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13 March 1949

ORIGINAL

THE STATUS QUO

OF

SODA INDUSTRY

IN

JAPAN

By

Tatsuo Tanaka

Governor of Yamaguchi Prefecture

I dedicate

this pamphlet on SODA INDUSTRY IN JAPAN to

my Respectful Mr. Eugene M. Ten Eyck, Chief

of Commerce and Industry Section, A.M.G.T.

Yamaguchi.

Governor

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PREFACE

I. I hereby dedicate these data according to the demand of Mr. Eugene M. Ten Eyck, Chief of Commerce and Industry Section, A.M.G.T. Yamaguchi, who met me on last April 11, and asked of me for my opinion when I made mention of enterprise rejustment in connection with soda industry.

II. These data being based on the scientific investigation by every means within my power without resorting only to my own opinion, I shall be able to testify them by these several statistics collected while I was with the Cabinet Planning Board, and Commerce and Industry Ministry, and as to the future prospect the materials for the 5-Year Economic Rehabilitation Program of the Economic Reconstruction Commission of the Economic Stabilization Board.

III. These materials being hurriedly compiled in the hours I could spare from my duties as the final decision of enterprise rationalization program is now drawing near at Tokyo Metropolis, I am very much deplorable to my dissatisfaction that perhaps there are many defects for which I wish to ask for your leniency, but if these data will serve even a little as your personal information, I shall be very much delightful.

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I. Important Role of Soda Industry playing in the Japanese Economy now on the Way of Rehabilitation.

A. In What Shape the Future Japan ought to be Rebuilt?

In this connection, what was discussed by the authorities from all quarters is already plain enough, in short, we ought to pave our way towards process-industries having high processing degree or having broad margin between costs of production and materials.

Considering from this standpoint, chemical industry, chemical textile industry and precision machine industry are most desirous, and the 5-Year Rehabilitation Program of the Economic Stabilization Board is also being drafted along these lines, and the three basic chemical elements of acid, alkali, and alcohol being necessary in these chemical industries fundamentally, such industries as soda manufacturing are one of the most fundamental and vital ones.

Our Yamaguchi Prefecture is, moreover, gifted with limestone regions along with the 3 plants of the 4 Soda manufacturing plants by ammonia-process throughout Japan. These 3 soda manufacturing plants not only as a key to the rehabilitation of our Yamaguchi Prefectural industry but also to that of Japan, do not stint labor for increasing their production.

The list given below shows the solid measure of working and production-capacities of soda plants operated by ammonia-process covering the period between 1930 and 1947, before I was appointed governor here. (List NO. 1)

The number of soda plants operated by electrolysis-process and their outputs are given here again in the following list which shows how many miner plants were operated by electrolysis-process in comparison with those by ammonia-process and whether they are profitable or not, considering from the point of view of electric power in our country. (List No. 2-2) (List No. 3)

Now as to the losses of these soda and caustic soda works done by air-raids, the following list shows that 17.8 per cent of the soda works and 35.7 per cent of the caustic works which now show 90.00 per cent -- rehabilitation respectively were damaged, and it was indeed a godsend for us to have such a little lose.

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Details of Damage Sustained by Air-raids

Summary :

	Soda Ash	Caustic Soda
Highest equipment-capacity until the end of 1944	889,200 ton	722,550 ton
Damage done by air-raids	158,400 "	257,860 "
Equipment capacity as of Aug. 15, 1945	527,200 "	464,690 "
Equipment capacity as of the end of Mar. 1948	835,200 "	660,890 "
Workshops before air-raids	7	42
Number of workshops sustained damage	3	5
Number of existing works	4	40
Percentage of damage	17.8	35.7
Ratio of equipment-capacity 1944-1948	93.9	91.5

Caustic soda produced by ammonia-process...410,000 tons, by electrolysis-process...310,000 tons at the end of 1944 respectively and sustained 50. and 17. per cent damaged respectively.

Soda ash sustained damage amounts to 70,500 tons at Makiyama Works of Mitsubishi Chemical, 50,400 tons at Tokuyama Soda Works, 32,400 tons at Ube Soda Works, and each shows a 25 per cent damage.

B. Analysis of Consuming-field of Soda and Caustic Soda.

As to where and to what extent these soda and caustic soda were and are being consumed in our country, we can find several changes in their consuming-field resulting fron their objective situation, once we examined the details of soda consumed for 5 year in the past.

Some 30 per cent of all the outputs of soda ash which was consumed for ordinary glass and plate glass manufacturing, and 15 per cent for medicines such as organic and inorganic agricultural chemical, took a turn for light metal manufacturing with the development of aircraft industry along with the progress of the war, and 35 per cent of which came to be used for light metal manufacturing.

As to caustic soda, we can easily understand how closely this caustic soda being conected with rayon industry considering from the fact that 45 per cent of this kind of soda went for artificial silk manufacturing, and this is the reason why the respective works of the Teikoku, Kanegafuchi, Toyo Rayon and Japan Cellulose Companies exist in this prefecture. Besides, some 10 per cent met the demand of sulophate ammonia manufacturing, and the importance of soda industry will be revealed in the following

list. (List No. 4)

As the above being a statistics covering 1941 to 1945, again I wish to refer to the following 5-Year Economic Rehabilitation-Plan on consumption of soda ash and caustic soda which was worked out by the Economic Stabilization Affairs Bureau of Economic Stabilization Board of Feb. 19th, 1949. (List No. 5)

C. By-products.

Chlorine bleaching-powder and chlorine solution are especially essential ones of by-products produced by electrolysis-process, and no other factory producing soda by electrolysis-process is found anywhere in Yamaguchi Prefecture except for Tokuyama Soda Plant, whose equipment half removed to ..... by the directive of the Commerce and Industry Ministry. (List No. 6)

II. Existing Condition of Ammonia-process.

A. Out of the existing 4 plants, 3 exist in Yamaguchi Prefecture, and the respective working capacities of these 4 plants are as shown in the following list No. 7. Of course, it is natural that working-capacities fluctuate according to the incentive factors resulting from labor condition, fuel, addition and repairs and others. (List No. 7)

The above calculation however was made as of the end of 1947, and in case of referring to soda ash only which totals to the extent of 770 tons per day bringing the annual output to 277,200 tons, the actual working capacities of late have come to the extent of 320 tons per day at Makiyama Plant of Mitsubishi Kasei K. K., 250 tons at Ube Soda Factory, 200 tons at Tokuyama Soda K. K.

Although the above figure exceeds the annual total of 217,000 tons of soda ash for 1949 mapped out by the Economic Stabilization Commission as of Feb. 19th, 1949, it comes short of the proposed 291,000 ton-goal for next year. Here the question depends on sleeping charge. (the total of 770 tons per day being based on the latest investigation, it was to the extent of 650 tons until some weeks ago). I mention herewith the 5 Year-Rehabilitation-Plan by Economic Stabilization Board on Soda Ash and Caustic Soda as a reference. (List No. 8)

The reason why I am of the opinion that the existing production ought to be continued is that :

1. The products exceeding the production-plan by the Economic Stabilization Board necessarily need not control. ---No, it is rather desirous and delightful for us to have such production more than 100 per cent, be it coal, iron or soda, and still more so with us especially in case of such essential manufactures as soda having a large field of consumption.

2. The present production will not necessarily be expected to last long as it is, if we consider the labor issue, condition of bottoms for material salt or other unexpected obstacles, as daily total of 770 tons being the latest record, and in case of a control being out over the products on ground that

a daily product was above the proposed plan worked out by the Rehabilitation Board, the annual mean may fall down below the proposed quantity for this year.

B. Actual Use of Ube Coal and Capacities of Plants.

The 3 plants in Yamaguchi Prefecture have a characteristic in consuming Ube coal.

By surmounting every obstacle for the reconstruction of our country, an increasing plan of iron-manufacture for 1949 is now being mapped out, for which the security of coal is an urgent question.

An increase-production of bituminous coal having strong cohesive-power for coking and having low ash portion for gas-producing furnace is most essential in a proposed large scale increase-program of coal production of 46,000,000 tons goal and these kinds of coal ought to be allotted to iron-manufacturing.

The coal production in Yamaguchi Prefecture is of a poor quality having low calorie, high ash portion and weak cohesive-power and moreover low melting point ∮ and is not popular even with the general consumers.

Those companies born in the industrial zones in Yamaguchi Pre. are managing this most nationally essential soda industry utilizing this coal of inferior quality since their birth under such a bad condition by contriving dust coal disposition equipments, i.e. additional dust coal feeder and conbustion gas agitator by steam injunction.

