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PRINTED: 09/06/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: WENDEN MANGANESE STOCKPILE

ALTERNATE NAMES:

LA PAZ COUNTY MILS NUMBER: 208

LOCATION: TOWNSHIP 6 N RANGE 12 W SECTION 28 QUARTER SW
LATITUDE: N 33DEG 49MIN 50SEC LONGITUDE: W 113DEG 31MIN 00SEC
TOPO MAP NAME: SALOME - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
MANGANESE

BIBLIOGRAPHY:

ADMMR WENDEN MANGANESE STOCKPILE FILE
USBM RI 5462 OPERATIONS OF MANGANESE ORE
PURCHASING DEPOTS AT DEMING NM AND WENDEN AZ
ADMMR MANGANESE COMMODITY FILES (WENDEN DEPOT
IN PARTICULAR)

06/12/98

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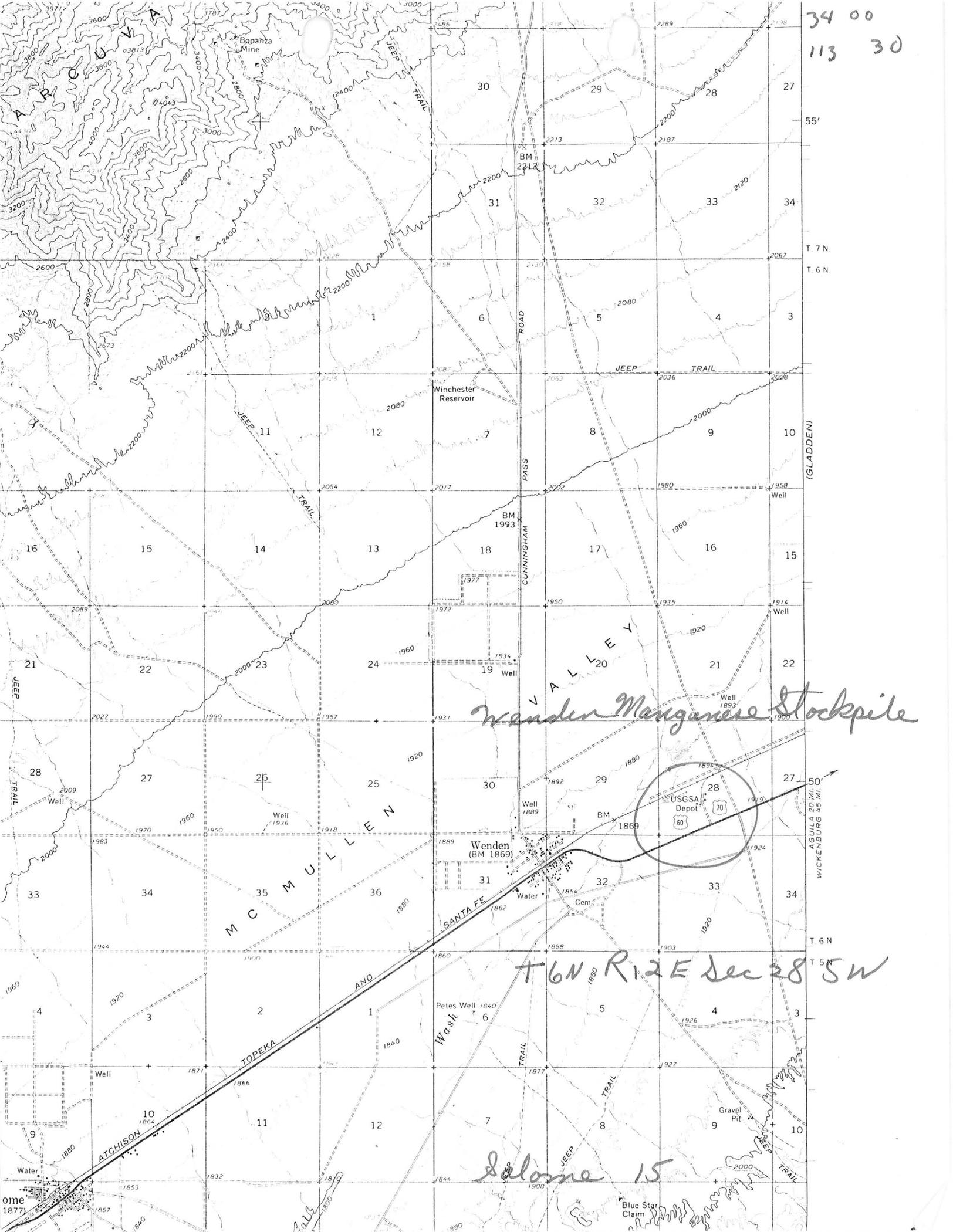
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IN PARTICULAR)

SEE: EAT MAP DR 18 - WENDEN STOCKPILE FOLDER

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113 30



Wander Manganese Stockpile

T. 6 N R. 12 E Sec 28 SW

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AGUILA 20 MI
WICKENBURG 4.5 MI

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1877

Blue Star
Claim

Manning

84TH CONGRESS } HOUSE OF REPRESENTATIVES { REPT. 1070
1st Session } } Part 2

AMENDING THE DOMESTIC MINERALS PROGRAM EXTENSION ACT OF 1953 IN ORDER TO EXTEND THE PROGRAMS TO ENCOURAGE THE DISCOVERY, DEVELOPMENT, AND PRODUCTION OF CERTAIN DOMESTIC MINERALS

JULY 19, 1955.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. ENGLE, from the Committee on Interior and Insular Affairs, submitted the following

SUPPLEMENTAL REPORT

[To accompany H. R. 6373]

On July 6, 1955, there was transmitted to the House H. R. 6373, as amended, together with the committee's explanatory statement embodied in Report No. 1070, which is herewith supplemented.

Following the reporting of H. R. 6373 and the granting of a rule thereon, question was raised as to the effect of the bill on funding operations under the Defense Production Act of 1950, as amended. It was brought to the attention of the committee that under the contingent liability method of obligating funds for minerals and metals under the Defense Production Act, H. R. 6373 in its reported form might have been construed as requiring the earmarking of upward of \$400 million to accomplish a purchase program not anticipated to exceed in any case \$150 million in gross purchase transactions.

To remove doubt as to the intended operation of H. R. 6373 as reported, the committee staff, at the request of the chairman, has developed clarifying language in the nature of a proposed substitute for the body of the bill.

With the exception of the last paragraph, the proposed substitute language constitutes a restatement and rephrasing of the language of the bill as originally reported. The last paragraph, which would become section 6 of the 1953 act, makes clear that the act would operate—

- (1) to limit the amount which may be expended—in addition to funds required to purchase the full quantities of all materials authorized to be purchased under the programs as they existed

Roger Manning

2 AMEND DOMESTIC MINERALS PROGRAM EXTENSION ACT OF 1953

on July 1, 1953—to gross purchase transactions not to exceed \$150 million;

(2) to specify that the Director of the Office of Defense Mobilization increase the quantity limitations of particular programs only when and to the extent found necessary to maintain the programs in effect until their calendar termination dates.

At a meeting of the Committee on Interior and Insular Affairs on July 19, 1955, the author of the bill, Mr. Engle, advised committee members that, subject to committee approval, there would be offered a committee floor amendment in the nature of substitute language as thus developed to H. R. 6373, as reported on July 6, 1955.

The suggested amendment, agreed to unanimously by the committee, is as follows:

Strike all after the enacting clause and insert in lieu thereof the following:

That section 3 of the Domestic Minerals Program Extension Act of 1953 (67 Stat. 417) is amended by deleting all after the words "two years" to the end of such section, and inserting in lieu thereof the following: "and purchases under such programs shall be continued until such termination dates in such quantities as may be offered to the government under such program: *Provided, however,* That the authority under this Act shall not extend to authorization for purchases under any program of an additional amount which will exceed one hundred per centum of the quantity specified for any such program as it existed on July 1, 1953: *Provided further,* That this section is not intended and shall not be construed to limit or restrict the regulatory agencies from taking such additional actions as may be permitted by statutory authority: *And provided further,* That the extended termination date and additional quantity authorized by this Act for the columbium-tantalum purchase program shall not apply to the purchase of columbium-tantalum bearing ores and concentrates of foreign origin."

Sec. 2. The Domestic Minerals Program Extension Act of 1953 is further amended by renumbering the present section 4 as section 7 and by adding the following new sections 4, 5, and 6:

"Sec. 4. Within ninety days from the effective date of this amendment, the Wenden, Arizona, ore-buying depot shall be reestablished and two new manganese ore-buying depots shall be established which will purchase manganese ores at prices and specifications and under regulations identical with those in effect under the program operated for the depot established at Wenden, Arizona; one new depot shall be established to serve the Ozark-Cushman area and one new depot shall be established to serve the southern Appalachian area. The locations for such new depots shall be determined by the Director of the Office of Defense Mobilization in cooperation with the General Services Administration.

"Sec. 5. The limitation in the domestic manganese purchase program (the car-lot program) excluding producers of more than ten thousand tons of annual production from participation therein shall be amended to provide that the exclusion shall be applicable only to producers which in any one of the four calendar years next preceding 1955 shall have produced and sold more than ten thousand tons of manganese ore averaging more than 40 per centum manganese.

"Sec. 6. For the purposes of this Act the Director of the Office of Defense Mobilization is hereby authorized and directed to enter, hereafter, into gross purchase transactions not to exceed \$150,000,000 out of moneys made available to him under section 304 (b) of the Defense Production Act of 1950, as amended, such amount to be in addition to funds required to purchase the full quantities of all materials authorized to be purchased under the programs as they existed on July 1, 1953: *Provided, however,* That the Director of the Office of Defense Mobilization is authorized and directed to use such additional moneys to increase the quantity limitations of particular programs, as provided for in sections 3 and 4 of this Act, only to the extent necessary to maintain the programs in effect until such termination dates as provided herein."

82d Congress }
2d Session }

COMMITTEE PRINT

MANGANESE REGULATIONS

FOR
NATION-WIDE PURCHASE PROGRAM



JULY 8, 1952

Roger - I am having
Murdock ship 100 to Willis
from whom you can get a
supply. Bill

Printed for the use of the Committee on Interior and Insular Affairs

UNITED STATES
GOVERNMENT PRINTING OFFICE

21950

WASHINGTON : 1952

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GEORGE H. SOULE, Jr., *Technical Consultant*

II

MANGANESE REGULATIONS FOR NATION-WIDE PURCHASE PROGRAM

MONDAY, JULY 7, 1952.

General Services Administrator Jess Larson today announced a Nation-wide program for Government buying of manganese ore and concentrates from small domestic producers of the much-needed defense material.

The new program, which supplements Government purchase of manganese at three already established manganese depots, is aimed at stimulating the production of commercial grade manganese anywhere in the United States that it is found.

Heretofore, Mr. Larson explained, it has been difficult for miners and producers to market small quantities of manganese.

Under the new plan the Government will buy carload lots of acceptable ores or concentrates at various rail points throughout the country for resale to industry.

Because of the need for more manganese for use in production of high-grade steels for defense and other essential purposes, Mr. Larson said it had been decided that "the Government should make it possible to use the output of the smaller producers wherever they may be."

The program is set up to run to June 30, 1956, or when deliveries have totaled 19,000,000 long-dry-ton units of manganese, whichever occurs first. A long-dry-ton unit is 22.4 pounds of manganese contained in a long ton of dry ore, or 1.0 percent.

For purposes of the program, a small producer is defined as any miner or producer whose total annual domestic output is less than 10,000 long-dry tons.

Larger producers may negotiate with the Government for sale of their ore.

In order to participate in the program, the small producer must send advance notice to the nearest GSA regional office by letter, postcard, or telegram, stating that he has read the regulation setting up the program and accepts its terms and conditions and that he desires to participate.

The cut-off date for such notifications is June 30, 1953. Upon receipt of proper notification, GSA will issue a certificate authorizing the applicant to make shipments under the program.

Only natural or sintered oxide ores and concentrates, or sintered carbonate ores and concentrates will be purchased under the program, and such ores and concentrates, to be accepted by the Government, must meet these specifications:

Manganese.....	40.0 percent minimum.
Iron.....	16.0 percent maximum.
Silica plus alumina.....	15.0 percent maximum.
Phosphorus.....	.3 percent maximum.
Copper plus lead plus zinc.....	1.0 percent maximum. ¹

¹ Of which not more than 0.25 percent may be copper.

Mr. Larson emphasized that higher-grade ores and concentrates are desired.

Prices paid for individual lots of acceptable ore or concentrates will be computed on a base price of \$2.30 per long ton unit of manganese contained in ore or concentrates meeting these specifications: 48 percent manganese, 6 percent iron, 11 percent silica plus alumina, and 0.12 percent phosphorus.

Better-grade ores or concentrates will bring more than \$2.30 per unit, inferior materials less. A schedule of premiums and penalties which will be figured into the ultimate price paid for individual lots is set forth in the regulation establishing the program.

Deliveries of ore or concentrates on cars at the nearest rail point will be at the expense of the miner or producer. Transportation to consignees will be paid for by the Government. Participants will be held accountable for all freight charges on any lot which fails to meet the Government's specifications, and for any expense to the Government resulting from overloading of freight cars.

The General Services Administration, which handles the buying of manganese for the Defense Materials Procurement Agency, of which Mr. Larson also is Administrator, operates three manganese depots for purchase of both large and small quantities of ores and concentrates. They are at Butte and Philipsburg, Mont., and at Deming, N. Mex. A fourth depot is being set up at Wenden, Ariz. * * *

GSA regional offices: Post Office and Courthouse, Boston, Mass.; 250 Hudson St., New York, N. Y.; GSA Regional Office Building, Washington, D. C.; 50 Whitehall Street SW., Atlanta, Ga.; 219 South Clark Street, Chicago, Ill.; 911 Walnut Street, Kansas City, Mo.; 1114 Commerce Street, Dallas, Tex.; Building 41, Denver Federal Center, Denver, Colo.; 630 Sansome Street, San Francisco, Calif.; 909 First Avenue, Seattle, Wash.

TITLE 32A—NATIONAL DEFENSE, APPENDIX

CHAPTER XIV—GENERAL SERVICES ADMINISTRATION

MANGANESE REGULATIONS

DOMESTIC MANGANESE PURCHASE PROGRAM

Sec.

1. Basis and Purpose.
2. Definitions.
3. Duration of the Program.
4. Participation in the Program.
5. Specifications.
6. Price, Premiums and Penalties.
7. Deliveries and Acceptance.
8. Sampling and Analysis.
9. Transportation Charges.
10. Weight.
11. Payment.

AUTHORITY: Sections 1 to 11 issued under sec. 704, 64 Stat. 816, as amended, Pub. Law 429, 82d Cong., 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 303, 64 Stat. 801, as amended, Pub. Law 429, 82d Cong., 50 U. S. C. App. Sup. 2093; E. O. 10161, Sept. 9, 1950, 15 F. R. 6105, 3 CFR 1950 Supp; E. O. 10281, Aug. 28, 1951, 16 F. R. 8789.

SECTION 1. Basis and Purpose. (a) The purpose of this regulation is to establish a Program to encourage expansion of domestic production of manganese by providing a uniform price scale for small domestic producers of metallurgical grade manganese ores and concentrates. Any small domestic producer whose total anticipated or actual production is less than 10,000 long dry tons per calendar year shall be eligible to participate under the provisions of this Program as hereinafter specifically set forth. Individuals or firms whose total production exceeds 10,000 long dry tons per year may negotiate with the Government for the purchase of their production.

(b) This regulation interprets and implements the authority of the Administrator of General Services, pursuant to delegation of authority from the Defense Materials Procurement Administrator of even date with this regulation, to purchase metallurgical grade manganese ores and concentrates, all of domestic origin, as authorized by the Defense Production Administration on May 9, 1952, and outlines the attendant responsibilities and functions of the Administrator of General Services in purchasing such manganese ores and concentrates for Government use and resale. In accordance with the Program set forth herein, the Administrator of General Services will buy domestically produced metallurgical grade manganese ores and concentrates conforming to the specifications, at the price, and under the other terms and conditions of this regulation.

SEC. 2. Definitions.

- (a) "Administrator" means the Administrator of General Services.
- (b) "Program" means the Program as set forth in the following paragraphs.
- (c) "Shipping point" means the location at which the small domestic producer delivers material f. o. b. railroad cars.
- (d) "Receiving point" means the location to which shipments shall be consigned.
- (e) "Small domestic producer" means any individual or firm whose total anticipated or actual production of manganese ore or concentrates mined and milled in the continental United States annually is less than 10,000 long dry tons.
- (f) The term "Continental United States" means the forty-eight (48) states and the District of Columbia.
- (g) "Long ton unit" means one per cent of 2,240 pounds avoirdupois dry weight, or 22.4 pounds of metallic manganese contained in manganese oxide or manganese carbonate.
- (h) "Manganese ore or concentrates" means natural or sintered oxide ores or concentrates or sintered carbonate ores or concentrates, as defined in section 5 hereof, excluding battery and chemical grades and ores or concentrates containing manganese as manganese silicate in excess of ten per cent.
- (i) "Lot" means that quantity of ore and concentrates offered at one time. It shall consist of one or more railroad carloads. Fractions of a carload may not be offered.
- (j) "Carload" means the quantity (carried in one railroad car) equalling or exceeding the minimum tonnage which can be moved at the lowest transportation rate.

SEC. 3. Duration of the Program. The Program shall terminate and be of no further force or effect at the close of business June 30, 1956, or when deliveries under the Program total 19,000,000 long dry ton units of manganese, whichever occurs first.

SEC. 4. Participation in the Program. Any small domestic producer desiring to participate in the Program shall make application to the nearest General Services Administration regional office in the form of a letter, postcard, or telegram, postmarked or dated by the telegraph office on or before June 30, 1953, stating (1) that applicant has read this regulation and accepts its terms and conditions, and (2) that applicant desires to participate in this Program, and will offer manganese ore or concentrates to the Government pursuant thereto. Such notification must be signed and a return address given. Receipt of this application will be acknowledged by the regional office which may request such additional information as may be necessary and will issue to those who qualify hereunder a certificate authorizing the applicant to make shipments under the Program.

SEC. 5. Specifications.

Chemical requirements: All shipments must meet the following chemical analysis:

	<i>By weight (dry basis)</i>
Manganese (Mn)-----	40.0 percent minimum.
Iron (Fe)-----	16.0 percent maximum.
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)-----	15.0 percent maximum.
Phosphorus (P)-----	.30 percent maximum.
Copper plus lead plus zinc (Cu plus Pb plus Zn)-----	1.00 percent maximum (of which not more than 0.25 percent may be copper).

Analyses superior to the foregoing are desired.

Physical requirements: Three types of material, according to physical characteristics, are covered by this specification. All offers shall stipulate the type covered and the following shall constitute the rejection limits of each type.

Type I—Lump Ore—shall be natural ore, unprocessed except for grading, washing or screening. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Type II—Fine Ore—shall be natural ore, unprocessed except for grading, washing or screening. Not more than 15 percent shall pass a Tyler standard 20 mesh screen.

Type III—Nodules or Sinber—shall be natural fines, or concentrates, densely agglomerated by the application of heat. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Fine concentrates may be considered for acceptance under this program through special arrangement with the appropriate regional office. In such case, appropriate adjustments may be made in price and other terms and conditions.

Sec. 6. *Price, Premiums, and Penalties.* The price to be paid for any carload lot of material will be determined in accordance with the base price and the premiums and penalties stated hereinbelow. Prices herein stated are f. o. b. railroad cars at the participant's shipping point.

The base price shall be \$2.30 per long dry ton unit for material of the following analysis:

	Percent
Manganese (Mn)-----	48.0
Iron (Fe)-----	6.0
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)-----	11.0
Phosphorus-----	.12

ores or concentrates containing more than 1 percent copper plus lead plus zinc (of which not more than 0.25 percent shall be copper) will not be accepted.

For material which is superior or inferior to the above analysis, the following premiums and penalties shall be applied:

Premiums: Manganese content above 48 percent (dry basis): ½ cent per unit for each 1 percent. Iron content below 6.0 percent (dry basis): ½ cent per unit for each 1 percent.

Penalties: Manganese content below 48 percent (dry basis) 1 cent per unit for each 1 percent, down to and including 44.0 percent. Below 44.0 percent, 4 cents per unit plus 1½ cents per unit for each 1.0 percent down to and including 40 percent. Iron content above 6 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 8.0 percent. Above 8 percent; 2 cents per unit plus ¼ cent per unit for each 1.0 percent up to and including 16 percent. Silica plus alumina content above 11.0 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 15.0 percent. Phosphorus content above 0.12 percent (dry basis); ½ cent per unit for each 0.01 percent up to and including 0.30 percent.

Sec. 7. *Deliveries and Acceptance.* (a) Participant shall advise the nearest General Services Administration regional office at least twenty (20) days prior to an intended date of shipment of each lot, giving full information as to shipping point, tonnage and analysis of the lot. The regional office will inform the participant of the receiving point and consignee within fifteen (15) days of receipt of notice, and participant shall deliver the lot, at his expense, f. o. b. railroad cars at his designated shipping point, consigned in accordance with such instructions. Shipment must be in lots of one or more carloads. Fractional carloads will not be accepted. The lot will be weighed, sampled and analyzed at the receiving point, and the cost of weighing, sampling and analysis will be at the expense of the Government. Upon receipt of analysis, participant will be informed as to the acceptability of the lot.

(b) If the lot fails to meet the specifications herein provided, the participant will be held responsible for the removal of the lot from the unloading site. Upon failure to remove the lot within fifteen (15) days after due notice, the Government may, at its option, remove such lot and the cost of such removal shall be for participant's account, or otherwise dispose of such lot without liability therefor. Lots delivered to the Government based on inaccurate information wilfully furnished by the participants may be the basis for terminating participation in the Program.

Sec. 8. *Sampling and Analysis.* Each lot will be sampled at the time of unloading at the receiving point by a sampler designated by the Government. Three pulp samples will be prepared from the sample taken, one each for the Government, participant, and umpire, and an analysis made for manganese, iron, silica, and alumina, and, if necessary for phosphorus, copper, lead, and zinc. Usual provisions will be made for splitting limits and settlement by average of the Government's and participant's analyses, or by trade practice if samples are

sent to umpire. Moisture samples will be taken in accordance with standard practice. The participant, at his own expense, may have a representative at the sampling.

Sec. 9. *Transportation Charges.* Freight charges from shipping point to receiving point will be paid either by the Government or by its consignee. Participant shall be held accountable for freight charges and any other charges incurred by the Government with respect thereto on any lot failing to meet the specifications provided herein, and for any expense to the Government due to railway cars being loaded in excess of the maximum limit.

