HUMBLE OIL & REFINING COMPANY

NEW ORLEANS 60, LOUISIANA

SOUTHEAST ESSO REGION

POST OFFICE BOX 60626

WILLIAM B. TOWNSEND, M. D.
REGIONAL MEDICAL DIRECTOR

December 21, 1962

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

Dear Doctor Kehoe:

Re: [redacted]

I want to thank you for your very prompt and excellent summation on the case of the above named. I have sent a Xerox copy of your letter of December 17, 1962 to Dr. J. N. Marshall.

I will keep you informed of any future events.

Thank you for your courtesies.

Yours very truly,

William B. Townsend

William B. Townsend, M. D.

WBT/mjm

KE 0012662

December 18, 1962

Dr. J. Neil Marshall
Associate in Neurology
Medical College Hospital of the
Medical College of South Carolina
55 Doughty Street
Charleston, South Carolina

Dear Doctor Marshall:

Attached for your information is a report of the results of urine and blood analyses for lead in the case of [redacted] The original of the report was sent to Dr. Townsend on December 10, along with a statement of analytical charges.

Sincerely yours,

Robert T. P. deTreville, M.D.

RTPD ef

cc: Dr. William B. Townsend
Dr. Frank Princi

Enc.

KE 0012663

N13228.01

December 17, 1962

William B. Townsend, M.D.
Medical Director
Humble Oil and Refining Company
Post Office Box No. 60626
New Orleans 60
Louisiana

Dear Doctor Townsend:

Dr. Robert T. P. deTreville has called my attention to a report of the analytical findings in the urine and blood of Mr. [redacted] an employee, I believe, of Humble Oil and Refining Company, who has been under the care of Dr. J. Neil Marshall, Dr. B. L. Freeman and Dr. H. Rittenberg. After seeing the report I inquired about the patient and was given the available information which includes two letters from Dr. Marshall to Dr. Freeman containing a Discharge Summary, and the summary of an Outpatient Visit.

I am in no position to make a diagnosis of this man's illness, but I think it is quite safe to say that it was not lead poisoning. There are several good reasons for this conclusion, while there is only one, highly dubious reason for thinking of lead poisoning in relation to this illness. It is not too unusual, unfortunately, to find some difficulty in determining the cause and the actual site of certain obscure types of neuromuscular disease, and I would place this man's illness in that category.

First, as to the matter of lead poisoning, Mr. [redacted] has no history of occupational or incidental exposure to lead (one must exclude the possibility of his absorption of tetraethyllead, not only because, (1) it does not occur under the conditions of his work; and (2) tetraethyllead has never been known to cause any lesions of the cord, spinal or peripheral nerves. The man's brief bout of painting would not have been expected to provide a dangerous degree of absorption of lead had the paint been a lead base type. Even regular outside or interior painters are but rarely poisoned, unless they engage regularly in sanding, scraping or burning off old paint. Moreover, in this instance the paint appears not to have been a lead base type. It is possible, of course, for a person to be poisoned by lead from some undiscoverable or obscure source, but this in the case of adults is rare. In this instance, a history of exposure is lacking.

Second, the presenting illness was at no time typical of lead poisoning, and one must stretch one's judgment very far to fit

the pattern of any type of lead poisoning. It is not impossible, perhaps, for lead absorption to produce disease in this form, but it is most improbable, and I have never seen such a case in a wide experience with the disease.

Third, our analytical findings show that this man, on November 27th, only about 4 months after the onset of an illness which must be regarded as a severe form of lead poisoning, if indeed it was lead poisoning at all (the neuromuscular form of lead poisoning occurs only when a large quantity of lead has accumulated in the body), has lead in his blood and urine in concentrations lower than that of the average American adult (these are distinctly "low normal" analytical findings). These findings make it highly improbable that Mr. Boyce had any large quantity of lead in his body in August of this year (1962). They suggest that the chelating therapy given in August depleted his usual or normal body burden of lead. They are not compatible with the analytical findings in the urine which were reported before and after the administration of $CaNa_2$ EDTA.

