

LEAD INDUSTRIES ASSOCIATION

INITIATIVE DRAFT

400 LEXINGTON AVENUE

CONFIDENTIAL

NEW YORK 17, N. Y.

RED LEAD DIVISION

RED LEAD TECHNICAL COMMITTEE

New York, N. Y.

September 28, 29, 1950

A meeting of the Red Lead Technical Committee was held on September 28 and 29 in the offices of the Lead Industries Association. The following persons were present.

Present

Mr. George Diehlman
Mr. A. C. Goetz
Dr. J. C. Johnstons
Mr. C. F. Shobe

Representing

National Lead Company
Eagle-Picher Company
Hammond Lead Products, Inc.
The Glidden Company

Dr. L. L. Carrick, Director of Red Lead Research, Meeting Chairman
Mr. Robert L. Ziegfeld, Secretary, Lead Industries Association
Mr. Christy J. Vander Valk, Technical Director, Red Lead Division

REPORT ON INSPECTION OF L.I.A. PROJECT NO. 14 AT JOPLIN, NEW ORLEANS, SAN FRANCISCO AND SAYVILLE

The meeting was begun at 10:00 A.M. on Thursday, September 28 with a discussion of inspection data on Project No. 14 after two years exposure at Joplin, New Orleans, San Francisco and Sayville. The technical director informed the committee that he had inspected the exposed specimens at Joplin, New Orleans and Sayville on September 10, 12 and 21, respectively. It was also reported that Mr. Diehlman had inspected the panels at San Francisco on August 31.

The results of these inspections were summarized in a report presented to the Committee members. A copy of this report is attached to these minutes as Exhibit A. This report shows that very few of the paint films have shown signs of breakdown at Joplin, New Orleans or Sayville. It is also evident from the results that both high and low red lead content primers and zinc yellow base primers have shown equivalent performance. The specimens have not been exposed long enough for the establishment of general trends favoring particular types of primers. The San Francisco inspection data show considerable corrosion on many of the panels but this is traceable to impractically thin paint films.

After reviewing the summary report of inspection data the committee advised the technical director to set up graphs showing the running performance record of each pigmentation in the five L.I.A. vehicles and each L.I.A. vehicle in various red lead and zinc yellow base pigmentation. The technical director said he would draw up these graphs for the next meeting of the Committee.



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PUBLICITY ON PROJECT NO. 14

Because of the inconclusiveness of the data after two years of exposure, it was decided to withhold any publicity on this program for one more year. It was felt that at least one more year of exposure will be required to bring out the superior performance characteristics of the red lead base paint systems.

DISCUSSION OF PROPOSED RED LEAD PROGRAM FOR 1951

The Red Lead Technical Committee discussed a tentative program for 1951 and approved the following:

1. Publication of three new Red Lead Technical Letters on the following subjects:

a) Primers for Marine Atmospheres and Intermittent Exposure to Salt Water

This will include the Red Lead Technical Committee's latest recommended formulas based on results obtained from cooperative Navy tests now being conducted at Sayville and Florida.

b) Primers for Galvanized Iron

It is planned to use the information developed at Sayville on the painting of galvanized iron. Particular emphasis will be placed on the excellent adhesion to galvanized surfaces and rust inhibitive properties of red lead-zinc dust primers. This bulletin will also include the announcement of an additional investigation by the Red Lead Technical Committee on the painting of rusted galvanized iron. (This newly proposed project is described in the next section of these minutes.)

c) Primer Paints for Railroad Maintenance

This Technical Letter will contain red lead base paint formulations and application instructions for both rolling stock and "maintenance of way." It was agreed that this bulletin should stress the use of modified L.T.A. Vehicle No. 5 (Vehicle E in Project No. 14) with extended red lead pigmentations.

d) Paints for Total Immersion in Fresh Water

This would include suggested systems for water tanks (including A.W.W.A. Recommendations) and other structures subjected to fresh water immersion.

It was decided to give priority in the order of publication to the Technical Letter on paints for galvanized surfaces. The technical director said he would prepare a tentative draft of this proposed bulletin for discussion at the next committee meeting.