Sec. 10. *Weight.* The number of long dry tons in each lot shall be the net railroad-track-scale weight less moisture as determined by standard practice.

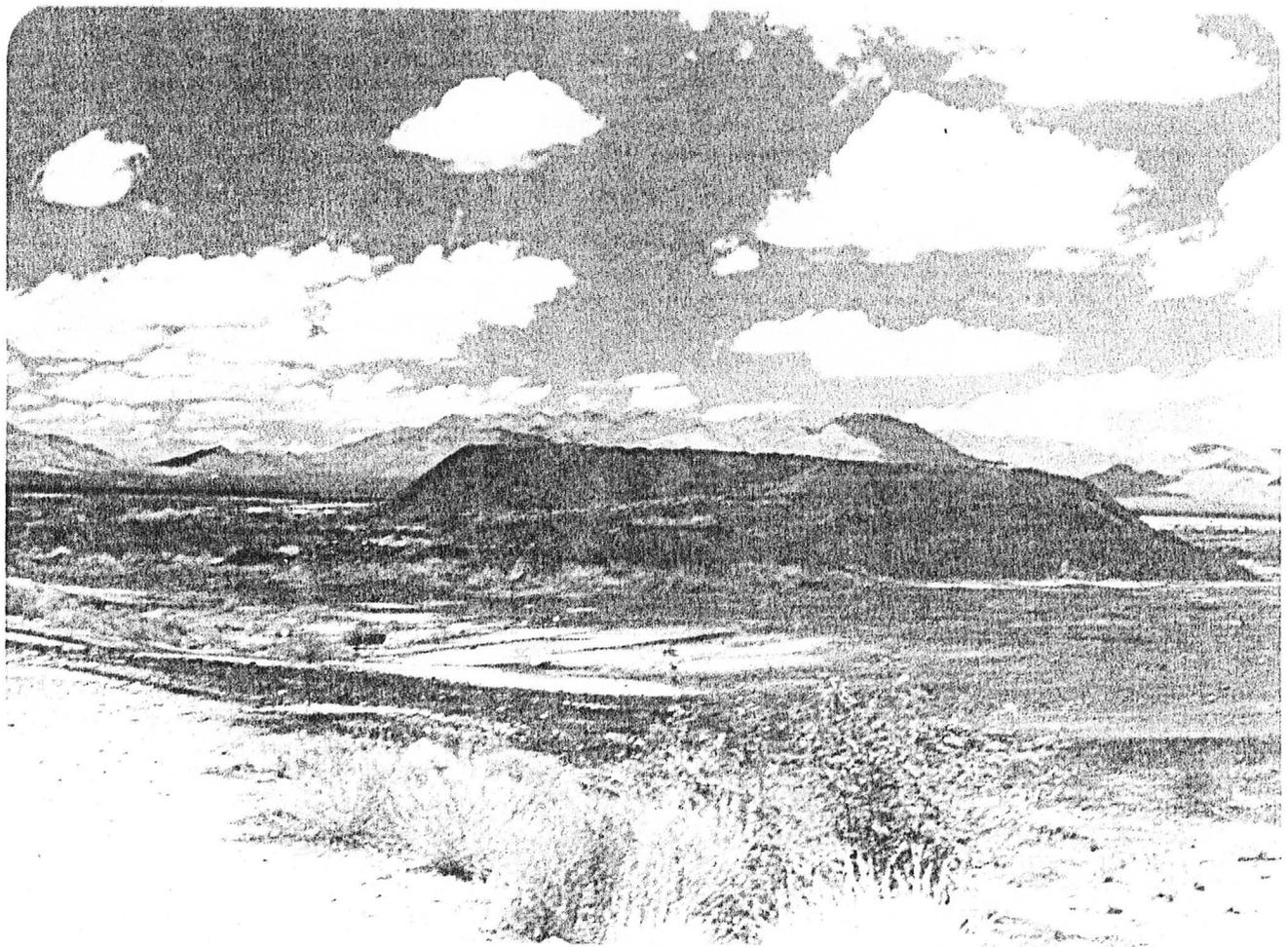
Sec. 11. *Payment.* Upon receipt by the appropriate regional office of applicable moisture and analysis determination and certified weight certificate with respect to each acceptable delivery under the terms of the program hereinabove stated, the participant shall be promptly paid for each such delivery in accordance with the price provisions of such program.

JESS LARSON,
Administrator of General Services.

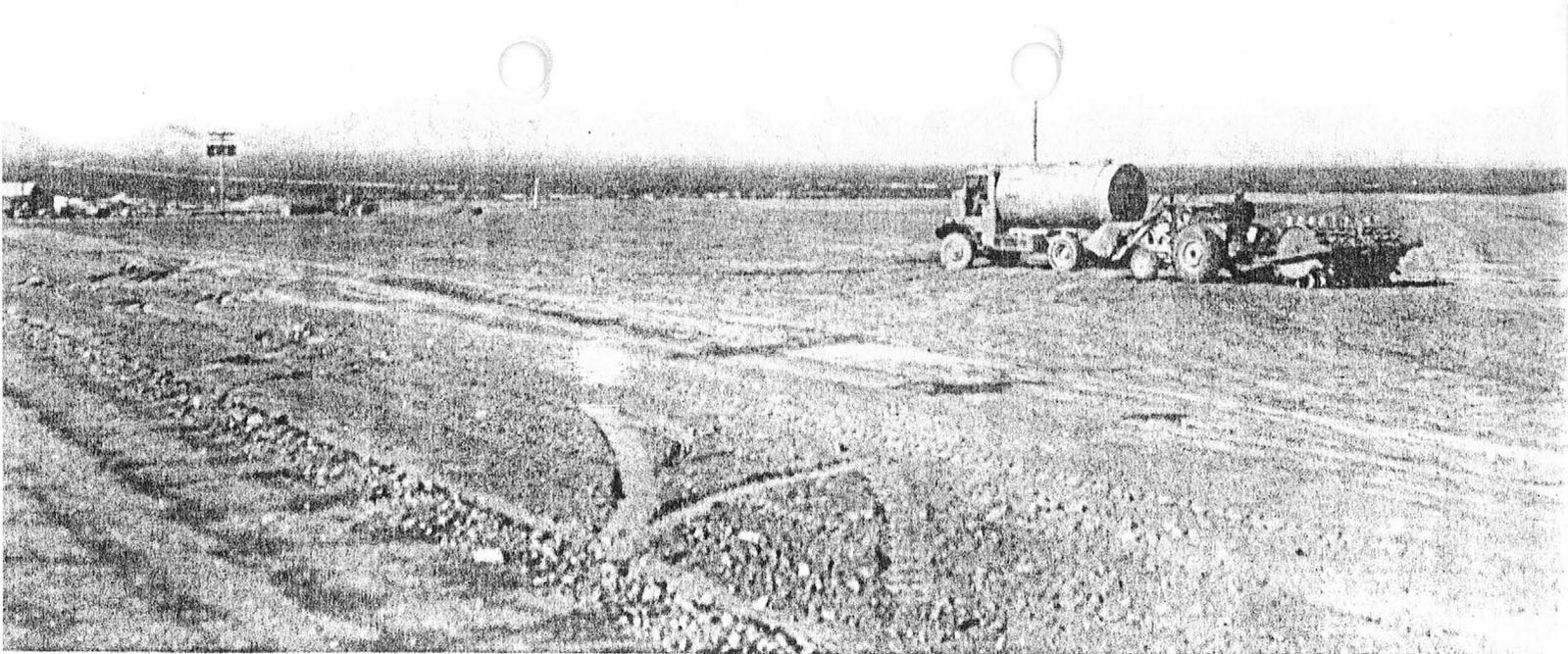
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Manganese stockpile at Wenden 8/80



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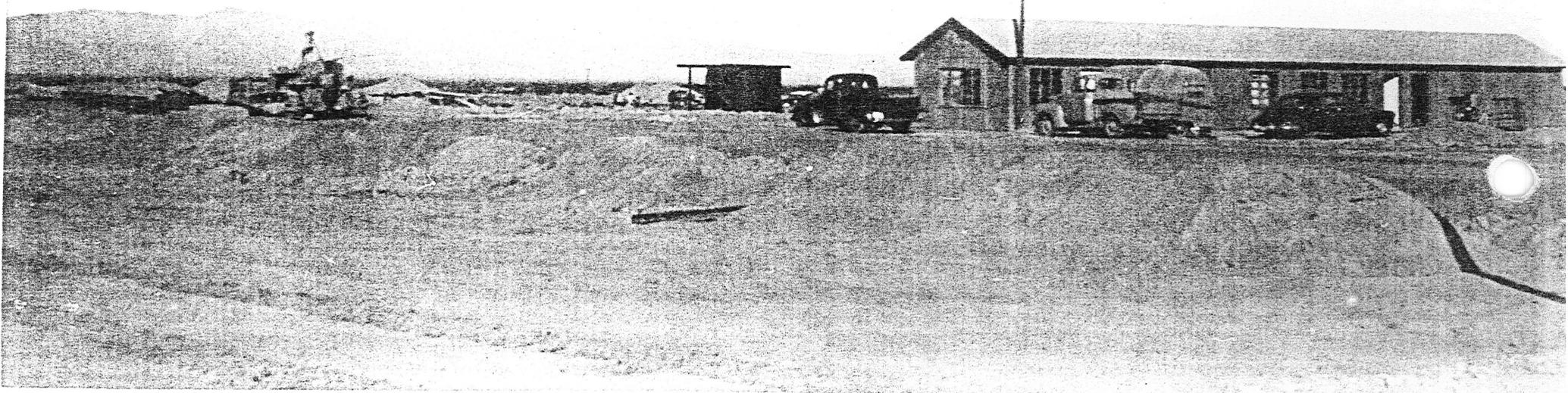
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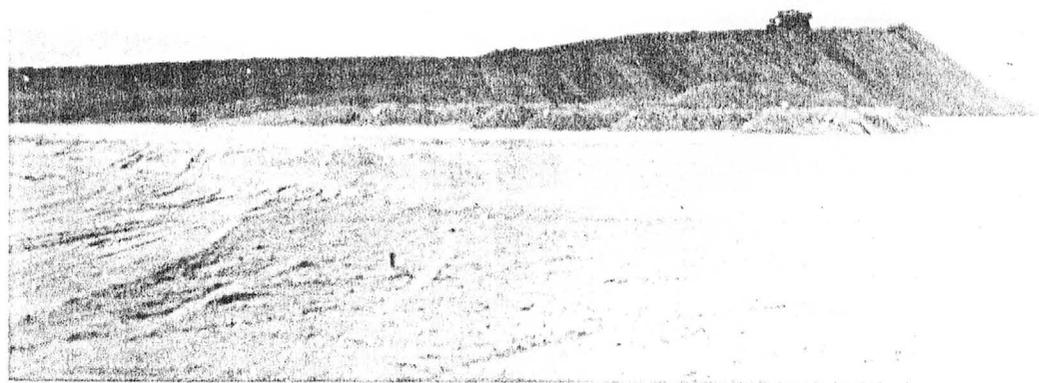
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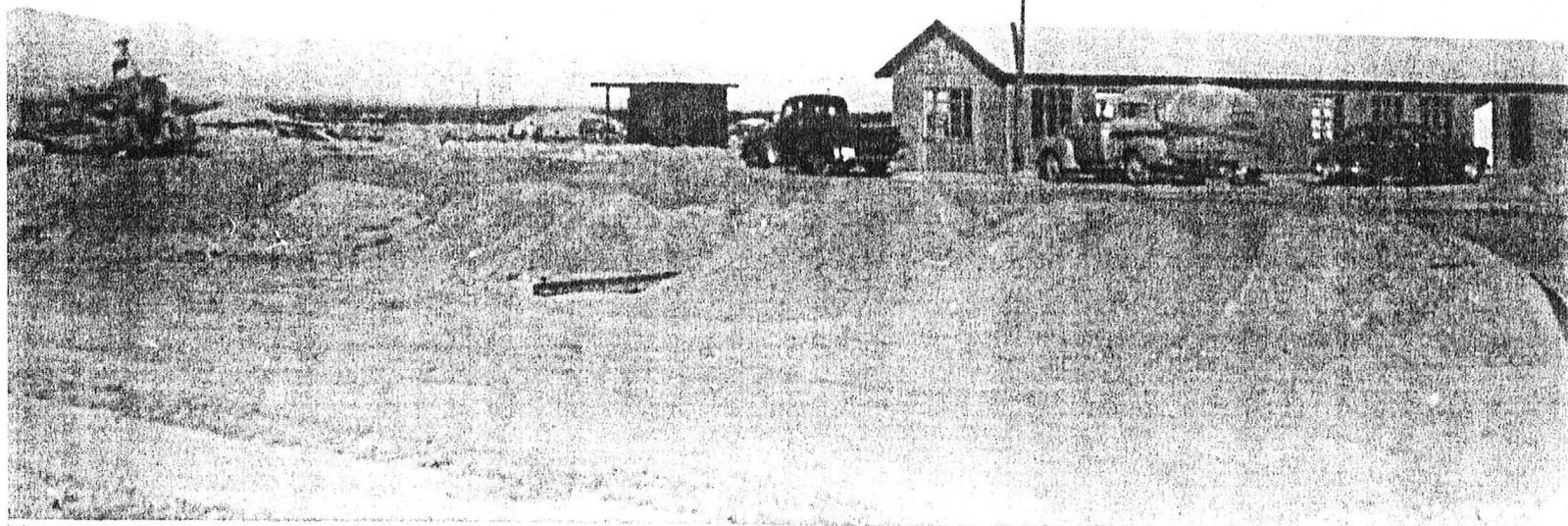


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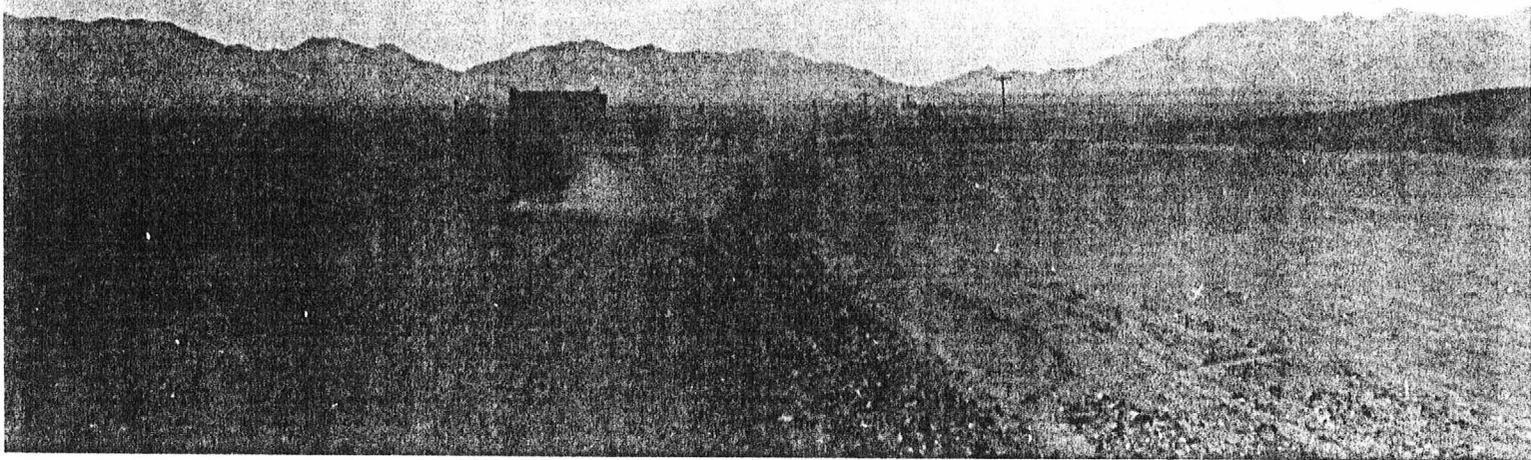
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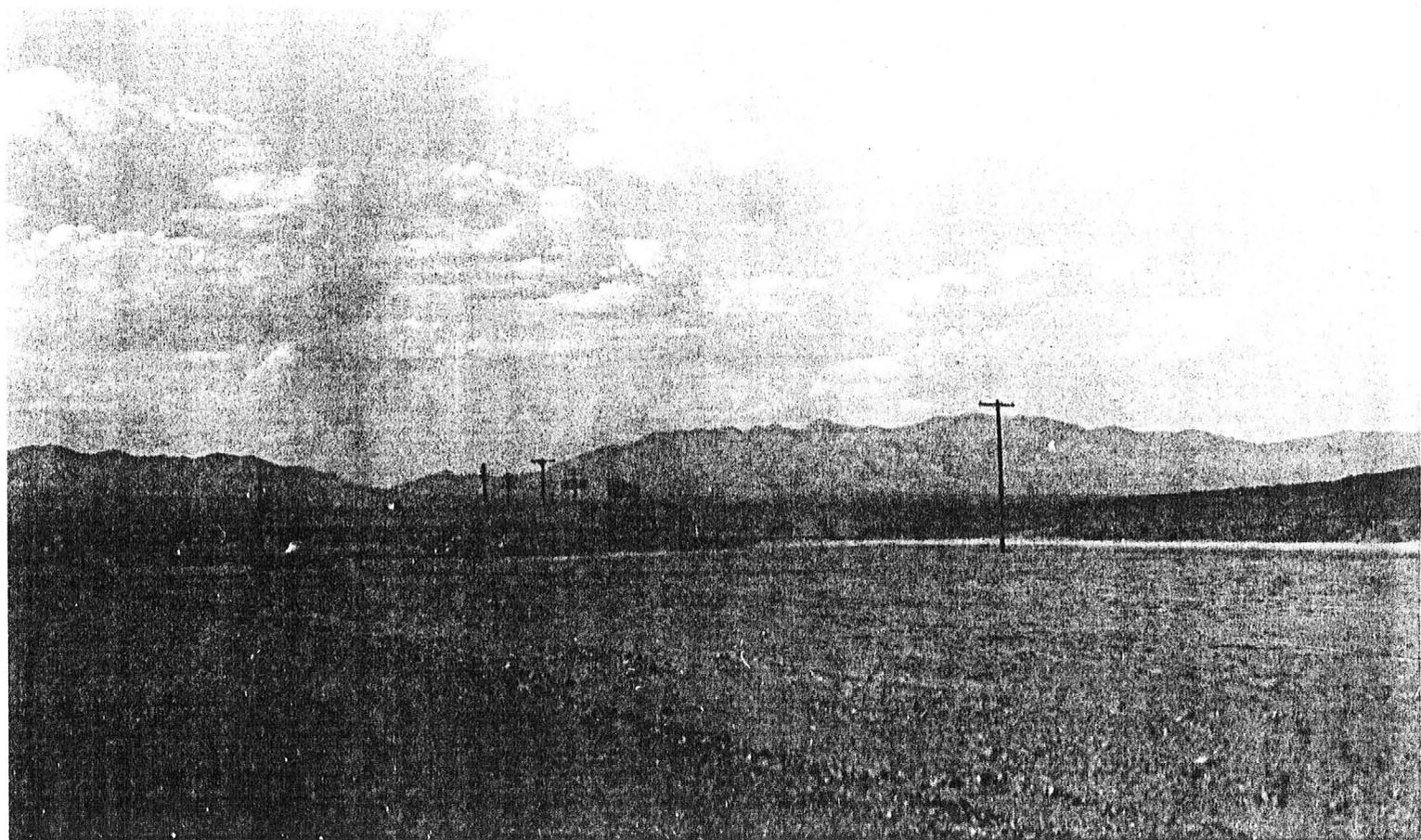
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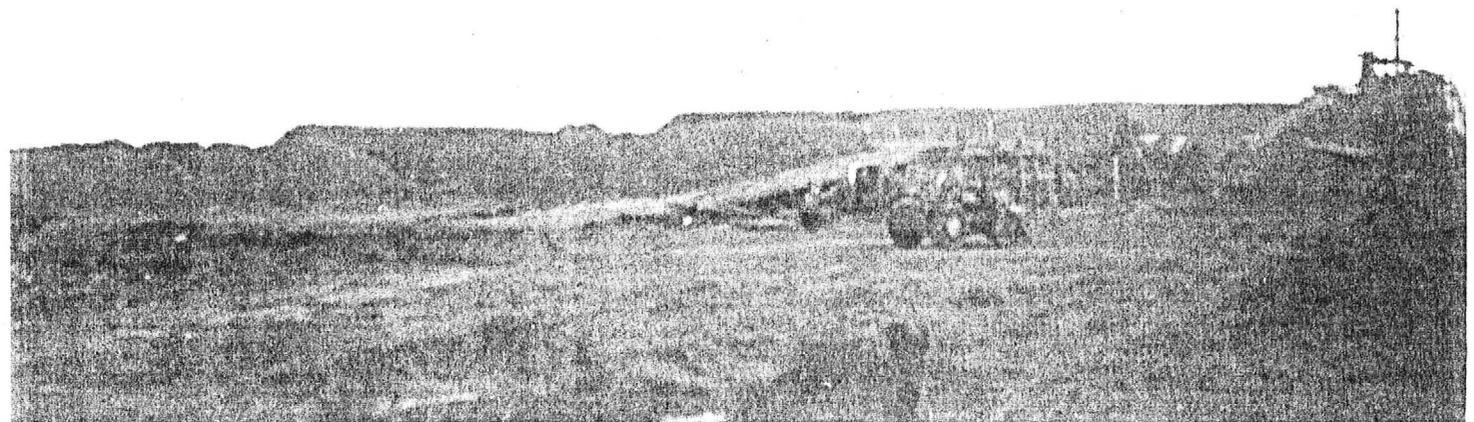
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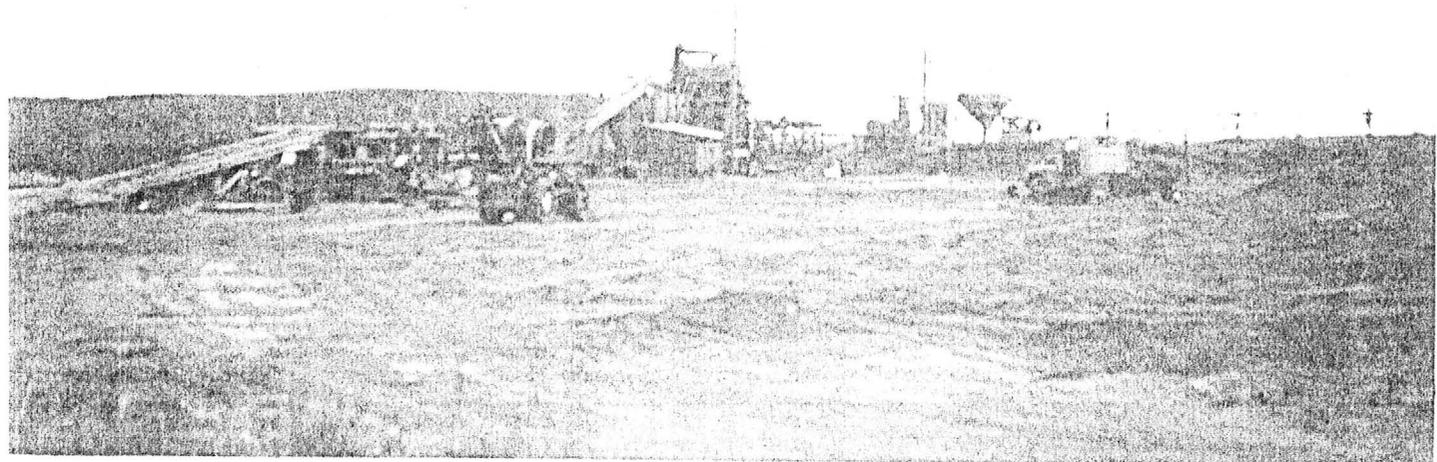
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1952

Manning

84TH CONGRESS } HOUSE OF REPRESENTATIVES { REPT. 1070
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With the exception of the last paragraph, the proposed substitute
language constitutes a restatement and rephrasing of the language
of the bill as originally reported. The last paragraph, which would
become section 6 of the 1953 act, makes clear that the act would
operate—

- (1) to limit the amount which may be expended—in addition
to funds required to purchase the full quantities of all materials
authorized to be purchased under the programs as they existed

on July 1, 1953—to gross purchase transactions not to exceed \$150 million;

(2) to specify that the Director of the Office of Defense Mobilization increase the quantity limitations of particular programs only when and to the extent found necessary to maintain the programs in effect until their calendar termination dates.