The result reported originally, before any therapy - that of more than 4 milligrams - (the figure 4.438 mg. is an odd representation of an analytical result, for there is no method of analysis which is that precise,) in a 24-hour sample is, of itself, presumptive evidence of the contamination of the sample. Such a high concentration of lead in the urine in the absence of "deleading" therapy is virtually unheard of. No competent or careful analyst would report such a result without obtaining an additional sample of urine and checking it carefully. It should be recognized that the collection of a 24-hour sample of urine in a hospital by the methods used ordinarily for that purpose (without careful instruction and supervision of the patient and all attendants) results regularly - not exceptionally, but regularly - in gross contamination of the sample with lead. This is one of the commonest difficulties in present diagnostic procedures in relation to lead. It is also true that the type of analysis done for lead in the usual hospital laboratory is not only worthless but grossly misleading. This is a difficult procedure of microanalysis and only those skilled and accustomed regularly to the performance of such analyses can be relied on to obtain even approximately correct results. Obviously, I know nothing of these matters in the hospital in question, but I have encountered this type of analytical result so often that I am justified in entertaining grave doubts as to its relevance.

Even after the type of therapy employed, one would confidently expect that the lead in the body would have been but slightly reduced, for such therapy eliminates only that in the soft tissues, and a few weeks later this is replenished from that deposited in the skeleton, so that the concentration in the blood returns very nearly to its original level. In fact, when the quantity of lead in

the body is considerably elevated, three and often four courses of intravenous Ca Na_2 EDTA are required to lower the lead concentration in the blood to anything like the normal level and keep it there. You will understand, therefore, why the results which have been obtained in this Laboratory have such significance at this time.

I have gone to some length to explain these matters since I suspect that you will wish to transmit my opinion and the basis for it to Dr. Marshall. The point of importance here relates to the ultimate condition of this patient, in which both you and Dr. Marshall have reason to be concerned. I sincerely hope that Mr. [redacted] will continue to improve and will recover completely. There is considerable likelihood, however, that he will not. One suspects that his is a progressive disease with a present remission. I shall be interested in learning what transpires. I shall be much better pleased, however, if his uneventful recovery leaves us in doubt as to the nature of his present illness.

Sincerely yours,

Robert A. Kehoe, M. D.

RAK:ss

Encl: Reprint of "Value of calcium disodium ethylenediaminetetraacetate and British anti-lewisite in therapy of lead poisoning."

Air Mail

December 10, 1962

W. B. Townsend, M.D.
P.O. Box #60626
New Orleans, Louisiana

Dear Doctor Townsend:

Re your letter to Dr. Princi dated November 20, concerning [redacted] which has been referred to me for reply.

Attached are the results of the recent analytical studies on [redacted] In addition, the Director of the Laboratory, Robert A. Kehoe, M.D., has reviewed this case and will send you his interpretation of the above results.

We are also enclosing the statement for analytical laboratory services performed, according to instructions contained in your letter.

Yours very truly,

Robert T.P. deTreville, M.D.

RDT:wp

cc: Dr. Kehoe
Dr. Princi

KE 0012367

N13228.03

Air Mail

December 10, 1962

W. B. Townsend, M.D.
P.O. Box #60626
New Orleans, Louisiana

Dear Doctor Townsend:

Re your letter to Dr. Princi dated November 20, concerning [redacted], which has been referred to me for reply.

Attached are the results of the recent analytical studies on Mr. [redacted] In addition, the Director of the Laboratory, Robert A. Kehoe, M.D., has reviewed this case and will send you his interpretation of the above results.

We are also enclosing the statement for analytical laboratory services performed, according to instructions contained in your letter.

Yours very truly,

Robert T.P. deTreville, M.D.

RDT:wp

cc: Dr. Kehoe
Dr. Princi

KE 0012368

N13228.04

THE KETTERING LABORATORY
COLLEGE OF MEDICINE
EDEN AND BETHESDA AVENUES
CINCINNATI 19, OHIO

December 5, 1962

To: Humble Oil and Refining Company
P.O. Box 60026
New Orleans 60, Louisiana

Attention: William B. Townsend, M.D.
Medical Director

For: Reimbursement of The Kettering Laboratory for the analysis of the urine and blood of [redacted] for the determination of lead.