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The possibility of a Technical Letter devoted entirely to prepainting surface preparation of steel was also discussed. The committee decided against such a Technical Letter but agreed that a more detailed discussion of surface preparation should be included in along with formulation data in all future Technical Letters.

Technical Articles

The following subjects were agreed upon by the Red Lead Technical Committee as suitable for technical articles for publication in appropriate periodicals.

1. Painting of Galvanized Iron

This article is to be based on the results obtained with red lead-sinc dust paints exposed at Sayville in L.I.A. Project No. 10. It was proposed that this article would have the greatest promotional value if released simultaneously with the Technical Letter on the same subject. Engineering News-Record was decided upon as a likely magazine for this article.

2. Primers for Industrial Use

The publication during 1951 of technical articles on primers for industrial maintenance was approved by the committee. It is planned to prepare articles on this subject of a general nature for publication in such magazines as Iron Age, Materials and Methods and Chemical Engineering as well as of a more specific nature dealing with single industries for publication in such magazines as Pulp and Paper Industries.

3. Primers for Railway Use

It was considered appropriate to supplement the proposed Red Lead Technical Letter on Railroad Maintenance Painting with a suitable technical article for publication in Railway Age Magazine.

4. Red Lead Paint Formulation

It was agreed that technical papers should be prepared for presentation before Paint Production Clubs. These are to contain recent formulation and exposure data of various Lead Industries Association Research Projects. These papers are to include data on paints for both atmospheric and marine exposures.

FIELD WORK

It was decided that the technical director should increase his activities on field visits to supplement the published information on red lead paints.

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NEW RESEARCH PROJECTS

The Red Lead Technical Committee laid plans for an additional project on red lead base primers for galvanized surfaces.

The successful performance of red lead-zinc dust primers on galvanized panels exposed for four and one-half years at Sayville indicates that these paints would be particularly valuable for application over partially rusted galvanized iron. Although zinc dust-zinc oxide are used widely and successfully over new and unrusted galvanized surfaces they lack corrosion-inhibitive properties when applied over steel. There is a need for primers that combine the excellent adhesive properties of zinc dust paints with the corrosion inhibitive characteristics of red lead paints.

A detailed outline of this proposed project is included in these minutes.

It was decided to have Mr. Shobe and Dr. Carrick continue exploratory work on the use of styronated alkyd resins as vehicles for fast drying red lead primers. Limited work so far has indicated a tendency toward rapid bodying of these paints resulting in poor can stability.

If the exploratory research results in the discovery of less reactive styronated alkyds it is planned to evaluate the durability of these red lead-styronated alkyd primers in marine exposures.

CONSIDERATION OF THE 1951 BUDGET FOR THE RED LEAD DIVISION

Mr. Ziegfeld asked the committee members to consider a proposed 1951 budget for the activities of the Red Lead Division. A proposed budget was approved by the Red Lead Technical Committee for submission to the Advisory Committee of the Red Lead Division. The proposed budget for 1951, the estimated expenditures for 1950 and the approved budget for 1950 are attached to these minutes as Exhibit B.

PROGRAM ON PAINTING PARTIALLY RUSTED GALVANIZED IRON

On the basis of the good performance of mixed pigment red lead-zinc dust paints exposed at Sayville on galvanized iron it was decided to plan a new research program utilizing rusted galvanized sheets as base specimens. Through this new program the committee proposed to show that primers containing a combination of red lead and zinc dust are highly effective for protecting partially rusted galvanized steel surfaces. Such primer paints combine the advantages of rust inhibition of red lead and adhesion of zinc dust to zinc surfaces. Past experience has shown conventional zinc dust-zinc oxide paints widely used on galvanized surfaces, have relatively poor corrosion inhibitive characteristics when applied to steel.

The following pigmentations were selected for use in this project:

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L. I. A. Pigmentations

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Red Lead	30.0	30.0	50.0	50.0	75.0	90.0
Zinc Dust	51.5	69.5	49.5	31.5	24.5	31.5
Iron Oxide	15.0	-	-	15.0	-	-
Mica	-	-	-	-	-	-
Magnesium Silicate	-	-	-	-	-	15.0
Aluminum Stearate	0.5	0.5	0.5	0.5	0.5	0.5

Control Pigmentations

	<u>1</u>	<u>2</u>	<u>3</u>
Zinc Oxide	20.0	50.0	20.0
Zinc Dust	80.0	50.0	65.0
Iron Oxide	-	-	15.0

The following vehicles were selected for combination with each of the above pigmentations.