The following list will be given to show the respective calories of coal produced in Yamaguchi Prefecture and Kyushu, and an average calorie of other miscellaneous quantities of coal produced in various parts of our country. (List No. 9)

The above list was investigated by coal commission of Japan Industrial Conference as of the latter half of 1947, and the existing situation is that it is doubtful for such a factory like Ube Soda Co. to secure even a 35,000 calories with the gradually deteriorating Ube coal in which helding 50 per cent ash portion in spite of their strenuous efforts on one hand.

On the other, the Mitsubishi Soda Factory in Kyushu are using a good quality of coal having more than 6,000,000 calories with gradual increase of output of Kyushu coal.

Consideration must be taken into the difference of the respective capacities between both factories.

Makiyama Plant	0.8 tons
Tokuyama Plant	1.3 tons
Ube Plant	1.8 tons

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The above materials show coal-consumption per soda ash ton made by basic unit calculation and presented to G.H.Q. by the Chemical Bureau of the Economic Stabilization Board last October.

It remains fresh in our menory that the Ube Soda Factory was once ordered to suspend its operation on ground that its capacity was inferior, however, the Tokuyama Soda Plant then were using mixed coal at a ration of 4 parts Kyushu coal to 6 parts Ube coal, while the Ube Plant was being operated by using 3,500 calories.

The list given below can easily testify to the fact that the above basic unit calculation is not correct.

This list shows the capacity of boiler according to the investigation of the above mentioned coal commission, civilian authorities of Japan Industrial Conference.

As is shown clearly in the list, a decline of 25 per cent in calorie of coal results in a decline of 60 per cent in the capacity of boiler, therefore, in case of using coal having 35,000 calories we see a decline of 42 per cent in calories which will certainly result a decline of exceeding 70 per cent capacity of boiler. Upon considering the actual situation that while a kind of coal having 6,000 calories was being used at the Mitsubishi Factory, the Ube Factory was using a kind of coal having 3,500 calories, it is clear that the Ube Factory must be compelled to consume 3 times the quantity of coal if we take the capacity of boiler into our consideration. The Ube Factory was however successful in checking fuel-consumption to the extent of 1.8 tons taking advantage of the dust coal disposing equipment and leaving no stone unturned.

The above-mentioned calculation made by the Chemical Bureau of the Economic Stabilization Board without taking consideration into calories, I believe, cannot be said to be correct. Moreover, if we think over the quantity of ash portion low-melting point of Ube coal, we cannot help saying that the capacity of the Ube Plant is rather higher than that of the Mitsubishi Plant. This year is just the time when priority allotment of coal for iron-manufacturing is most necessary considering from the national point of view.

The Mitsubishi Plant consuming coal for iron manufacture ought to control its operation of glass and fire-brick manufacturing to the minimum extent.

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C. Sleeping Charge and Content of Enterprise.

Sleeping charge is now discussed because of the suspension of operation being keenly felt among the companies. Sleeping charge is nothing but a kind of accommodation-funds filling up red ink. The question is whether the government will take responsibility of it or other two or three companies have to take acount for the losses coming from the suspension of operation.

In the latter case, the readjustment of prices of soda will follow and this results in shifting the losses in question on the consumers.

In either case, this is not consistent with the financial administrative policy of the Economic 9 Point Program.

Considering from the ideology of the Economic 9 Point Program, it is logically correct that we wait and see the eventual result of the ceiling works which will finally come to suspend operation as a result of their non-economic production.

The list given below shows the details of capital, property, income and expenditure, and management capacity of our soda industry based on the materials as of Feb. 16th, 1949 furnished by the Japan Industrial Bank. (List Nos. 12, 13, and 14)

D. Producer's Price and International Market.

Producers' prices of the respective companies.

Mitsubishi Kasei	-	¥39,800 per ton.
Tokuyama Soda	-	¥38,000 "
Ube Soda	-	¥40,000 "

As above-mentioned, each company has a different price.

The highest price of the Ube Soda comes from the handicap of fuel-concumption as given above. The Merit System however is not yet being carried out, Once it has been carried out, the tables will be turned, and the unit price of the Makiyama Plant of Mitsubishi Kasei consuming high quality of coal will take a jump.

I cannot say for certain now to what extent the difference of prices will come. 5,500 calories are much talked about to be the standard price.

Again considering the relation between the domestic and international prices, $120 per ton c.i.f. Hongkong, and $102 per ton f.o.b. U.S.A., in last January respectively, and thus the excess between CIF and FOB makes $18 which means carriage and sundry. Now the much mooted single exchange rate is not yet established, but that-much-talked-about-¥350 is to be presumed, then coal price per ton will make ¥42,000, and we can make both ends meet on the existing coal price without any objection.

In Great Britain, at the pre-war time, Blannamond is affiliated

to the Imperial Chemical Incorporation which is now aiming at its monopolization of the Oriental market as pre-war days. The United States, however, shows 50 per cent increase of soda ash and 70 per cent increase of caustic soda during the period between 1940 and 1944, an increase to the existing 51 private works from the previous 40 and the existing 8 government works from the previous 4, but they are mainly located in the central part of the country, the carriage to the coast is expensive, and in addition to this, their domestic need being great after the war, the possibility of export for the East cannot be expected. Seeing from technical angle, these new plants are all being operated by electrolysis-process, and I hear these operated by ammonia-process are only 4 plants.

Here remains a problem how to survey the Oriental market hereafter, of course a view of our soda industry, too, ought to be done as an industry which is within the economic sphere of the United States.

As to the relations to I.C.I. of Great Britain more further investigation will be necessary, and that the destination of 30,000 tons of soda exported on, too. (List No. 15)

III. Problem of Material-salt.

The most important materials in Soda Manufacturing is salt, and all the soda manufacturing plants depend only on material-salt for industrial use except for method by electrolysis-process adapted by the Iwakuni Rayon mfg. Works which can electrolyze with sea-water now being under study of late.

I wish to summarize herewith the outline of its demand and supply.

All the outputs of salt of our country are table salt, and the salt for industrial use depends only on imported salt, which is as follows :

Formosa	Bay-salt
China	Chang tung salt
China	Chang lu salt

and salt produced in adjacent seas.
" " in Mediterranean Sea.
" " in Somaliland, Africa.

The list given below shows the actual condition of demand and supply of salt.

I remember that when a party of the Strike Investigation Mission came to Yamaguchi the other day, I referred to the minimum indispensable quantity of salt as 2,500,000 tons, Dr. Benner reported on me saying whether such a small quantity will do or not. (List No. 16)

The following list shows the solid measure of imported salt in the past and reveals distinctly the changes of places exported following the changes of international situation. (List No. 17)

The highest record of domestic salt produced is in the neighborhood of 600,000 and taking account of table salt only, salt of approximately 1,000,000 tons was demanded as shown in the list. (List No. 18)

The greater part of salt for industrial use being for soda industry, on the whole 1,500,000 tons is regarded to be the solid measure in the past. (List No. 19)

The demand and supply program of salt worked out by the Economic Stabilization Board as of Feb. 19th, 1949 is as follows : (List No. 20)

IV. The 5-Year-Rehabilitation Program.

The much mooted 5-Year Economic Rehabilitation Program was at last published under data of Feb. 22, 1949 after several revisions had been made, but following the enforcement of Economic 9 Point Program due to the Dodge Plan, some revision of this Program, at least can hardly be denied, though I am not certain that to what extent it will be revised, but I am convinced that at least some basic revisions will be avoided. In this prefecture, the war damage to soda industry by air-raids was not serious, and moreover, they can run their works depending on our domestic materials, be it limestone or coal, only except for material salt.

As the following lists being arranged so as to contrast the already mentioned lists with another ones being put together, care must be taken to the items given below.

Soda ash colum of List No. 8 is arranged so as to be in comparison with the colum of necessary materials of List No. 21 which shows the basis of calculation. List No. 22, 23 and 24 show the real working-capacities being in comparison with the equipments already mentioned, and list No. 21 stands as the details of an annual average working capacity, and then the details of consumption or supply-program are made being based on this production-plan.

The program for several necessary materials consists of List No. 16 relating to material salt, List No. 20 relating to electric-power for motive sources, and List No. 27 relating to the materials for addition and repairs.