2 analyses at $12.50 each.....$25.00

KE 0012360

TIC SERVICE
lass of service desired; e this message will be s a full rate telegram

RATE EGRAM		SERIAL	
ETTER		NIGHT LETTER	X

WESTERN UNION

1206

W. P. MARSHALL, PRESIDENT

INTERNATIONAL SERVICE
Check the class of service desired; otherwise this message will be sent at the full rate

FULL RATE		LETTER TELEGRAM	
VICTORY LETTER		SHIP RADIOGRAM	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED
	PD		KETTERING ADMINISTRATION	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

NOV 30 1962

DR J NEIL MARSHALL
DIVISION OF NEUROLOGY
MEDICAL COLLEGE HOSPITAL OF SOUTH CAROLINA
55 DOUGHTY STREET
CHARLESTON S C

SAMPLE KIT FOR URINE AND BLOOD LEAD IN CASE OF [redacted] IS BEING MAILED TO YOU AT THE REQUEST OF DR TOWNSEND HUMBLE OIL REGIONAL MEDICAL DIRECTOR NEW ORLEANS LOUISIANA COMPLETE INSTRUCTIONS ARE CONTAINED

ROBERT T P DETREVILLE MD
KETTERING LABORATORY

RTPD ef
CC: RON LEACH

KE 0012670

N13228.06

Esso

HUMBLE OIL & REFINING COMPANY

NEW ORLEANS 60, LOUISIANA

SOUTHEAST ESSO REGION

WILLIAM B. TOWNSEND, M. D.
REGIONAL MEDICAL DIRECTOR

POST OFFICE BOX 60626

November 20, 1962

Frank Princi, M. D.
The Kettering Laboratories
College of Medicine
University of Cincinnati
Cincinnati, Ohio

Dear Doctor Princi:

Re: [redacted]

This is to confirm our telephone conversation of November 19, 1962 on the above named.

Enclosed are copies of two discharge summaries and an out patient visit for your information.

Please bill to the Humble Oil & Refining Company to the attention of the writer.

Yours very truly,

William B. Townsend, M. D.
Medical Director

WBT/mjm

Enclosures

KE 0012371

N13228.07

November 13, 1962

Dr. B. L. Freeman
112 Rutledge Avenue
Charleston, South Carolina

Re: OUTPATIENT VISIT - 10/25/62
Mr. [redacted]
MCH 0D-67336

Dear Dr. Freeman:

I saw Mr [redacted] for follow-up outpatient evaluation on 10/25/62 in the Private Diagnostic Clinic of the Medical College Hospital. In the 12 days since his discharge from this hospital there has been a further progressive, generalized increase in muscular power. He feels that strength in the arms is returning faster than in the legs and can now descend the stairs without much trouble, but on ascending steps he has to proceed quite slowly and hold onto the rail for support. He can now walk fairly well if he does it slowly, but still is unable to run. He denies paresthesias or dysesthesias and has no more of the joint discomfort in his knees and hips which troubled him on his first hospital admission. His only pains are occasional aching in the low back area. He has no other complaints and his system inquiry is unremarkable.

Further inquiry into the possible sources for lead poisoning reveals that, although he painted the inside of his house during the summer of 1962, this was with rubber latex paint. He denies sanding any painted surfaces. He stated again as on his initial examination that his intake of alcohol was limited to approximately 3 beers in a year's time.

On physical examination blood pressure was 136/92 and there were no abnormalities of the heart, chest, abdomen and joints. Mentally, he was clear and alert with appropriate affect, speech and mentation. Cranial nerves were all intact and there were no sensory abnormalities. The deep tendon reflexes were equal and active bilaterally with normal plantar responses. On inspection his shoulders still show mild atrophy, especially in the suprascapular and deltoid areas as well as the pectoralis major. His thighs were still rather flabby and showed mild atrophy. Occasional muscle fasciculations were seen in the shoulders, quadriceps and pectoral musculature. There was marked improvement in the strength of his grip and arms. It would seem that the hands and arms are now almost back to normal, but he still shows about a 5-10% loss of strength in the shoulder girdle musculature. The legs also showed marked improvement in strength so that now there is only about a 10% loss of strength in his thighs and even less in his calf muscles. He still walks with a slightly wide-based, waddling gait, but this is also much improved. With effort he was able to stand on the balls of both feet and with great effort could stand on both heels alone. He

still was not able to climb the stairs unless he used the examiner's hand to pull himself upward.