At a meeting of the Committee on Interior and Insular Affairs on July 19, 1955, the author of the bill, Mr. Engle, advised committee members that, subject to committee approval, there would be offered a committee floor amendment in the nature of substitute language as thus developed to H. R. 6373, as reported on July 6, 1955.

The suggested amendment, agreed to unanimously by the committee, is as follows:

Strike all after the enacting clause and insert in lieu thereof the following:

That section 3 of the Domestic Minerals Program Extension Act of 1953 (67 Stat. 417) is amended by deleting all after the words "two years" to the end of such section, and inserting in lieu thereof the following: "and purchases under such programs shall be continued until such termination dates in such quantities as may be offered to the government under such program: *Provided, however,* That the authority under this Act shall not extend to authorization for purchases under any program of an additional amount which will exceed one hundred per centum of the quantity specified for any such program as it existed on July 1, 1953: *Provided further,* That this section is not intended and shall not be construed to limit or restrict the regulatory agencies from taking such additional actions as may be permitted by statutory authority: *And provided further,* That the extended termination date and additional quantity authorized by this Act for the columbium-tantalum purchase program shall not apply to the purchase of columbium-tantalum bearing ores and concentrates of foreign origin."

SEC. 2. The Domestic Minerals Program Extension Act of 1953 is further amended by renumbering the present section 4 as section 7 and by adding the following new sections 4, 5, and 6:

"SEC. 4. Within ninety days from the effective date of this amendment, the Wenden, Arizona, ore-buying depot shall be reestablished and two new manganese ore-buying depots shall be established which will purchase manganese ores at prices and specifications and under regulations identical with those in effect under the program operated for the depot established at Wenden, Arizona; one new depot shall be established to serve the Ozark-Cushman area and one new depot shall be established to serve the southern Appalachian area. The locations for such new depots shall be determined by the Director of the Office of Defense Mobilization in cooperation with the General Services Administration.

"SEC. 5. The limitation in the domestic manganese purchase program (the car-lot program) excluding producers of more than ten thousand tons of annual production from participation therein shall be amended to provide that the exclusion shall be applicable only to producers which in any one of the four calendar years next preceding 1955 shall have produced and sold more than ten thousand tons of manganese ore averaging more than 40 per centum manganese.

"SEC. 6. For the purposes of this Act the Director of the Office of Defense Mobilization is hereby authorized and directed to enter, hereafter, into gross purchase transactions not to exceed \$150,000,000 out of moneys made available to him under section 304 (b) of the Defense Production Act of 1950, as amended, such amount to be in addition to funds required to purchase the full quantities of all materials authorized to be purchased under the programs as they existed on July 1, 1953: *Provided, however,* That the Director of the Office of Defense Mobilization is authorized and directed to use such additional moneys to increase the quantity limitations of particular programs, as provided for in sections 3 and 4 of this Act, only to the extent necessary to maintain the programs in effect until such termination dates as provided herein."

BUREAU OF THE BUDGET POSITION

In a letter to the chairman of the Senate Committee on Interior and Insular Affairs, the Bureau of the Budget indicates its favorable position on H. R. 6373, in the following language:

If it is the sense of the Congress that some measure should be enacted at this session to assist the domestic mining industry, the Bureau of the Budget would interpose no objection to a short-term program similar to that contained in H. R. 6373 provided that such legislation is amended as recommended by the Department of the Interior in its report on H. R. 6373 to limit any quota for a manganese purchase program to not more than double the existing quota.

Chapter XIV—General Services Administration

[Revision 1]

MANGANESE REGULATIONS

DOMESTIC MANGANESE PURCHASE PROGRAM

This regulation is revised for the purpose of (1) redefining the meaning of the term "manganese ores and concentrates", and (2) modifying the chemical and physical requirements of acceptable lots. Changes have been made only in the provisions of sections 2 (h), 5 and 6. All other sections remain unchanged.

Sec.

1. Basis and purpose.
2. Definitions.
3. Duration of the Program.
4. Participation in the Program.
5. Specifications.
6. Price, premiums and penalties.
7. Deliveries and acceptance.
8. Sampling and analysis.
9. Transportation charges.
10. Weight.
11. Payment.

AUTHORITY: Sections 1 to 11 issued under sec. 704, 64 Stat. 816, as amended, Pub. Law 429, 82d Cong.; 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 303, 64 Stat. 801, as amended, Pub. Law 429, 82d Cong.; 50 U. S. C. App. Sup. 2093; E. O. 10161, Sept. 9, 1950, 15 F. R. 6105, 3 CFR 1951 Supp.; E. O. 10281, Aug. 28, 1951, 16 F. R. 8789, 3 CFR 1951 Supp.

SECTION 1. Basis and purpose. (a) The purpose of this regulation is to establish a Program to encourage expansion of domestic production of manganese by providing a uniform price scale for small domestic producers of metallurgical grade manganese ores and concentrates. Any small domestic producer whose total anticipated or actual production is less than 10,000 long dry tons per calendar year shall be eligible to participate under the provisions of this Program as hereinafter specifically set forth. Individuals or firms whose total production exceeds 10,000 long dry tons per year may negotiate with the Government for the purchase of their production.

(b) This regulation interprets and implements the authority of the Administrator of General Services, pursuant to delegation of authority from the Defense Materials Procurement Administrator of even date with this regulation, to purchase metallurgical grade manganese ores and concentrates, all of domestic origin, as authorized by the Defense Production Administration on May 9, 1952, and outlines the attendant responsibilities and functions of the Administrator of General Services in purchasing such manganese ores and concentrates for Government use and resale. In accordance with the Program set forth herein, the Administrator of General Services will buy domestically produced metallurgical grade manganese ores and concentrates conforming to the specifications, at the price, and under the other terms and conditions of this regulation.

SEC. 2. Definitions. (a) "Administra-

tor" means the Administrator of General Services.

(b) "Program" means the Program as set forth in the following paragraphs.

(c) "Shipping point" means the location at which the small domestic producer delivers material f. o. b. railroad cars.

(d) "Receiving point" means the location to which shipments shall be consigned.

(e) "Small domestic producer" means any individual or firm whose total anticipated or actual production of manganese ore or concentrates mined and milled in the continental United States annually is less than 10,000 long dry tons.

(f) The term "continental United States" means the forty-eight (48) States and the District of Columbia.

(g) "Long ton unit" means one percent of 2,240 pounds avoirdupois dry weight, or 22.4 pounds of metallic manganese contained in manganese oxide or manganese carbonate.

(h) "Manganese ores or concentrates" means natural or sintered oxide ores or concentrates or sintered carbonate ores or concentrates, as defined in section 5 of this regulation, and furnace slags, excluding battery and chemical grades and ores and concentrates containing manganese as manganese silicate in excess of 10 percent.

(i) "Lot" means that quantity of ore and concentrates offered at one time. It shall consist of one or more railroad carloads. Fractions of a carload may not be offered.

(j) "Carload" means the quantity (carried in one railroad car) equalling or exceeding the minimum tonnage which can be moved at the lowest transportation rate.

SEC. 3. Duration of the Program. The Program shall terminate and be of no further force or effect at the close of business June 30, 1956, or when deliveries under the Program total 19,000,000 long dry ton units of manganese, whichever occurs first.

SEC. 4. Participation in the Program. Any small domestic producer desiring to participate in the Program shall make application to the nearest General Services Administration regional office in the form of a letter, postcard, or telegram, postmarked or dated by the telegraph office on or before June 30, 1953, stating (a) that applicant has read this regulation and accepts its terms and conditions, and (b) that applicant desires to participate in this Program, and will offer manganese ore or concentrates to the Government pursuant thereto. Such notification must be signed and a return address given. Receipt of this application will be acknowledged by the regional office which may request such additional information as may be necessary and will issue to those who qualify hereunder a certificate authorizing the applicant to make shipments under the Program.

SEC. 5. Specifications—(a) Chemical requirements. All shipments must meet the following chemical analysis:

	By weight. (dry basis) (percent)
Manganese (Mn)-----	40.0 minimum.
Iron (Fe)-----	16.0 maximum.
Phosphorus (P)-----	0.30 maximum.
Copper plus lead plus zinc (Cu plus Pb plus Zn), of which not more than 0.25 percent may be copper.	1.0 maximum.
Silica plus alumina (SiO ₂ + plus Al ₂ O ₃).	

¹ No maximum specified; however, material over 15 percent will be purchased in exceptional cases only.

(b) **Physical requirements.** Four types of material, according to physical characteristics, are covered by this specification. All offers shall stipulate the type covered and the following shall constitute the rejection limits of each type.

Type I—Lump ore shall be natural ore, unprocessed except for grading, washing, or screening. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Type II—Fine ore shall be natural ore, unprocessed except for grading, washing, or screening. Not more than 15 percent shall pass a Tyler standard 20 mesh screen.

Type III—Nodules or sinter shall be natural fines, or concentrates, densely agglomerated by the application of heat. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Type IV—Slag shall be material which has been agglomerated by the application of heat above the point of fusion. Not more than 5 percent by weight shall pass a Tyler standard sieve mesh No. 20 or U. S. standard sieve No. 20.

Fine concentrates may be considered for acceptance under this Program through special arrangement with the appropriate regional office. In such case, appropriate adjustments may be made in price and other terms and conditions.

SEC. 6. Price, premiums, and penalties. (a) The price to be paid for any carload lot of material will be determined in accordance with the base price and the premiums and penalties stated hereinbelow. Prices herein stated are f. o. b. railroad cars at the participant's shipping point.

(b) The base price shall be \$2.30 per long dry ton unit for material of the following analysis:

	Percent
Manganese (Mn)-----	48.0
Iron (Fe)-----	6.0
Phosphorus (P)-----	0.12
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)--	11.0

(c) For material which is superior or inferior to the above analysis, the following premiums and penalties shall be applied:

(1) Premiums: Manganese content above 48 percent (dry basis); ½ cent per unit for each 1 percent. Iron content below 6.0 percent (dry basis); ½ cent per unit for each 1 percent.

(2) Penalties: Manganese content below 48 percent (dry basis); 1 cent per unit for each 1 percent, down to and including 44.0 percent. Below 44.0 percent, 4 cents per unit plus 1½ cents per unit for each 1.0 percent down to and including 40 percent. Iron content above 6 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 8.0 percent. Above 8 percent; 2 cents per unit plus ¼ cent per unit for each 1.0 percent up to and including 16 percent. Silica plus alumina content above 11.0 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 15.0 percent. Above 15.0 percent, 4 cents per unit plus 2 cents per unit for each 1.0 percent up to and including 18.0 percent; 19.0 percent and above 10 cents per unit. Phosphorus content above 0.12 percent (dry basis); ½ cent per unit for each 0.01 percent up to and including 0.30 percent.

Ores and concentrates containing more than one (1) percent copper plus lead plus zinc (of which not more than 0.25 percent shall be copper) will not be accepted under this Program.

Sec. 7. Deliveries and acceptance. (a) Participant shall advise the nearest General Services Administration regional office at least twenty (20) days prior to an intended date of shipment of each lot, giving full information as to shipping point, tonnage and analysis of the lot. The regional office will inform the participant of the receiving point and consignee within fifteen (15) days of receipt of notice, and participant shall deliver the lot, at his expense, f. o. b. railroad cars at his designated shipping point,

consigned in accordance with such instructions. Shipment must be in lots of one or more carloads. Fractional carloads will not be accepted. The lot will be weighed, sampled and analyzed at the receiving point, and the cost of weighing, sampling and analysis will be at the expense of the Government. Upon receipt of analysis, participant will be informed as to the acceptability of the lot.

(b) If the lot fails to meet the specifications herein provided, the participant will be held responsible for the removal of the lot from the unloading site. Upon failure to remove the lot within fifteen (15) days after due notice, the Government may, at its option, remove such lot and the cost of such removal shall be for participant's account, or otherwise dispose of such lot without liability therefor. Lots delivered to the Government based on inaccurate information willfully furnished by the participant may be the basis for terminating participation in the Program.

Sec. 8. Sampling and analysis. Each lot will be sampled at the time of unloading at the receiving point by a sampler designated by the Government. Three pulp samples will be prepared from the sample taken, one each for the Government, participant, and umpire, and an analysis made for manganese, iron, silica, and alumina, and, if necessary, for phosphorus, copper, lead and zinc. Usual provisions will be made for splitting limits and settlement by average of the Government's and participant's analyses, or by trade practice

if samples are sent to umpire. Moisture samples will be taken in accordance with standard practice. The participant, at his own expense, may have a representative at the sampling.

Sec. 9. Transportation charges. Freight charges from shipping point to receiving point will be paid either by the Government or by its consignee. Participant shall be held accountable for freight charges and any other charges incurred by the Government with respect thereto on any lot failing to meet the specifications provided herein, and for any expense to the Government due to railway cars being loaded in excess of the maximum limit.

Sec. 10. Weight. The number of long dry tons in each lot shall be the net railroad-track-scale weight less moisture as determined by standard practice.

Sec. 11. Payment. Upon receipt by the appropriate regional office of applicable moisture and analysis determination and certified weight certificate with respect to each acceptable delivery under the terms of the program hereinabove stated, the participants shall be promptly paid for each such delivery in accordance with the price provisions of this program.

This revision shall be effective upon publication in the FEDERAL REGISTER.

Dated: February 19, 1953.

RUSSELL FORBES,
Acting Administrator.

[F. R. Doc. 53-1848; Filed, Feb. 25, 1953;
8:57 a. m.]

(Published in the Federal Register, February 26, 1953, 18 F.R. 1112)

**Chapter XIV—General Serv.
Administration**

MANGANESE REGULATIONS: PURCHASE PROGRAM FOR DOMESTIC MANGANESE ORE AT WENDEN, ARIZONA

Sec.

1. Basis and purpose.
2. Definitions.
3. Participation in the program.
4. Deliveries.
5. Duration of the program.
6. Price schedule for ores.

AUTHORITY: Sections 1 to 6 issued under sec. 704, 64 Stat. 816, as amended, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 303, 64 Stat. 801, as amended, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2093, E. O. 10281, Aug. 28, 1951, 16 F. R. 8789-8791.

SECTION 1. Basis and purpose. This regulation interprets and implements the authority of the Administrator of General Services to purchase manganese ore of domestic origin at Wenden, Arizona, pursuant to delegation of authority from the Defense Materials Procurement Administrator¹ of even date with this regulation, and outlines the attendant responsibilities and functions of the Administrator of General Services in purchasing such manganese ores for Government use and resale. In accordance with the program set forth herein, as authorized by the Defense Production Administration on May 9, 1952, the Administrator will buy domestically produced manganese ore containing not less than fifteen percent (15%) manganese, in accordance with the specifications contained in this regulation.

Sec. 2. Definitions. As used in this regulation:

(a) "Administrator" means the Administrator of General Services.

(b) "Program" means the purchase of manganese ore as set forth in this regulation.

(c) "Depot" means the purchase depot of the Government at Wenden, Arizona.

(d) "Manganese ore" means crude ore containing not less than fifteen percent (15%) manganese, mined in the United States, its territories and possessions.

(e) "Long ton unit of manganese" means 22.4 pounds of manganese contained in a long dry ton of manganese ore.

Sec. 3. Participation in the program. Any person may participate in the program by notice given to the General Services Administration Regional Office, Building 41, Denver Federal Center, Denver, Colorado, in the form of a letter, postcard or telegram postmarked or dated by the telegraph office not later than August 31, 1953. Such notice shall state that the writer desires to participate in the program and will deliver

¹ See F. R. Doc. 52-7358, Defense Materials Procurement Agency, in the Notices section, *infra*.

manganese ore to the depot. Such notice must be signed and a return address given. Any person participating in the program will promptly be sent a certificate authorizing him to deliver ore meeting minimum specifications.

Sec. 4. Deliveries. Manganese ore to be purchased by the Government under the program is to be delivered f. o. b. depot. Delivery of less than five (5) long tons of ore at one time will not be accepted. Participants in the program must give the Government reasonable notice with respect to deliveries of ore. Each delivery will be sampled and assayed by the Government at the depot and payment on an estimated recovery basis will be made in accordance with the analysis of such sample and as provided in section 6 below. Deliveries not conforming to the minimum specifications will be rejected, and expenses in connection therewith will be borne by the seller.

Sec. 5. Duration of the program. This program shall terminate and be of no further force or effect when six million (6,000,000) contained long ton units of manganese have been delivered to the depot and accepted by the Government under this program, or at the close of business June 30, 1956, whichever first occurs.

Sec. 6. Price schedule for ores. The following prices per long dry ton will be paid for manganese ore delivered f. o. b. depot. Where the fractional manganese content is 0.5 percent (0.5%) or below, payment will be made as though no fractional content were involved. Where such fractional content is 0.51 percent (0.51%) or above, payment will be made at the next higher figure.

Percent Mn in ore:	To be paid for 1 long dry ton
15.....	\$8.54
16.....	10.24
17.....	12.00
18.....	13.71

Percent Mn in ore—Con.	To be paid for 1 long dry ton
19.....	15.48
20.....	17.20
21.....	19.13
22.....	21.08
23.....	23.05
24.....	24.99
25.....	26.94
26.....	29.04
27.....	32.40
28.....	35.11
29.....	37.88
30.....	40.60
31.....	44.73
32.....	46.86
33.....	50.00
34.....	53.14
35.....	56.29
36.....	60.74
37.....	65.15
38.....	69.61
39.....	74.03
40 fines.....	78.00
40 ore.....	88.00

The above price schedule applies to lots received from individual shippers aggregating less than 200 tons during any 30-day period, and shall constitute the final and definite price for such lots.

For lots received from individual shippers aggregating 200 tons or more during any 30-day period, the above price schedule shall serve as a basis for preliminary settlement pending laboratory tests. The preliminary settlement shall be adjusted up or down, as the case may be, as a result of tests for laboratory-determined recoverability. Final settlement shall be calculated on the basis of \$2.30 per long ton unit of manganese determined from the laboratory tests to be recoverable from the ore, subject to a charge of \$10 per ton of ore (the estimated cost of sampling, milling, and handling) and to the specifications, premiums, and penalties set forth below.

SPECIFICATIONS

	Percent
Manganese.....	48.0
Iron.....	6.0
Silica plus alumina.....	11.0
Phosphorus.....	.12

PREMIUMS

Manganese content above 48.0 percent (dry basis): ½ cent for each 1.0 percent.
Iron content below 6.0 percent (dry basis): ½ cent for each 1.0 percent.

PENALTIES

Manganese content below 48.0 percent (dry basis): 1 cent for each 1.0 percent, down to and including 44.0 percent. Below 44.0 percent: 4 cents, plus ½ cents for each 1.0 percent down to 40.0 percent minimum. Iron content above 6.0 percent (dry basis): 1 cent for each 1.0 percent, up to and including 8.0 percent. Above 8.0 percent: 2 cents plus ¼ cent for each 1.0 percent up to 16 percent maximum. Silica plus alumina content above 11.0 percent (dry basis): 1 cent for each 1.0 percent up to 15 percent maximum. Phosphorus content above 0.12 percent (dry basis): ½ cent for each 0.01 percent up to 0.3 percent maximum.

The Government will reject any lot which, on the basis of the laboratory testing, cannot be beneficiated to a product the chemical analysis of which falls within the following limits in all respects. The Government reserves the right to dispense with laboratory testing of shipments aggregating less than 200 tons over a 30-day period.

	By weight (dry basis) (percent)
Manganese (Mn).....	40.0 minimum
Iron (Fe).....	16.0 maximum
Silica plus alumina (SiO ₂ plus Al ₂ O ₃).....	15.0 maximum
Phosphorus (P).....	.30 maximum
Copper plus lead plus zinc (Cu plus Pb plus Zn).....	1.00 maximum

¹ Of which not more than 0.25 percent may be copper.

Dated: June 27, 1952.

JESS LARSON,
Administrator of General Services.

[F. R. Doc. 52-7359; Filed, July 1, 1952;
2:09 p. m.]

(Published in the Federal Register, July 3, 1952, 17 F.R. 5990)

WENDEN MANGANESE STOCKPILE

YUMA

Office call - Ronald Karvinen to pick up the information on the Wenden Stockpile. If it meets certain specifications, his company is prepared to buy the whole lot. GW WR 1/3/77

~~Handwritten scribbles and signatures at the bottom of the page.~~

Roger Manning

82d Congress }
2d Session }

COMMITTEE PRINT

MANGANESE REGULATIONS FOR NATION-WIDE PURCHASE PROGRAM



JULY 8, 1952

*Roger - I am having
Mundick ship 100 to Willis
from whom you can get a
supply. Bill*

Printed for the use of the Committee on Interior and Insular Affairs

UNITED STATES
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WASHINGTON : 1952

21950

MANGANESE REGULATIONS FOR NATION-WIDE PURCHASE PROGRAM

MONDAY, JULY 7, 1952.

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GEORGE H. SOULE, Jr., *Technical Consultant*

General Services Administrator Jess Larson today announced a Nation-wide program for Government buying of manganese ore and concentrates from small domestic producers of the much-needed defense material.