日本に於ける曹達工業

田中龍夫

一九四九年三月十三日

吾が敬愛するテナイク商工部長の爲めに本文を擧ぐ

一九四九、三、一三

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前言

一、本資料は四月十一日軍政部テナイク商工部長と會見に際し豊達關係の整備問題に言及し知事より意見の提出を求められたるにより此處に一文を提するものなり

二、本資料作製に當りては單なる意見とせず出來得る限り科學的根據を以つて論ずる事とし企畫院・商工省在職期間中の諸統計並に將來に對する見透しとしては經濟安定本部經濟復興委員會の復興五ケ年計畫資料を以つて此れを立證す

三、東京に於ける企業合理化の最後的決定も迫り日子無き爲め急きかつ執務の余技の作業にて缺陷多き點は自ら遺憾なるも寛容なる態度にて御參考となれば誠に喜ばしいまれむ事を希ふ 尚少しでも

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一、日本經濟復興途上に於ける曹達工業の重要性

(一)過去に於ける曹達工業の各種實績と空襲被害

將來の日本は如何なる型に於て復興す可きであるか右に關する各方面の權威者の所論は既に明らかであつて一言にして言へば加工度の高かい產業に向ふ可きである產業則ち原料費と生產費との間に幅のある斯る觀點に立つ際に化學纖維工業並に精密機械工業の三種にて最も望ましいものであり安定本部の復興五ケ年計畫も亦此の線に沿つて立案せられてゐる

而も化學工業とは其の基礎に三原素たる酸・アルカリ・アルコールの三要素を要し曹達工業の如きは基礎產業中の基礎的なる最重要工業である

而も我山口縣の如き石灰岩地帶なると同時に產炭地として此處に全國アルカリ四工場中の三工場を有し本曹達三工場は丈に山口縣產業のみ

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ならず日本産業再建の鍵として吾々は其の生産増強に凡ゆる協力を惜まぬものである

第一表は一九三〇年より四七年余が山口縣に就任迄のア法曹達工場の能力並に稼動實績である

更に電解法の生産並に工場數第二表、第二表の二及第三表の如くである

本表は我國が電力的に見て果して電解が有利なるか又ア法曹達工場と比し如何に都小工場の多いかを示すものである

然らば出荷苛性曹達並に曹達灰工場は空襲により如何なる程度の被害を被つたかと云ふに左表の如く曹達灰に於て一七ヘ%苛性に於て三ヤヤ%であり一九四八年には各九〇%以上の復舊を見損害の輕微なりし事は誠に僥幸であつた

曹達工場被害状況

摘要	曹達灰	苛性曹達
一九四四年末県最高設備能力（年産）	八八九二〇〇屯	七二六五五〇屯
空襲被害	一五八四〇〇	二五七八六〇
一九四五年八月十五日設備能力	五二七二〇〇	四六四六九〇
一九四八年三月末設備能力	八三六二〇〇	六六〇八九〇
空襲前事業場	七	四二
〃被害工場数	三	五
現在工場数	四	四〇
空襲被害率	一七八	三六七
一九四八年對一九四四年設備比率	九三九	九一五

（註）苛性曹達は一九四四年末ア法四一万屯にて被害率夫々五%一七%なり曹達灰被害は三菱牧山七万二千屯、徳曹五万四千屯、宇部曹達三万二千四百屯にて各二五%の被害率である

(ロ)曹達灰苛性曹達の消費内容を分析

次に曹達灰　苛性曹達は我國に於て如何なる方面に如何なる程度消費せらるゝか・即ち消費（過去五年）内容を見れば客觀狀勢により種々變遷してゐる事がわかる

曹達灰は生産の約三〇%が板ガラス、ガラス用にて（有機、無機最多）一類に一五%である

然るに航空機工業の進展に伴ひ輕金屬方面の增産と共に戰爭の進むに從つて軽金屬用三五%迄達するに至つた事もあつた

苛性曹達に於ては四五%がスフ、人絹向けであり曹達工業とスフ、人絹工業との如何に關連するかを物語る　本縣下帶人、鐘紡、東洋紡、日本セルロースの各工場の存在する以所である

其の他需安に約一〇%の需要あり詳細は第四表にて其の重要性を察知されたい

本表は一九四一年より四五年の五ケ年であるが更に經濟復興五ケ年計畫により將來の曹達灰苛性曹達の消費計畫である

尚本表は安定本部經濟復興事務局（一九四九年二月一九日実）作製に
なるものである

(ロ) 副産物

副産物も亦重要なるものが多く特に鹽素、晒粉、液体鹽素等は電解法
より生ずるものである

山口縣に於ては徳山の一工場であり既設備の半分は商工
省の命により　に移設せられてゐる

ニ、アムモニヤ曹達法の現狀

(イ) 現在各社稼働狀況

現有四工場中の三工場は山口縣下にあり

右四工場の設備能力左の如くである

尚稼動は勞働情勢・原燃料關係並に補習其他の各要素により一定し居
らざるは當然である

然るに右稼動計數は一九四七年末なるも今日は上昇し曹達灰にて三萬

牧山の日産三二〇屯、宇部二五〇屯、徳山二〇〇屯程度の實稼動となり日産合計七七〇屯程度にして二七七二〇〇屯となり安本經濟復興委員會の一九四九年二月一九日案の一九四九年度曹達灰二一七、〇〇〇屯を上廻るは事實なるも來年度の二九一、〇〇〇屯には足らざる實產となる

此處にスリービングチヤージを爲すか爲さゞるかの論の生ずる所以である（但し日產七七〇屯は最近にて先頃迄は六五〇屯程度であつた）

今安本の曹達灰並に苛性ソーダ五ケ年計畫を掲げ參考に供する（第八表）

余が意見としては現狀のまゝ生產を繼續して可とす理由は

イ、安本の生產計畫を上廻る事を必ずしも抑制す可きではない否むしろ石炭にしろ鐵にしろソーダにしろ一〇〇%以上の生產ある事は望ましく他に大なる影響なき限り生產計畫突破は喜ばしき事である就中ソーダの如き需要大にして各方面より待望せられある重要製品に於ておや

ロ、今日の生産は必しも此のまゝ永續するとは限らぬ或は勞働問題或は原料鑛の船腹狀況其の他不測の事を考へれば日産七七〇屯は最近の最高であり年間を通じて見る時に今計畫日産數量を超えたと云ひて抑制した場合或は本年度の計畫數量をすら通年して見ると割るかも知れないのである

(ハ)宇部炭の活用狀況と工場效率

山口三工場は宇部炭を消費するものとして特色を有する

卽ち一九四九年度は國家再建の爲萬難を排して製鐵の增産を計畫してゐる

其の爲めには製鐵用炭の確保こそ最大の急務である 一六〇〇〇〇〇〇屯の石炭大增産も強粘結有煙のコークス用炭及低灰分のガス發生爐用炭こそ最も貴重であり此等を製鐵用に振り向ける可きである

山口炭の如き低カロリー、弱粘結にして而も灰分多く且つ融點低き石炭はこれを一般に使用する事すら各方面より苦情の起る雜炭である

然るに山口工業地帯に其の誕生以来此を山口炭自場消費を目標に或は粉炭装置或は塊炭の蒸気噴射二段レトルトの完全燃焼装置等を考案し此の粗悪炭にして而も國家的に最貴重なる曹達工業を運営してゐるのである。

第九表に参考として九州炭山口炭及全國平均炭のカロリー表を掲げる（日本産業協議會石炭委員會編）

品質の低下を案じ宇部曹達の如き三五〇〇カロリーも危まれる現状である。而も灰分五〇%の炭を凡ゆる努力を拂ひ使用しつゝあり他方九州牧山にありては漸次九州炭の増産と共に六〇〇〇カロリーを超ゆる良質炭を使用しつゝある此の両者用の能率の差を考へねばならぬ

即ち原単位計算に於て昨年十月安本化学局よりGHQに提出せる資料にソーダ灰屯當り石炭消費を

牧山工場 一〇八屯、徳山工場、一一三屯、宇部工場、一八八屯、

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とし斯るが故に宇部は能率悪しとて一度操業の停止を命ぜられたるは未だ記憶に新らしき事である