<u>1</u>	<u>2</u>	<u>3</u>
Raw Linseed Oil	Raw Linseed Oil (2 parts by weight)	Alkyd Resin Solids
Thinner and Driers	Alkyd Solids (1 part by weight)	Thinner and Driers
	Thinner and Driers	

alkyd is to be of the soya oil modified glyceryl phthalate type containing 25% phthalic anhydride on the solids.

It was tentatively decided to prepare the paints at a FVC of 42% except that containing L. I. A. Pigmentation No. 5 which is to be formulated at a FVC of 50%.

Paint Preparation

Mr. Coets agreed to have his laboratory make all paints with Vehicle No. 1.

Mr. Shobe agreed to have his laboratory make all paints with Vehicles No. 2 and No. 3.

Two pints of each paint are to be prepared; one for application and one for storage.

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Base Specimens

It was decided to apply the paints to base specimens consisting of:

1. Galvanized sheets (preferably flat-not corrugated) with about 50% of the surface area showing rust. It was thought that this might be most readily obtained from a galvanized iron roof that had never been painted.

It was planned to cut this partially rusted galvanized sheet into 12 in. x 18 in. specimens.

Dr. Johnstone agreed to try to locate sufficient partially rusted galvanized sheet for the project.

2. New spangled galvanized 20 gauge 12 in. x 18 in. panels. These panels are to be obtained by the technical director.

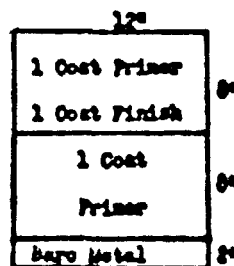
3. Aluminum coated steel panels. These are planned for use only with the paints containing No. 2 vehicle above. Mr. Coats said he would investigate the availability of these panels from American Rolling Mills. These are also to be cut to 12 in. x 18 in.

Finish Paint

It was decided to use an aluminum finish paint consisting of 1 3/4 lb. of aluminum paste (Alcoa Aluminum Paste No. 240) per gallon of long oil alkylid resin meeting Army Navy Specification AN-TT-VII6a. This is the aluminum finish paint used in the L.I.A. Comprehensive Atmospheric Project (Project No. 14).

Panel Layout

The following panel layout was approved for this project by the Rod Lead Technical Committee.



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Paint Application

Single primer coats are to be applied by spray to the entire panel area except the two inch strip indicated to a dry film thickness of approximately 1.5 mils.

Single finish coats are to be applied by spray over the upper half of the primed area to a dry film thickness to approximately 1.0 mil.

Mr. Diehlman agreed to have all of the specimens prepared at Sayville.

Method of Exposure

It was agreed that all of the panels should be exposed at 45° facing south at Sayville, Long Island.

REVISION OF RED LEAD TECHNICAL LETTER NO. 5

The committee was informed that Mr. L. R. Whiting of the Carbide and Carbon Corporation was considering the distribution of Red Lead Technical Letter No. 5 at the Bakelite Division booth at the Federation of Paint and Varnish Production Clubs at Chicago, November 9-11, 1950. The committee was also told that Mr. Whiting had requested a revision in the text of the Foreword of this Technical Letter with an aim toward broadening the suggested applications of the vinyl system.

Upon consideration of this request it was decided to revise paragraphs 2 and 3 of the Foreword as follows:

Original Wording

Paragraph 2 - The vinyl system containing a red lead-vinyl anticorrosive coat is especially well suited for the protection of steel surfaces exposed to fresh and salt water and to highly corrosive atmospheric environments.

Paragraph 3 - Another red lead primer containing a coumarone type vehicle is designed especially for use with antifouling paints for the protection of steel ship bottoms and submerged marine structures.