The new program, which supplements Government purchase of manganese at three already established manganese depots, is aimed at stimulating the production of commercial grade manganese anywhere in the United States that it is found.

Heretofore, Mr. Larson explained, it has been difficult for miners and producers to market small quantities of manganese.

Under the new plan the Government will buy carload lots of acceptable ores or concentrates at various rail points throughout the country for resale to industry.

Because of the need for more manganese for use in production of high-grade steels for defense and other essential purposes, Mr. Larson said it had been decided that "the Government should make it possible to use the output of the smaller producers wherever they may be."

The program is set up to run to June 30, 1956, or when deliveries have totaled 19,000,000 long-dry-ton units of manganese, whichever occurs first. A long-dry-ton unit is 22.4 pounds of manganese contained in a long ton of dry ore, or 1.0 percent.

For purposes of the program, a small producer is defined as any miner or producer whose total annual domestic output is less than 10,000 long-dry tons.

Larger producers may negotiate with the Government for sale of their ore.

In order to participate in the program, the small producer must send advance notice to the nearest GSA regional office by letter, postcard, or telegram, stating that he has read the regulation setting up the program and accepts its terms and conditions and that he desires to participate.

The cut-off date for such notifications is June 30, 1953. Upon receipt of proper notification, GSA will issue a certificate authorizing the applicant to make shipments under the program.

Only natural or sintered oxide ores and concentrates, or sintered carbonate ores and concentrates will be purchased under the program, and such ores and concentrates, to be accepted by the Government, must meet these specifications:

Manganese.....	40.0 percent minimum.
Iron.....	16.0 percent maximum.
Silica plus alumina.....	15.0 percent maximum.
Phosphorus.....	.3 percent maximum.
Copper plus lead plus zinc.....	1.0 percent maximum. ¹

¹ Of which not more than 0.25 percent may be copper.

Mr. Larson emphasized that higher-grade ores and concentrates are desired.

Prices paid for individual lots of acceptable ore or concentrates will be computed on a base price of \$2.30 per long ton unit of manganese contained in ore or concentrates meeting these specifications: 48 percent manganese, 6 percent iron, 11 percent silica plus alumina, and 0.12 percent phosphorus.

Better-grade ores or concentrates will bring more than \$2.30 per unit, inferior materials less. A schedule of premiums and penalties which will be figured into the ultimate price paid for individual lots is set forth in the regulation establishing the program.

Deliveries of ore or concentrates on cars at the nearest rail point will be at the expense of the miner or producer. Transportation to consignees will be paid for by the Government. Participants will be held accountable for all freight charges on any lot which fails to meet the Government's specifications, and for any expense to the Government resulting from overloading of freight cars.

The General Services Administration, which handles the buying of manganese for the Defense Materials Procurement Agency, of which Mr. Larson also is Administrator, operates three manganese depots for purchase of both large and small quantities of ores and concentrates. They are at Butte and Philipsburg, Mont., and at Deming, N. Mex. A fourth depot is being set up at Wenden, Ariz. * * *

GSA regional offices: Post Office and Courthouse, Boston, Mass.; 250 Hudson St., New York, N. Y.; GSA Regional Office Building, Washington, D. C.; 50 Whitehall Street SW., Atlanta, Ga.; 219 South Clark Street, Chicago, Ill.; 911 Walnut Street, Kansas City, Mo.; 1114 Commerce Street, Dallas, Tex.; Building 41, Denver Federal Center, Denver, Colo.; 630 Sansome Street, San Francisco, Calif.; 909 First Avenue, Seattle, Wash.

TITLE 32A—NATIONAL DEFENSE, APPENDIX

CHAPTER XIV—GENERAL SERVICES ADMINISTRATION

MANGANESE REGULATIONS

DOMESTIC MANGANESE PURCHASE PROGRAM

Sec.

1. Basis and Purpose.
2. Definitions.
3. Duration of the Program.
4. Participation in the Program.
5. Specifications.
6. Price, Premiums and Penalties.
7. Deliveries and Acceptance.
8. Sampling and Analysis.
9. Transportation Charges.
10. Weight.
11. Payment.

AUTHORITY: Sections 1 to 11 issued under sec. 704, 64 Stat. 816, as amended, Pub. Law 429, 82d Cong., 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 303, 64 Stat. 801, as amended, Pub. Law 429, 82d Cong., 50 U. S. C. App. Sup. 2093; E. O. 10161, Sept. 9, 1950, 15 F. R. 6105, 3 CFR 1950 Supp.; E. O. 10281, Aug. 28, 1951, 16 F. R. 8789.

SECTION 1. *Basis and Purpose.* (a) The purpose of this regulation is to establish a Program to encourage expansion of domestic production of manganese by providing a uniform price scale for small domestic producers of metallurgical grade manganese ores and concentrates. Any small domestic producer whose total anticipated or actual production is less than 10,000 long dry tons per calendar year shall be eligible to participate under the provisions of this Program as hereinafter specifically set forth. Individuals or firms whose total production exceeds 10,000 long dry tons per year may negotiate with the Government for the purchase of their production.

(b) This regulation interprets and implements the authority of the Administrator of General Services, pursuant to delegation of authority from the Defense Materials Procurement Administrator of even date with this regulation, to purchase metallurgical grade manganese ores and concentrates, all of domestic origin, as authorized by the Defense Production Administration on May 9, 1952, and outlines the attendant responsibilities and functions of the Administrator of General Services in purchasing such manganese ores and concentrates for Government use and resale. In accordance with the Program set forth herein, the Administrator of General Services will buy domestically produced metallurgical grade manganese ores and concentrates conforming to the specifications, at the price, and under the other terms and conditions of this regulation.

SEC. 2. *Definitions.*

- (a) "Administrator" means the Administrator of General Services.
- (b) "Program" means the Program as set forth in the following paragraphs.
- (c) "Shipping point" means the location at which the small domestic producer delivers material f. o. b. railroad cars.
- (d) "Receiving point" means the location to which shipments shall be consigned.
- (e) "Small domestic producer" means any individual or firm whose total anticipated or actual production of manganese ore or concentrates mined and milled in the continental United States annually is less than 10,000 long dry tons.
- (f) The term "Continental United States" means the forty-eight (48) states and the District of Columbia.
- (g) "Long ton unit" means one per cent of 2,240 pounds avoirdupois dry weight, or 22.4 pounds of metallic manganese contained in manganese oxide or manganese carbonate.
- (h) "Manganese ore or concentrates" means natural or sintered oxide ores or concentrates or sintered carbonate ores or concentrates, as defined in section 5 hereof, excluding battery and chemical grades and ores or concentrates containing manganese as manganese silicate in excess of ten per cent.
- (i) "Lot" means that quantity of ore and concentrates offered at one time. It shall consist of one or more railroad carloads. Fractions of a carload may not be offered.
- (j) "Carload" means the quantity (carried in one railroad car) equalling or exceeding the minimum tonnage which can be moved at the lowest transportation rate.

SEC. 3. *Duration of the Program.* The Program shall terminate and be of no further force or effect at the close of business June 30, 1956, or when deliveries under the Program total 19,000,000 long dry ton units of manganese, whichever occurs first.

SEC. 4. *Participation in the Program.* Any small domestic producer desiring to participate in the Program shall make application to the nearest General Services Administration regional office in the form of a letter, postcard, or telegram, postmarked or dated by the telegraph office on or before June 30, 1953, stating (1) that applicant has read this regulation and accepts its terms and conditions, and (2) that applicant desires to participate in this Program, and will offer manganese ore or concentrates to the Government pursuant thereto. Such notification must be signed and a return address given. Receipt of this application will be acknowledged by the regional office which may request such additional information as may be necessary and will issue to those who qualify hereunder a certificate authorizing the applicant to make shipments under the Program.

SEC. 5. *Specifications.*

Chemical requirements: All shipments must meet the following chemical analysis:

	<i>By weight (dry basis)</i>
Manganese (Mn)-----	40.0 percent minimum.
Iron (Fe)-----	16.0 percent maximum.
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)-----	15.0 percent maximum.
Phosphorus (P)-----	.30 percent maximum.
Copper plus lead plus zinc (Cu plus Pb plus Zn)-----	1.00 percent maximum (of which not more than 0.25 percent may be copper).

Analyses superior to the foregoing are desired.

Physical requirements: Three types of material, according to physical characteristics, are covered by this specification. All offers shall stipulate the type covered and the following shall constitute the rejection limits of each type.

Type I—Lump Ore—shall be natural ore, unprocessed except for grading, washing or screening. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Type II—Fine Ore—shall be natural ore, unprocessed except for grading, washing or screening. Not more than 15 percent shall pass a Tyler standard 20 mesh screen.

Type III—Nodules or Sinber—shall be natural fines, or concentrates, densely agglomerated by the application of heat. Not more than 5 percent shall pass a Tyler standard 20 mesh screen.

Fine concentrates may be considered for acceptance under this program through special arrangement with the appropriate regional office. In such case, appropriate adjustments may be made in price and other terms and conditions.

Sec. 6. *Price, Premiums, and Penalties.* The price to be paid for any carload lot of material will be determined in accordance with the base price and the premiums and penalties stated hereinbelow. Prices herein stated are f. o. b. railroad cars at the participant's shipping point.

The base price shall be \$2.30 per long dry ton unit for material of the following analysis:

	Percent
Manganese (Mn)-----	48.0
Iron (Fe)-----	6.0
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)-----	11.0
Phosphorus-----	.12

ores or concentrates containing more than 1 percent copper plus lead plus zinc (of which not more than 0.25 percent shall be copper) will not be accepted.

For material which is superior or inferior to the above analysis, the following premiums and penalties shall be applied:

Premiums: Manganese content above 48 percent (dry basis): ½ cent per unit for each 1 percent. Iron content below 6.0 percent (dry basis): ½ cent per unit for each 1 percent.

Penalties: Manganese content below 48 percent (dry basis) 1 cent per unit for each 1 percent, down to and including 44.0 percent. Below 44.0 percent, 4 cents per unit plus 1½ cents per unit for each 1.0 percent down to and including 40 percent. Iron content above 6 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 8.0 percent. Above 8 percent; 2 cents per unit plus ¼ cent per unit for each 1.0 percent up to and including 16 percent. Silica plus alumina content above 11.0 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 15.0 percent. Phosphorus content above 0.12 percent (dry basis); ½ cent per unit for each 0.01 percent up to and including 0.30 percent.

Sec. 7. *Deliveries and Acceptance.* (a) Participant shall advise the nearest General Services Administration regional office at least twenty (20) days prior to an intended date of shipment of each lot, giving full information as to shipping point, tonnage and analysis of the lot. The regional office will inform the participant of the receiving point and consignee within fifteen (15) days of receipt of notice, and participant shall deliver the lot, at his expense, f. o. b. railroad cars at his designated shipping point, consigned in accordance with such instructions. Shipment must be in lots of one or more carloads. Fractional carloads will not be accepted. The lot will be weighed, sampled and analyzed at the receiving point, and the cost of weighing, sampling and analysis will be at the expense of the Government. Upon receipt of analysis, participant will be informed as to the acceptability of the lot.

(b) If the lot fails to meet the specifications herein provided, the participant will be held responsible for the removal of the lot from the unloading site. Upon failure to remove the lot within fifteen (15) days after due notice, the Government may, at its option, remove such lot and the cost of such removal shall be for participant's account, or otherwise dispose of such lot without liability therefor. Lots delivered to the Government based on inaccurate information wilfully furnished by the participants may be the basis for terminating participation in the Program.

Sec. 8. *Sampling and Analysis.* Each lot will be sampled at the time of unloading at the receiving point by a sampler designated by the Government. Three pulp samples will be prepared from the sample taken, one each for the Government, participant, and umpire, and an analysis made for manganese, iron, silica, and alumina, and, if necessary for phosphorus, copper, lead, and zinc. Usual provisions will be made for splitting limits and settlement by average of the Government's and participant's analyses, or by trade practice if samples are

sent to umpire. Moisture samples will be taken in accordance with standard practice. The participant, at his own expense, may have a representative at the sampling.

Sec. 9. *Transportation Charges.* Freight charges from shipping point to receiving point will be paid either by the Government or by its consignee. Participant shall be held accountable for freight charges and any other charges incurred by the Government with respect thereto on any lot failing to meet the specifications provided herein, and for any expense to the Government due to railway cars being loaded in excess of the maximum limit.

Sec. 10. *Weight.* The number of long dry tons in each lot shall be the net railroad-track-scale weight less moisture as determined by standard practice.

Sec. 11. *Payment.* Upon receipt by the appropriate regional office of applicable moisture and analysis determination and certified weight certificate with respect to each acceptable delivery under the terms of the program hereinabove stated, the participant shall be promptly paid for each such delivery in accordance with the price provisions of such program.

JESS LARSON,
Administrator of General Services.

Date: July 7, 1952.

Certified to be a true copy of original.

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Information from Joe Arundale via telephone , 10:30 AM, Thursday
December 30, 1976.

As of October 1976 inventory the Wendon storage depot has on hand 749,621,163 pounds or approximately 333,000 long dry tons of ore in the manganese stockpile that runs 22.54% manganese, 4.00% Iron, 0.20% Phosphorus, Combined lead copper zinc 0.90% and the combined Silica Alumina content of 40.0%.

The U.S.B.M. R.I. 5462 describes the Wendon and Deming depots.

To visit Wendon, call Jack Frazier or Harry Oakley of the G.S.A Central Office Storage Division at 703-557-0872

To make a bid or deal on the Wendon reserves contact:

Paul Linfield
G.S.A
Office of Stockpile disposal
E.N.D.O.
18 & F Streets NW,
Washington, D. C. 20405
Telephone 703-557-0872

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PHOENIX, ARIZONA

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STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA



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The Western States Manganese Producers Association was organized at a meeting held at Blythe, California on June 5th. Gene De Zan was elected President, Jack Stewart, Vice-President and George Krim (sp) Secretary. A board of directors, consisting of the above officers and two others to be appointed by the president, was voted. Dean Burch, an attorney and former administrative assistant to Senator Barry Goldwater, was employed as consultant and directed to draft by-laws to be presented at the meeting at Blythe on June 10th at 8:00 P.M. The by-laws are to contain a statement of purpose; membership provisions including \$100 initiation fee, active members to be producers, associate members with \$50 initiation fee; assessment and financing and other provisions.

The meeting voted to give the president full authority to set up a local office at Blythe. It also voted to assess members \$15. for token membership payments to the American Manganese Producers Association.

Jack Stewart sat as temporary chairman at the start of the meeting. He gave the purposes of the gathering as follows:

1. To organize all manganese producers.
2. To try to select an individual to pursue at Washington the extension of the manganese program.
3. To set up an office, probably at Blythe, for a secretary, meeting place and propaganda source.
4. To consider employment of a publicity man.

Of the 20 present at the meeting a little over half were producers representatives. Mohave Mining and Milling was not present and was said to be not in favor of the proposed association program. Al Stovall did not attend but was reported to be in favor of the meeting's purpose.

A letter from Howard J. Pyle to a producer was read. It expressed the opinion that if all producers acted in full accord in working through OCDM for extension of the present program to 1961, the administration would support it. It gave the positive opinion that the administration would not support already proposed legislation. Opinions were voiced that Pyle still carries much weight and that Senator Hayden is important for any appropriations necessary. The strategy favored is to claim

reliance upon Howard Fleming's "promise" of manganese program purchases to 1961.

One of those present stated that Castro, Director of G. S. A. has said that additional legislation to extend the carlet program to 1961 is not needed.

There was discussion of Carson Adkerson and the American Manganese Producers Association. De Zan who has recently been to Washington, said Adkerson has done a "hell of a good job", and urged his support. He spoke of his southern support and said they should at least try to get the south's approval. A few present had given Adkerson support. One said that Anaconda and Mohave support him, but on the whole they were favorable to him and felt they needed his support.

De Zan stressed the need of expedition and coordination because of the late start. He and others wanted a resolution drafted and forwarded as early as possible. He will testify at Washington before the House Interior Subcommittee on Mines and Mining between June 25 and July 2 and wants all manganese facts he can get.

Burch's program is to contact Senators Murray, Goldwater, Hayden, Engle, etc.; to seek interview at the White House after such contacts and after calling on Adkerson; and to pursue any leads that might help to persuade the administration to direct O.C.D.M. to continue the manganese program. Burch said that preliminary calls to Washington found opinions that manganese is dead.

Gus Welkenhauer read a letter he had written to Senator Engle describing the operation of his company, its investment of over \$1 million, its 100 employees at Blythe and its 1956 increase in capacity due to confidence of continuation of June 30, 1961 as testified by Dr. Arthur S. Fleming before the Senate Interior Committee on May 24, 1956.

The consensus of opinion was that G.S.A.'s 30-day letter would come forth about September 15th and the program closing date would therefore be about October 15th. The May 15th figures are a total of 25,071,000 units purchased and 300,000 in the pipe line.

There was discussion of membership drives, particularly the seeking of associate members among suppliers, contractors and railroads.

The meeting had considerable drive and if its steam continues there will be a strong attempt to secure the manganese program extension to 1961 through O.C.D.M. action directed by the President. The next meeting, June 10th, purposes at least doubling of membership and embarkation on the proposed course of action.

Among those present, in addition to the above, were Lew Smith "Doc" and N. Powers, Rex Conway, Denning, Paul Hardy, Garlac (?), Ike Kusisto, Nick Caproni and Boynton-engineering consultant offering office and services.

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA



WESTERN STATES MANGANESE PRODUCERS ASSOCIATION

Meeting 8:00 P.M., June 10th at Blythe, Calif.

Between 60 and 70 present

President, Gene DaZan presided

Business Mgr., Robert A. Grant read the minutes of the last meeting.

Mayor "Andy" Alexander of Blythe spoke briefly.

The Blythe Chamber of Commerce Secretary offered the help of that organization.

Robert S. Palmer, Secretary of the Colorado Mining Association, was introduced as guest speaker. He told of despair in mining camps; decried the giving away of the savings of three generations in efforts to stabilize the world; protested release of stockpiled metals; discussed domestic mining's battle for U.S., its own markets and for national security; emphasized the importance of all mining to national security and the gravity of basing war needs on estimates of short duration when it is by no means sure that the next war would last three years rather than 20. He invited the Association to appear before the House Interior and Insular Affairs Committee during June 27th to July 2nd to present the case of the manganese producers. He stressed the need of unanimity, saying that division means defeat; that manganese is fortunate in having a common objective and wishing it success. He stated that the purpose of such congressional hearings is to create public sentiment in favor of continuing domestic mining and added that if a job was done, executive departments would be given a thorough going over. He also commented that appropriations to keep domestic mining alive would be peanuts as contrasted with the importance of national security.

Jack Stewart introduced Dean Burch to the newcomers and Burch presented drafts of By-laws and resolutions. The former was tentatively approved and passed to the Board of Directors for consideration. The latter was read and likewise tentatively approved. It resolved that the present stockpile program be extended to June 30, 1961, after several whereases citing relation to defense, and producers' reliance upon Dr. Fleming's statement among others. Burch then spoke of calls to Washington; clearance with Adkerson; difficulties and lack of time to pursue legislation even if outlook were favorable; and preference for seeking O.C.D.M. action.

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De Zan re-stated that the administration will not support new legislation and that the Association proposed to seek extension through O.C.D.M. He then told of Georges Krenn's resignation and announced that Al Stovall had been appointed a director.

Jack Payne was elected secretary.

Nick Caproni submitted a copy of a letter from Hon. Wayne Aspinall to Carson Adkerson about the forthcoming hearing and Grant read it to the assembled.

Payne gave a pep talk, asked for signatures of membership applications and the answering of questions on forms provided. (copy attached)

WENDEN MANGANESE DEPOT

Following the announcement of the General Services Administration on July 21, 1951 of a purchase program at Deming, New Mexico for Arizona Manganese ores there was considerable activity in prospecting for and locating deposits of this mineral. The first shipments were made to Deming December 15, 1951 and it soon became apparent that properties located in the central and western parts of the state could not be profitably mined for shipment to this depot principally because of high freight rates.

In the early part of 1952 a group of mine operators in the western part of Arizona initiated a campaign toward the location of a depot in this state that would be conveniently located to their mines. This group worked in conjunction with the Arizona Small Mine Operators Association and the Arizona Department of Mineral Resources. Since by far the greatest concentration of ores was in an area between Wickenburg on the east, Parker on the west, Gila Bend on the south and Kingman on the north with Artillery Peak in the center it was decided that either Aguila or Wenden, both of which were centrally located and on the main line of the Santa Fe Railroad as well as U. S. Highway 60, would be a suitable location. Considerable work was then done to prove to the General Services Administration that a sufficient amount of ore was present in this area to warrant a purchase depot. Following numerous conferences, trips to Washington, field surveys and exploration work of various sorts the General Services Administration announced in the fall of 1952 that a depot would be established at Wenden.

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This depot consists of a sampling plant having a capacity of 400 tons per eight hour shift, together with the necessary warehouses, offices, etc. and some housing for employees. Scales for both railroad and truck shipments are provided. Ores after passing through the sampler are stored on the ground and there is ample storage space. A dust collection system is now being installed.

The first ores were delivered to Wenden on January 26, 1953 at the rate of 350 to 400 tons daily, the total for the first week being 1600 tons. This tonnage gradually increased until it was necessary to work overtime to handle shipments. Within three months it became apparent that the plant would have to operate on a two shift basis in order to accommodate all of the producers. And this was done as of June 1, 1953.

From the beginning shipments by Arizona Manganese miners to this station exceeded the most optimistic predictions. Daily ore deliveries to Wenden are said to have exceeded the combined weekly receipts at the Government Purchase Depots at Butte and Phillipsburg, Montana and Deming, New Mexico.

The Wenden depot has been assigned a quota of 6,000,000 units and up to July 28th, 904,000 units had been delivered to it. Since this is the first six months it can confidently be expected that this depot will accumulate Manganese at the rate of 2,000,000 units annually.

There are about 50 shippers mostly by truck with about 60% of the total tonnage being delivered by 10% of the operators.

Although some shipments with a manganese content

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above 40% have been made by far the greatest tonnage has a manganese content close to the minimum acceptable 15%.

R. I. C. Manning

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Since January of this year we have received numerous letters from small mine operators in the West concerning the manganese stockpiling program being carried on under authority granted by Public Law 429 of the 82d Congress.

The original government domestic purchase program for manganese called for the purchase of 37,000,000 long ton units. Eighteen million units were to be purchased at three G.S.A. buying stations, each station being allotted 6,000,000 units. The remaining units comprise the so-called nationwide car-lot program which limits shippers to 10,000 tons of eligible material each in any one year. The time for completion of the program was extended to June, 1958 by the passage of the Aspinall Act, Public Law 206.

