Mr. W. C. Roney

RECEIVED
DEC 18 1951
STATISTICAL DEPT.
NEW YORK

RECEIVED
DEC 1 8 1951
W. K. DALY

INTERNATIONAL SMELTING AND REFINING COMPANY

TOOELE PLANT - TOOELE, UTAH

REPORT ON AUDIT OF THE SULPHIDE CONCENTRATOR, THE LEAD PLANT AND THE SLAG TREATING PLANT OF THE INTERNATIONAL SMELTING AND REFINING COMPANY, TOOELE, UTAH, FOR AUGUST 1951

MONTH OF AUGUST 1951

TIME REQUIRED FOR AUDIT

C. E. Rowan September 17, to November 18, 1951, inclusive

Audit of the Metallurgical records of the Tooele Plant of the International Smelting and Refining ...y for August 1951 included the three operating plants, as follows:

Approximately 61.5%, 17% and 65% of the purchased receipts of the Concentrator, Lead Plant and Slag ...ng Plant, respectively, were audited in detail for weights, assays, unloadings, contracts, settlements ...ets. In addition, 35% and 25% of purchased receipts of the Concentrator and the Lead Plant, respectively, ...udited for Tooele weights and unloadings. This covered seven fully audited shippers and four tested ...rs. Detail on some receipts and new contracts appears in the report.

All of the outside shipments and interplant movements were audited in detail as were most of the ...lant movements at the Sulphide Concentrator and the Lead Plant. All shipments from the Slag Treating were audited except two cars of Deleaded Zinc Fume shipped to the Great Falls Plant of the Anaconda ...ining Company. Final and preliminary data as included in the August statements were used in all cases.

Inventory observations were made on September 1st and 27th, October 1st and November 1st, as detailed ...audit. All four observations were checked to the books to determine practices and accuracy. All ...er 1st inventories were audited in detail from the physical and estimated inventory reports on into the ...ents. Valuations of all inventories were also audited in full including purchase costs, fixed operating ...and worked back inventory. A complete review of the lead plant metal valuation was made and a discussion ... is presented herein.

August work sheets and statements as well as August 31, 1951 cumulative statements were audited using ...a as mentioned above and assuming all July 31, 1951 inventories to be correct.

C. E. Rowan
Metallurgical Auditor

November 18, 1951

PNYC 00011844

INTERNATIONAL SMELTING AND REFINING COMPANY

TOOELE PLANT - TOOELE, UTAH

MONTH OF AUGUST 1951

I N D E X

PNYC 00011845

INTERNATIONAL SMELTING AND REFINING COMPANY

TOOELE PLANT - TOOELE, UTAH

MONTH OF AUGUST 1951

SULPHIDE CONCENTRATOR

Utah Consolidated Mines Company - Ore

This ore accounted for over 49% of the Concentrator receipts in August 1951. The contract has remained essentially the same as detailed in the 1948 audit. The treatment cost has risen to $1.49 per dry ton and the sampling credit has been increased to 50¢ per dry ton. This ore is all sampled, weighed and assayed by the Utah Ore Sampling Company and the International Company accepts and uses these weights and moistures but averages the assays with their own and calls for umpires when needed.

All August zinc contents were totaled and averaged and the shipper was paid for the balance of zinc in two lots which had been given the 60 pound minimum deduction because of low content zinc. This is allowed in the contract if the monthly average assay is large enough to receive the 65% payment. 19,735 pounds were paid for at 9.438¢ per pound. Also, the difference between the July sampling credit total (50¢ per dry ton) and half the July sampling charge ($1.00 per wet ton) was paid to the shipper as allowed in the contract.

...nd Earl Shirts - Ore

This lead-zinc ore from Ketchum, Idaho, received in August 1951 amounted to 5 lots or 4.7% of the August receipts. The contract of September 15, 1948 states the usual metal percentages and prices but the duplicate copy has not yet been signed and returned, as is the custom. The August 1951 treatment cost was $2.921 per dry ton and copper is not paid for. No agreement could be located for the 6% royalty paid on each lot to J. B. Eldridge, owner of the property.

...and and Hullinger - Tailings

These tailings are from Park City, Utah, and accounted for 6.5% of the August 1951 receipts. No written contract was available but the terms of the last two lots were listed by Mr. G. A. Hurt, Ore Buyer, on one of the lot sheets, as follows:

Gold - 100% @ $16.00 per ounce, if .01 ounce per ton or over.

Silver - 80% @ market over 1 ounce per ton.

Lead - 100% @ $1.50 per unit over 1.5 units.

Copper - 100% @ $1.50 per unit

Zinc - 100% @ $1.75 per unit after deducting oxide zinc and .7 unit.

Treatment - $4.00 per dry ton.

Hauling - $1.00 per wet ton to shippers.

Splitting Limits - Au. - .01 oz. per ton, Ag. - .3 oz. per ton,
Pb. - .3%, Cu. - .2%, Zn. - .5%.

Payment - Half to Silver King Coalition Mines.

These terms were higher than those on the first three August lots because of an upswing in grade during the month. Neither formal contract was available.

...da Copper Mining Company - Silver Iron Concentrates

These concentrates accounted for 34.5% of the Concentrator receipts for August 1951. Tooele weights, moistures and assays are used on the settlements. These were checked in detail but the settlements themselves were not proven because they are checked yearly in Anaconda, during the Zinc Concentrator Audit.

[illegible]/949-40/1[illegible]

[illegible]

...es to Lead Plant

...August 1951, five cars, 293 wet tons of lead concentrates, were received and treated at [illegible] ...ant. All Concentrator production is considered shipped, used as Lead Plant receipts and [illegible] ...lant carries all inventories. These shipments are adjusted monthly to arrive at normal con[illegible] recoveries. August shipments were reduced by 13,000 pounds of lead, 1,7[illegible] ounces of [illegible] ...ven ounces of gold. Each car is assayed so this reduction in August pushed the concentrator ...ies down and helped to raise the Lead Plant recoveries at the same time since all of these ...s were received at the Lead Plant in August. These adjustments are made at December [illegible] ... if needed.