Revised Wording

Paragraph 2 - The red lead-vinyl anticorrosive paint, applied as part of a conventional vinyl anticorrosive - antifouling system, is particularly well suited for the protection of metal surfaces immersed in or exposed to sea water. This vinyl anticorrosive paint also offers long term protection for ferrous surfaces exposed to fresh water and highly corrosive atmospheric environments.

Paragraph 3 - Another red lead primer containing a coumarone type vehicle is also well suited for the protection of steel ship bottoms when used with antifouling paints, for the protection of submerged marine structures and for use in other saline and humid environments.

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The committee approved the reprinting of Red Lead Technical Letter No. 5 with the revisions in the Foreword as shown above with the provision that these changes met with Mr. Whiting's approval. The technical director said he would submit these suggested changes for Mr. Whiting's comment.

REVIEW OF RECENT WORK WITH ARMY ENGINEERS AND SURGEON GENERAL'S OFFICE
ON POSSIBLE TOXIC EFFECTS OF RED LEAD PAINTS APPLIED TO WATER TANK INTERIORS

The committee members were informed of the cooperative work being done by the Health and Safety Division and the Red Lead Division to have Paragraph 8-2e in Federal Specification TT-P-86a deleted. This paragraph excepts the use of Type IV paint by the Army for the painting of potable water tanks despite the fact that red lead has been widely used for this purpose for several decades and that the latest Recommended Practices of the American Water Works Association specifically call for the use of Type IV paint for this application.

In order to obtain scientific evidence to support the soundness of this practice from a health standpoint the Lead Industries Association has sponsored a project in Massachusetts consisting of the lead analyses of periodic water samples taken from a 185,000 tank painted on the interior with paint conforming to TT-P-86a, Type IV. Lead determinations were made on samples of influent and effluent waters before painting, immediately after painting, during the initial washing and clearing cycle and periodically thereafter. A copy of a summary report of these analyses made between May 18 and September 25, 1950 is attached to these minutes as Exhibit C.

Mr. Bowditch and the technical director have discussed this work and transmitted the data collected so far to the following individuals:

Col. Don Longfellow, M.C., Chief
Preventive Medicine,
Office of the Surgeon General

Col. Wesley C. Cox, Chief,
U. S. Army Industrial Hygiene Lab.

Mr. A. Van Ruckelshaus,
Research & Development Lab.,
Corps of Engineers

Mr. Paul T. Howard, Chairman,
Tech. Comm. on Paint, Varnish, Lacquer & Related Materials, FSB

Mr. J. Wallace, Specif. Section,
Eng. Div.,
Military Construction Dept.

James O. Townsend, M. D., Chief,
Industrial Hygiene Div.,
U.S.P.H.S.

Dr. Lawrence T. Fairhall, Chief,
Chem. Section,
Ind. Hygiene Div., U.S.P.H.S.

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NEXT MEETING

The tentative dates agreed upon for the next meeting of the Red Lead Technical Committee are November 30 and December 1, 1950.

The meeting was adjourned at 4:00 P.M. on September 29.

C. J. Herman-Vack

SUMMARY REPORT OF DATA ON PROJECT NO. 14Based On The September, 1950 Inspection DataFrom TheJoplin, New Orleans, San Francisco and Sayville Exposure Sites

The panels at Joplin, New Orleans and Sayville were inspected on September 12, 14 and 21. The panels at San Francisco were inspected by Mr. Diehlman on August 31, 1950. Because of the small change evidenced in the panels at Cleveland during the inspection by the Red Lead Technical Committee in the Spring of this year, the inclusion of the Cleveland data was not considered essential in the summary of this report. However an inspection of these panels is planned by the Technical Director within the next month.

INSPECTION RECORD

RED LEAD BASE PAINTS

- 1 - Single Primer
 2 - Double Primer
 3 - Single Primer / Finish
 4 - Double Primer / Finish