I felt Mr. [redacted] had made a marked improvement in his strength in comparatively short time. Really, this was faster progress than I anticipated and it now seems that outlook for eventual recovery is good. As long as he is improving, I see no reason for return follow-ups with me and Mr. [redacted] will return to Dr. Rittenberg for continuation of his general medical care. His only medication at present consists of oral B-Complex vitamins inthe form of Surbex-with-C, one b.i.d.

Thank you again for the opportunity to follow him with you. His illness has been very interesting and I hope his rapid improvement continues.

With best regards.

Sincerely yours,

J. NEIL MARSHALL, M. D.
Associate in Neurology

JNM/lhw
cc: PDC Chart
Dr. H. Rittenberg
3910-A Rivers Ave, Chas. Hgts.
Dr. Wm. B. Townsend, Reg. Med. Dir.
Humble Oil & Refining Co., New Orleans, La.

November 13, 1962

Dr. B. L. Freeman
112 Rutledge Avenue
Charleston, South Carolina

Re: DISCHARGE SUMMARY - #67336
Mr. [redacted]
404 Durant Ave, N. Chas.
10-8-62 to 10-13-62

Dear Dr. Freeman:

During the period of re-hospitalization of your patient, Mr. [redacted], my original diagnosis of peripheral polyneuropathy, probably due to lead, remains unchanged.

Eight days following discharge from this hospital the patient was re-admitted for a repeat course of Versinate therapy. Since discharge from the Medical College Hospital there has been definite improvement of the patient's strength. On re-examination atrophy was still noted around the shoulder girdle and over the thighs. Diffuse, generalized weakness was present in the arms and hands, but much improved over the previous examination. He still showed moderate weakness of his legs. Scattered fasciculations were present over the shoulder girdle and in the thighs and calf muscles. Deep tendon reflexes were present and equal throughout with normal plantar responses.

Routine urinalysis was normal. Hemoglobin 13.5 grams, RBC 4.2 million with normal white count and differential.

During the 5 days of hospitalization the patient received Versinate, 1 gram in 500 cc's of 5% glucose b.i.d. Daily determinations for porphyrins and lead were made on 24-hour collection of urine in a lead-free bottle. All 5 specimens were negative for porphyrins. Lead determinations were as follows: First day, 1.8 mgs/day; second day, negative; third day, 2.040 mgs/day; fifth day, negative.

He was given an appointment for outpatient follow-up visit on 10-25-62. Thank you again for the opportunity to see this very interesting gentleman.

Sincerely yours,

J. NEIL MARSHALL, M. D.
Associate in Neurology

JNM/lhw
cc: 2 - MCH Chart
Dr. H. Rittenberg
3910-A Rivers Ave, Chas. Hgts.
Dr. Wm. B. Townsend, Reg. Med. Director
Humble Oil & Refining Co., New Orleans, La.

KE 0012674

N13228.09

MEDICAL COLLEGE HOSPITAL
of the
MEDICAL COLLEGE OF SOUTH CAROLINA
55 DOUGHTY STREET
CHARLESTON, SOUTH CAROLINA

ARTMENT OF MEDICINE
VISION OF NEUROLOGY

November 13, 1962

Dr. William B. Townsend
Regional Medical Director
Humble Oil & Refining Company
P. O. Box 60626
New Orleans, La.

Re: Mr. [redacted]
MCH #D-67336

Dear Dr. Townsend:

Enclosed with this letter are copies of the hospital discharge summary for 9-17-62 and 10-8-62 as well as the record of Mr. [redacted] outpatient visit on 10-25-62. After obtaining the patient's written permission, these records are being forwarded to you as you requested.

Mr. [redacted] would be quite willing to have blood determination for lead. Since this examination is not made at this hospital, the specimen would have to sent elsewhere; however, I would be glad to draw this specimen if you would send me the necessary materials. I would be interested to see if the blood lead determination verified my diagnosis.