...schedule of payments and credits, similar to the Lead Plant open contract is used for valu[illegible] ...oncentrates for transfer. The schedule, including latest changes in freight and labor, is [illegible] ...ow.

Lead	- Less 1.5 units, balance	95% @ N. Y. price, less 2.[illegible]
Copper	- (Min. deduction 10 lbs.)	90% @ N. Y. price, less 3.[illegible]
Zinc	- If 5%	80% @ 22% of East St. Louis price.
Silver	- If 1 ounce	97½% @ Mint Price
Gold	- If .02 ounce	91% @ $35.[illegible]0 per ounce

Iron	- Credit - [illegible]¢ per unit.
Insoluble	- Charge - 10¢ per unit
Sulphur	- 2% free - balance 2[illegible]¢ per unit - Maximum $2.25 ton
Zinc	- Charge - 15¢ per unit paid for.
Treatment	- $5.215 per dry ton plus or minus [illegible]¢ per unit of lead over or under 40%. (after deducting 1.5 units)
Labor Base	- $ 9.35 - 15¢ for [illegible] - 25¢ change
Coke Base	- $10.[illegible]- 15¢ for [illegible] - $1.[illegible] change
Bullion Freight Base	- $22.95

Weights, assays and value of shipments were audited in detail for August 1951.

...trates to Lead Plant

[illegible] Concentrator production is also used to determine lead plant receipts [illegible] ...me to normal concentrator recoveries. All [illegible] are Lead Plant inventories, ...pments were 18 cars, 75[illegible] wet tons.

The schedule for valuing these [illegible] concentrates [illegible] as follows:

Lead	- 50% at [illegible] price [illegible] 4.0[illegible]25¢.
Copper	- Deduct 20 pounds, [illegible] N. Y. price less 5.52[illegible]
Zinc	- No payment.
Silver	- If .5 ounce, 95% at [illegible] price.
Gold	- If .02 ounce, 91% [illegible] per ounce.
Iron less insoluble	- 5¢ per unit, credit.
Treatment	- $7.[illegible] per dry ton. [illegible] value is deficient, [illegible] treatment to bring total to zero.
Labor Base	- $ 9.35 - 15¢ for [illegible] - 25¢ change
Bullion Freight	- $22.95 base.

Weights, assays and value of shipments were audited in detail for [illegible] 1951.

PNYC 00011846

SULPHIDE CONCENTRATOR

TORIES

All Concentrator bin inventories were measured on September 1, 1951 and observed and noted by Messrs. J. C. Wilson and W. F. Noll, Jr., Pogson and Peloubet Auditors. [illegible] and specific weights are used as comparisons. Full cars and/or lots are used to approximate the estimated tonnages. Actual weights and assays are used on a first-in, first-out basis. Stockpile [illegible] are at average stockpile assays.

Zinc concentrates on hand are weighed and assayed. Lead and Iron concentrates are included in Lead Plant inventories.

The Superintendent prepares a monthly sheet detailing the full lots which remain in bins, [illegible] weights and actual weights on any zinc concentrates on hand. This report is used for inventories [illegible] bin measurements are only used for checking.

On September 27, 1951 the Auditor viewed the shutdown concentrator and its [illegible] in-process inventories are reported for this plant because it is usually between runs when inventories are taken and any material on hand belongs to the prior run. Some [illegible] material was observed in the classifiers and on the floor but neither the Superintendent nor the Accounting Office thought it [illegible] large enough to affect recoveries of the prior run and put it into inventories.

ATION OF INVENTORIES

ckpile and Bins

As explained in the previous audit, these ore inventories are valued on a [illegible] basis except for silver and gold. Each lot, on a first-in, first-out basis for weight, is valued at [illegible]. [illegible] silver ounces paid for are valued at 34.75¢ per ounce. The total value of gold paid for is divided by $34.91 to arrive at ounces paid for and this total is valued at $34.[illegible] per ounce. The theory back of this is that, even though the terms of the many contracts differ in percent of gold paid for and [illegible], all are based on a $34.91 price, approximately. This is market price less [illegible].

Ores and concentrates in bins which were not sampled [illegible] a sampling cost of $.4646 per ton which is an old [illegible] not carry this because they are to be sampled again before [illegible].

ne Concentrates

Zinc Concentrates are still valued at the contract [illegible] at 34.75¢ per ounce. The contract states a gold price of [illegible] per ounce [illegible] tion.

PNYC 00011847

LEAD [illegible]

Continued

[illegible] Anaconda Copper Mining Company - Lead Concentrate [illegible]

Lead	- Under 25% - 90% of Wet Assay, [illegible]
	- 25 to 50% - 91% of Wet Assay
	- Over 50% - 92% of Wet Assay
	- Price - Average New York [illegible] price week ending Wednesday, next preceding sampling date, less [illegible] when lead is 15¢, plus or minus .031¢ for each [illegible] in lead price. Also plus or minus change in [illegible]
Copper	- Deduct 20 pounds, balance at [illegible]
Arsenic and Antimony	- 1% free, excess at 50¢ per unit
Treatment	- $9.00 per dry ton, [illegible] International - Utah
Freight	- International pays freight from Bradley, Idaho
	- Shipper pays only freight to Bradley, Idaho
Labor	- Smelter - $13.[illegible] base [illegible]
	- Refinery - $1.55[illegible] per hour base. [illegible] lead price [illegible] per ton of paid for lead for each 1¢. [illegible] third preceding months labor cost average
Coke	- $16.167 base plus 15¢ [illegible]
Bullion Freight	- $22.95 base, [illegible] deduction.

The splitting limits on assays were mentioned in a letter dated June 20, 1951 from [illegible] [illegible]ens, Manager at Bonanza, to Mr. E. L. Sackett, suggesting limits of [illegible] on lead and .5 ounces silver. Mr. Sackett agreed in his reply of June 25, 1951.