3	4
1	2

PANEL NO.	RATINGS OF GENERAL CORROSION												% R.L.
	New Orleans				Savville				Joplin				
	1	2	3	4	1	2	3	4	1	2	3	4	
207B	8	10	10	10	9	10	10	10	10	10	10	10	92.5
207A	9	10	10	10	10	10	10	10	10	10	10	10	"
207B	9	10	10	10	10	10	10	10	10	10	10	10	"
208A	10	10	10	10	10	10	10	10	9	9	10	10	75
212B	10	10	9	10	10	10	10	10	10	10	10	10	"
212A	8	10	8	10	10	10	10	10	9	9	10	10	25 Z.Y., 55 Pr.Ox.
213B	8	9	9	9	10	10	10	10	9	9	10	10	"
221A	10	10	10	10	9	10	10	10	10	10	10	10	50 Z.Y., 10 Pr.Ox.
223B	10	10	10	10	9	10	10	10	10	10	10	10	"
227B	9	10	10	10	10	10	10	10	10	10	10	10	"
235A	10	10	10	10	4	10	10	10	10	10	10	10	55
235B	10	10	10	10	6	10	10	10	10	10	10	10	"
241A	10	10	10	10	9	10	10	10	10	10	10	10	"
241B	10	10	10	10	8	10	10	10	10	10	10	10	65
241B	10	10	10	10	8	10	10	10	10	10	10	10	"
247B	9	10	10	10	10	10	10	10	10	10	10	10	"
247A	10	10	10	10	9	10	10	10	10	10	10	10	40
247B	10	10	10	10	7	10	10	10	10	10	10	10	"
247A	10	10	10	10	9	10	10	10	10	10	10	10	25 Z.Y., 30 Pr.Ox.
247B	8	10	8	10	7	10	10	10	10	10	10	10	"
251A	10	10	10	10	9	10	10	10	10	10	10	10	15 Z.Y., 50 Pr.Ox.
252A	10	10	10	10	10	10	10	10	9	10	10	10	"
252B	9	10	10	10	10	10	10	10	10	10	10	10	55 Z.Y.
252B	0	10	10	10	10	10	10	10	10	10	10	10	25 Z.Y.
252A	7	10	10	10	6	10	10	10	9	10	10	10	80 Zn
252B	7	10	10	10	6	10	10	10	10	10	10	10	"
263A	5	10	10	10	7	10	10	10	10	10	10	10	80 Zn
263B	3	10	10	10	8	10	10	10	10	10	10	10	"
267A	5	10	10	10	2	10	10	10	10	10	10	10	60 R.L.
267B	7	10	9	8	2	10	10	10	7	10	10	10	"
267B	9	10	10	10	10	10	10	10	10	10	10	10	51 R.L.
267A	3	10	10	10	1	10	10	10	1	10	10	10	72 Pr.Zn
267B	4	10	10	10	1	10	10	10	1	10	10	10	"
267A	1	10	10	10	2	10	10	10	6	10	10	10	72 R.L.
267B	0	10	10	10	1	10	10	10	5	10	10	10	"
267A	4	10	10	10	1	10	10	10	6	10	10	10	72 R.L.
267B	4	10	10	10	4	10	10	10	6	10	10	10	"
267B	8	10	10	10	10	10	10	10	10	10	10	10	55 Z.Y.
267B	0	9	10	10	10	10	10	10	8	10	10	10	100 R.L.
267B	-	-	-	-	-	-	-	-	0	10	10	10	"
267B	1	1	10	10	1	1	10	10	5	10	10	10	22.5 R.L.
267B	0	3	8	7	2	4	9	10	5	10	9	8	"

* Denotes comparison paints.

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PANEL NO.	RATINGS OF GENERAL CORROSION												S Fig.	
	New Orleans				Savville				Joplin					
	1	2	3	4	1	2	3	4	1	2	3	4		
331A •	6	10	10	10	9/	10	10	10	10	10	10	10	10	85 R.L.
331B •	8	10	10	10	9/	10	10	10	10	10	10	10	10	"
210A •	9	10	10	10	10	10	10	10	10	10	10	10	10	49.5 Z.Y.
210B •	9	10	10	10	10	10	10	10	10	10	10	10	10	"
210A •	7	8	10	10	9	10	10	10	10	10	10	10	10	40 Z.Y.
211B •	7	8	10	10	10	10	10	8	10	10	10	10	10	"
215A •	10	10	10	10	9	10	10	10	10	10	10	10	10	35 Z.Y., 40 Pr. Ox.
215B •	8	10	8	8/	9	10	9	10	10	10	10	10	10	"
219B •	9/	10	9/	10	10	10	10	10	10	10	10	10	10	"
222B •	8/	10	10	10	10	10	10	10	10	10	10	10	10	"
311B •	10	10	7	9	10	10	10	10	10	10	10	10	10	40 Pr. Ox., 35 Pr. Cr.
256A •	10	10	10	10	8	10	10	10	10	10	10	10	10	32
256B •	10	10	10	10	6	10	9	10	10	10	10	10	10	"
256A •	10	10	10	10	8	10	10	10	10	10	10	10	10	"
259A •	10	10	10	10	5	10	10	10	10	10	10	10	10	38
259B •	10	10	10	10	8	10	9	10	10	10	10	10	10	"
259A •	10	10	10	10	9	10	10	10	10	10	10	10	10	"