然れども當時傳聞は九州炭四、宇部炭六の混用に宇部曹達は一〇〇%の而かも三五〇〇カロリーの宇部炭操業であつた

右の原単位計算が正當でない事は第十表にて反駁出來得るのである即ち本表はボイラー効率表にして第九表同様民間權威者の石炭委員會の調査によるものである

普通ボイラーは六三〇〇カロリーをベースとするも本表は六〇〇〇カロリーを一〇〇として計算してある

本表に明らかなる如くカロリーにて二五%の低下はボイラー効率にては六〇%の低下となる

況や三五〇〇カロリーの石炭の場合に於てはカロリーにて四二%低下となり効率にては七〇%以上の効率低下は確實である

驚えつて牧山が六〇〇〇カロリーの石炭を使用し宇部が三五〇〇カロ

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リーの石炭を使用しつゝある此の現況は其のボイラー効率を念頭に入れる場合三倍以上の石炭を使用せなければならぬ事となる　然るに粉炭裝置其の他凡ゆる苦心を爲して牧山が〆へ屯の時に宇部は下へ屯の使用にて食ひ止めて居るのであつて然らされば牧山の〆へ屯に對し三倍強の下へ屯以上を使用するも尚可能學と云ひ得やる　即ちカロリーを考へさる前記安本化學局の計算は最も不首と云ふ可きである

況や灰分の量並に其の低融點なる事を考へればむしろ宇部ソーダの方が牧山より高能率を云はねばならぬ

一九四九年度は國家的にも製鐵用炭の最も重點配當を要する時である

むしろ製鐵用炭を使用しつゝある牧山工場こそガラス並にコロハルト煉瓦製造の最低限度迄操業の抑制をす可きである

(ヘ)スリーピングチヤーヂと企業内容

操業の場合にスリーピングチヤーヂの論あるもスリーピングチヤーヂは一種の赤字融資に外ならない　其の間の責任は國家に於て拂ふが他の三社なり二社が負擔するか後者の場合はソーダ價格の調整更に消費

者轉嫁に外ならない　何れにしても九原則の金融財制策と矛盾すると云はねばならぬ　むしろ九原則の理念から考へればスリーピングチヤージをせず不經濟生産を爲しつゝある限界工場が自然的に操業を中止する結果を待つ事が理論的には正しい

今曾達工業全般の資本狀況、資産狀況、收支狀況、經營効率狀況をは本興業銀行一九、四九、年二月十六日の資料により詳記すれば第十一表の如くである

(ロ)生産價格と國際市場各社の生産價格(一屯)

三菱　三九、八〇〇圓
德曾　三八、〇〇〇圓
宇部　四〇、〇〇〇圓

右の如く各社共夫々生産價格に相異あり宇部曾達の價格最高なるは前記の如き石炭消費量に於て最も不利である然るに炭價に於て未だメリツトシステム實施されず將來メリツト

システムの實施を見たる場合に於ては逆轉し高品位炭使用の三菱牧山工場の單價が高騰する事となる

但し今日の所メリットシステムに於て果して如何なる價格差となるか判明せず五五〇〇カロリーが基準價格となるとの噂の程度である

更に國際價格との關係を見れば一月相場に於て香港CIF一二〇ドル北米合州國FOBが一〇二ドルである　故にFOB、CIFの差一八ドルが保險料運賃諸係りとなる譯である

今爲替單一レートが如何に設定せらるゝか未定であるが巷間傳へらるる三五〇圓とせば屯が四二〇〇圓となり現行國内價格にて最早事業上支障ない事となる

英國は戰前のプラナモンドが統一されてICI卽ち

となつたが東洋市場の戰前同樣の獨占を企圖しつゝある

然るに米國は一九四〇年乃至四四年の間ソーダ灰五〇%苛性曹達七〇%の增加を見新工場は民間四〇より五一に官營四工場より八工場に增設せられたが主として中部地方にあり海岸迄の輸送費に多額の經費を

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要し又米國内需要も大なる爲め戰後東洋向けの輸出は考へられぬ
技術的な面より云へば右の新工場增加は電解法にてアルカリ法は四工場と關連
く此處に今後東洋市場を如何に考へるかの問題があり
二七た米國經濟圈としての我國曹達工業の考察が爲されねばならない
英國ICIとの關係は更に詳細な調査を必要とし又傳曹三万屯の一九
四八年輸出も香港仕向けをりし事と考へ併せねばならぬ

三、原料鹽問題

曹達工業上最も重要なるは原料鹽である

電解法中最近研究せられ居る岩國帝人の海水より直接電解する方法を除きすべて工業用原鹽に依存するものである

今我國鹽の需給狀況を略記すれば本部内生產鹽はすべて食糧鹽であり工業鹽は輸入鹽に依存したものである

輸入鹽には台湾の天日鹽支那の山東鹽長芦鹽等近海鹽と地中海ソマリー
ランド等の遠海鹽である

第十六表は鹽の需給實績であるが過般ストライク調査團の一行　博士來山の際余は二五〇〇〇〇〇屯は最低必要なる事を云ひたるも斯る少量で良いかと反問を受けた事を記憶する

第十七表は過去に於ける外鹽輸入の實績である

國際情勢の變化に伴ふ輸入地の變化が顯著に現はれて居る而かも國内生産は最高六〇〇〇〇〇屯程度であり食糧用のみにても約百万屯の需要あるは第十八表の如くである

尚工業鹽の大部分はソーダ工業用ひあるが工業鹽全体として百五十万屯は既往の實績として見られる

次に安定本部五ケ年計畫一九四九年二月一九日案による鹽需給計畫は第二十表の如くである

四　復興五ケ年計畫

復興五ケ年計畫は數回に渉り改行を爲されたるも一九四九年二月二十二日附にて發表されたるものが最も新らしいものである

但しドッジプランによる九原則の強行に伴ひ再改訂せらるゝであらう事

は豫測に難くないが豊達の如き基礎主要工業がどの程度改訂せらるゝか未だ判明しない

勿論若干の改訂ある可きも空襲被害少なく且つ原料關を除き他は石灰石にしろ石炭にしろ國内資源である　根本的改善の無い事丈けは豫測し得るのである

以下各表は既に揭示せる前揭各表と一連のものであるが此れが見方につき一言付加しておく

即ち

第八表豊達灰欄と第二一表所要原料と對應するものである

而して第二二表第二三表第二四表は上記設備による實稼働能力表にして第二一表年間平均實稼動能力の内容と見る可きものである

更に第五表の消費内容即ちソーダ灰苛性ソーダの配當計畫によりて爲さるゝものである

生産用所要各原料の計畫は主原料たる工業鹽につきては第十六表燃料た

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る石炭につきては第二〇表動力源たる電力につきては第二六表其の他補修運轉用資材は第二七表各資材となる

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List No. 1

Designed Capacity (A) and Percentage of Actual Operation (B)

of Soda Plants of Ammonia Process.

(Unit : metric ton)

Year	Number of Plants	Crude Soda Ash		Soda Ash		Caustic Soda	
		(A)	(B)	(A)	(B)	(A)	(B)
1930	2	84,600	72	64,800	94	7,200	0
1931	2	131,400	75	108,000	80	18,000	46
1932	2	183,600	78	126,000	81	28,800	102
1933	2	270,000	82	198,000	72	108,000	55
1934	2	360,000	93	270,000	64	144,000	78
1935	4	475,200	86	270,000	75	191,520	72
1936	6	568,800	85	367,200	61	267,120	67
1937	7	716,400	78	399,600	59	339,120	68
1938	7	813,600	82	457,200	54	396,520	76
1939	7	928,800	70	457,200	54	414,500	68
1940	7	928,800	64	486,000	44	414,500	64
1941	4	835,200	49	403,200	39	403,200	45
1942	4	835,200	37	403,200	37	403,200	28
1943	4	835,200	32	403,200	32	403,200	26
1944	4	835,200	20	403,200	25	403,200	12
1945	4	835,200	11	403,200	7	403,200	2
1946	4	835,200	3	403,200	6	403,200	1.5
1947	4	835,200	8	403,2 00	12	403,200	3

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List No. 2

Designed Capacity (A) and Percentage of Actual Operation (B)

of Soda Plants of Electrolytic Process.

(Unit : metric ton)

Year	Number of plants	(A)	(B)
1930	10	24,932	68
1931	11	36,953	71
1932	11	40,278	75
1933	13	51,364	77
1934	16	71,303	76
1935	21	95,571	84
1936	24	141,308	82
1937	24	179,712	73
1938	25	204,966	66
1939	30	126,938	67
1940	30	222,608	63
1941	32	234,958	52
1942	33	234,424	50
1943	35	237,079	49
1944	35	234,868	41
1945	36	250,925	10
1946	36	251,610	12
1947	36	251,610	16

(Note : Excluded plants which are out of operation.)

List No. 2-2

Designed and Actual Capacity of Soda Plants of Electrolytic Process at the End of 1947.