August 1951 Bonanza Line receipts [illegible]

Wet Weight	Dry Weight	[illegible]	[illegible]	[illegible]
332,720 lbs.	308,1[illegible]7 lbs.	[illegible]	[illegible] lbs.	[illegible]
		[illegible]	1.1[illegible]	[illegible]

The zinc was not paid for and there [illegible]

[illegible]llion to Omaha, Nebraska

[illegible] Lead bullion shipped to the American Smelting and Refining [illegible] the Tooele Smelter. The silver is returnable [illegible] pounds per ton of bullion in 20 days after receipt [illegible] paid for at [illegible].9125 per ounce. The contract has remained the same [illegible] the last half (5 years) of contract period [illegible] treatment cost went into effect adding [illegible] after the 14th. Also the splitting limit on silver [illegible] of letters between Mr. Carl Gall, Manager of the [illegible] the Tooele Plant. If silver ran over 100 ounces the splitting [illegible]

[illegible]. The final settlement for June 1951 shipments [illegible] for August 1951 shipments. The settlements and [illegible] checked in Tooele as received.

August shipments with Omaha weights (final) [illegible] (preliminary) [illegible]

	[illegible]	[illegible]	[illegible]	[illegible]
Total Weight		[illegible]		
Lead	98.70[illegible]	4,[illegible]		4,72[illegible] lbs.
Bismuth	.0[illegible]	[illegible]		[illegible]
Silver	[illegible] oz.		[illegible]	[illegible]
Gold	.93[illegible] oz.		[illegible]	—
			Payments	Charges
Gold Payment			[illegible]	
Bismuth Charge				[illegible]
Estimated Treatment				[illegible]
Estimated Freight				[illegible],[illegible]1.92

PNYC 00011848

LEAD PLANT

[illegible]ERPLANT TRANSFERS AND MOVEMENTS - Continued

[illegible] Matte and Speiss

[illegible] The Converters receive and treat this material from the [illegible]. The [illegible]gust transfer was from the August 1st inventory [illegible].

[illegible]rnace Cadmium Dust

[illegible] High cadmium content dust is accumulated for twice [illegible] roasting [illegible] at the [illegible] copper roasters. None was shipped in August 1951.

[illegible] Blast Furnaces

[illegible] The product of the Sintering Pans is weighed by cars, [illegible] inventories at [illegible] Blast Furnace Bins and the balance used as shipments to the [illegible] and as [illegible]ast Furnace Treatment. All inventories are for the Sintering Plant. [illegible] fixed moisture [illegible]75% is used. Constant loss percentages are used on each metal to arrive at the con[illegible]t of the sinter, even though a monthly assay is taken for comparison. [illegible] statis[illegible] on sinter shipped are:

	Lead	Copper	[illegible]	[illegible]	[illegible]
[illegible]xed Loss	2%	.5%	[illegible]		[illegible]
[illegible]thly Assay	29.20%	2.00%	10.[illegible]	[illegible] oz.	.[illegible]4 oz.
[illegible]puted Assay	29.06%	1.95%	9.[illegible]	[illegible] oz.	.278 oz.
[illegible]thly Weights	4,477,236 lbs.	305,660 lbs.	[illegible]	[illegible] oz.	[illegible],639,950 oz.
[illegible]puted Weights	4,455,770 lbs.	298,994 lbs.	[illegible]	[illegible] oz.	[illegible],131,[illegible]7 oz.

[illegible] to the Slag Treatment Plant

[illegible] The molten slag sent to the Slag Treatment Plant [illegible] loss of [illegible]ron and manganese at the Blast Furnaces. [illegible], including [illegible]at in the cold dump slag, scrap iron and coke, [illegible] manganese [illegible] all materials except slag is the content [illegible] daily. [illegible] dry weight and other contents of the slag [illegible] transferred [illegible] the Slag Treating Plant on the following [illegible]:

Zinc Charge	- Total zinc content [illegible] the Slag Treating [illegible] during the month plus [illegible] of this company [illegible] monthly average [illegible]
Treatment of Cold Slag Charge	- $7.00 per dry ton [illegible] Blast Furnaces. Increased from $5.00 per ton [illegible] 1951 from [illegible]
Credit for further Treatment of Toll Zinc	- $6.75 per dry ton [illegible] Lead Plant during the month

[illegible] A. M. on September 1, 1951, Messrs. J. G. Wilson and [illegible], [illegible] [illegible]uditors, observed the taking of all bin inventories [illegible] [illegible]corded and turned over to the Metallurgical [illegible] [illegible]. These bins accounted for a major portion of [illegible] [illegible] the end of the audit period, they did not [illegible] [illegible]ith inventories taken at a later date. Bin audit [illegible] [illegible]pecific weights per cubic foot if available, [illegible] [illegible] using specific assays. Full or partially loaded cars [illegible] [illegible] observed that inventory, but were further audited for [illegible] dates, assays and [illegible] of contents. This also included clerks' estimates of [illegible].

LEAD PLANT

Continued

[illegible] September 27, 1951 while the plant was down the Auditor accompanied [illegible], Clerk, on an [illegible] taking trip around the Lead Plant. Observations were made of materials on the floor, in [illegible] [illegible] at the old Copper Plant. These are mostly lead inventories. They were later traced to the [illegible] sheets for September 30, 1951.

[illegible] observed on September 27, 1951 were the old Reverberatory Furnace building and baghouse, the Sintering Plant, Blast Furnaces and the Drossing Plant. At the Reverb building both Reverb fur- [illegible] bottoms had been excavated leaving one 25 foot pit and one 10 foot pit. Surplus recoveries have [illegible] but copper content is still being treated and deducted from the balance in the Copper [illegible] and calcine inventory. The Converter Baghouse was observed as completely empty, although [illegible] at every Converter run.