• Denotes comparison points.

INSPECTION RECORD - SAN FRANCISCO

RED LEAD BASE PAINTS

- 1 - Single Primer
 2 - Double Primer
 3 - Single Primer
 4 - Double Primer
 5 - Finish

3	4
2	2

PANEL NO.	Gen. Corrosion				R. L.	PANEL NO.	Gen. Corrosion				R. L.
	1	2	3	4			1	2	3	4	
201A	8	9	9	10	99.5	221A	8	9	8	9	50 Z.Y., 60 Ir. Co.
201B	8	9	8	9	"	221B	8	9	8	10	"
201A	10	10	10	10	"	221A	9	10	9	10	"
201B	10	10	10	10	"	221B	7	9	8	9	"
202A	8	10	9	10	"	222A	6	8	9	10	"
202B	8	10	9	10	"	222B	9	8	9	9	"
203A	7	9	9	10	"	223A	7	10	9	8	"
203B	8	10	9	10	"	223B	8	9	9	9	"
204A	7	10	9	10	"	224A	3	3	8	10	"
204B	7	10	9	10	"	224B	10	3	10	9	"
205A	7	9	7	10	75	225A	4	10	8	10	25 Z.Y., 30 Ir. Co.
205B	8	9	8	9	"	225B	5	10	8	10	"
206A	7	10	9	10	"	226A	10	10	10	10	"
206B	10	10	10	10	"	226B	5	10	8	10	"
210A	8	10	10	10	"	230A	10	10	10	10	"
210B	8	10	9	10	"	230B	10	10	10	10	"
211A	7	10	10	10	"	231A	7	10	9	10	"
211B	7	10	9	10	"	231B	8	10	8	10	"
212A	10	10	10	10	"	232A	5	9	7	10	"
212B	10	10	10	10	"	232B	6	10	7	10	"
213A	9	10	10	10	25 Z.Y., 55 Ir. Co.	233A	6	10	10	10	25
213B	10	10	10	10	"	233B	7	10	9	10	"
214A	7	9	9	9	"	234A	6	10	9	10	"
214B	9	10	10	10	"	234B	10	10	10	10	"
215A	7	10	10	10	"	235A	4	9	9	10	"
215B	4	10	9	10	"	235B	9	8	9	9	"
216A	3	10	9	10	"	236A	9	10	9	10	"
216B	9	9	9	9	"	236B	9	10	10	10	"
217A	4	9	9	9	"	237A	8	9	10	10	"
217B	5	8	8	9	"	237B	9	10	9	10	"
218A	10	10	10	10	35 Z.Y., 40 Ir. Co.	238A	7	10	8	10	55
218B	9	10	9	10	"	238B	7	9	8	10	"
219A	8	10	9	10	"	239A	8	10	10	10	"
219B	7	10	9	10	"	239B	8	10	10	10	"
220A	8	10	10	10	"	240A	8	10	10	10	"
220B	8	10	10	10	"	240B	9	10	10	10	"
221A	6	9	8	9	"	241A	9	10	10	10	"
221B	8	9	8	9	"	241B	8	10	9	10	"
222A	9	9	8	10	"	242A	9	10	10	10	"
222B	8	10	7	9	"	242B	8	10	9	10	"