(Unit : metric ton)

Name of Company	Name of Plant	Designed Capacity			Actual Capacity
		Quick-silver process	Diaphragm process	Total	
Nisshin Denka	Sakata	--	11,860	11,860	3,240
Tekko-sha	"	3,736	--	3,736	2,580
Kureha Chemical	Nishiki	7,200	5,400	12,600	6,000
Hodogaya Chemical	Koriyama	--	4,597	4,597	1,080
Showa Denko	Hirota	--	1,080	1,080	600
Nihon Soda	Nihongi	--	25,936	25,936	10,800
"	Takaoka	6,367	--	6,367	--
Toa Gosei	Fushiki	8,257	3,016	11,273	4,740
Nissan Chemical	Toyama	317	--	317	204
Kanto Denka	Shibukawa		12,950	12,950	979
Nissan Chemical	Oji	--	7,260	7,260	3,120
Asahi Denka	Ogu	--	15,837	15,837	3,900
Hodogaya Chemical	Hodogaya	488	4,278	4,766	3,084
Tsurami Soda	Tsurumi	--	5,280	5,280	3,780
Showa Denko	Yokohama	--	8,324	8,324	3,960
Ajinomoto	Kawasaki	7,200	--	7,200	2,880

Nissan Chemical	Oji	--	7,260	7,260	3,120
Asahi Denka	Ogu	--	15,837	15,837	3,900
Hodogaya Chemical	Hodogaya	488	4,278	4,766	3,084
Tsurami Soda	Tsurumi	--	5,280	5,280	3,780
Showa Denko	Yokohama	--	8,324	8,324	3,960
Ajinomoto	Kawasaki	7,200	--	7,200	2,880
Kanegafuchi Kaisui-riyo	Nagai	--	1,200	1,200	--
Toa Gosei	Nagoya	4,780	6,740	11,520	4,860
Niitsubishi Kasei	Yodogawa	1,460	--	1,460	1,200
Naniwa Gosei	Osaka	2,940	--	2,940	1,796
Toa Koko	"	--	4,196	4,196	--
Yamatogawa Senko	Sakai	--	500	500	456
Yura Chemical	Amagasaki	--	2,980	2,980	--
Osaka Soda	"	6,120	--	6,120	--
Kanegafuchi Boseki	Takasago	1,800	1,800	3,600	2,520
Nanaki Chemical	Wakayama	--	2,628	2,628	1,308
Nisshin Chemical	Okayama	900	--	900	360
Toyo Soda	Tonda	--	3,650	3,650	1,800
Toa Gosei	Sakade	4,057	5,322	9,379	3,000
Nankai Chemical	Tosa	--	2,628	2,628	396
Nisshin Chemical	Niihama	--	830	830	732
Osaka Soda	Kokura	10,220	--	10,220	7,200
Mitsubishi Kasei	Kurosaki	7,200	--	7,200	1,920
Mitsui Chemical	Miike	--	14,570	14,570	4,284
Asahi Kasei	Nobeoka	18,676	--	18,676	6,480
Nihon Soda	Karita	--	7,030	7,030	2,820

Ajinomoto	Kawasaki	7,200	--	7,200	--
Kanegafuchi Kaisui-riyo	Nagai	--	1,200	1,200	--
Toa Gosei	Nagoya	4,780	6,740	11,520	4,860
Niitsubishi Kasei	Yodogawa	1,460	--	1,460	1,200
Naniwa Gosei	Osaka	2,940	--	2,940	1,796
Toa Koko	"	--	4,196	4,196	--
Yamatogawa Senko	Sakai	--	500	500	456
Yura Chemical	Amagasaki	--	2,980	2,980	--
Osaka Soda	"	6,120	--	6,120	--
Kanegafuchi Boseki	Takasago	1,800	1,800	3,600	2,520
Nanaki Chemical	Wakayama	--	2,628	2,628	1,308
Nisshin Chemical	Okayama	900	--	900	360
Toyo Soda	Tonda	--	3,650	3,650	1,800
Toa Gosei	Sakade	4,057	5,322	9,379	3,000
Nankai Chemical	Tosa	--	2,628	2,628	396
Nisshin Chemical	Niihama	--	830	830	732
Osaka Soda	Kokura	10,220	--	10,220	7,200
Mitsubishi Kasei	Kurosaki	7,200	--	7,200	1,920
Mitsui Chemical	Miike	--	14,570	14,570	4,284
Asahi Kasei	Nobeoka	18,676	--	18,676	6,480
Nihon Soda	Karita	--	7,030	7,030	2,820
Total		91,718	159,892	251,610	93,979

(Note : - These works are now under the supervision of the government.

List No. 3

Output of Soda Ash and Caustic Soda

(Unit ; metric ton)

Year	Soda Ash	Caustic Soda		
		Ammonia process	Electrolytic process	Total
1930	61,144	0	16,951	16,591
1931	86,717	8,206	26,326	34,532
1932	102,643	29,466	30,344	59,810
1933	141,751	59,317	39,451	98,768
1934	174,063	111,708	54,343	166,051
1935	203,680	137,785	97,972	217,759
1936	222,997	177,323	116,317	293,640
1937	234,238	231,193	130,832	362,025
1938	244,908	301,787	135,963	437,750
1939	244,415	283,148	145,532	428,680
1940	214,369	266,044	140,445	406,489
1941	152,958	181,494	123,173	304,667
1942	145,435	112,857	117,485	230,342
1943	126,066	106,220	115,009	221,229
1944	98,308	46,845	96,202	143,047
1945	27,757	8,482	25,604	34,086
1946	22,922	6,507	23,745	30,252
1947	46,711	12,121	40,049	52,170

List No. 4

For what purpose Soda Ash (A) and Caustic Soda (B)

were consumed?

(Unit : metric ton)

Used for	1941		1942		1943		1944		1945	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Salt refining	4,830	--	3,015	637	2,585	851	1,850	--	610	--
Synthetic petroleum	790	1,497	586	1,184	820	2,230	1,458	2,830	320	900
Oil refining	37	1,653	--	1,683	--	1,059	--	400	--	90
Light metal	9,850	25,741	10,910	27,350	17,170	53,520	50,540	34,700	10,000	3,250
Metal Soda	376	12,498	430	11,700	117	11,700	--	11,645	--	2,290
Ammonia sulphate	1,950	3,284	1,470	1,860	1,080	2,595	280	1,885	360	1,430
Iron & steel	5,247	966	6,002	569	6,145	561	3,918	189	502	30
Mining	1,400	153	1,400	139	1,431	317	1,208	211	360	10
Paper pulp	2,126	20,070	919	10,784	683	8,072	185	2,380	80	1,370
Rayon	1,070	119,850	129	82,099	--	50,035	--	18,650	--	7,100
Cellophane	--	3,280	--	1,192	--	436	--	138	--	--
Seasonings	7,880	5,124	4,670	6,464	12,425	1,910	6,250	850	2,950	427
Sheet & glass	56,546	--	43,880	--	32,165	--	15,430	--	4,500	--
Grease refining	275	971	74	671	14	445	4	220	2	30
Grease working	3,972	11,741	2,104	9,941	1,237	6,593	590	3,062	250	1,170
Washing soda	2,073	--	1,237	--	1,219	--	360	--	80	--
Bicarbonate of soda	11,000	--	8,148	--	9,067					

Ammonia sulphate	1,960	3,284	1,470	1,860	1,080	2,695	280	1,885	360	1,430
Iron & steel	5,247	966	6,002	569	6,145	561	3,918	189	502	30
Mining	1,400	153	1,400	139	1,431	317	1,208	211	360	10
Paper pulp	2,126	20,070	919	10,784	683	8,072	185	2,380	80	1,370
Rayon	1,070	119,850	129	82,099	--	50,035	--	18,650	--	7,100
Cellophane	--	3,280	--	1,192	--	436	--	138	--	--
Seasonings	7,880	5,124	4,670	6,464	12,425	1,910	6,250	850	2,950	427
Sheet & glass	56,546	--	43,880	--	32,165	--	15,430	--	4,500	--
Grease refining	275	971	74	671	14	445	4	220	2	30
Grease working	3,972	11,741	2,104	9,941	1,237	6,593	590	3,062	250	1,170
Washing soda	2,073	--	1,237	--	1,219	--	360	--	80	--
Bicarbonate of soda	11,000	--	9,148	--	9,067	--	6,350	--	2,200	--
Medecines	1,840	2,216	1,030	1,288	772	1,356	900	870	730	800
Inorganic chemicals	20,864	3,142	12,371	1,680	12,135	1,950	9,122	2,257	2,775	480
Agricultural chemicals	710	1,168	665	825	683	720	595	280	420	300
Dye-stuff & intermedium	5,759	14,262	3,193	7,148	3,443	7,365	1,700	3,350	585	922
Organic medecines	3,608	1,714	1,564	2,859	1,372	4,266	1,264	3,260	250	765
Cotton cloth & wool bleaching	4,000	12,211	1,460	6,336	1,066	4,261	310	1,800	128	610
Export to colonies	2,225	5,669	738	2,983	1,337	1,586	1,870	305	40	40
Export to foreign lands	380	4,587	220	4,960	370	6,463	75	990	—	—
Others	7,722	18,772	5,536	15,618	3,946	7,316	15,601	14,003	5,650	10,226
Munitions	13,444	18,229	32,297	42,678	41,303	50,507	31,935	45,970	5,330	9,450
Total	169,974	288,798	415,048	240,666	155,585	225,914	151,795	150,245	37,762	41,690

List No. 5

Consumption-program of Soda Ash (A) and Caustic Soda (B)

in line with the 5-year Economic Reconstruction Plan.