[illegible] Sintering and Precast (crusher) buildings were devoid of any appreciable inventories. [illegible] [illegible] loaded cars were noted at the loading platform near these buildings. At the Blast Furnaces [illegible] repairs were in progress. Furnaces number 1, 2 and 5 are completely gone with only a bin [illegible] number 2. Furnace number 3 had been torn down for repairs and number 4 was being cleaned out [illegible] ready for the next run. Inventories were very difficult to take but it was assumed that no [illegible] quantities had taken place since September 1, 1951 even though a change in location had been [illegible]

[illegible] following are comments on a few inventories. All were completely explained in the 1948 audit but [illegible] deemed to be of sufficient interest to warrant duplication.

[illegible] actual car weights and monthly assays were first [illegible] moisture. In taking [illegible] inventory to the plant sheets, however, and to the statements, [illegible] assays [illegible] General Comments.

[illegible] of this dust is in fixed quantities as follows:

Dry Flue	[illegible]
Moisture Chamber	[illegible]
Main Flue	[illegible]
Treater Intake	[illegible] Tons
Stack Base	[illegible]0 Tons

[illegible] assays on these fixed inventories are also fixed [illegible] monthly assays [illegible] the car inventory of Dust. Actual weights and monthly [illegible] See further comment at the end of this audit report

[illegible] small stockpile of this material was observed [illegible] 1951, [illegible] since [illegible] 1, 1951. An estimate of baskets (pots) of dross [illegible] [illegible] 27, 1951, agreeing with the September 1, 1951 [illegible] [illegible] 75% moisture and monthly assays on the work sheets [illegible] monthly assays [illegible] used on the plant statements.

[illegible] Fume

[illegible] inventory was in bins, stockpile, pits and flue [illegible] [illegible] as explained in the 1948 audit. The cars [illegible] average moisture [illegible] used for these removals as well as for the remaining [illegible] [illegible] each month. The flue intake is kept at 50,000 pounds [illegible] [illegible] inventories are added to the bin and car inventories, however, [illegible]

[illegible] in transit and plant inventories of lead bullion [illegible] [illegible] The plant closed on August 27th so no assays of [illegible] [illegible] the on-hand inventories, as is the usual practice, [illegible] [illegible] used, slightly lower than the in transit assays, which [illegible] [illegible] inventories were taken from the estimated settlement sheets, as [illegible] [illegible] figures from the A. S. and R. Company, the total of the lead, [illegible] [illegible] assays is taken without change and the actual bismuth and [illegible] [illegible] This assumes that the total of the four assays is [illegible]

LEAD PLANT

ATION OF INVENTORIES

ockpiles and Stock Bins

The method of valuing these inventories has changed since the 1948 audit. The silver and gold are no longer reduced to 34.75 cents and $34.00 per ounce, respectively, when added to the stockpile. All lots are now added at actual costs and charges but the gold cost is divided by $34.91 to arrive at a new paid-for ounces figure. Thus, all gold paid-for ounces go into stockpiles and stock bins at $34.91 per ounce. As before, cars out of stockpile and stock bins are given average contents and values. At month end, inventories of all lots are recapped and silver and gold total paid-for ounces are revalued at 34.75 cents and $34.00 per ounce, allowing the difference to fall into treatment. Therefore, the individual stockpile records carry actual costs and charges with gold at $34.91 per ounce but the total inventory as used on statements is revalued for both silver and gold. This is useful when lots are transferred between plants because original costs are then needed.

Actual freight and refining charges, zinc and zinc costs and treatment charges are used as totaled on the Stockpile Recap Sheet.

The lead and copper valuations now are made on a "normal base" method along with the lead and copper in the by-products inventory. On May 31, 1949 this method was started using the May 31, 1946 inventory as a base when the government controlled price was lifted. The May 31, 1949 inventory was called normal. Also included in the base were old Copper Plant inventories on hand at that plant in 1946 but transferred to the Lead Plant on January 1, 1949.

Date				Pounds	Per Pound	Amount			Pounds	Per Pound	Amount
[illegible]	Stock Pile			[illegible],415,636	6.500	$ 352,211.57			248,883	11.039	$ 27,475.41
	By-Products			[illegible],058	[illegible]	[illegible],117.61			[illegible]	6.500	1,[illegible]
				[illegible]	[illegible]	[illegible]			[illegible]	11.77[illegible]	[illegible]
5/31/49	Stock Pile	Base		1,[illegible]	[illegible]	$ 7[illegible],447.09	Base	(1)	[illegible]	11.775	$ 1,[illegible]
	By-Products	Base		2,107,763	6 500	137,004.60	Base		21,079	[illegible]	1,791.72
		Base		447,058	4.500)		Base	(3)	554,674	11.775	65,312.87
		Base (2,7)		90,807	4.500)	24,203.93		(2)	49,520	10.071	4,987.37
								(2)	3,890	10.078	392.03
								(2)	942,820	10.377	97,838.11
								(3)	459,176	17.763	81,563.43
	Total			3,821,737		$ 237,655.62			2,041,052		$ 253,050.43
12/31/49	Stock Pile and By-Products			3,821,737		$ 237,655.62		(3)	1,581,876		$ 171,487.00
	Increase		(5)	470,035	12.000	56,404.20		(4)	86,921	15.818	13,749.15
				4,291,772		$ 294,059.82			1,668,797		$ 185,236.15
12/31/50	Stock Pile and By-Products			3,821,737		$ 237,655.62		(2)	697,109	10.376	$ 72,330.15
							Base		585,646		68,269.49
	Increase		(5)	[illegible]	17.000	42,027.89		(6)	110,676	-	19,929.55
	Total			[illegible]		$ 189,627.73			1,393.431		$ 160,529.19
[illegible]	Stock Pile			[illegible]	[illegible]	$ 75,447.09		(1)	9,[illegible]	11.775	$ 1,164.9[illegible]
	Increase		(5)	[illegible]	[illegible]	310,770.37		(5)	[illegible]	23.138	32,508.[illegible]
				[illegible]		$ 387,217.46			15[illegible],3[illegible]3		$ 33,673.7[illegible]
	By-Products		(7)	[illegible]	4.[illegible]	$ 24,203.93			21,079	8.500	$ 1,791.72
				2,10[illegible]	6 500	137,004.6[illegible]			554,674	11.775	65,312.87
								(2)	478,[illegible]	9.727	46,531.1[illegible]
	Increase		(5)	[illegible]	[illegible]	[illegible]		(5)	[illegible]	23.138	[illegible]
			(8)	[illegible]	[illegible]	$ 124,65[illegible]		(8)	[illegible]	6 362	$ 73,720.86
	[illegible] - Total			[illegible]	[illegible]	$ [illegible]			[illegible]	10.406	$ [illegible]

