintain liaison both with your company and State of California Division of Industrial Safety.

HISTORY OF PRESENT PROBLEM: On June 28, 1962, a maximum air reading of 50 micrograms per cubic foot of air was noted within the shaft of the sewer tunnel by Mr. Ed Watson of the Ethyl Corporation. This concentration of lead is sufficiently high that the Ethyl people do not allow workers to work at storage tanks for longer than two hours with this concentration of lead. All work was halted and a meeting of myself, Charles Cooks, and Oscar Cheff for the Wunderlich Company; Carl Johnson, John Dupre, Robert Murray, I.S. Reid, J. Moore, A.A.A. Wharff of the Division of Industrial Safety; Edward Watson of the Ethyl Corporation and R. Hodgins and R. Cota of Laborers Local No. 89, was held at the Industrial Safety Division Offices at 1521 4th Avenue, San Diego, on Monday, July 2, 1962. At this meeting it was determined that all workers who had been working in the tunnel would proceed to Sharp Hospital for urinary coproporphyrins and quantitative urinary leads before consideration for return to work would be given.

Later that day, officials of the Wunderlich Corporation and the Industrial Safety Commission visited the scene of the construction and it was decided by the Wunderlich Corporation that they would wear oxygen masks and tanks in the construction until such time as the maximum concentrations of lead in the air would permit them to return to breathe the air being piped into the tunnel.

It should be noted that in the week prior to discovery of this concentration of lead in the air, three men had complained of feeling giddy from gasoline fumes and had visited local physicians.

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None of these men complained of insomnia, apprehension, anxiety, nightmares, headache, or difficulty with vision which are the usual manifestations of inhalation of lead fumes which usually cause encephalopathy before other manifestations are noted. Similarly, there was no history to suggest gastro-intestinal cramping or diarrhea, hemolysis or peripheral neuropathy.

Work was resumed with respirator equipment on July 5, 1962. On July 9, I was phoned by Bob Murray of the Industrial Safety Division, who reported average readings of 6 micrograms per cubic foot with maximum readings of 8 micrograms per cubic foot in the tunnel. In accordance with Ethyl Corporation regulations, I advised Mr. Murray that the men could not work without their respirator equipment for more than four hours in any one shift. By July 13, 1962 the readings throughout the entire tunnel were less than 4 micrograms per cubic foot except for a reading of 8 micrograms in one small pocket in which the men were not working. At that time, I advised Mr. Murray that the men could cease using respirator equipment but that subsequent readings would have to be made to determine whether they could continue to function without it. None of the men have to my knowledge had any symptoms suggestive of either lead or hydrocarbon intoxication since work has been resumed.

The three men who consulted a Dr. H. M. Breuer of 502 8th Street, Ramona, California, prior to work being stopped on June 28, were [REDACTED], [REDACTED], and [REDACTED]. I phoned Dr. Breuer and determined that Mr. Watt's only complaint was mild vertigo and that Dr. Breuer in examining him felt that there was no need for laboratory studies. Mr. McFadden complained of nausea, weakness, chest pain, vertigo, and a feeling of intoxication. A chest x-ray and complete blood count were obtained by Dr. Breuer and reported to me as being normal. Two copies of my history and physical of 7-6-62 on Mr. [REDACTED] are enclosed. He seemed to be most symptomatic of the three. Suffice it to say that his complaints when he consulted Dr. Breuer did not suggest lead encephalopathy although they did suggest a certain amount of gasoline intoxication. A chest x-ray obtained on 7-3-62 at the Palomar Hospital showed no evidence of active disease. The patient's hemoglobin was slightly decreased for a man of his age, 12.6 gms. with a hematocrit of 38 and the white count was at the borderline of upper normal at 10,000 with a differential of 60 segs., 4 bands, 2 eosinophiles, 29 lymphocytes, 5 monocytes. No stippling was observed and the red cell morphology was essentially normal. These findings do not suggest lead intoxication but they do not rule it out. When I saw Mr. [REDACTED] he was essentially