A review of the program shows that three G.S.A. buying stations were set up. The locations are Butte and Phillipsburg, Montana; Deming, New Mexico; and Wenden, Arizona. An original allotment of 6,000,000 units was assigned to each buying station. It is not clear upon what basis that assignment was made, and that constitutes one of the problems we wish to explore at today's conference.

The total program to date is only about 15 per cent completed. However, the deliveries to the Wenden station are far in advance of the deliveries to the other two stations, and present calculations indicate that the Wenden station will have its quota of 6,000,000 units filled by early 1955.

Based upon the many letters which I have personally received and upon the study I have made, the following questions would seem to be important to our mutual consideration of the problem involved:

1. What was the basic thinking behind this program? Was it merely to stockpile about a half year's supply of manganese or was it to make this country independent, if possible, of unreliable foreign sources of strategic manganese for protection during periods of stress?

2. Who in G.S.A. made the original allotment of 6,000,000 units to each of the three buying stations?

3. In making that decision, did the responsible persons take into consideration the potential of each area before making the quota assignments or was it a purely arbitrary decision?

4. Do G.S.A. and O.D.M. at this time believe that the original quotas were realistic in the light of performance to date?

We would also like to have a candid expression of opinion from G.S.A. and O.D.M. concerning the following suggested solutions which have been raised in the letters I have received:

1. Can we increase the quota for the Wenden station?
2. Can we readjust the present quotas in the light of actual performance?
3. Can we extend the time of the program?
4. Can we lift the 10,000 ton restriction on car lots?

In conclusion, I might add that I have been extremely disappointed in the response I have received from both of these agencies to date. I have been trying for six months to get answers to these important questions. I have been told by O.D.M. that the decisions rest with G.S.A., and I have been told by G.S.A. that O.D.M. would have to originate the policies which could afford the solutions and answers. One can readily see the frustration which results from such passing of responsibility from one government agency to another.

Being a member of the Senate Small Business Committee, I finally contacted the Chairman of the Committee, Senator Edward J. Thye, and the Chief Counsel, Mr. Forsythe, and requested that the Committee attempt to work out a solution with the two agencies.

In response to my request, the Chairman turned the matter over to the Committee staff. Mr. Forsythe suggested that we hold this initial conference in an attempt to get both agencies and the Committee together at the

same time in an effort to pinpoint responsibility in this matter and to attempt to make clear to you the questions involved. We also invited Senator Hayden to be present as he has also received numerous letters on this matter and is keenly interested in it.

I suggest that for the orderly handling of the matter before us, we take the following path in our discussions:

1. Let us allow the representative from O.D.M. to fill us in on the background of this program and explain just what O.D.M.'s responsibility is.
2. Let us allow G.S.A. to explain what its responsibilities are.
3. We would then like to have both agencies discuss the questions raised in this memorandum.
4. We would then like to have a frank and candid expression of opinion from the agencies concerning the suggested solutions found on Page 2 of this memorandum.

A R I Z O N A M I N E S

<u>Mine Name</u>	<u>Location</u>	<u>Approx. Head</u>	<u>Approx. Conc.</u>	<u>% Yield of Spec. Ore</u>	<u>Amenable</u>	<u>Not Amenable Reason</u>
Blackrock	13 mi. S. Aguila	25.4	43.0	84.5	yes	
Blackcrow	13 mi. S. Aguila	20.4	44.7	89.1	yes	
Black Nugget	15 mi. SW Aguila	25.0	43.5	88.6	yes	
Black Queen	16 mi. S. Aguila	17.4	42.0	82.8	yes	
Black Jack	6 mi. N. Alamo Crossing	17.7	41.0	77.7	yes	
Black Dragon	Fresnal Mining District Pima County	28.8	49.7	79.9	yes	
John House Mine	21 mi. SW Aguila	29.5	48.2	87.5	yes	
Black Beauty	26 Mi. W and 5 mi. N. Salome	25.6	41.0	96.4	yes	
Polinite #1	between Shannon Mine and Artillery Peak, 60 mi. N. Wenden	25.9	42.5	83.1	yes	
Black Dahlia	Yuma County	28.0	44.8	90.1	yes	
Oversight	4 mi. W. Alamo	16.9	42.0	75.1	yes	
Blackcrow	50 mi. N. Wenden	14.7	41.7	74.3	yes	
Blackcrow	50 mi. N. Wenden	19.9	36.9	33.4	No	low recovery
Basco-Shannon	Near Alamo	14.8	46.4	78.9	yes	
Doyle Mine	26 mi. N. Wenden	16.0	41.4	75.0	yes	
Lake Mine	55 mi. N. Wenden	28.3	40.4	77.9	yes	

Love Mine	56 mi. N. Wenden	18.4	41.5	89.2	✓	yes
Black Diamond	50 mi. N. Wenden	20.2	40.8	92.3	✓	yes
Kanab #4	16 mi. S. Aguila	21.0	44.5	83.0		yes
Lucky #2	23 mi. N. Bouse	32.6	40.5	93.9		yes
Rinconada	9 mi. SW Bouse	26.3	42.3	90.6		yes
Lion's Den	S. of Aguila	15.4	41.9	74.4		yes
Black Eagle	12 E. of Gila Bend	20.0	43.1	85.2	✓	yes
Istake	10 mi. N. Wickenburg	17.3	44.3	66.6		yes
Hilltop #3	Sheep Tank Mining District Yuma County	21.3	45.5	87.3		yes
National Debt 3 and 4	23 mi. SW Wenden	23.0	44.1	80.0		yes
Blackrock No. 1	8 mi. NE Wickenburg	19.8	41.0	87.1		yes
Fool's Folly	near Wenden	20.4	46.6	82.9		yes
Santa Fe Andesite	8 mi. S. Powell Station	22.6	40.2	71.6		yes
Black Eagle	55 N. Wenden	27.0	40.7	86.2		yes
Jig Concentrates	Flagstaff	21.2	40.4	73.7		yes
Priceless Lease	45 mi. N. Wenden	19.8	40.1	85.2		yes
Cindy 1 & 2	3 mi. SW Bouse	18.0	40.3	85.4		yes
Power #1 & 2	15 mi. SE of Cibola	35.8	43.2	96.5		yes
National Debt #1	23 mi. SW Wenden	23.4	45.3	86.2		yes

Black Buck	23 mi. N. Morristown	23.6	41.6	97.2	yes	
Black Diamond	14½ mi. S. Aguila	20.6	42.2	81.5	yes	
Manganese #1	3 mi. N. Bumblebee	20.0	45.8	92.2	yes	
Black Bird	1 mi. E. Bouse	16.3	40.0	73.1	yes	
Ross #1	9 mi. N. Wickenburg	18.3	41.8	65.7	yes	
Black Buck#2	23 mi. N. Morristown	24.8	44.3	95.7	yes	
North Star #1	Old Hat Mining District Mammoth, Arizona	19.5	42.0	92.7	yes	
Black Rock #3	19 mi. S. Aguila	28.7	45.5	85.2	No	high copper (.50)
Black Hawk	Cemetery Hills Yuma County	21.3	40.0	48.4	No	low recovery
Lucky #2	Artillery Peak Mining District	14.5	35.0	61.7	No	Low Mn low recovery
Santa Rosa Queen #4		26.7	43.8	82.6	No	High copper(.80)
Catherine Carpenter #1	7 SW Artillery Peak	23.4	35.0	37.2	No	low recovery low manganese
Zig Zag	Owl Head District Pinal County	26.8	44.3	97.7	No	high copper(.50)
Black Chief		19.2	38.8	78.5	No	low manganese
Pachaco	Yavapai County	44.5			No	high copper(.35)

Page Four

Santa Fe Sandstone	Near Powell Station	21.6	29.2	70.8	No	low manganese
Lucky #2	Artillery Peak Mining District	14.7	28.8	88.1	No	low manganese high iron (22.9)
Lucky Johnny	3 mi. NW Clanton Wells	15.9	43.4	49.4	No	low recovery
Old Crescent	10 m. SW Winckleman					

WENDEN MANGANESE DEPOT

Following the announcement of the General Services Administration on July 21, 1951 of a purchase program at Deming, New Mexico for Arizona Manganese ores there was considerable activity in prospecting for and locating deposits of this mineral. The first shipments were made to Deming December 15, 1951 and it soon became apparent that properties located in the central and western parts of the state could not be profitably mined for shipment to this depot principally because of high freight rates.

In the early part of 1952 a group of mine operators in the western part of Arizona initiated a campaign toward the location of a depot in this state that would be conveniently located to their mines. This group worked in conjunction with the Arizona Small Mine Operators Association and the Arizona Department of Mineral Resources. Since by far the greatest concentration of ores was in an area between Wickenburg on the east, Parker on the west, Gila Bend on the south and Kingman on the north with Artillery Peak in the center it was decided that either Aguila or Wenden, both of which were centrally located and on the main line of the Santa Fe Railroad as well as U. S. Highway 60, would be a suitable location. Considerable work was then done to prove to the General Services Administration that a sufficient amount of ore was present in this area to warrant a purchase depot. Following numerous conferences, trips to Washington, field surveys and exploration work of various sorts the General Services Administration announced in the fall of 1952 that a depot would be established at Wenden.

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This depot consists of a sampling plant having a capacity of 400 tons per eight hour shift, together with the necessary warehouses, offices, etc. and some housing for employees. Scales for both railroad and truck shipments are provided. Ores after passing through the sampler are stored on the ground and there is ample storage space. A dust collection system is now being installed.

The first ores were delivered to Wenden on January 26, 1953 at the rate of 350 to 400 tons daily, the total for the first week being 1600 tons. This tonnage gradually increased until it was necessary to work overtime to handle shipments. Within three months it became apparent that the plant would have to operate on a two shift basis in order to accommodate all of the producers. And this was done as of June 1, 1953.

From the beginning shipments by Arizona Manganese miners to this station exceeded the most optimistic predictions. Daily ore deliveries to Wenden are said to have exceeded the combined weekly receipts at the Government Purchase Depots at Butte and Phillipsburg, Montana and Deming, New Mexico.

The Wenden depot has been assigned a quota of 6,000,000 units and up to July 28th, 904,000 units had been delivered to it. Since this is the first six months it can confidently be expected that this depot will accumulate Manganese at the rate of 2,000,000 units annually.

There are about 50 shippers mostly by truck with about 60% of the total tonnage being delivered by 10% of the operators.

Although some shipments with a manganese content

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above 40% have been made by far the greatest tonnage has a manganese content close to the minimum acceptable 15%.

R. I. C. Manning

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THE MANGANESE PROGRAM OF THE BUREAU OF MINES
REF BY NORWOOD B. MELCHER, CH
FERROUS METALS AND ALLOYS BRANCH
AT THE MEETING OF THE COLORADO MINING ASSOCIATION
DENVER, COLORADO, FEBRUARY 14, 1953

Steel is a cornerstone of our industrial economy and manganese is essential to steel production. Unless the steelmaking process is changed from our present practice, there is no substitute for manganese. Although the general public knows relatively little about manganese, except, perhaps, that the United States does not have enough, it is intimately associated with daily living. Manganese colors the bricks in our buildings, as well as the marbles children use; it improves the quality of our glass, and makes our oranges bigger and our chickens healthier; it helps us develop our pictures; it makes possible the electric flashlight and the portable radio; it may form part of our television set; and many of our plastics, as well as cold rubber, would not be possible without manganese. In all these ways, manganese affects our daily life in addition to being necessary to virtually every ton of steel and most aluminum.

Metallic manganese has little use by itself, but when alloyed with, or used in the production of other materials, it becomes one of the most essential and widely used metallic elements.

Manganese is the most important ferro-alloying element required in the production of steel, both carbon and alloy. The United States, while the largest manganese-consuming country today, uses less manganese per ton of steel than any other important steel-producing nation. This position is the result of the relatively equal availability and cost of many other elements used by the United States steel industry. Areas of the world having large deposits of high-grade manganese tend to substitute it for other, less accessible, alloying elements. Conversely, in the United States the absence of large domestic high-grade manganese deposits has fostered selective use of other ferro-alloy elements.

To make steel in quantity, five major raw materials are necessary; iron ore, steel scrap, fuels (coke, gas and oil), fluxes, and manganese ore. If, during an emergency period, the United States were isolated from trade with the rest of the world, the deficiency in manganese ore would become apparent almost immediately. While the United States has enough of the first four elements to continue to produce steel at desired rates for limited periods under isolation, it is lack of manganese that could make itself apparent in reducing steel production. It is true that other materials could be used to deoxidize and desulphurize the molten steel and that other elements could be used to alloy with steel, but no single element is available in the quantities needed that could accomplish what manganese does without creating another series of problems. It is also true that steel can be made in the electric furnace without manganese, but potential electric-furnace capacity is much too small compared with open hearth to permit full conversion.

Although there are large deposits of manganese-bearing materials in the United States, the extractive metallurgy is either as yet undeveloped or so expensive that there has not been established a satisfactory degree of self-sufficiency in domestic manganese production to date.

This situation has been recognized by the establishment of a National Stockpile and by research, largely by the Bureau of Mines, into the development of domestic reserves, Stockpiling, while desirable and necessary, is not the only method of attaining national security. Investigation and research leading to development of domestic low-grade sources are the long-term routes to improved self-sufficiency, which in turn will contribute materially to national security.

Per net ton of steel produced, the United States requires about 35 pounds of manganese ore of presently usable grade. Accordingly, the Nation consumed 1.8 million tons of ore in 1952 and, to meet demands of full steel production under the expansion program, 2.2 million tons per year will be needed within 2 or 3 years. From a longer range view, projected steel capacity of 160 million net tons in 1975 will require nearly 3 million tons of manganese ore, even if new uses for manganese have not been developed during that period. Rapid increase in the rate of domestic production must be achieved if we are to provide any substantial part of these requirements. A domestic production rate of 10 percent of requirements (it is now below this figure) would require production three times the present rate by 1975.

February 14, 1953

The Bureau manganese program is designed to make possible a much larger proportion than 10 percent as domestic production during this period. Such increased production would lead to effective use of our manganese resources and would reduce the strategic risks inevitably encountered during period of national emergency. In accomplishing this goal, the Bureau program is broken down into three phases: The immediate or short range, the long range, and the emergency program.

Research of the short-range type, directed primarily to the Nation's many smaller deposits, includes mining investigations, metallurgical research, and dissemination of appropriate data designed to facilitate commercial production within a short time. Examples of such activities are the mining and metallurgical investigations in the vicinity of Wenden, Arizona; Batesville, Arkansas; Pioche, Nevada; and the Three Kids deposits in Nevada, all of which are now in production or in active development by private industry. Also, in the short range the Bureau will continue its numerous investigations to assist DMEA and DMPA in their programs for expanding domestic output.

Many short-range projects consist of cooperative programs with industry, which, because of their national significance, are properly part of the Bureau's responsibilities. Such agreements have been made with Manganese, Inc., Combined Metals Reduction company, and Western Electrochemical Company. Some of these agreements are still in effect, and a cooperative attack on future problems is anticipated. As a service to industry, the Bureau presents data of interest through monthly releases, the Minerals Yearbook, Mineral Trade Notes, Information Circulars, and Reports of Investigations.

The longer range projects of the Bureau, so-called because of the longer time required to obtain commercial production, are directed largely toward developing sources constituting the largest production potentials. Among these sources are Chamberlain, South Dakota; Cuyuna Range, Minnesota; Aroostook County, Maine; Artillery Peak, Arizona; and the vast potential tied up in the Nation's open-hearth slags. Because of the conservation possibilities of the latter source and accessibility of the slag at the steel plants, work on this project has constituted a major part of the Bureau's efforts since 1949. I am happy to be able to say that, through this research, a process has been developed that is technically feasible and could be put into extensive commercial production if an emergency condition so dictated. The cost of producing ferromanganese by this process may, however, exceed costs using imported raw materials; consequently, the need remains for continued research to perfect the process to reduce costs and thereby make it attractive to private industry. The DMPA has announced recently the signing of a contract with Mangaslag, Inc., as an initial operation in the field of cotton. I might add that a high-iron steel-furnace smelting stock and a phosphorus fertilizer are important co-products of the process. Other important projects in the long-range category are construction and operation of a large-scale concentrator and leaching plant at Boulder City, Nevada, for treating Artillery Peak and other low grade ores. The Artillery Peak district contains 15 million tons of ore averaging over 6 percent manganese and another 180 million tons of ore averaging down around 4 percent. In all, 7 1/2 million tons of recoverable manganese has been estimated for this area. Metallurgical research thus far has been limited to the higher grades containing 8 to 10 percent manganese, and a commodity suitable for the production of ferromanganese has been produced through a combination of flotation and leaching.

Future work will be concerned with lower grade materials, with the ultimate objective of making possible the construction and operation of a large-scale commercial mill. Cuyuna range ores have been shipped to the Boulder City pilot plant; similarly, ores from the other large, low-grade deposits will be treated in turn as small-scale laboratory research leads the way. Processes developed through this work can be applied to many smaller deposits and thereby permit additional mines to operate successfully.

February 14, 1953

The Bureau has determined that domestic reserves of rhodonite and other silicate ores can be utilized through beneficiation and smelting to produce manganese alloys, particularly silicomanganese. Large deposits of this type of ore occur in Colorado, as well as the West, and Northwest. For many years these ores were considered unusable because of their high content of closely associated silica. Because they were considered unusable very little exploration has been done to determine the extent of the reserves, but it is assumed that the occurrences total many millions of tons. About 2 years ago the Bureau succeeded in producing sinter and nodules containing 35 percent manganese and over 40 percent silica from Colorado rhodonites. These products were shipped to a large consuming firm and converted successfully to manganese alloys. The company pointed out that several thousand tons per month could be readily absorbed if the material were available in commercial quantities. Subsequently, the Bureau of Mines has conducted additional experiments to produce alloys from these rather low grade concentrates in electric furnaces. Having established that such alloys have a place in the United States consumption pattern, the Bureau proposes to accelerate its exploration program to develop reserves and thereby indicate the potential value of this resource. The direct production of alloys that can utilize subgrade concentrates and ores points to a field of research in which the Bureau is interested and actively engaged. If we can produce these relatively low grade alloys without constructing elaborate and expensive plants to meet old and sometimes antiquated specifications, our goal of attaining a higher rate of expanded domestic production is much nearer. It is true that these newly-developed alloys could not be used for all purposes for which standard ferroalloys are now employed. However, to the extent to which they can be used for low-alloy steels and other purposes, relief would be given to the problem of meeting our high requirements. For example, silicomanganese containing 67 percent Mn. as compared to standard ferromanganese with 80 percent is satisfying over 10 percent of our manganese requirements, and substandard ferromanganese containing 60 percent or less in manganese could find important uses.

Manganese-bearing rock of Aroostook County, Maine, while presenting a challenge to metallurgists, is nevertheless so large a potential source that we must explore every possible avenue to bring these deposits into commercial production. Here again the manganese, silica, and iron are so intimately associated that revolutionary metallurgical methods may have to be developed to achieve our goal. Similarly, the vast potential deposits on the Cuyuna range, Minnesota, and those at Chamberlain, South Dakota, have their peculiar properties which present individual problems in mining and metallurgy. At Minneapolis, Bureau metallurgists have designed and constructed a shaft-type sulfatizing furnace in an attempt to produce a water-soluble sulfate. Here, as in the recovery of manganese from steel furnace slags, iron will constitute the largest production item. About 5 times as much iron as manganese would result.

The nature of the Chamberlain deposit is such that a mining method must be developed that will be extremely inexpensive and yet permit recovery of the manganese nodules, which, incidentally, contain only 16 to 18 percent manganese and are present in the shales at only 75 pounds per short ton of rock.

These longer range and necessarily complex projects in no way detract from the regular and frequent examinations and research projects on the many smaller domestic deposits. From the long term standpoint the smaller operators will be able to reduce treatment costs and increase overall recovery if sufficient time is available to complete pilot-plant research and to construct and place in operation plants to utilize the new processes developed. However, in times of emergency and particularly under conditions of full mobilization, it may be necessary to place more emphasis on less efficient high-cost methods designed to provide substantial production, quicker. If such a situation should develop before completion of the long range projects, the Bureau will reorient investigation and research and provide all possible assistance to stimulate rapid production by known methods, and less emphasis would be given to the development of better methods for future use,

THE 11 LARGEST MANGANESE DEPOSITS OF THE UNITED STATES, IN ORDER
OF THEIR CONTENT OF METALLIC MANGANESE (FROM U.S.G.S.)

District	Ore, Tons	Metallic Manganese, Tons	Average grade, percent
1. South Dakota, Chamberlain district	2,500,000,000	45,000,000	1.5
2. Minnesota, Cuyuna range	500,000,000*1	10,000,000- 25,000,000	2-10
3. Maine, Aroostook County	120,000,000	13,000,000	11 <i>f</i>
	130,000,000	9,000,000	7 <i>f</i>
4. Arizona, Artillery Peak	195,000,000*2	7,500,000*2	4 <i>f</i>
	15,000,000*3	975,000*3	6.5
5. North and South Carolina, Gaffney-Kings Mountain	25,000,000*4	1,000,000*4	3-4?
6. Montana, Butte district	5,000,000	850,000	17 <i>f</i>
7. Colorado, Leadville district	4,000,000*4	600,000*4	15
8. Nevada, Three Kids district	5,500,000	500,000	10
9. Arkansas, Batesville district	1,725,000	439,000	25 <i>f</i>
10. Nevada, Pioche district	4,000,000*4	400,000*4	10
11. Montana, Philipsburg district	800,000	180,000	22.5

*1 Mostly open-pit ore, unoxidized carbonate slate, lean, oxidized material.

*2 All types of ore.

*3 Hard ore only.

*4 Crude estimate, not based on exploration.

C O P Y

DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING
FAIR GROUNDS
PHOENIX, ARIZONA

(2) Penalties: Manganese content below 48 percent (dry basis); 1 cent per unit for each 1 percent, down to and including 44.0 percent. Below 44.0 percent, 4 cents per unit plus 1½ cents per unit for each 1.0 percent down to and including 40 percent. Iron content above 6 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 8.0 percent. Above 8 percent; 2 cents per unit plus ¾ cent per unit for each 1.0 percent up to and including 16 percent. Silica plus alumina content above 11.0 percent (dry basis); 1 cent per unit for each 1.0 percent up to and including 15.0 percent. Above 15.0 percent, 4 cents per unit plus 2 cents per unit for each 1.0 percent up to and including 18.0 percent; 19.0 percent and above 10 cents per unit. Phosphorus content above 0.12 percent (dry basis); ½ cent per unit for each 0.01 percent up to and including 0.30 percent.