LEAD PLANT

OF INVENTORIES - Continued

iles and Stock Bins - Continued

Period Inventory - May 31, 1946

This inventory contained quantities of lead and copper at two distinct [illegible] of prices, both [illegible] controlled and both used under the prior method of valuation. The early prices were 4.5¢ and [illegible].5¢ while the last controlled prices were 6.5¢ and 11.775¢, both for lead and copper respectively.

ing Inventory - May 31, 1949

The stock pile and by-product inventories were valued separately on a last in, first-out basis ing January 1, 1949 quantities.

(1) This stock of copper was incorrectly valued. It should have been carried at 11.[illegible] per ound.

(2) Old copper plant inventories were transferred to the Lead Plant on [illegible] 1, 19[illegible] and these amounts were still on hand at May 31, 1949. Values are at transferred [illegible].

(3) Excess copper (459,176 pounds) over January 1, 1949 amount ([illegible]) was valued at verage current sales price. This excess was lost at year end, however.

End Inventories - 1949 and 1950

The stock pile and by-product inventories were here valued [illegible] separate [illegible] sed irregardless of physical inventories of each.

(2) In 1950 the old copper plant inventory was being [illegible] rate of [illegible] although much of it had been recovered in the previous year and not written [illegible] of the write-off was being made at 10.5¢ per pound which was higher than the original inventory as shown at May 31, 1949.

(4) Even though the May 31, 1949 gain of 459,176 pounds was [illegible] 31, 1949, another gain was shown (86,921 pounds) which was the difference [illegible] loss. The value per pound was the average stock pile cost for 194[illegible].

(5) Increases and decreases are at current market prices.

(6) This copper increase was valued at May and June 1950 [illegible] the last-in, first-out basis.

est Inventory - August 31, 1951

A return has now been made to valuing the two inventories [illegible] normal base from the May 31, 1949 inventory.

(1) This is to be written down to 11.039¢ per pound on [illegible] 31, [illegible].

(2) This balance of old copper plant inventory is well above [illegible] still on hand. The removal at 10.5¢ has reduced the value to 9.72¢ per pound. This is to be written down to the actual pounds of old copper plant copper still on hand by December 31, 1951. The August 31, 1951 [illegible] inventory was 197,943 pounds at 10.5¢ per pound transferred cost.

(7) The lead content of old copper plant inventories has been [illegible] and Mr. Floyd plans to eliminate this part of the base inventory ([illegible]) pounds at [illegible] by December 31, 1951.

(8) The practice of decreasing (borrowing) from base inventory [illegible] bility of a very low value even though it would be called a "[illegible]" inventory. It was suggested to Mr. Floyd that he value the decreases at the last added base costs per pound, at least at December 31st, of each year. Then the system could be classified as a last-in, first-out method. He stated that this would give him a bad looking profit and loss statement [illegible] this is a necessary evil of this valuation system. [illegible] instructions on the desired method of valuation to be followed. [illegible] show a large increase over these base inventories [illegible].

PNYC 00011853

LEAD PLANT

INVENTORIES - Continued

Material

Lead Bullion is valued in New York but any lead bullion on hand in [illegible] kettles is credited [illegible] cost to finish - drossing expense. This credit is held on the Salt Lake statements until the [illegible]lowing month. A fixed cost of $1.7589 per ton is used which was the cost at December 31, 19[illegible]. [illegible] stated in the previous audit, it is assumed that the New York Office uses this credit when valuing [illegible] lead inventory.

SLAG TREATING PLANT

[illegible] Metals Reduction Company

Sixty-five percent of the purchased ore receipts at the Slag Treating Plant in August came from Combined Metals Reduction Company stockpile at Jean, Nevada. The special contract for this material [illegible] the following terms:

Zinc and Lead	- 80 percent at 44 percent of average East St. Louis price for the week ending Wednesday, next preceding date of sampling of last car of each lot.
Treatment	- $7.48 per dry ton F.O.B. International, Utah.
Splitting Limits	- Same as Lead Plant Contract
Weights	- Tooele Weights

[illegible] Oxide

All zinc oxide is weighed and assayed as shipped. If consigned, it remains at such assays [illegible] partially sold, it is sold at such assays. August 1951 shipments and sales were as follows:

[illegible]rican Chemet Corporation, East Helena, Montana

One car shipped and sold in August. Lead per pound - [illegible]. Zinc per pound - [illegible].325¢ [illegible] consigned inventory on hand.

[illegible]signment Shipments

One car shipped in August 1951 but no sales were made from it. Two sales of [illegible] pounds and 53,000 pounds were made at 12.875¢ per pound of oxide. [illegible] had no sales in August.

[illegible]inc Fume returned to American Zinc Company

Eighty percent of the zinc content of American Zinc Company [illegible] in deleaded zinc fume. In August 1951 approximately 270 tons of fume containing 379,[illegible] pounds [illegible] zinc were returned, using averaged assays and their weights as received at [illegible], Texas. Tooele [weig]hts and assays are used on the books as shipped.

[illegible]inc Fume to International Minerals and Metals

All lots shipped to Bartlesville, Oklahoma in August 1951 were still in [illegible] August [illegible]. The August settlement for previous shipments and the August shipments [illegible] Tooele and Bartlesville weights, all assays, receiving [illegible] and [illegible]

There was no change in the stock pile during August 1951. Any [illegible] at actual [weig]hts and assays. Removals would be taken out at actual weights and [illegible].