I hope the enclosed information will be satisfactory for your purposes.

Sincerely yours,

J. NEIL MARSHALL, M. D.
Associate in Neurology

Encls.
JNM/lhw
cc: Dr. B. L. Freeman
112 Rutledge Ave, Chas.
Dr. H. Rittenberg
3910-A Rivers Ave, Chas. Hgts.

KE 0012675

N13228.1

October 9, 1962

Dr. B. L. Freeman
112 Rutledge Ave
Charleston, South Carolina

Re: DISCHARGE SUMMARY - #67336
Mr. [redacted]
404 Durant Ave, N. Chas.
9-17-62 to 9-29-62

Dear Dr. Freeman:

During the period of hospitalization of your patient, Mr. [redacted] I have arrivedat the following diagnosis: Peripheral polyneuropathy, probably due to lead.

This 39 year old gasoline truck operator entered the hospital with complaints of pain in his back and legs which had begun about August 1, 1962. On August 6, 1962, following extraction of some teeth, he noted the onset of progressive weakness in his hands, arms and legs. There were no sensory or sphincter disturbances. A copy of the admission note by the neurologic house officer is included for your files.

On examination BP was 140/90. The remainder of his general physical examination was not remarkable. On neurologic testing he showed moderate, symmetrical weakness of the hands and arms as well as marked weakness of the lower limbs, especially around the pelvic girdle. The muscles were tender to squeeze. There were no other neurologic abnormalities.

Routine hemogram, urinalysis, BUN, calcium, phosphorus, chlorides, sodium and potassium were all normal. He had a normal PBI and LE cell preparations were negative on three occasions. Blood uric acid was 3.7 mgs.% and 2-hr. postprandial blood sugar was 80 mgs%. Total proteins were 8.5 gm% with albumin 4.75, alpha globulin 0.92, beta globulin 1.40 and gamma globulin 1.43 gm%. Dr. Harry Gregorie obtained a muscle biopsy from the left thigh which showed minor degenerative changes of the cytoplasm. These changes appeared to be related to relatively small groups of adjacent bundles and would suggest the likelihood of neural origin. The biopsy showed no evidence of inflammatory process.

Initially, it was felt that Mr. [redacted] had a polymyositis; however, urinary excretion of lead in 24 hours was 4.438 mgs. per day (normal less than .15 mgs. per day). Further questioning revealed that although Mr. Boyce had worked for many years as a gasoline truck operator, he had, in addition, during the summer of 1962 painted his house although not all of it was lead paint. Since lead can present in adults as a symmetrical motor neuropathy,

KE 0012676

N13228.11

he was begun on a 5-day course of intravenous Versinate therapy. The urine remained clear of any evidence of lead on the third and fourth day; however, following the fifth day of treatment showed 6.35 mgs. of lead per day. Scrupulous attention to avoid contamination by the use of lead-free bottles was carried out and I feel fairly confident that lead is the offending agent.

During hospitalization there was some improvement in Mr. [redacted] strength. At discharge he could support his weight on either leg alone for ten seconds and could stand on his toes which he was not able to do on admission. He was unable to step up onto a stool with either leg even though he held onto the bed for balance and support. He was discharged on oral B-Complex vitamins and arrangements were made to readmit him about one week for another course of intravenous Versinate therapy.

Thank you very much for the referral of this very pleasant and most interesting gentleman. I shall keep you informed of my further findings.

With best regards.

Sincerely,

J. NEIL MARSHALL, M. D.
Associate in Neurology

JNM/lhw

Name: [redacted]

Material: Urine and Blood

Submitted: 11-29-62 by Dr. W. B. Townsend, P. O. Box 60626, New Orleans, Louisiana for Medical College Hospital, 55 Doughty Street, Charleston, South Carolina

Required: Lead Analyses

URINE

Analysis Number	-	62A-6991
Volume	-	120 ml.
Specific Gravity	-	1.007
Mg. Pb/Liter	-	0.02

BLOOD

Analysis Number	-	62A-6992	
		Spectrographic	Dithizone
Grams	-	16.5	16.7
Mg. Pb/100 Grams	-	0.025	0.015

The urine and blood lead levels are completely within normal limits and are, in fact, at the lower end of the normal range.