(Unit : metric ton)

To be consumed for	1949		1950		1951		1952		1953	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Pulp for artificial silk	—	1,100	—	1,900	—	2,800	—	3,600	150	4,500
Paper & pulp	450	11,000	650	13,000	780	15,000	900	18,000	1,000	20,000
Rayon	—	55,000	—	67,000	—	93,000	—	121,000	—	149,000
Synthetic fibre	—	300	—	1,300	—	3,000	—	5,300	42,000	8,400
Sheet glass	38,000	—	28,000	—	33,000	—	38,000	—	86,000	—
Glass works	—	—	23,000	—	28,000	—	33,000	—	—	—
Chemical Fertilizer	4,000	41,800	5,700	5,800	6,500	7,200	7,400	8,200	8,170	8,800
	8,800	12,500	2,000	17,000	16,000	22,000	20,000	26,000	24,000	30,000
Organic Synthetics	340	1,200	300	1,700	400	2,200	500	3,000	650	4,600
Inorganic medecines	6,000	1,600	7,500	1,900	9,000	2,200	10,500	2,500	12,000	2,800
For goods	—	3,200	420	4,000	500	5,000	580	6,000	680	7,000
Medecines	1,300	3,800	1,500	4,200	1,700	4,800	1,850	5,400	2,000	6,000
Agricultural Chemicals	450	660	600	700	750	750	900	800	1,100	800
Rubber goods	—	110	—	300	—	400	—	500	—	600
Grease	1,200	5,450	550	8,000	670	11,000	800	13,000	800	13,500
Seasonings	15,060	3,000	82,000	4,100	37,000	5,150	44,000	5,600	48,000	6,600

Pulp for artificial silk	—	1,100	—	1,300	—	2,[illegible]	—	[illegible],000	150	4,500
Paper & pulp	450	11,000	650	13,000	780	15,000	900	18,000	1,000	20,000
Rayon	—	55,000	—	67,000	—	93,000	—	121,000	—	149,000
Synthetic fibre	—	300	—	1,300	—	3,000	—	5,300	42,000	8,400
Sheet glass	38,000	—	28,000	—	33,000	—	38,000	—	86,000	—
Glass works	—	—	23,000	—	28,000	—	33,000	—	—	—
Chemical Fertilizer	4,000	41,800	5,700	5,800	6,500	7,200	7,400	8,200	8,170	8,800
	8,800	12,500	2,000	17,000	16,000	22,000	20,000	26,000	24,000	30,000
Organic Synthetics	340	1,200	300	1,700	400	2,200	500	3,000	650	4,600
Inorganic medecines	6,000	1,600	7,500	1,900	9,000	2,200	10,500	2,500	12,000	2,800
For goods	—	3,200	420	4,000	500	5,000	580	6,000	680	7,000
Medecines	1,300	3,800	1,500	4,200	1,700	4,800	1,850	5,400	2,000	6,000
Agricultural Chemicals	450	660	600	700	750	750	900	800	1,100	800
Rubber goods	—	110	—	300	—	400	--	500	—	600
Grease	1,200	5,450	550	8,000	670	11,000	800	13,000	800	13,500
Seasonings	15,060	3,000	82,000	4,100	37,000	5,150	44,000	5,600	48,000	6,600
Salt refining	14,200	3,800	18,000	4,000	20,700	5,000	24,000	6,000	27,300	6,900
Oil refining	—	500	—	1,000	—	1,500	—	1,800	—	2,000
Sluminium Electrolysing	4,500	7,500	4,800	9,000	5,600	12,000	7,000	14,500	7,800	17,500
Others	15,700	14,480	20,480	17,100	23,400	22,000	25,570	25,800	28,350	30,000
Export	—	10,000	—	13,000	—	15,000	—	18,000	—	20,000
Total	110,000	140,000	155,000	175,000	185,000	230,000	215,000	285,000	240,000	340,000

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List No. 6

Output of Chlorine Manufactures and Bicarbonate of Soda

(Unit : metric ton)

Year	Hydrochloric Acid	Bleaching Powder	Liquid Chlorine	Bicarbonate of Soda	Calcium Chloride
1930	7,405	49,471	444	2,230	Unknown
1931	18,369	45,005	2,369	3,079	"
1932	23,883	47,485	3,808	6,081	"
1933	34,647	61,142	5,546	6,413	"
1934	43,762	66,155	9,208	9,858	"
1935	73,781	77,080	12,827	14,113	"
1936	(1)135,298	79,228	16,330	15,169	"
1937	157,531	91,930	(2) 18,343	12,744	"
1938	118,271	77,287	(2) 11,477	10,378	"
1939	143,363	72,873	15,985	14,172	5,665
1940	123,363	81,860	15,681	17,704	6,971
1941	89,986	65,862	14,062	14,782	25,478
1942	77,480	56,086	11,554	12,507	12,399
1943	69,465	46,280	11,444	10,830	Unknown
1944	46,833	35,313	7,096	7,597	9,401
1945	11,706	6,303	1,786	3,137	3,384
1946	19,955	7,597	2,604	2,976	5,115
1947	33,326	16,208	4,405	3,819	(3) 8,500

(Note : (1) Lubran process is included.)
((2) Compressed gas is included.)
((3) Presumed.)

List No. 7

Designed and Actual Capacity per Day of Soda Plants of Ammonia Process (as of 1947)

(Unit : metric ton)

Name of Company	Name of Plant	Crude Soda Ash		Soda Ash		Caustic Soda	
		Designed	Actual	Designed	Actual	Designed	Actual
Mitsubishi Kasei K. K.	Makiyama	800	300	500	300	250	150
Ube Soda K. K.	Ube	360	300	200	150	200	100
Tokuyama Soda K. K.	Tokuyama	600	100	250	90	350	100
Toyo Soda K. K.	Tonda	560	—	170	—	320	—
Total		2,320	700	1,120	540	1,120	350
Actual capacity per annum in total		835,200	273,600	403,200	194,400	403,200	126,000

List No. 8

Output Program of Soda Ash and Caustic Soda in Line with the 5-year Econimic Rehabilitation Plan.

	Average output per annum (1930-1934)	Weight	1949		1950		1951		1952		1953	
			(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Soda Ash	189,300	0.26	217,000	113,72	291,000	153,72	378,000	199,68	458,000	241,94	526,000	277,57
Caustic Soda	89,423	0.26	140,000	156,56	175,000	195,70	230,000	257,21	285,000	318,71	340,000	380,23

(Note : (A) - Quantity of output (Unit ; metric ton))
((B) - Index of general output.)

List No. 9

Declining Trend of the Grade of Coal.

(Unit : Calorie)

Colliery	1940		1941		1942		1943		1944		1945		1946		1947		1948	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Whole state		5,985	6,010	6,086	5,955	5,960	5,985				5,968	5,730	5,665	5,600	5,573	5,600		
Kyushu area		6,137	6,195	6,305	6,078	6,110	6,096				6,015	5,936	5,907	5,815	5,797	5,872		
Ube area		4,680	4,680	4,662	4,595	4,468	4,426				4,168	4,203	4,103	4,030	3,966	3,905		

(Note : (A) - The first half of the year.)
((B) - The second half of the year.)