These bins were among those measured by the Pogson, [illegible] 1951. [Meas]urements, cubic foot volume and specific weights are used for [illegible] total [illegible] [c]hecked by in and out actual weights. Lot weights and assays are used on a first-in, first-out basis [to acc]umulate the desired total weight. All measurements, computations and assays [illegible] in detail.

SLAG TREATING PLANT

- Continued

Zinc Fume and By-Products

The fume inventory consisted of in transit to I. M. and M. Company, on hand company owned ...d on hand returnable to American Zinc Company. Most of the on hands are still reported by the ...perating department and are all handled as outlined in the previous audit, except the assay of ...e last lot of fume shipped is used for content of the fume on hand. The car and miscellaneous ...ventory was observed by the Auditor on October 1, 1951 with Mr. W. H. Floyd and later checked ...the records. This did not include those reported by the operating department which were esti-...ated. The auditor was present on November 1, 1951 when the Lead Plant Superintendent, the Slag ...reating Plant Foreman and his assistant met and reviewed cleanings, deposits and operations since ...resuming on October 22, 1951. The Baghouse pits were viewed and estimated while all other by-...roducts inventories were entirely estimated. The in process inventory at East Helena is com-...uted but both systems seem to be reasonably accurate. The estimated inventories at Tooele include ...me in the Chamber, Flue and Bag House, most of which is not available for measuring or viewing.

...d Zinc Oxide

Consigned stocks of zinc oxide were out of town and were not physically verified by the Auditor ...t consignees letters were audited to confirm sales and balances on hand. All consigned stocks re-...ain the car assay as originally shipped.

One consigned balance of 20,775 pounds of oxide was on hand at August 31, 1951 out of a car ...ipped in June 1950. The consignee is the C. L. Duncan Company, 1101 - 17th Street, San Francisco, ...lifornia. No sales had been reported since August 31, 1951 up to the date of this writing.

...OF INVENTORIES

The methods of valuing Slag Treatment Plant inventories have not changed since the 1948 audit. ...in stock piles and bins is valued at actual lot costs. The lots are designated on the first-in, ...rst-out basis. Bin ore also carries sampling cost at the current cost per ton. Deleaded zinc fume ...transit to International Minerals and Metals Company and on hand at the plant are valued together ...the I. M. and M. Company contract terms but with an estimated treatment cost as used on the prelimi-...ry settlement. Gold and silver are not paid for in this contract nor valued on any of these inven-...ries.

Leaded zinc oxide at the plant is valued on the sales terms of fumes sent to the Lead Plant. ...signed stock was also valued at these same sales terms except that lead was carried at 16.04¢ per ...und. Mr. Floyd stated that he would change this to follow the fume sales price which is the current ...rket value. Gold and silver are paid for and valued at $32.816 (100%) and 34.75¢ per ounce, re-...spectively.

By-products which include dusts, cleanings, fumes etc., are valued at current handling costs ...ly. This includes sampling cost. A minor portion of these materials, some furnace cleanings, etc., ...returned to the Lead Plant for retreatment but most continue on through the Slag Treating Plant. ...eleading cost is applied because the only by-product in this section of the plant is either re-...culated or perhaps sold as a finished product with Leaded Zinc Oxide. Mr. Floyd was questioned ...t the omission of purchase cost on all by-products and he stated that there was no purchase cost ...ing the early operation of this plant and he is using a last-in, first-out theory on this material. ...y. This inventory is almost entirely estimated and fluctuates very little.

ERRORS AND DISCREPANCIES

...CENTRATOR

...trates shipped to Anaconda

In checking the August settlement for Zinc Concentrates shipped to Anaconda, Montana, the audition ...e price for zinc freight to East St. Louis was noted as being .7635¢ per pound, or $15.27 per ton ...was not auditable from the information on hand at Tooele because the previous rate in March 1951 ...was $15.43 per ton and the last increase on April 4, 1951, was two percent, supposedly giving a new ...f $15.74 per ton. The rate used in August 1951, however, was $15.27.

Upon inquiry to Anaconda, Mr. R. N. Kelly replied that the Bashaw Sampler had not been advised of a ...decrease in February 1951 to $14.98 which would explain the two percent increase to $15.27 in April ...Mr. Kelly also stated that Salt Lake was informed of the error but "decided that the amount involved ...warrant revising the settlements."

AND DISCREPANCIES - Continued

PLANT

ortionment of Total Treatment Cost

In prorating total costs to the six Anaconda Copper Mining Company materials treated and the one custom ore classification, the charge for treating cold slag at the Blast Furnaces is deducted from the total treatment cost as are the current Cadmium Fuming [illegible] and the current reclaiming expense. This assumes the Anaconda materials do not contribute to these expenses and vice versa. Then the average cost per ton treated derived from this net cost is applied to the Anaconda materials treated and the balance of treatment cost is applied to the custom ore.

In August 1951 the deferred Cadmium and reclaiming costs were deducted from the total treatment cost instead of the current treatment portion of those operations. This gave a per ton treatment cost for Anaconda materials which was approximately 85¢ per ton lower than it should have been. It also left a larger treatment cost against custom ore than was correct. [illegible] will be corrected in November 1951 accounts.

TREATING PLANT

leaded Fume to International Minerals and Metals

The freight bill, Bartlesville weight, on car U. P. [illegible] of [illegible] zinc fume shows a net weight of 112,900 pounds but using the gross and tare weights, the net should have been 111,[illegible] pounds. Bartlesville weights are used on the settlement and for the freight charges but not on the Metallurgical Statements, as in transit inventories.

ventory Value of Consigned Zinc Oxide

In valuing the consigned stock of zinc oxide, it was noted that the [illegible] value of lead fume was used except for the lead price. Current lead price [illegible] in the schedule of lead fume transferred to the lead plant but an older price of $[illegible] was used in this case. Mr. Floyd stated that current price would be used henceforth. The August 31, 1951 inventory was understated by $580.86.