Robert T. P. deTreville

Robert T. P. deTreville, M.D.

Samples Collected: 11-27-62
Samples Received: 11-29-62
Samples Reported: 12-3-62

KE 0012376

N13228.12

11-27-62
1 Kit

THE KETTERING LABORATORY
COLLEGE OF MEDICINE, UNIVERSITY OF CINCINNATI
EDEN AND BETHESDA AVENUES
CINCINNATI 19, OHIO

INSTRUCTIONS: BEFORE PROCEEDING PLEASE READ THE REVERSE SIDE OF THIS FORM. The information required below is of major importance for the performance of the service that you have requested. FAILURE TO COMPLETE THIS SECTION OF THE FORM FULLY will result in delay in carrying out both the analysis and the subsequent interpretation (where applicable) of the results. Please PRINT or TYPE.

Patient: [redacted] 404 DURANT North Charleston S.C.
Name Address City Zone State

Race W Sex M Age 39 Indigent ___ Private ✓ Other ___

Hospital: Medical College Hosp. 55 Doughty Charleston S.C.
Name Address City Zone State

Requested by: Dr. WB Townsend, P.O. Box 60626, New Orleans, La.
Name Address City Zone State

Bill: Doctor ___ Hospital ___ Other Dr WB Townsend

Send Report To: Doctor ___ Hospital ___ Other "

Investigation Desired: Blood & Urine Lead

History: Include nature of exposure, actual time of exposure if known or surmised, and especially the last day or hour of exposure; character and time of onset of illness; course of illness and present status; previous pertinent medical history.
Patient works on gasoline delivery truck and has done so for years. During Summer of '62 painted but with "oil base paint" Aug 62 progressive muscular weakness of all 4 limbs which has improved both before & after Versenate therapy in Oct

Physical Findings: Some symmetrical shoulder & hip atrophy. Moderate weakness of limbs especially proximally. Fasciculations
Muscle biopsy - atrophy suggestive of neurogenic origin

Pertinent Laboratory Findings: Initial Urine lead 4.438 mg/day
During 2nd & last courses of versenate (5 day) in Oct urine leads ranged from 0 to 2.04 mg/day

Impression: Peripheral Polyneuropathy probably due to lead

Treatment: Specify medications and dates of institution and completion of therapy.
9-24-62 to 9-29 Versenate 1 gm in 500 cc 5% G/W b.i.d
10-5 to 10-13 " 1 gm " " " " " "

KE 0012670

N13228.13

The Kettering Laboratory is a totally self-supported research unit of the University of Cincinnati engaged in research in the fields of industrial hygiene and medicine. The Laboratory is not a medical service laboratory, and clinical diagnostic services, as such, are not performed. We do undertake to assist physicians with toxicologic problems or other special problems in this and related fields, as a courtesy, when adequate facilities are not available locally. We shall make every effort to be of assistance provided that we can obtain the information we require, and if the work that is to be done will yield, in our opinion, information that will be helpful in establishing a diagnosis, in the management of a case, in teaching, or in contributing to a better understanding of physiologic or pathologic mechanisms.

NO SPECIMEN WILL BE ACCEPTED FOR ANALYSIS UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE BY THE ATTENDING OR OTHER RESPONSIBLE PHYSICIAN WITH A PHYSICIAN IN THE KETTERING LABORATORY. This is necessary for a number of reasons. First, unless proper specimens are collected with specified care, in specially processed containers, and in adequate amounts, they are likely to be contaminated or unsuitable for analysis. Second, we must be sure that we are aware of pertinent historical facts and clinical findings since we provide frequently interpretations of the results. Third, our staff members must frequently revise work schedules on sponsored research in order to carry out the analysis.

The Laboratory makes a charge for reimbursement of the actual cost of the service performed, since otherwise funds earmarked for research will be expended for medical service. Deviation from this policy is made when patients are indigent or when the cost of the service would cause undue economic hardship. Therefore, it is requested that the attending physician assist us by marking the appropriate line on the reverse side of this form.