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List No. 10

Boiler Efficiency (Oct. 1948)

Calorie	6,000	5,750	5,500	5,250	5,000	4,750	4,500
Calorie Ratio	100	96	92	87	83	79	75
Boiler output	100	96	91	85	77	69	40

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List no. 11

Finance Condition of Soda Industry

	Feb.-July, 1946	Aug. 1946-Jan. 1947
(A) Capital:		
(a) Net worth	24.1	22.2
(b) Liabilities	78.0	75.4
(c) Net Income or Deficit (profit or Loss.)	2.1	2.4
(B) Net Worth:		
(d) Capital Stock paid in	105.1	115.2
(e) Surplus Reserves	7.3	7.5
(f) Deferred Income or Deficit	13.0	22.7
(C) Liabilities:		
(g) Bonds	0	0
(h) Funded Debts	64.8	70.2
(i) Fixed Liabilities	34.6	29.3
(j) Reserve Fund	0.6	0.5
(D) Ratio of Liabilities	324	340

NOTE: (a) ratio = $\frac{(a)}{(A)} \times 100$

(b) " $\frac{(b)}{(A)} \times 100$

(c) " $\frac{(c)}{(A)} \times 100$

(d) " $\frac{(d)}{(B)} \times 100$

(e) " $\frac{(e)}{(B)} \times 100$

(f) " $\frac{(f)}{(B)} \times 100$

(h) " $\frac{(h)}{(C)} \times 100$

(i) " $\frac{(i)}{(C)} \times 100$

(j) " $\frac{(j)}{(C)} \times 100$

(D) " $\frac{(b)}{(a)} \times 100$

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List no.12

Properties of Soda Industry

	Feb.-July, 1946	Aug.1946-Jan.1947
(A) CAPITAL:		
(a) Fixed Assets	54	52
(b) Current Assets	42	45
(c) Other Assets	4	3
(B) FIXED ASSETS:		
(d) Tangible Fixed Assets		
(1) Land	6.8	7.2
(2) Construction in process	33.9	33.3
(3) Others	51.1	52.8
(e) Intangible Fixed Assets	2.8	2.4
(f) Long-term Investments	5.4	4.3
(C) CURRENT ASSETS:		
(g) Inventories	40.3	46.6
(h) Liquid Assets	52.1	48.6
(i) Expense Payments	7.6	4.8
(D) RATIOS:		
(j) Fixed ratio		
(4)	224	234
(5)	239	247
(k) Fixed and Permanent well-balanced ratio		
(6)	72	146
(7)	77	154
(m) Current ratio		
(8)	157	205
(9)	145	195
(n) "Acid Test" ratio	82	100

NOTE:

NOTE:

(a) ratio = $\frac{(a)}{(A)} \times 100$

(b) " $\frac{(b)}{(A)} \times 100$

(c) " $\frac{(c)}{(A)} \times 100$

(d) percentage = $\frac{(d)}{(B)} \times 100$

(e) " $\frac{(e)}{(B)} \times 100$

(f) " $\frac{(f)}{(C)} \times 100$

(h) " $\frac{(h)}{(C)} \times 100$

(i) " $\frac{(i)}{(C)} \times 100$

(4) = $\frac{(a)}{(\text{net worth})} \times 100$

(5) = $\frac{(e) + (C)}{(\text{net worth})} \times 100$

(6) = $\frac{(a)}{(\text{net worth}) + (\text{Fixed Liabilities})} \times 100$

(7) = $\frac{(a) + (c)}{(\text{net worth}) + (\text{Fixed Liabilities})} \times 100$

(8) = $\frac{(b)}{(\text{Current Liabilities})} \times 100$

(9) = $\frac{(b) + (i)}{(\text{Current Liabilities})} \times 100$

List no. 13

Income and Expenditure of Soda Industry.

	Feb.-July, 1946	Aug. 1946-Jan. 1947
(A) INCOME:		
(a) Sales.	72.8	90.9
(b) All Other Incomes.	27.2	9.1
(B) EXPENSES:		
(c) Cost of goods manufactured.	57.2	76.4
(d) General Administrative and Selling Expenses.	7.7	5.2
(e) Depreciations (Fixed Assets)	19.4	2.1
(f) All Other Expenses.	24.7	16.3
(C) RATIO OF INCOME TO EXPENSES:	74	119
(D) RATIO OF DEPRECIATION OF FIXED ASSETS:	5.24	6.96
(E) RATIO OF PROFIT: —		
(g) to Income	34.34	15.62
(h) to Capital Stock paid in	—	26.97
(i) to Net Worth	—	29.65
(j) to Manufacturing Income	1.92	29.38
(F) RATIO OF DIVIDENDS:	—	—
(G) RATIO OF RESERVES IN OFFICE:	—	100.00

NOTE: $(C) = \frac{(A)}{(B)} \times 100$

$(D) = \frac{(\text{Depreciation of Tangible \& Intangible Fixed Assets}) \times 2}{(\text{Fixed Assets at the ~~beginning~~ of the term}) - (\text{land}) + (\text{Construction in process})}$

$(g) = \frac{(\text{profit})}{(A)} \times 100$

$(h) = \frac{(\text{profit}) \times 2}{(\text{Average capital Stock paid in})} \times 100$

$(i) = \frac{(\text{profit}) \times 2}{(\text{average net worth})} \times 100$

$(j) = \frac{(a) - (c)}{(a)}$

$(F) = \frac{(\text{Dividends}) \times 2}{(\text{Average Capital Stock paid in}}$

$(G) = \frac{(\text{Reserves in office})}{(\text{profit})} \times 100$

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List no. 14

Management Capacity of Soda Industry.

	Feb.-July, 1946	Aug. 1946-Jan. 1947
Capital Stock paid in	0.37	2.02
Net worth	0.35	2.06
All Capital	0.14	0.62
Operating Assets	0.18	0.92
Fixed Assets	0.41	2.45
Inventories	0.91	3.61

List No. 11

Finance Condition of Soda Industry

	Feb.-July, 1946	Aug. 1946-Jan. '47
(A) Capital :		
(a) Net Worth	24.1	22.2
(b) Liabilities	78.0	75.4
(c) Net Income or Deficit (profit or loss.)	2.1	2.4
(B) Net Worth :		
(d) Capital stock paid in	105.1	115.2
(e) Surplus Reserves	7.3	7.5
(f) Deferred Income or Deficit	13.0	22.7
(C) Liabilities :		
(g) Bonds	0	0
(h) Funded Debts	64.8	70.2
(i) Fixed Liabilities	34.6	29.3
(j) Reserve Fund	0.6	0.5
(D) Ratio of Liabilities	324	340

Note : (a) Ratio= $\frac{(a)}{(A)}$ X 100

(b) " $\frac{(b)}{(A)}$ X 100

(c) " $\frac{(c)}{(A)}$ X 100

(d) " $\frac{(d)}{(B)}$ X 100

(e) " $\frac{(e)}{(B)}$ X 100

(f) " $\frac{(f)}{(B)}$ X 100

(h) " $\frac{(h)}{(C)}$ X 100

(i) " $\frac{(i)}{(C)}$ X 100

(j) " $\frac{(j)}{(C)}$ X 100

(D) " $\frac{(b)}{(a)}$ X 100

List No. 12

Properties of Soda Industry

	Feb.-July, 1946	Aug.1946-Jan.'47
(A) Capital :		
(a) Fixed Assets	54	52
(b) Current Assets	42	45
(c) Other Assets	4	3
(B) Fixed Assets :		
(d) Tangible Fixed Assets		
(1) Land	6.8	7.2
(2) Construction in process	33.9	33.3
(3) Others	51.1	52.8
(e) Intangible Fixed Assets	2.8	2.4
(f) Long-term Investments	5.4	4.3
(C) Current Assets :		
(g) Inventories	40.3	46.6
(h) Liquid Assets	52.1	48.6
(i) Suspence Payments	7.6	4.8
(D) Ratios :		
(j) Fixed Ratio		
(4)	224	234
(5)	239	247
(k) Fixed and Permanent well-balanced ratio		
(6)	72	146
(7)	77	154
(m) Current Ratio		
(8)	157	205
(9)	145	195
(n) "Acid Test" ratio	82	100