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asymptomatic and physical examination was entirely within normal limits except for a mild hypertension of 160/88. This I would not attribute to lead intoxication. Laboratory values disclosed a hemoglobin of 13 gms., red count 4.25 million, hematocrit 40 giving an MCV of 88.5, and MCHC of 32.5. The WBC was 10,850 consisting of 67 segs., 3 bands, 22 lymphocytes, and 2 monocytes. There was minimal toxic granulation of the neutrophils and no basophilic stippling of the red cells noted. It was my impression that there was no evidence of lead or gasoline intoxication at the time I saw this patient. How long he had shown this low level of hemoglobin (low normal), it is impossible to state as to the last time he had a blood count was when he was discharged from the Navy in 1958 and the records of that discharge are presently in St. Louis.

The coproporphyrin test was used as a screening test to allow the men to return to work if negative and was negative in each case. The quantitative lead determinations took several additional days to be run.

RESULTS OF QUANTITATIVE URINE LEAD AND COPROPORPHYRIN DETERMINATIONS

Coproporphyrins were determined by the method of Sdiensson, Rimington, and Bonds, Scandinavian Journal of Clinical and Laboratory Investigation, Volume I, Page 2. Quantitative urinary leads were done by the modification of the method of Hench, J.F., Biochemical Journal, Volume 34, Page 1234.

Results of qualitative coproporphyrin determinations were all done immediately after collection of urine from the patients, all specimens being obtained on July 2 and 3. All coproporphyrin determinations were negative.

Results of quantitative urinary lead tests obtained between July 2 and July 3, 1962 showed the following values:

PATIENT'S NAME

(micrograms/100 mill.) AMOUNT OF LEAD

[REDACTED]

50.2
43.8
38.0
29.2
25.0
24.3
24.3
21.1
21.1
21.1

KE 0012590

SERVICE

fast message
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er symbol.

WESTERN UNION

TELEGRAM

W. P. MARSHALL, PRESIDENT

SF-1201 (4-60)

SYMBOLS

DL=Day Letter

NL=Night Letter

LT=International
Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

1237A EST JUN 30 62 CTB024 0B588

O SDC330 NL PD SAN DIEGO CALIF 29

DRCOBERT A KECHOE

KETTERING LABS COLLEGE OF MEDICINE EDEN & BETHESDA AVE CIN=
SHIP 12 LEAD FREE BLOOD SAMPLE CONTAINERS WITH COLLECTION INSTRUCTIONS
FOR LEAD ANALYSIS

JOHN R KISER MD 2290 6TH AVE SA DIEGO CALIF 1

7 CTB024 0B588
ST 903A

SS

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[REDACTED]

19.5
19.5
19.5
16.2
14.6
14.6
13.0
13.0
13.0
13.0
13.0
13.0
8.1
8.1
8.1
8.1
8.1
4.8
0.0

On July 13 additional readings were taken on the three highest values, namely [REDACTED] and [REDACTED]. It should be mentioned that the normal range by this quantitative method is 0 to 60 micrograms per 100 milliliters. Samples were collected on the noon lunch hour for each of these three men on a Friday so that they had had a chance to accumulate lead throughout the week and for at least four hours at work. They had been breathing air without the aid of a respirator for at least four hours the day of the determination. The readings for these men were as follows: [REDACTED] 29.3, [REDACTED] 26.5, and [REDACTED] 14.9.

On the basis of these last determinations, I feel the workers are in all probability out of danger to lead exposure, but as I have stated previously, we will continue to follow them and to obtain lead air samples periodically. Thank you for referring this interesting problem to me. A copy of my history and physical examination on Mr. [REDACTED] is being sent to me. In addition to myself, three copies of this report are being sent to you; one to Mr. John R. Dupre of the State Industrial Safety Division; one copy to Robert A. Kehoe, M.D. of the Kettering Laboratory of the University of Cincinnati College of Medicine; and an additional copy to Dr. Frank Princi of the Kettering Laboratory, the Medical Director of the Ethyl Corporation.

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I wish to also express my deep gratitude to Dr. John R. Kiser of this city who was instrumental in clarifying the situation, obtaining much of the background information, offering many valuable suggestions, and referring this problem to me.

Yours very truly,

Donald L. Schmidt

Donald L. Schmidt, M.D.

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