Ores and concentrates containing more than one (1) percent copper plus lead plus zinc (of which not more than 0.25 percent shall be copper) will not be accepted under this Program.

SEC. 7. Deliveries and acceptance. (a) Participant shall advise the nearest General Services Administration regional office at least twenty (20) days prior to an intended date of shipment of each lot, giving full information as to shipping point, tonnage and analysis of the lot. The regional office will inform the participant of the receiving point and consignee within fifteen (15) days of receipt of notice, and participant shall deliver the lot, at his expense, f. o. b. railroad cars at his designated shipping point,

consigned in accordance with such instructions. Shipment must be in lots of one or more carloads. Fractional carloads will not be accepted. The lot will be weighed, sampled and analyzed at the receiving point, and the cost of weighing, sampling and analysis will be at the expense of the Government. Upon receipt of analysis, participant will be informed as to the acceptability of the lot.

(b) If the lot fails to meet the specifications herein provided, the participant will be held responsible for the removal of the lot from the unloading site. Upon failure to remove the lot within fifteen (15) days after due notice, the Government may, at its option, remove such lot and the cost of such removal shall be for participant's account, or otherwise dispose of such lot without liability therefor. Lots delivered to the Government based on inaccurate information wilfully furnished by the participant may be the basis for terminating participation in the Program.

SEC. 8. Sampling and analysis. Each lot will be sampled at the time of unloading at the receiving point by a sampler designated by the Government. Three pulp samples will be prepared from the sample taken, one each for the Government, participant, and umpire, and an analysis made for manganese, iron, silica, and alumina, and, if necessary, for phosphorus, copper, lead and zinc. Usual provisions will be made for splitting limits and settlement by average of the Government's and participant's analyses, or by trade practice

if samples are sent to umpire. Moisture samples will be taken in accordance with standard practice. The participant, at his own expense, may have a representative at the sampling.

SEC. 9. Transportation charges. Freight charges from shipping point to receiving point will be paid either by the Government or by its consignee. Participant shall be held accountable for freight charges and any other charges incurred by the Government with respect thereto on any lot failing to meet the specifications provided herein, and for any expense to the Government due to railway cars being loaded in excess of the maximum limit.

SEC. 10. Weight. The number of long dry tons in each lot shall be the net railroad-track-scale weight less moisture as determined by standard practice.

SEC. 11. Payment. Upon receipt by the appropriate regional office of applicable moisture and analysis determination and certified weight certificate with respect to each acceptable delivery under the terms of the program hereinabove stated, the participants shall be promptly paid for each such delivery in accordance with the price provisions of this program.

This revision shall be effective upon publication in the FEDERAL REGISTER.

Dated: February 19, 1953.

RUSSELL FORBES,
Acting Administrator.

[F. R. Doc. 53-1848; Filed, Feb. 25, 1953;
8:57 a. m.]

(Published in the Federal Register, February 26, 1953, 18 F.R. 1112)

Chapter XIV—General Services Administration

MANGANESE REGULATIONS: PURCHASE PROGRAM FOR DOMESTIC MANGANESE ORE AT WENDEN, ARIZONA

- Sec.
 1. Basis and purpose.
 2. Definitions.
 3. Participation in the program.
 4. Deliveries.
 5. Duration of the program.
 6. Price schedule for ores.

AUTHORITY: Sections 1 to 6 issued under sec. 704, 64 Stat. 816, as amended, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 303, 64 Stat. 801, as amended, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2093, E. O. 10281, Aug. 28, 1951, 16 F. R. 8789-8791.

SECTION 1. Basis and purpose. This regulation interprets and implements the authority of the Administrator of General Services to purchase manganese ore of domestic origin at Wenden, Arizona, pursuant to delegation of authority from the Defense Materials Procurement Administrator¹ of even date with this regulation, and outlines the attendant responsibilities and functions of the Administrator of General Services in purchasing such manganese ores for Government use and resale. In accordance with the program set forth herein, as authorized by the Defense Production Administration on May 9, 1952, the Administrator will buy domestically produced manganese ore containing not less than fifteen percent (15%) manganese, in accordance with the specifications contained in this regulation.

SEC. 2. Definitions. As used in this regulation:

- (a) "Administrator" means the Administrator of General Services.
- (b) "Program" means the purchase of manganese ore as set forth in this regulation.
- (c) "Depot" means the purchase depot of the Government at Wenden, Arizona.
- (d) "Manganese ore" means crude ore containing not less than fifteen percent (15%) manganese, mined in the United States, its territories and possessions.
- (e) "Long ton unit of manganese" means 22.4 pounds of manganese contained in a long dry ton of manganese ore.

SEC. 3. Participation in the program. Any person may participate in the program by notice given to the General Services Administration Regional Office, Building 41, Denver Federal Center, Denver, Colorado, in the form of a letter, postcard or telegram postmarked or dated by the telegraph office not later than August 31, 1953. Such notice shall state that the writer desires to participate in the program and will deliver

¹ See F. R. Doc. 52-7358, Defense Materials Procurement Agency, in the Notices section, *infra*.

manganese ore to the depot. Such notice must be signed and a return address given. Any person participating in the program will promptly be sent a certificate authorizing him to deliver ore meeting minimum specifications.

SEC. 4. Deliveries. Manganese ore to be purchased by the Government under the program is to be delivered f. o. b. depot. Delivery of less than five (5) long tons of ore at one time will not be accepted. Participants in the program must give the Government reasonable notice with respect to deliveries of ore. Each delivery will be sampled and assayed by the Government at the depot and payment on an estimated recovery basis will be made in accordance with the analysis of such sample and as provided in section 6 below. Deliveries not conforming to the minimum specifications will be rejected, and expenses in connection therewith will be borne by the seller.

SEC. 5. Duration of the program. This program shall terminate and be of no further force or effect when six million (6,000,000) contained long ton units of manganese have been delivered to the depot and accepted by the Government under this program, or at the close of business June 30, 1956, whichever first occurs.

SEC. 6. Price schedule for ores. The following prices per long dry ton will be paid for manganese ore delivered f. o. b. depot. Where the fractional manganese content is 0.5 percent (0.5%) or below, payment will be made as though no fractional content were involved. Where such fractional content is 0.51 percent (0.51%) or above, payment will be made at the next higher figure.

To be paid for 1 long dry ton	
Percent Mn in ore:	
15-----	\$8.54
16-----	10.24
17-----	12.00
18-----	13.71
To be paid for 1 long dry ton	
Percent Mn in ore—Con.	
19-----	15.48
20-----	17.20
21-----	19.13
22-----	21.06
23-----	23.05
24-----	24.99
25-----	26.94
26-----	29.64
27-----	32.40
28-----	35.11
29-----	37.88
30-----	40.60
31-----	44.73
32-----	46.86
33-----	50.00
34-----	53.14
35-----	56.29
36-----	60.74
37-----	65.15
38-----	69.61
39-----	74.03
40 fines-----	78.00
40 ore-----	88.00

The above price schedule applies to lots received from individual shippers aggregating less than 200 tons during any 30-day period, and shall constitute the final and definite price for such lots.

For lots received from individual shippers aggregating 200 tons or more during any 30-day period, the above price schedule shall serve as a basis for preliminary settlement pending laboratory tests. The preliminary settlement shall be adjusted up or down, as the case may be, as a result of tests for laboratory-determined recoverability. Final settlement shall be calculated on the basis of \$2.30 per long ton unit of manganese determined from the laboratory tests to be recoverable from the ore, subject to a charge of \$10 per ton of ore (the estimated cost of sampling, milling, and handling) and to the specifications, premiums, and penalties set forth below.

SPECIFICATIONS

	Percent
Manganese-----	48.0
Iron-----	6.0
Silica plus alumina-----	11.0
Phosphorus-----	.12

PREMIUMS

Manganese content above 48.0 percent (dry basis): ½ cent for each 1.0 percent.
 Iron content below 6.0 percent (dry basis): ½ cent for each 1.0 percent.

PENALTIES

Manganese content below 48.0 percent (dry basis): 1 cent for each 1.0 percent, down to and including 44.0 percent. Below 44.0 percent: 4 cents, plus 1½ cents for each 1.0 percent down to 40.0 percent minimum. Iron content above 6.0 percent (dry basis): 1 cent for each 1.0 percent, up to and including 8.0 percent. Above 8.0 percent: 2 cents plus ¾ cent for each 1.0 percent up to 16 percent maximum. Silica plus alumina content above 11.0 percent (dry basis): 1 cent for each 1.0 percent up to 15 percent maximum. Phosphorus content above 0.12 percent (dry basis): ½ cent for each 0.01 percent up to 0.3 percent maximum.

The Government will reject any lot which, on the basis of the laboratory testing, cannot be beneficiated to a product the chemical analysis of which falls within the following limits in all respects. The Government reserves the right to dispense with laboratory testing of shipments aggregating less than 200 tons over a 30-day period.

	By weight (dry basis) (percent)
Manganese (Mn)-----	40.0 minimum
Iron (Fe)-----	16.0 maximum
Silica plus alumina (SiO ₂ plus Al ₂ O ₃)-----	15.0 maximum
Phosphorus (P)-----	.30 maximum
Copper plus lead plus zinc (Cu plus Pb plus Zn)-----	1.00 maximum

¹ Of which not more than 0.25 percent may be copper.

Dated: June 27, 1952.

JESS LARSON,
 Administrator of General Services.

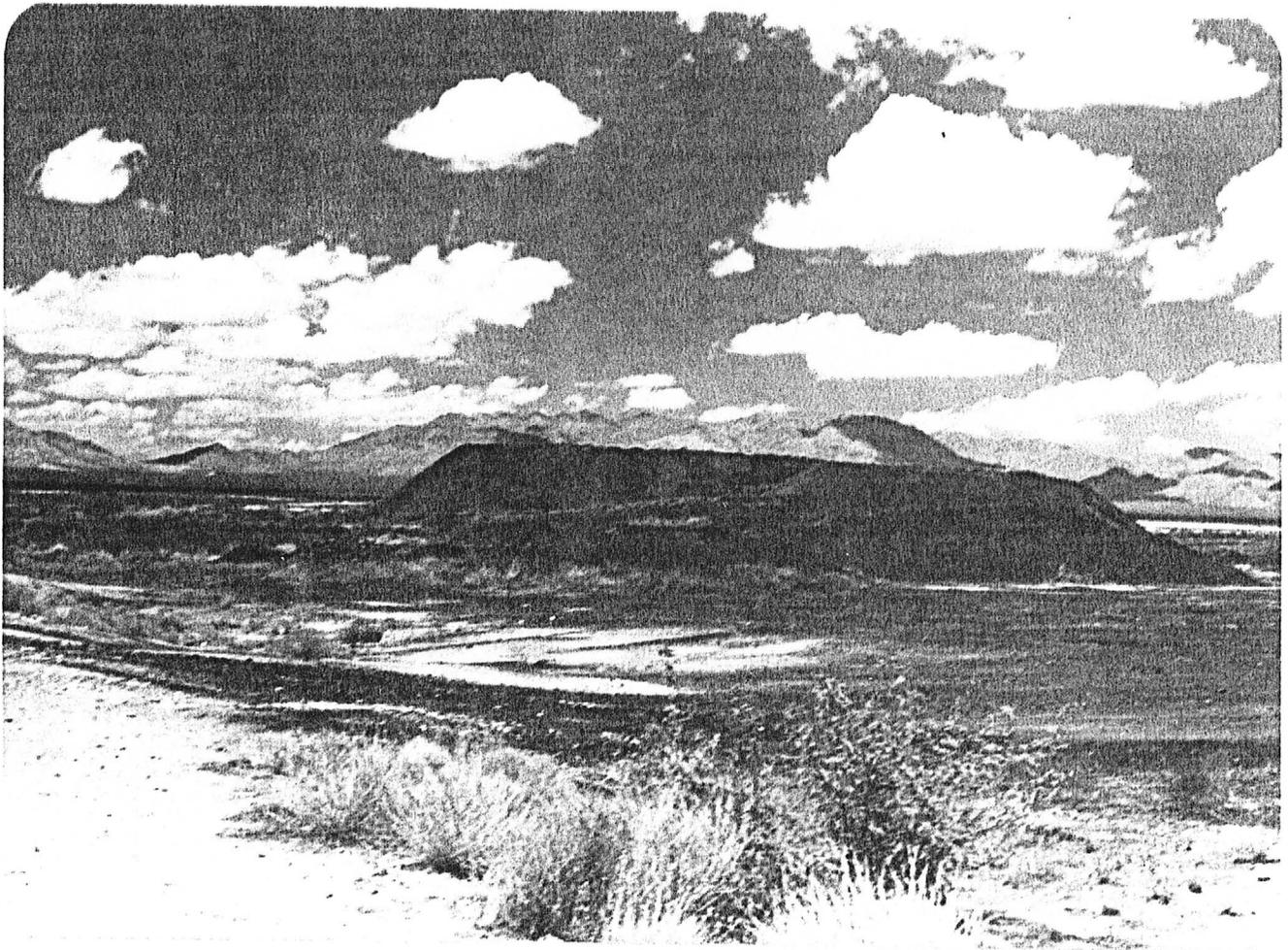
[F. R. Doc. 52-7359; Filed, July 1, 1952; 2:09 p. m.]

WENDEN MANGANESE STOCKPILE

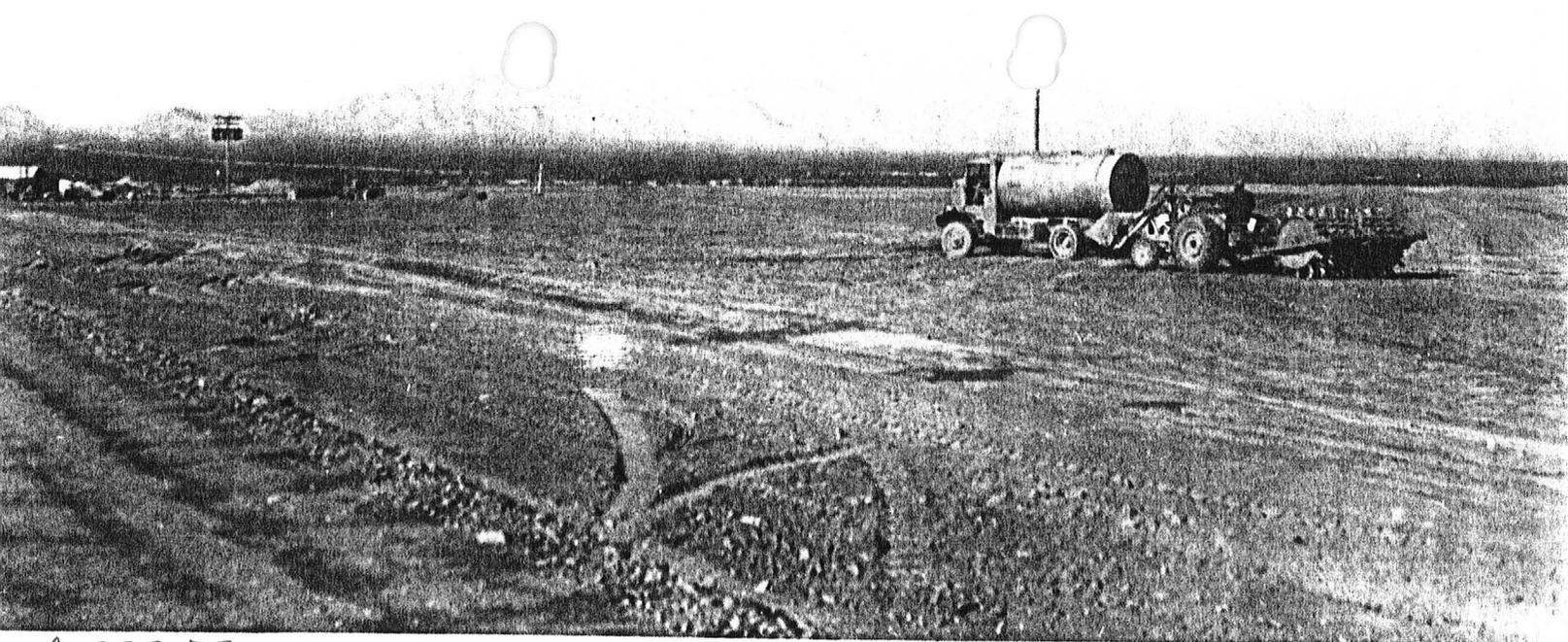
YUMA

Office call - Ronald Karvinen to pick up the information on the Wenden Stockpile. If it meets certain specifications, his company is prepared to buy the whole lot. GWI WR 1/3/77

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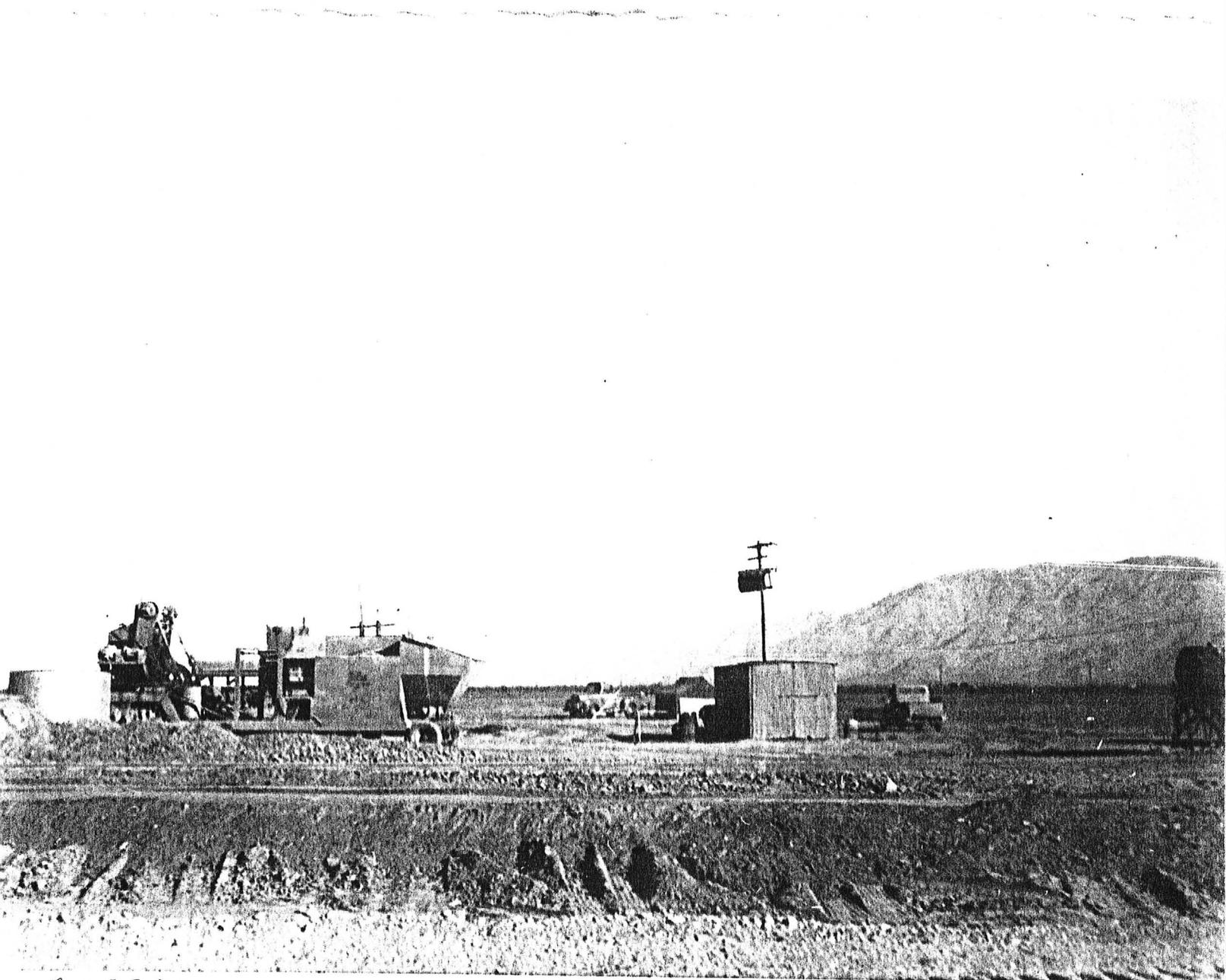


Manganese stockpile at Wenden 8/80



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1952



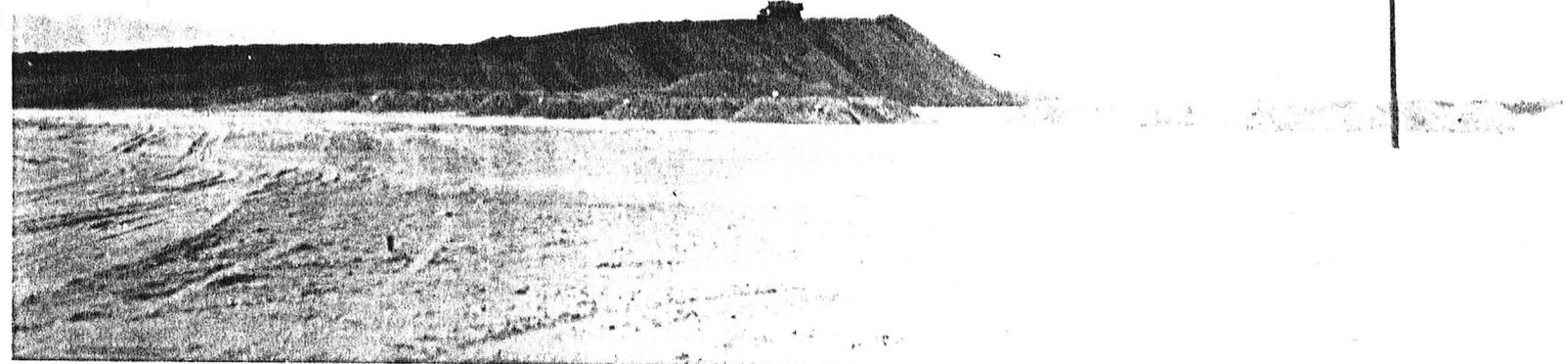
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1952