PANEL NO.	Gen. Corrosion				S R. L.	PANEL NO.	Gen. Corrosion				S R. L.
	1	2	3	4			1	2	3	4	
211A	9	10	10	10	65	311A	10	10	10	10	40 Dr. Cr. 35 Pb Cr
211B	10	10	10	10	"	311B	9	10	9	10	"
211A	9	10	10	10	"	312A	9	10	10	10	"
211B	8	10	9	10	"	312B	9	10	10	10	"
212A	8	10	9	10	"	313A	10	10	10	10	"
212B	8	10	8	10	"	313B	10	10	10	10	"
213A	7	10	9	10	"	314A	10	7	10	9	"
213B	9	10	10	10	"	314B	7	9	8	9	"
217A	9	8	10	10	"	315A	5	7	7	8	"
217B	9	10	9	10	"	315B	6	9	9	10	"
218A	9	10	8	10	40	252A	9	8	10	8	47 Z.Y.
218B	9	10	10	10	"	252B	10	10	10	10	"
219A	9	10	9	10	"	252A	1	9	7	10	55 Z.Y.
219B	9	10	9	10	"	252B	2	9	7	9	"
250A	10	10	10	10	"	252A	1	10	10	10	65 Z.Y.
250B	10	10	10	10	"	260B	6	9	9	9	"
251A	8	9	9	9	"	261A	7	9	8	10	25 Z.Y.
251B	9	10	9	10	"	261B	6	10	9	10	"
252A	8	9	8	9	"	262A	1	10	7	10	80 Zn
252B	7	10	9	10	"	262B	8	10	9	10	"
253A	8	10	9	10	15 Z.Y. 50 Ir. Cr.	263A	9	10	10	10	80 Zn
253B	9	10	9	10	"	263B	9	10	9	10	"
254A	6	10	9	10	"	264A	1	9	9	10	25 Pb Cr
254B	9	10	9	10	"	264B	2	10	9	10	"
255A	9	10	9	10	"	265A	8	10	8	9	17.5 R.L.
255B	10	10	10	10	"	265B	7	10	9	10	"
256A	8	10	10	10	"	266A	5	10	10	10	60 R.L.
256B	10	10	10	10	"	266B	7	10	7	10	"
257A	5	10	9	10	"	267A	4	9	8	10	57 R.L.
257B	6	9	9	9	"	267B	6	10	9	10	"
258A	6	10	8	10	52	267A	6	9	9	10	99.5 R.L.
258B	9	10	10	10	"	268B	9	10	9	10	"
257A	9	10	9	10	"	267A	5	10	10	10	72 Pb Zn
257B	9	10	9	10	"	267B	8	10	10	10	"
258A	9	10	10	10	"	268A	7	10	9	10	72 R.L.
258B	10	10	10	10	"	267B	7	10	8	10	"
259A	10	10	10	10	"	301A	1	8	8	10	72 R.L.
259B	9	10	10	10	"	301B	5	9	8	8	"
260A	8	10	9	10	"	302A	1	9	5	10	55 Z.Y.
260B	9	10	10	10	"	302B	6	9	10	10	"
261A	10	10	10	10	30	307A	1	4	3	9	100 R.L.
261B	10	10	10	10	"	307B	0	1	1	6	"
262A	8	10	10	10	"	310A	1	4	6	9	99.5 R.L.
262B	10	10	10	10	"	310B	2	4	8	8	"
263A	5	10	10	10	"	311A	5	10	9	10	85 R.L.
263B	10	7	10	10	"	311B	9	10	10	10	"
264A	8	10	10	10	"	311B	8	6	10	10	45.5 Z.Y.
264B	7	10	10	10	"	312A	9	10	10	10	"
264A	10	10	10	10	"	311A	6	10	8	10	40 Z.Y.
265B	10	10	10	10	"	311B	6	10	6	10	"
						312A	6	10	10	10	30 Pb-R Cr
						312B	7	9	9	9	"

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COMMENTS ON PANELS CONCERNINGCHECKING AND CRACKING

The following listed panels were checked in the indicated areas:

J O P L I N

203A, 203B - Double primer areas both rated 5.

206A - Single and double primer areas rated 8.

268A, 268B - Both primer areas rated 3.

310A, 310B - Both primer areas rated 3.