RAL

With the above exceptions, only a few minor errors and [illegible]

GENERAL COMMENTS

PLANT COTTRELL FIRE

On Monday morning August 27, 1951, just before the [illegible] out in the Lead Sintering Plant Cottrell. It [illegible] portion of the Flue, which was started early in September [illegible] job was completed to allow the Lead Plant to resume operation [illegible] all of the Lead Plant except the Sample Mill and the [illegible] was closed because of the loss of its major receipt, [illegible] was continued in the Slag Plant kiln. The Suplhide [illegible] its normal operating runs.

PLANT WRITE-OFF

The copper plant was completely written off on January 1, [illegible] E. O. Sowerwine in his letter of January 17, 19[illegible], to Mr. Floyd, [illegible] copper plant inventories on December 31, 19[illegible] [illegible] Flue Dust and McDougall Roaster Bottoms and Flue Dust [illegible] the inventories are carried on the New York books. [illegible] was included in the Lead Plant By-products Inventory [illegible] the transferred inventory were:

	[illegible]	Value
Lead	[illegible]	[illegible]
Copper	[illegible]	[illegible]
Silver	[illegible]	[illegible]
Gold	[illegible]	[illegible]
Total		$[illegible]
Reclaiming Cost		$ 1,37[illegible]

GENERAL COMMENTS

ANT WRITE-OFF - Continued

No metallurgical statements have been prepared for the [illegible]

ECEIPTS

As before, date of receipt depends entirely on availability of final [illegible] estimated profit and loss figures are submitted to New York. [illegible] ing month. The Salt Lake and Tooele Offices agree on lots to be [illegible] Any lots which had been physically received and dumped but [illegible] eipts are removed from the inventory where they [illegible] method of arriving at receipts and inventories but Mr. Floyd [illegible] need for accuracy in the estimated profit and loss statement. [illegible] clude only final silver affidavit figures in his monthly profit [illegible] profit and loss statement is also the final monthly statement.

NTS TO ARRIVE AT NORMAL RECOVERIES

It is still the practice to adjust, at will, various [illegible] arrive at more normal recoveries. In August 1951 numerous changes [illegible] evidence but were not shown as adjustments. The majority of [illegible] inventories but stock pile removals and interplant [illegible] Stock pile removals are given either actual assays or average [illegible] results. The Sinter sent to the Blast Furnaces from the Sinter Plant [illegible] more reasonable recoveries at both plants but does not affect [illegible] the zinc content of hot slag sent to the Slag Treating Plant [illegible] get a more reasonable recovery at the Slag Treating Plant. [illegible] teries were not used at all to help pull down an [illegible] materials and the impending strike, August [illegible] larger August 31st inventory adjustments, [illegible]

	LEAD		COPPER		[illegible]		[illegible]	
	%	Pounds	%	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Inventories:								
Sinter - As Taken	27.00	423,501	2.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
As Used	21.00	333,276	1.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sinter Cleanings (1)								
- As Taken	31.35	981,505	2.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
- As Used	27.35	759,149	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dross Reverb Speiss								
- As Taken	8.60	64,125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
- As Used	8.60	64,125	47.80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total as Taken		1,474,131		[illegible]		[illegible]		[illegible]
Total as Used		1,156,552		[illegible]		[illegible]		[illegible]
Decrease		317,579		[illegible]		[illegible]		[illegible]
Omissions:								
Yard Cleanings	15.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Belt Cleanings	12.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
al Inventory [illegible]		308,508		[illegible]				
Transfer								
Sinter - As Taken	29.20	4,477,236	2.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
- As Used	29.06	4,455,770	1.95	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Decreased		21,466		[illegible]		[illegible]		[illegible]

(1) The dry weight of this material [illegible]

GENERAL COMMENTS

...NT WRITE-OFF - Continued

No metallurgical statements have been prepared for the Copper Plant since 1946.

...CEIPTS

As before, date of receipt depends entirely on availability of final settlement data when the ...stimated profit and loss figures are submitted to New York. This is usually the 12th of the follow...ing month. The Salt Lake and Tooele Offices agree on lots to be included and excluded at months end. ...ny lots which had been physically received and dumped but were not to be included in the months re...ceipts are removed from the inventory where they were dumped. This is a confusing and easily erratic ...ethod of arriving at receipts and inventories but Mr. Floyd states that it is necessary because of the ...eed for accuracy in the estimated profit and loss statement. He also has received instructions to in...clude only final silver affidavit figures in his monthly profit and loss statements. The estimated ...rofit and loss statement is also the final monthly statement.

...TS TO ARRIVE AT NORMAL RECOVERIES

It is still the practice to adjust, at will, various inventories and interplant shipments to ...rrive at more normal recoveries. In August 1951 numerous changes in weights and assays were in ...vidence but were not shown as adjustments. The majority of changes made were in Lead Plant secondary ...inventories but stock pile removals and interplant movements were also watched and adjusted when needed. Stock pile removals are given either actual assays or average stockpile assays, depending on desired ...results. The Sinter sent to the Blast Furnaces from the Sinter Plant is adjusted monthly to affect ...more reasonable recoveries at both plants but does not affect the overall Lead Plant recoveries. Also, the zinc content of hot slag sent to the Slag Treating Plant from the Lead Plant is often adjusted to get a more reasonable recovery at the Slag Treating Plant. On August 31, 1951 two Sinter Plant inventories were not used at all to help pull down an abnormally high recovery. Because of the shortage of materials and the impending strike, August was a cleanup month. Below is an example of three of the larger August 31st inventory adjustments, the two omissions and the Sinter transfer adjustment:

	LEAD		COPPER		SILVER		GOLD	
	%	Pounds	%	Pounds	Oz. Per Ton	Ounces	Oz. per Ton	Ounces
Inventories:								
Sinter - As Taken	27.00	428,501	2.00	31,741	19.25	15,273.26	.15	119.028
As Used	21.00	333,278	1.00	15,870	13.25	10,514.14	.15	119.028
Sinter Cleanings (1)								
- As Taken	31.35	981,505	2.01	62,900	20.725	[illegible]	.124	[illegible]
- As Used	27.55	759,149	.873	24,058	16.635	[illegible]	.1024	[illegible]
Dross Reverb Speiss								
- As Taken	8.60	64,125	57.80	430,980	72.96	27,200.95	1.04	387.749
- As Used	8.60	64,125	47.80	356,415	42.96	16,0[illegible].35	.84	313.162
Total as Taken		1,474,131		525,621		[illegible]		760.29[illegible]
Total as Used		1,156,552		396,343		49,[illegible]		573.[illegible]
Decrease		317,579		129,278		[illegible].96		127.[illegible]
Omissions:								
Yard Cleanings	18.6	22,608	3.6	4,376	17.08	[illegible]	.12	[illegible]
Belt Cleanings	12.9	48,321	2.6	9,739	9.71	[illegible]	.09	[illegible]
Inventory Decrease		388,508		143,393		[illegible]		[illegible]
Transfer								
Sinter - As Taken	29.20	4,477,236	2.00	306,660	[illegible]	[illegible]	[illegible]	[illegible]
- As Used	29.06	4,455,770	1.95	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Decreased		21,466		7,[illegible]		[illegible]		[illegible]

(1) The dry weight of this material was [illegible]

GENERAL COMMENTS

[illegible]NTS TO ARRIVE AT NORMAL RECOVERIES - Continued

Examples of past unaccountable (x) losses, as published, are:

	LEAD	COPPER	SILVER	GOLD
Year - 1949	3.301%	.[illegible]%	[illegible]	4.179%
Year - 1950	3.168%	.[illegible]%	[illegible]	4.6[illegible]5%
August - 1951	6.9[illegible]1%	[illegible]	[illegible]	5.565%
January - June 1951	3.082%	3.948%	[illegible]	4.116%

(x) These are all losses except slag loss, which is nearly constant.

While it is true that the Tooele Plant has large fluctuations in contents of ores and concentrates [illegible]ated, there should be a more uniform and more easily traceable method of [illegible] these recovery and loss percentages. The most preferable move would be more exact and complete inventories and better assays. There seem to be ample assays. Composites are hard to use because of the cont[illegible] fluctuations. After all this is done, then adjustments would be proper if needed. An abnormally high adjustment would then seem [illegible] call for an investigation if time allowed. In the Montana plant, adjustments are allowed every month [illegible] except June 30th and December 31st.

In a discussion with Mr. Carles Bardwell, Smelter Superintendent, and W. H. Floyd, Chief Clerk, the Auditor suggested that adjustments be limited to a few specific inventories when needed and that all adjustments be shown on the work sheets as such and shown to the management each month. This was readily agreed to by both men. In discussing inventory taking, Mr. Bardwell agreed with Mr. Floyd that the fluctuations of the contents of treated custom ores and concentrates are a major consideration at Tooele and that recovery fluctuations are bound to occur but in the long run losses are reasonably constant. He also stated that the point of loss occurrences are watched and controlled, making sure that these losses are not changing noticeably. Upon inquiry by the Auditor, Mr. Bardwell stated that he would be glad to have the operating department give special assistance to the clerk at December 31st of each year when they take inventories and he offered to submit more complete flue and bag house inventories [illegible] of the Lead Plant, where all parties agreed, the inventories were lax.

In time it is believed that these changes will make both departments more [illegible] of the causes and effects of these fluctuations and perhaps will lead to their being [illegible].

[illegible]METAL RECOVERY FROM FURNACE BOTTOMS

Removal of the old Copper Plant Reverberatory Furnace bottoms from [illegible] to October 1950 recovered some large excesses in metals over the original inventory. All [illegible] but carry no metals or values. The final accounting showed the following excess metals recovery, as at October 31, 1950:

	Lead Pounds	Copper Pounds	Silver Ounces	Gold Ounces
Furnace No. 3.	[illegible],175	1[illegible],7[illegible]	26,214.34	3,[illegible]
Furnace No. 4	[illegible],63[illegible]	[illegible]	566.82	2[illegible].599

This is further support to the theory recently proven at other plants that the build-up of furnace bottoms over the period of operations tends to be considerably conservative.

The recoveries of past losses show up in higher current [illegible] metals withdrawn from cold slag at the Blast Furnace Plant.

CONCLUSION

The Lead and Slag Treating Plants were shut down from August 27[illegible] to October 21, 1951, inclusive, as a result of a strike and a fire, both of which began on August 27, 19[illegible]. A new Lead Plant Sinter [illegible] was built during the shutdown.

All remaining Copper Plant inventories were transferred to the Lead Plant on January 1, 1949. [illegible] Copper Plant statements have been drawn up since that date.

PNYC 00011859

CONCLUSION

During the audit, the following major points were brought up and are discussed in more detail in the ing report:

(1) The necessity of compiling a final profit and loss statement by the 12th of the following month it necessary to eliminate some receipts from the physical inventory.

(2) The Auditor observed the taking of inventory at four different dates. The operating department fered to submit more data on monthly Lead Plant Flue Systems inventories. They also will assist in ember 31st inventories.

(3) Numerous adjustments were made in August interplant shipments and August 31st inventories. The management has agreed to limit these adjustments to a few specific materials and to show them on the heets.

(4) The New York Office is herein asked to clarify the desired inventory valuation procedure. The s used are changed at will to facilitate recoveries and to hold low costs and all parties concerned written instructions.

nly a few errors and discrepancies were uncovered during the audit. The work sheets and statements appeared to be in good order and to follow the Anaconda Company Metallurgical standards with the noted exceptions. The Metallurgical staff was cooperative and their work was neat and accurate.