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1952



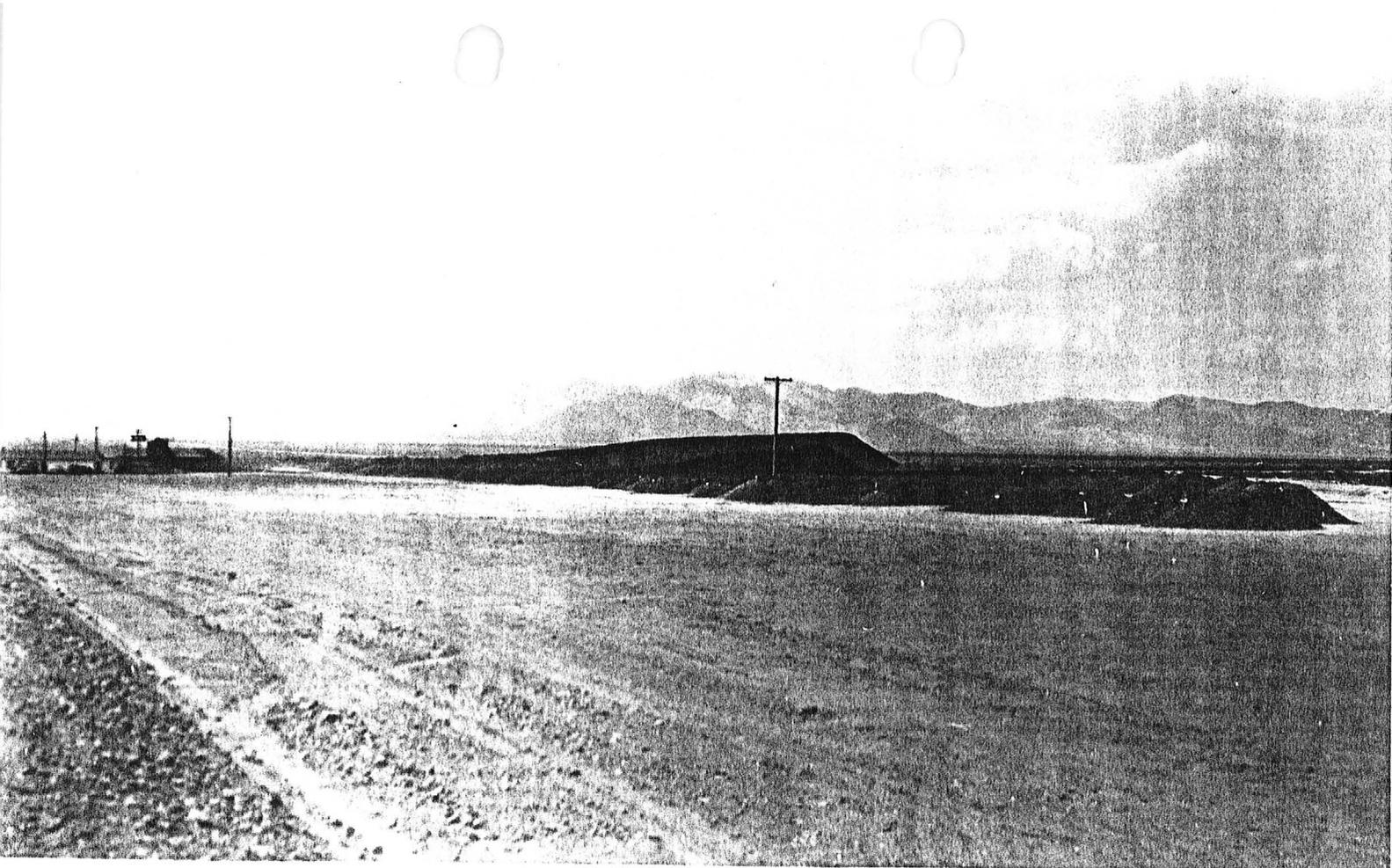
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1953



A-220-70

1953



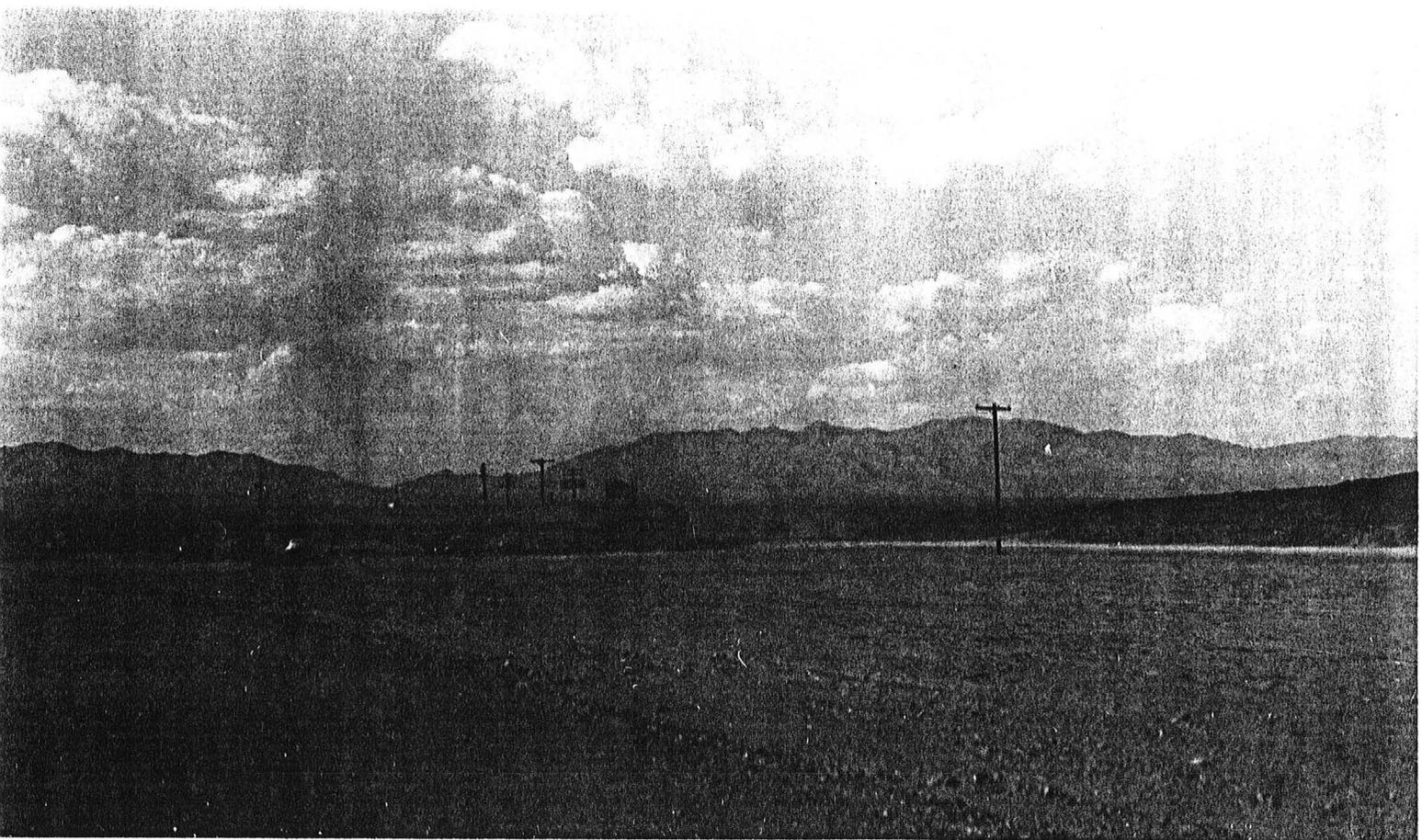
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1953



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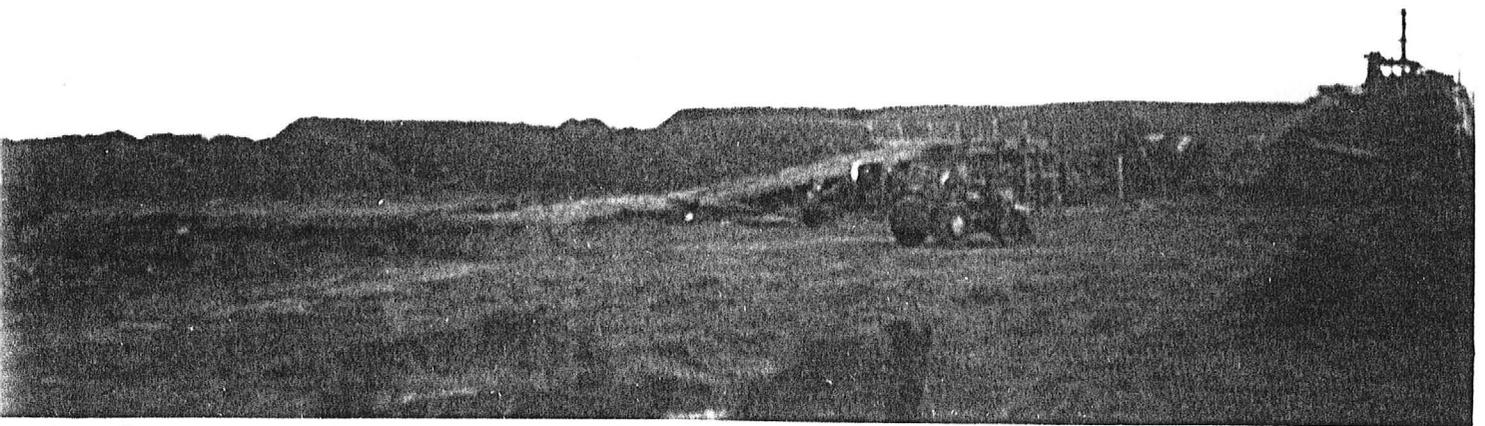
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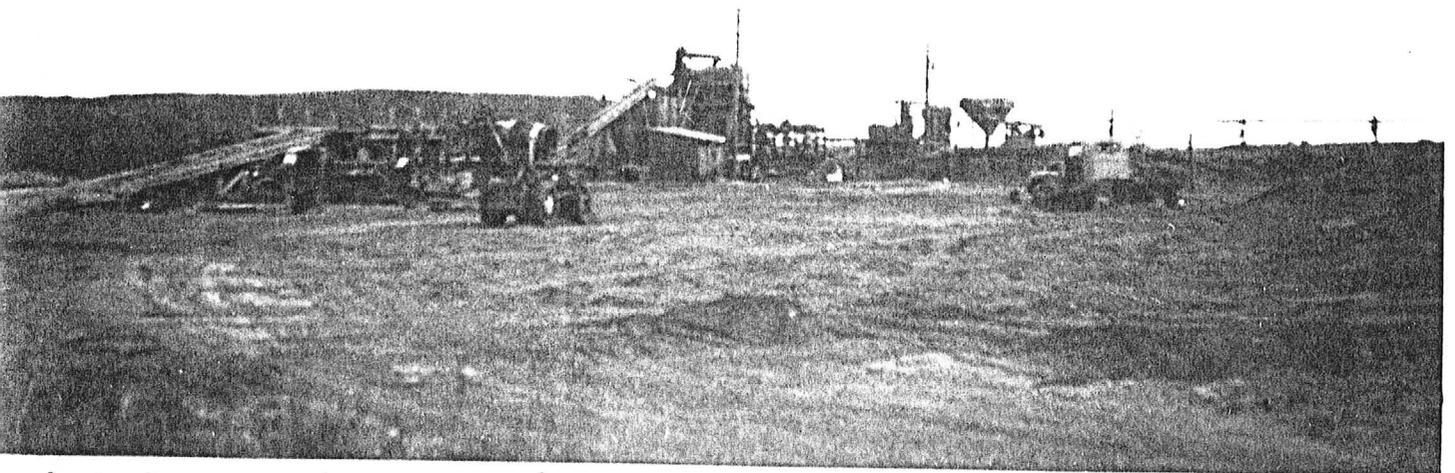
1953



A-318

ALBUQUERQUE NM DEPOT

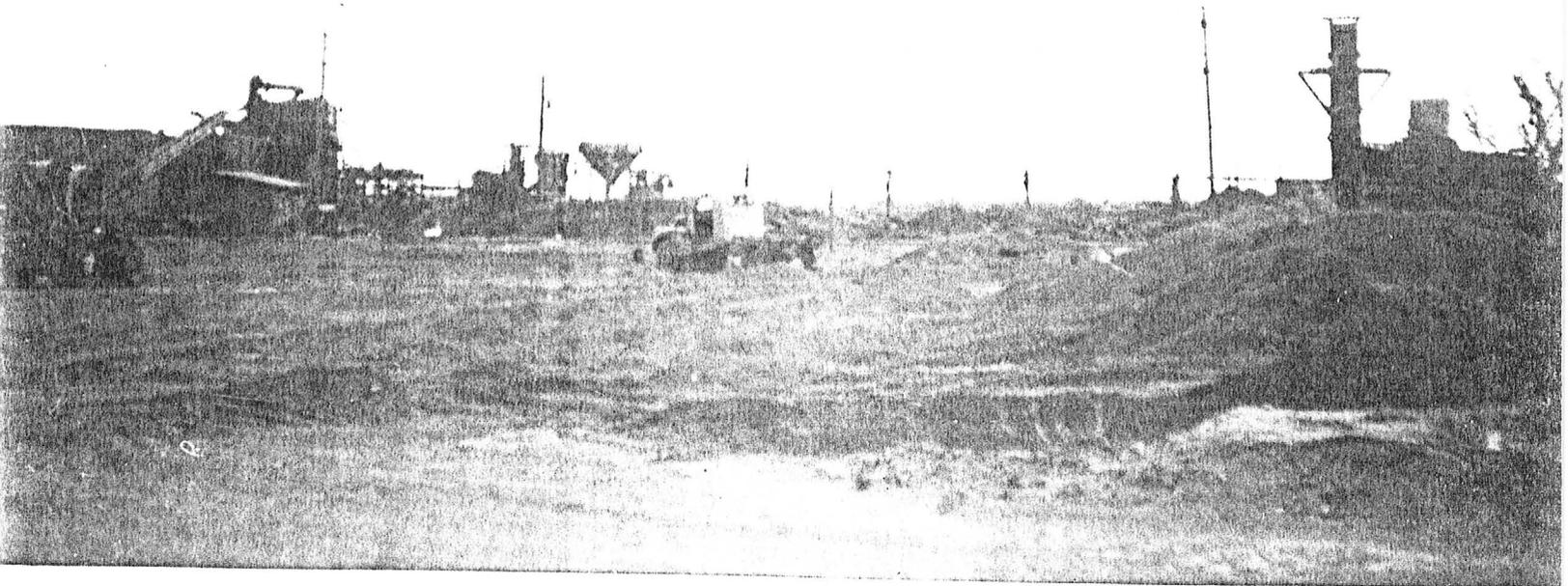
1955



A-31-9

DEMING N.M. DEPOT

1955



A-31-10

DEMING

NM

DEPOT

1955

Reference under.
Manganese in card file
both as reference and
commodity
Create mine file "Wenden Manganese
Stockpile"
gu

Information from Joe Arundale via telephone , 10:30 AM, Thursday
December 30, 1976.

As of October 1976 inventory the Wenden storage depot has on hand
749,621,163 pounds or approximately 333,000 long dry tons of ore
in the manganese stockpile that runs 22.54% manganese, 4.00% Iron,
0.20% Phosphorus, Combined lead copper zinc 0.90% and the combined
Silica Alumina content of 40.0%.

The U.S.B.M. R.I. 5462 describes the Wenden and Deming depots.

To visit Wenden, call Jack Frazier or Harry Oakley of the G.S.A
Central Office Storage Division at 703-557-0872

To make a bid or deal on the Wenden reserves contact:

Paul Linfield
G.S.A
Office of Stockpile disposal
E.N.D.O.
18 & F Streets NW,
Washington, D. C. 20405
Telephone 703-557-0872

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JAN - 3 1977
DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

Information from Joe Arundale via telephone , 10:30 AM, Thursday
December 30, 1976.

As of October 1976 inventory the Wendon storage depot has on hand 749,621,163 pounds or approximately 333,000 long dry tons of ore in the manganese stockpile that runs 22.54% manganese, 4.00% Iron, 0.20% Phosphorus, Combined lead copper zinc 0.90% and the combined Silica Alumina content of 40.0%.

The U.S.B.M. R.I. 5462 describes the Wendon and Deming depots.

To visit Wendon, call Jack Frazier or Harry Oakley of the G.S.A Central Office Storage Division at 703-557-0872

To make a bid or deal on the Wendon reserves contact:

Paul Linfield
G.S.A
Office of Stockpile disposal
E.N.D.O.
18 & F Streets NW,
Washington, D. C. 20405
Telephone 703-557-0872

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA



The Western States Manganese Producers Association was organized at a meeting held at Blythe, California on June 5th. Gene De Zan was elected President, Jack Stewart, Vice-President and George Krim (sp?) Secretary. A board of directors, consisting of the above officers and two others to be appointed by the president, was voted. Dean Burch, an attorney and former administrative assistant to Senator Barry Goldwater, was employed as consultant and directed to draft by-laws to be presented at the meeting at Blythe on June 10th at 8:00 P.M. The by-laws are to contain a statement of purpose; membership provisions including \$100 initiation fee, active members to be producers, associate members with \$50 initiation fee; assessment and financing and other provisions.

The meeting voted to give the president full authority to set up a local office at Blythe. It also voted to assess members \$15. for token membership payments to the American Manganese Producers Association.

Jack Stewart sat as temporary chairman at the start of the meeting. He gave the purposes of the gathering as follows:

1. To organize all manganese producers.
2. To try to select an individual to pursue at Washington the extension of the manganese program.
3. To set up an office, probably at Blythe, for a secretary, meeting place and propaganda source.
4. To consider employment of a publicity man.

Of the 20 present at the meeting a little over half were producers representatives. Mohave Mining and Milling was not present and was said to be not in favor of the proposed association program. Al Stovall did not attend but was reported to be in favor of the meeting's purpose.

A letter from Howard J. Pyle to a producer was read. It expressed the opinion that if all producers acted in full accord in working through OGDW for extension of the present program to 1961, the administration would support it. It gave the positive opinion that the administration would not support already proposed legislation. Opinions were voiced that Pyle still carries much weight and that Senator Hayden is important for any appropriations necessary. The strategy favored is to claim

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reliance upon Howard Fleming's "promise" of manganese program purchases to 1961.

One of those present stated that Castro, Director of G. S. A. has said that additional legislation to extend the carlot program to 1961 is not needed.

There was discussion of Carson Adkerson and the American Manganese Producers Association. De Zan who has recently been to Washington, said Adkerson has done a "hell of a good job", and urged his support. He spoke of his southern support and said they should at least try to get the south's approval. A few present had given Adkerson support. One said that Anacosta and Mohave support him, but on the whole they were favorable to him and felt they needed his support.

De Zan stressed the need of expedition and coordination because of the late start. He and others wanted a resolution drafted and forwarded as early as possible. He will testify at Washington before the House Interior Subcommittee on Mines and Mining between June 25 and July 2 and wants all manganese facts he can get.

Burch's program is to contact Senators Murray, Goldwater, Hayden, Engle, etc.; to seek interview at the White House after such contacts and after calling on Adkerson; and to pursue any leads that might help to persuade the administration to direct O.C.D.M. to continue the manganese program. Burch said that preliminary calls to Washington found opinions that manganese is dead.

Gus Wolkenhauer read a letter he had written to Senator Engle describing the operation of his company, its investment of over \$1 million, its 100 employees at Blythe and its 1956 increase in capacity due to confidence of continuation of June 30, 1961 as testified by Dr. Arthur S. Fleming before the Senate Interior Committee on May 24, 1956.

The consensus of opinion was that G.S.A.'s 30-day letter would come forth about September 15th and the program closing date would therefore be about October 15th. The May 15th figures are a total of 25,071,000 units purchased and 300,000 in the pipe line.

There was discussion of membership drives, particularly the seeking of associate members among suppliers, contractors and railroads.

The meeting had considerable drive and if its steam continues there will be a strong attempt to secure the manganese program extension to 1961 through O.C.D.M. action directed by the President. The next meeting, June 10th, purposes at least doubling of membership and embarkation on the proposed course of action.

Among those present, in addition to the above, were Lew Smith "Doc" and N. Powers, Rex Conway, Denning, Paul Hardy, Garlac (?), Ike Kusisto, Nick Caproni and Boynton-engineering consultant offering office and services.

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA



WESTERN STATES MANGANESE PRODUCERS ASSOCIATION

Meeting 8:00 P.M., June 10th at Blythe, Calif.

Between 60 and 70 present

President, Gene DeZan presided

Business Mgr., Robert A. Grant read the minutes of the last meeting.

Mayor "Andy" Alexander of Blythe spoke briefly.

The Blythe Chamber of Commerce Secretary offered the help of that organization.

Robert S. Palmer, Secretary of the Colorado Mining Association, was introduced as guest speaker. He told of despair in mining camps; decried the giving away of the savings of three generations in efforts to stabilize the world; protested release of stockpiled metals; discussed domestic mining's battle for U.S., its own markets and for national security; emphasized the importance of all mining to national security and the gravity of basing war needs on estimates of short duration when it is by no means sure that the next war would last three years rather than 20. He invited the Association to appear before the House Interior and Insular Affairs Committee during June 27th to July 2nd to present the case of the manganese producers. He stressed the need of unanimity, saying that division means defeat; that manganese is fortunate in having a common objective and wishing it success. He stated that the purpose of such congressional hearings is to create public sentiment in favor of continuing domestic mining and added that if a job was done, executive departments would be given a thorough going over. He also commented that appropriations to keep domestic mining alive would be peanuts as contrasted with the importance of national security.

Jack Stewart introduced Dean Burch to the newcomers and Burch presented drafts of By-laws and resolutions. The former was tentatively approved and passed to the Board of Directors for consideration. The latter was read and likewise tentatively approved. It resolved that the present stockpile program be extended to June 30, 1961, after several whereases citing relation to defense, and producers' reliance upon Dr. Fleming's statement among others. Burch then spoke of calls to Washington; clearance with Adkerson; difficulties and lack of time to pursue legislation even if outlook were favorable; and preference for seeking O.C.D.M. action.

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De Zan re-stated that the administration will not support new legislation and that the Association proposed to seek extension through O.C.D.M. He then told of Georges Krenn's resignation and announced that Al Stovall had been appointed a director.

Jack Payne was elected secretary.

Nick Caproni submitted a copy of a letter from Hon. Wayne Aspinall to Carson Adkerson about the forthcoming hearing and Grant read it to the assembled.

Payne gave a pep talk, asked for signatures of membership applications and the answering of questions on forms provided. (copy attached)

FK

Please accept my application for membership in the Western States Manganese Producers Association as an:

_____ Active Member (Minimum Dues \$100.00)

_____ Associate Member (Minimum Dues \$25.00)

I Attach my Check _____ For _____ Dollars,
Cash _____

NAME: _____

ADDRESS: _____

TELEPHONE NO: _____

Dated _____ 1959 Signed _____

In order to assist the Committee with facts they must have when presenting our arguement I submit the following data:

I am operating the _____ Mine in the County of _____
_____ State of _____

I am (Denote which):

- A. _____ Mill Operator
- B. _____ Trucker
- C. _____ Mine Contractor
- D. _____ Other (describe) _____

I am employing _____ men.