S A Y V I L L E

201A, 203B - Double primer areas rated 7 and 6 respectively.

207A, 207B - Both primer areas rated 8 and 6 respectively.

The following panels showed top coat cracking at the following test sites:

J O P L I N

212B - Rated 9 on 2 primer, 1 finish coat area.

213B - Rated 7 and 3 on 1 primer, 1 top coat and 2 primer, 1 topcoat areas respectively.

215B - Rated 9 and 6 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

223B - Rated 9 and 7 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

233B - Rated 7 and 9 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

253B - Rated 8 and 6 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

311B - Rated 7 and 9 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

266B - Rated 7 and 3 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

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(Joplin, Topcoat cracking)

210B - Rated 7 and 4 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

NEW ORLEANS

218B - Rated 8 on 2 primer coat, 1 topcoat area.

223B - Rated 8 and 5 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

253B - Rated 9 and 8 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

228B - Rated 8 on 2 primer coat, 1 topcoat area.

233B - Rated 6 and 2 on 1 primer, 1 topcoat and 2 primer, 1 topcoat areas respectively.

210B - Rated 7 on 2 primer, 1 topcoat area.

266B - Rated 7 on 2 primer coat, 1 topcoat area.

EXHIBIT B

RED LEAD DIVISION

RECOMMENDED BUDGET FOR 1951

APPROVED BUDGET AND ESTIMATED EXPENDITURES FOR 1950

	<u>Approved Budget 1950</u>	<u>Estimated Expenditures 1950</u>	<u>Recommended Budget 1951</u>
Salaries and Consulting Fees	\$ 9,700	\$ 8,900	\$ 9,500
Social Security Taxes	100	225	300
Traveling Expenses	3,000	2,700	3,500
Telephone and Telegraph	300	125	200
Meetings	400	500	500
Entertainment and Luncheons	500	300	400
Printing	5,000	2,000	4,500
Mailing	1,500	750	1,500
Illustrations	400	200	400
Research Materials and Expense	1,000	200	1,000
Books and Subscriptions	100	100	100
Association Dues	100	100	100
Miscellaneous	400	100	300
Contingencies	<u>500</u>	<u>-</u>	<u>700</u>
	\$23,000	\$16,200	\$23,000
Balance, beginning of year		\$ 5,663.83	\$15,335.43
Receipts:			
Subscriptions		10,976.00	10,000.00
Transfers		<u>10,024.00</u>	<u>-</u>
		\$26,663.83	\$25,335.43
Expenditures		<u>16,200.00</u>	<u>23,000.00</u>
Balance, end of year		\$10,463.83	\$ 2,335.43
Reserves		<u>4,874.60</u>	<u>-</u>
Total Balance, end of year		\$15,335.43	\$ 2,335.43

EXHIBIT C

Results of analyses for lead in samples of water from 185,000-gallon standpipe at Wrentham, Mass., painted interiorly with TT-P-86a, TYPE IV PAINT, as reported by Dr. H. B. Elkins, Chief of Laboratory, Division of Occupational Hygiene, Mass. Department of Labor and Industries.

Sample No.	Date Collected	Source and Status	Lead, Mg./Liter	
			CaC ₂ O ₄ Method	Evaporation Method
FW 1	5/18/50	Water before entry to standpipe	0.000	0.000
FW 2	5/18/50	Water from standpipe before painting	0.000	0.000
FW 3	7/17/50	Wash water after painting	0.000	0.000
FW 4	7/18/50	Wash water after painting	0.002	0.003
FW 5	7/19/50	Wash water after painting	0.000	0.001
FW 6	7/24/50	Second filling	0.002	0.000
FW 7	7/31/50	Static one week	0.000	0.000
FW 8	8/8/50	On line 8 days	0.018	0.006
			0.015	
FW 9	8/21/50	On line 21 days	0.000	
FW 10	9/25/50	On line one month, 25 days	0.001	

NOTE: The generally accepted safe limit for lead in potable water is 0.1 mg./L. Dr. Elkins estimates the average error in analysis to be 0.002 mg./L. Having satisfied himself as to the greater accuracy of the calcium oxalate method, the evaporation method was not used in analyzing samples FW 9 and FW 10.

10/5/50