- A. My weekly payroll is approximately _____ Dollars.
- B. I have about _____ people dependent on me.
- C. I have an investment in the mining venture of approximately _____ Dollars.

WENDEN MANGANESE DEPOT

Following the announcement of the General Services Administration on July 21, 1951 of a purchase program at Deming, New Mexico for Arizona Manganese ores there was considerable activity in prospecting for and locating deposits of this mineral. The first shipments were made to Deming December 15, 1951 and it soon became apparent that properties located in the central and western parts of the state could not be profitably mined for shipment to this depot principally because of high freight rates.

In the early part of 1952 a group of mine operators in the western part of Arizona initiated a campaign toward the location of a depot in this state that would be conveniently located to their mines. This group worked in conjunction with the Arizona Small Mine Operators Association and the Arizona Department of Mineral Resources. Since by far the greatest concentration of ores was in an area between Wickenburg on the east, Parker on the west, Gila Bend on the south and Kingman on the north with Artillery Peak in the center it was decided that either Aguila or Wenden, both of which were centrally located and on the main line of the Santa Fe Railroad as well as U. S. Highway 60, would be a suitable location. Considerable work was then done to prove to the General Services Administration that a sufficient amount of ore was present in this area to warrant a purchase depot. Following numerous conferences, trips to Washington, field surveys and exploration work of various sorts the General Services Administration announced in the fall of 1952 that a depot would be established at Wenden.

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This depot consists of a sampling plant having a capacity of 400 tons per eight hour shift, together with the necessary warehouses, offices, etc. and some housing for employees. Scales for both railroad and truck shipments are provided. Ores after passing through the sampler are stored on the ground and there is ample storage space. A dust collection system is now being installed.

The first ores were delivered to Wenden on January 26, 1953 at the rate of 350 to 400 tons daily, the total for the first week being 1600 tons. This tonnage gradually increased until it was necessary to work overtime to handle shipments. Within three months it became apparent that the plant would have to operate on a two shift basis in order to accommodate all of the producers. And this was done as of June 1, 1953.

From the beginning shipments by Arizona Manganese miners to this station exceeded the most optimistic predictions. Daily ore deliveries to Wenden are said to have exceeded the combined weekly receipts at the Government Purchase Depots at Butte and Phillipsburg, Montana and Deming, New Mexico.

The Wenden depot has been assigned a quota of 6,000,000 units and up to July 28th, 904,000 units had been delivered to it. Since this is the first six months it can confidently be expected that this depot will accumulate Manganese at the rate of 2,000,000 units annually.

There are about 50 shippers mostly by truck with about 60% of the total tonnage being delivered by 10% of the operators.

Although some shipments with a manganese content

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above 40% have been made by far the greatest tonnage has a manganese content close to the minimum acceptable 15%.

R. I. C. Manning

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INTRODUCTORY STATEMENT BY SENATOR BARRY GOLDWATER
MEMBER OF SENATE SMALL BUSINESS COMMITTEE

Since January of this year we have received numerous letters from small mine operators in the West concerning the manganese stockpiling program being carried on under authority granted by Public Law 429 of the 82d Congress.

The original government domestic purchase program for manganese called for the purchase of 37,000,000 long ton units. Eighteen million units were to be purchased at three G.S.A. buying stations, each station being allotted 6,000,000 units. The remaining units comprise the so-called nationwide car-lot program which limits shippers to 10,000 tons of eligible material each in any one year. The time for completion of the program was extended to June, 1958 by the passage of the Aspinall Act, Public Law 206.

A review of the program shows that three G.S.A. buying stations were set up. The locations are Butte and Phillipsburg, Montana; Deming, New Mexico; and Wenden, Arizona. An original allotment of 6,000,000 units was assigned to each buying station. It is not clear upon what basis that assignment was made, and that constitutes one of the problems we wish to explore at today's conference.

The total program to date is only about 15 per cent completed.

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The total program to date is only about 15 per cent completed. However, the deliveries to the Wenden station are far in advance of the deliveries to the other two stations, and present calculations indicate that the Wenden station will have its quota of 6,000,000 units filled by early 1955.

Based upon the many letters which I have personally received and upon the study I have made, the following questions would seem to be important to our mutual consideration of the problem involved:

1. What was the basic thinking behind this program? Was it merely to stockpile about a half year's supply of manganese or was it to make this country independent, if possible, of unreliable foreign sources of strategic manganese for protection during periods of stress?

2. Who in G.S.A. made the original allotment of 6,000,000 units to each of the three buying stations?

3. In making that decision, did the responsible persons take into consideration the potential of each area before making the quota assignments or was it a purely arbitrary decision?

4. Do G.S.A. and O.D.M. at this time believe that the original quotas were realistic in the light of performance to date?

We would also like to have a candid expression of opinion from G.S.A. and O.D.M. concerning the following suggested solutions which have been raised in the letters I have received:

1. Can we increase the quota for the Wenden station?
2. Can we readjust the present quotas in the light of actual performance?
3. Can we extend the time of the program?
4. Can we lift the 10,000 ton restriction on car lots?

In conclusion, I might add that I have been extremely disappointed in the response I have received from both of these agencies to date. I have been trying for six months to get answers to these important questions. I have been told by O.D.M. that the decisions rest with G.S.A., and I have been told by G.S.A. that O.D.M. would have to originate the policies which could afford the solutions and answers. One can readily see the frustration which results from such passing of responsibility from one government agency to another.

Being a member of the Senate Small Business Committee, I finally contacted the Chairman of the Committee, Senator Edward J. Thye, and the Chief Counsel, Mr. Forsythe, and requested that the Committee attempt to work out a solution with the two agencies.

In response to my request, the Chairman turned the matter over to the Committee staff. Mr. Forsythe suggested that we hold this initial conference in an attempt to get both agencies and the Committee together at the

same time in an effort to pinpoint responsibility in this matter and to attempt to make clear to you the questions involved. We also invited Senator Hayden to be present as he has also received numerous letters on this matter and is keenly interested in it.

I suggest that for the orderly handling of the matter before us, we take the following path in our discussions:

1. Let us allow the representative from O.D.M. to fill us in on the background of this program and explain just what O.D.M.'s responsibility is.
2. Let us allow G.S.A. to explain what its responsibilities are.
3. We would then like to have both agencies discuss the questions raised in this memorandum.
4. We would then like to have a frank and candid expression of opinion from the agencies concerning the suggested solutions found on Page 2 of this memorandum.

A R I Z O N A M I N E S

<u>Mine Name</u>	<u>Location</u>	<u>Approx. Head</u>	<u>Approx. Conc.</u>	<u>% Yield of Spec. Ore</u>	<u>Amenable</u>	<u>Not Amenable Reason</u>
Blackrock	13 mi. S. Aguila	25.4	43.0	84.5	yes	
Blackcrow	13 mi. S. Aguila	20.4	44.7	89.1	yes	
Black Nugget	15 mi. SW Aguila	25.0	43.5	88.6	yes	
Black Queen	16 mi. S. Aguila	17.4	42.0	82.8	yes	
Black Jack	6 mi. N. Alamo Crossing	17.7	41.0	77.7	yes	
Black Dragon	Fresnal Mining District Pima County	28.8	49.7	79.9	yes	
John House Mine	21 mi. SW Aguila	29.5	48.2	87.5	yes	
Black Beauty	26 Mi. W and 5 mi. N. Salome	25.6	41.0	96.4	yes	
Polinite #1	between Shannon Mine and Artillery Peak, 60 mi. N. Wenden	25.9	42.5	83.1	yes	
Black Dahlia	Yuma County	28.0	44.8	90.1	yes	
Oversight	4 mi. W. Alamo	16.9	42.0	75.1	yes	
Blackcrow	50 mi. N. Wenden	14.7	41.7	74.3	yes	
Blackcrow	50 mi. N. Wenden	19.9	36.9	33.4	No	low recovery
Basco-Shannon	Near Alamo	14.8	46.4	78.9	yes	
Doyle Mine	26 mi. N. Wenden	16.0	41.4	75.0	yes	
Lake Mine	55 mi. N. Wenden	28.3	40.4	77.9	yes	

Love Mine	56 mi. N. Wenden	18.4	41.5	89.2	✓	yes
Black Diamond	50 mi. N. Wenden	20.2	40.8	92.3	✓	yes
Kanab #4	16 mi. S. Aguila	21.0	44.5	83.0		yes
Lucky #2	23 mi. N. Bouse	32.6	40.5	93.9		yes
Rinconada	9 mi. SW Bouse	26.3	42.3	90.6		yes
Lion's Den	S. of Aguila	15.4	41.9	74.4		yes
Black Eagle	12 E. of Gila Bend	20.0	43.1	85.2	✓	yes
Istake	10 mi. N. Wickenburg	17.3	44.3	66.6		yes
Hilltop #3	Sheep Tank Mining District Yuma County	21.3	45.5	87.3		yes
National Debt 3 and 4	23 mi. SW Wenden	23.0	44.1	80.0		yes
Blackrock No. 1	8 mi. NE Wickenburg	19.8	41.0	87.1		yes
Fool's Folly	near Wenden	20.4	46.6	92.9		yes
Santa Fe Andesite	8 mi. S. Powell Station	22.6	40.2	71.6		yes
Black Eagle	55 N. Wenden	27.0	40.7	86.2		yes
Jig Concentrates	Flagstaff	21.2	40.4	73.7		yes
Priceless Lease	45 mi. N. Wenden	19.8	40.1	85.2		yes
Cindy 1 & 2	3 mi. SW Bouse	18.0	40.3	85.4		yes
Power #1 & 2	15 mi. SE of Cibola	35.8	43.2	96.5		yes
National Debt #1	23 mi. SW Wenden	23.4	45.3	86.2		yes

Black Buck	23 mi. N. Morrystown	23.6	41.6	97.2	yes	
Black Diamond	14½ mi. S. Aguila	20.6	42.2	81.5	yes	
Manganese #1	3 mi. N. Bumblebee	20.0	45.8	92.2	yes	
Black Bird	1 mi. E. Bouse	16.3	40.0	73.1	yes	
Ross #1	9 mi. N. Wickenburg	18.3	41.8	65.7	yes	
Black Buck#2	23 mi. N. Morrystown	24.8	44.3	95.7	yes	
North Star #1	Old Hat Mining District Mammoth, Arizona	19.5	42.0	92.7	yes	
Black Rock #3	19 mi. S. Aguila	28.7	45.5	85.2	No	high copper (.50)
Black Hawk	Cemetery Hills Yuma County	21.3	40.0	48.4	No	low recovery
Lucky #2	Artillery Peak Mining District	14.5	35.0	61.7	No	Low Mn low recovery
Santa Rosa Queen #4		26.7	43.8	82.6	No	High copper(.80)
Catherine Carpenter #1	7 SW Artillery Peak	23.4	35.0	37.2	No	low recovery low manganese
Zig Zag	Owl Head District Pinal County	26.8	44.3	97.7	No	high copper(.50)
Black Chief		19.2	38.8	78.5	No	low manganese
Pachaco	Yavapai County	44.5			No	high copper(.35)

Santa Fe Sandstone	Near Powell Station	21.6	29.2	70.8	No	low manganese
Lucky #2	Artillery Peak Mining District	14.7	28.8	88.1	No	low manganese high iron (22.9)
Lucky Johnny	3 mi. NW Clanton Wells	15.9	43.4	49.4	No	low recovery
Old Crescent	10 m. SW Winckleman					

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THE MANGANESE PROGRAM OF THE BUREAU OF MINES
REF. BY NORWOOD B. MELCHER, CH
FERROUS METALS AND ALLOYS BRANCH
AT THE MEETING OF THE COLORADO MINING ASSOCIATION
DENVER, COLORADO, FEBRUARY 14, 1953

Steel is a cornerstone of our industrial economy and manganese is essential to steel production. Unless the steelmaking process is changed from our present practice, there is no substitute for manganese. Although the general public knows relatively little about manganese, except, perhaps, that the United States does not have enough, it is intimately associated with daily living. Manganese colors the bricks in our buildings, as well as the marbles children use; it improves the quality of our glass, and makes our oranges bigger and our chickens healthier; it helps us develop our pictures; it makes possible the electric flashlight and the portable radio; it may form part of our television set; and many of our plastics, as well as cold rubber, would not be possible without manganese. In all these ways, manganese affects our daily life in addition to being necessary to virtually every ton of steel and most aluminum.

Metallic manganese has little use by itself, but when alloyed with, or used in the production of other materials, it becomes one of the most essential and widely used metallic elements.

Manganese is the most important ferro-alloying element required in the production of steel, both carbon and alloy. The United States, while the largest manganese-consuming country today, uses less manganese per ton of steel than any other important steel-producing nation. This position is the result of the relatively equal availability and cost of many other elements used by the United States steel industry. Areas of the world having large deposits of high-grade manganese tend to substitute it for other, less accessible, alloying elements. Conversely, in the United States the absence of large domestic high-grade manganese deposits has fostered selective use of other ferro-alloy elements.

To make steel in quantity, five major raw materials are necessary; iron ore, steel scrap, fuels (coke, gas and oil), fluxes, and manganese ore. If, during an emergency period, the United States were isolated from trade with the rest of the world, the deficiency in manganese ore would become apparent almost immediately. While the United States has enough of the first four elements to continue to produce steel at desired rates for limited periods under isolation, it is lack of manganese that could make itself apparent in reducing steel production. It is true that other materials could be used to deoxidize and desulfurize the molten steel and that other elements could be used to alloy with steel, but no single element is available in the quantities needed that could accomplish what manganese does without creating another series of problems. It is also true that steel can be made in the electric furnace without manganese, but potential electric-furnace capacity is much too small compared with open hearth to permit full conversion.

Although there are large deposits of manganese-bearing materials in the United States, the extractive metallurgy is either as yet undeveloped or so expensive that there has not been established a satisfactory degree of self-sufficiency in domestic manganese production to date.

This situation has been recognized by the establishment of a National Stockpile and by research, largely by the Bureau of Mines, into the development of domestic reserves. Stockpiling, while desirable and necessary, is not the only method of attaining national security. Investigation and research leading to development of domestic low-grade sources are the long-term routes to improved self-sufficiency, which in turn will contribute materially to national security.

Per net ton of steel produced, the United States requires about 35 pounds of manganese ore of presently usable grade. Accordingly, the Nation consumed 1.8 million tons of ore in 1952 and, to meet demands of full steel production under the expansion program, 2.2 million tons per year will be needed within 2 or 3 years. From a longer range view, projected steel capacity of 160 million net tons in 1975 will require nearly 3 million tons of manganese ore, even if new uses for manganese have not been developed during that period. Rapid increase in the rate of domestic production must be achieved if we are to provide any substantial part of these requirements. A domestic production rate of 10 percent of requirements (it is now below this figure) would require production three times the present rate by 1975.

(over)

The Bureau manganese program is designed to make possible a much larger proportion than 10 percent as domestic production during this period. Such increased production would lead to effective use of our manganese resources and would reduce the strategic risks inevitably encountered during period of national emergency. In accomplishing this goal, the Bureau program is broken down into three phases: The immediate or short range, the long range, and the emergency program.

Research of the short-range type, directed primarily to the Nation's many smaller deposits, includes mining investigations, metallurgical research, and dissemination of appropriate data designed to facilitate commercial production within a short time. Examples of such activities are the mining and metallurgical investigations in the vicinity of Wenden, Arizona; Batesville, Arkansas; Pioche, Nevada; and the Three Kids deposits in Nevada, all of which are now in production or in active development by private industry. Also, in the short range the Bureau will continue its numerous investigations to assist DMEA and DMPA in their programs for expanding domestic output.

Many short-range projects consist of cooperative programs with industry, which, because of their national significance, are properly part of the Bureau's responsibilities. Such agreements have been made with Manganese, Inc., Combined Metals Reduction company, and Western Electrochemical Company. Some of these agreements are still in effect, and a cooperative attack on future problems is anticipated. As a service to industry, the Bureau presents data of interest through monthly releases, the Minerals Yearbook, Mineral Trade Notes, Information Circulars, and Reports of Investigations.

The longer range projects of the Bureau, so-called because of the longer time required to obtain commercial production, are directed largely toward developing sources constituting the largest production potentials. Among these sources are Chamberlain, South Dakota; Cuyuna Range, Minnesota; Aroostook County, Maine; Artillery Peak, Arizona; and the vast potential tied up in the Nation's open-hearth slags. Because of the conservation possibilities of the latter source and accessibility of the slag at the steel plants, work on this project has constituted a major part of the Bureau's efforts since 1949. I am happy to be able to say that, through this research, a process has been developed that is technically feasible and could be put into extensive commercial production if an emergency condition so dictated. The cost of producing ferromanganese by this process may, however, exceed costs using imported raw materials; consequently, the need remains for continued research to perfect the process to reduce costs and thereby make it attractive to private industry. The DMPA has announced recently the signing of a contract with Mangaslag, Inc., as an initial operation in the field of cotton. I might add that a high-iron steel-furnace smelting stock and a phosphorus fertilizer are important co-products of the process. Other important projects in the long-range category are construction and operation of a large-scale concentrator and leaching plant at Boulder City, Nevada, for treating Artillery Peak and other low grade ores. The Artillery Peak district contains 15 million tons of ore averaging over 6 percent manganese and another 180 million tons of ore averaging down around 4 percent. In all, 7 1/2 million tons of recoverable manganese has been estimated for this area. Metallurgical research thus far has been limited to the higher grades containing 8 to 10 percent manganese, and a commodity suitable for the production of ferromanganese has been produced through a combination of flotation and leaching.

Future work will be concerned with lower grade materials, with the ultimate objective of making possible the construction and operation of a large-scale commercial mill. Cuyuna range ores have been shipped to the Boulder City pilot plant; similarly, ores from the other large, low-grade deposits will be treated in turn as small-scale laboratory research leads the way. Processes developed through this work can be applied to many smaller deposits and thereby permit additional mines to operate successfully.

The Bureau has determined that domestic reserves of rhodonite and other silicate ores can be utilized through beneficiation and smelting to produce manganese alloys, particularly silicomanganese. Large deposits of this type of ore occur in Colorado, as well as the West, and Northwest. For many years these ores were considered unusable because of their high content of closely associated silica. Because they were considered unusable very little exploration has been done to determine the extent of the reserves, but it is assumed that the occurrences total many millions of tons. About 2 years ago the Bureau succeeded in producing sinter and nodules containing 35 percent manganese and over 40 percent silica from Colorado rhodonites. These products were shipped to a large consuming firm and converted successfully to manganese alloys. The company pointed out that several thousand tons per month could be readily absorbed if the material were available in commercial quantities. Subsequently, the Bureau of Mines has conducted additional experiments to produce alloys from these rather low grade concentrates in electric furnaces. Having established that such alloys have a place in the United States consumption pattern, the Bureau proposes to accelerate its exploration program to develop reserves and thereby indicate the potential value of this resource. The direct production of alloys that can utilize subgrade concentrates and ores points to a field of research in which the Bureau is interested and actively engaged. If we can produce these relatively low grade alloys without constructing elaborate and expensive plants to meet old and sometimes antiquated specifications, our goal of attaining a higher rate of expanded domestic production is much nearer. It is true that these newly-developed alloys could not be used for all purposes for which standard ferroalloys are now employed. However, to the extent to which they can be used for low-alloy steels and other purposes, relief would be given to the problem of meeting our high requirements. For example, silicomanganese containing 67 percent Mn, as compared to standard ferromanganese with 80 percent is satisfying over 10 percent of our manganese requirements, and substandard ferromanganese containing 60 percent or less in manganese could find important uses.

Manganese-bearing rock of Arcostock County, Maine, while presenting a challenge to metallurgists, is nevertheless so large a potential source that we must explore every possible avenue to bring these deposits into commercial production. Here again the manganese, silica, and iron are so intimately associated that revolutionary metallurgical methods may have to be developed to achieve our goal. Similarly, the vast potential deposits on the Cuyuna range, Minnesota, and those at Chamberlain, South Dakota, have their peculiar properties which present individual problems in mining and metallurgy. At Minneapolis, Bureau metallurgists have designed and constructed a shaft-type sulfatizing furnace in an attempt to produce a water-soluble sulfate. Here, as in the recovery of manganese from steel furnace slags, iron will constitute the largest production item. About 5 times as much iron as manganese would result.

The nature of the Chamberlain deposit is such that a mining method must be developed that will be extremely inexpensive and yet permit recovery of the manganese nodules, which, incidentally, contain only 16 to 18 percent manganese and are present in the shales at only 75 pounds per short ton of rock.

These longer range and necessarily complex projects in no way detract from the regular and frequent examinations and research projects on the many smaller domestic deposits. From the long term standpoint the smaller operators will be able to reduce treatment costs and increase overall recovery if sufficient time is available to complete pilot-plant research and to construct and place in operation plants to utilize the new processes developed. However, in times of emergency and particularly under conditions of full mobilization, it may be necessary to place more emphasis on less efficient high-cost methods designed to provide substantial production, quicker. If such a situation should develop before completion of the long range projects, the Bureau will reorient investigation and research and provide all possible assistance to stimulate rapid production by known methods, and less emphasis would be given to the development of better methods for future use,

THE 11 LARGEST MANGANESE DEPOSITS OF THE UNITED STATES, IN ORDER OF THEIR CONTENT OF METALLIC MANGANESE (FROM U.S.G.S.)

District	Ore, Tons	Metallic Manganese, Tons	Average grade, percent
1. South Dakota, Chamberlain district	2,500,000,000	45,000,000	1.5
2. Minnesota, Cuyuna range	500,000,000*1	10,000,000-25,000,000	2-10
3. Maine, Arcoostook County	120,000,000	13,000,000	11- f
	130,000,000	9,000,000	7 f
4. Arizona, Artillery Peak	195,000,000*2	7,500,000*2	4 f
	15,000,000*3	975,000*3	6.5
5. North and South Carolina, Gaffney-Kings Mountain	25,000,000*4	1,000,000*4	3-4?
6. Montana, Butte district	5,000,000	850,000	17 f
7. Colorado, Leadville district	4,000,000*4	600,000*4	15
8. Nevada, Three Kids district	5,500,000	500,000	10
9. Arkansas, Batesville district	1,725,000	439,000	25 f
10. Nevada, Pioche district	4,000,000*4	400,000*4	10
11. Montana, Philipsburg district	800,000	180,000	22.5

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*1 Mostly open-pit ore, unoxidized carbonate slate, lean, oxidized material.

*2 All types of ore.

*3 Hard ore only.

*4 Crude estimate, not based on exploration.

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