Note : (a) Ratio= $\frac{(a)}{(A)}$ X 100

(b) Ratio= $\frac{(b)}{(A)}$ X 100

(c) " $\frac{(c)}{(A)}$ X 100

(d) Percentage= $\frac{(d)}{(B)}$ X 100

(e) Percentage= $\frac{(e)}{(B)}$ X 100

(g) Percentage= $\frac{(g)}{(C)}$ X 100

(h) " $\frac{(h)}{(C)}$ X 100

(i) " $\frac{(i)}{(C)}$ X 100

(4) = $\frac{(a)}{(\text{net worth})}$ X 100

(5) = $\frac{(a) + (c)}{(\text{net worth})}$ X 100

(6) = $\frac{(a)}{(\text{net worth}) + (\text{fixed liabilities})}$ X 100

(7) = $\frac{(a) + (c)}{(\text{net worth}) + (\text{fixed liabilities})}$ X 100

(8) = $\frac{(b)}{(\text{current liabilities})}$ X 100

(9) = $\frac{(b) + (i)}{(\text{current liabilities})}$ X 100

List No. 13

Income and Expenditure of Soda Industry

	Feb.-July, 1946	Aug.1946-Jan.1947
(A) Income :		
(a) Sales	72.8	90.9
(b) All Other Incomes	27.2	9.1
(B) Expenses :		
(c) Cost of goods manufactured	57.2	76.4
(d) General Administrative and Selling Expenses	7.7	5.2
(e) Depreciations (Fixed Assets)	10.4	2.1
(f) All Other Expenses	24.7	16.3
(C) Ratio of Income to Expenses :	74	119
(D) Ratio of Depreciation of Fixed Assets :	5.24	6.96
(E) Ratio of Profit :-		
(g) to Income	34.34	15.62
(h) to Capital stock paid in	--	26.97
(i) to net worth	—	29.65
(j) to manufacturing income	1.92	29.38
(F) Ratio of Dividends :	--	--
(G) Ratio of Reserves in Office :	--	100

Note : $(C) = \frac{(A)}{(B)} \times 100$

$$(D) = \frac{(\text{Depreciation of Tangible \& Intangible Fixed Assets})}{(\text{Fixed Assets at the beginning of the term})} \times 2 - (\text{land}) + (\text{Construction in process})$$

$$(g) = \frac{(\text{profit})}{(A)} \times 100$$

$$(h) = \frac{(\text{profit}) \times 2}{(\text{Average capital stock paid in})} \times 100$$

$$(i) = \frac{(\text{profit}) \times 2}{(\text{Average net worth})} \times 100$$

$$(j) = \frac{(a) - (c)}{(a)}$$

$$(F) = \frac{(\text{Dividends}) \times 2}{(\text{Average capital stock paid in})} \times$$

$$(G) = \frac{(\text{Reserves in Office})}{(\text{profit})} \times 100$$

DECLASSIFIED E.O. 12065 SECTION 3 (E)(1), NARS DATE

List No. 14

Management Capacity of Soda Industry

	Feb.-July, 1946	Aug.1946-Jan. 1947
Capital Stock paid in	0.37	2.02
Net Worth	0.35	2.06
All Capital	0.14	0.62
Operating Assets	0.18	0.92
Fixed Assets	0.41	2.45
Inventories	0.91	3.61

DECLASSIFIED E.O. 12065 SECTION 3 (E), NARS DATE

List No. 15

Output of Soda Ash and Caustic Soda in U. S. A.

(Unit : metric ton)

Year	Soda Ash			Caustic Soda			Chlorine	Remarks
	Ammonia process	Elect. process	Total	Ammonia process	Elect. process	Total	Private plants only	
1939	2,350	133	2,383	533	492	1,025	514	
1940	2,873	142	3,015	686	743	1,100	635	
1944	4,338	180	4,718	690	1,205	1,895	1,258	
1945	4,380	182	4,490	715	1,110	1,825	1,182	
1946	4,375	210	4,557	--	--	1,855	1,164	
1950	--	--	4,200	--	--	1,300	1,200	The quantity of domestic demand presumed at the end of year.

List No. 16

Actual Demand and Supply of Salt.

(Unit : metric ton)

Year	Supply			Consumption		
	Domestic	Imported	Total	Dietetic	Industrial	Total
1930	629	373	1,002	742	209	951
1931	521	454	975	773	298	1,071
1932	573	638	1,211	762	396	1,158
1933	631	926	1,557	762	650	1,411
1934	676	1,229	1,905	784	855	1,639
1935	604	1,184	1,788	789	1,068	1,857
1936	519	1,270	1,789	821	1,160	1,981
1937	536	1,724	2,278	891	1,418	2,304
1938	439	1,751	2,190	971	1,476	2,447
1939	636	1,860	2,496	1,029	1,409	2,438
1940	570	1,725	2,299	1,062	1,356	2,418
1941	389	1,506	1,895	1,006	930	1,936
1942	475	1,533	2,058	1,038	787	1,825
1943	415	1,410	1,825	1,101	710	1,811
1944	353	944	1,297	927	590	1,517
1945	324	457	681	489	165	854
1946	357	412	769	647	141	787
1947	246	805	1,051	625	193	818

List No. 17

Imported Salt

Year	Ocean		Coast		Total
	Metric tons	%	Metric tons	%	
1930	9	2	364	98	373
1931	66	14	388	86	454
1932	272	43	366	57	638
1933	540	58	386	42	936
1934	693	56	536	44	1,226
1935	677	57	507	43	1,184
1936	519	41	751	59	1,270
1937	803	46	939	54	1,742
1938	642	37	1,109	63	1,751
1939	955	51	905	49	1,860
1940	471	27	1,254	73	1,725
1941	143	10	1,363	90	1,506
1942	30	2	1,503	98	1,533
1943	33	2	1,387	98	1,410
1944	1	0	943	100	944
1945	0	0	457	100	457
1946	127	31	285	69	412
1947	606	95	199	25	805

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List No. 18

Actual Consumption of Dietetic Salt

(Unit : metric ton)

Year	Table Salt	Soy	Bean paste	Pickles	Industrial (General)	Others	Northern-seas Fisheries	Total
1935		209,131	126,827	288,227	59,391	105,193	--	788,769
1936		217,746	142,784	288,512	55,833	116,345	--	821,220
1937		223,412	142,862	290,706	60,076	104,269	70,017	891,342
1938		233,187	145,406	307,730	366,302	141,383	186,869	970,877
1939		221,219	149,803	320,743	72,475	162,427	102,400	1,029,067
1940		252,905	156,783	339,943	96,928	160,024	55,000	1,061,583
1941		237,994	152,343	304,424	100,043	173,215	38,500	1,006,619
1942	182,352	213,979	146,701	190,339	85,249	184,771	35,000	1,038,331
1943	188,461	234,683	163,348	207,476	81,835	180,219	45,454	1,101,476
1944	185,681	192,800	153,061	192,800	78,921	146,342	78,921	927,180
1945	190,000	49,288	92,088	55,888	88,756	82,800	21,756	489,320
1946	189,920	118,381	105,762	93,831	--	74,600	61,312	643,806

(Note : The monopOly Laws were not applied to salt used for Northern-seas fishers, before July 1939.)

List No. 19

Actual Consumption of Industrial Salt

(Unit : metric ton)

Year	Soda Ash	Caustic Soda	Sulphate of Soda	Chlorate of Soda	other Chemicals	Artificial Total	Artificial Pigment	Others	Grand Total
1930						199,836	5,074	3,694	208,604
1931						285,827			297,789
1932						378,445			396,336
1933						307,541			649,501
1934						821,515			354,823
1935						1,039,817	20,558	7,408	1,067,783
1936						1,129,462	21,377	9,084	1,159,923
1937	1,095,270	251,291	14,071	4,457	5,008	1,376,092	32,468	4,060	1,412,620
1938	1,161,228	264,542	11,259	6,192	6,948	1,450,169	22,205	4,067	1,476,441
1939	1,083,258	276,879	10,822	5,636	8,011	1,384,606	20,441	4,045	1,409,092
1940	1,029,077	271,583	8,446	3,394	19,457	1,331,957	21,020	3,500	1,156,480
194o	652,330	229,116	5,376	4,670	17,976	909,468	17,917	2,929	930,314
1942	518,336	240,789	2,316	5,801	14,044	781,316	3,148	2,266	786,730
1943	455,347			247,504		702,851	7,149		710,000
1944	324,500			253,700		578,200	11,800		590,000
1945	96,000			70,000		161,483	3,237		164,720
1946	--					129,074	18,827		139,897

<u>List No. 20</u>

Program for Demand and Supply of Salt in Line with

the 5-year Economic Rehabilitation Plan

(Unit : metric ton)

Demand

	1949	1950	1951	1952	1953
Industrial					
Caustic Soda					
Ammonia process	75,000x2.8 =200,000	95,000x2.56 =255,000	135,000x2.56 =345,600	175,000x2.44 =427,000	210,000x2.33 =489,000
Electrolytic pro.	65,000x2.2 =143,000	80,000x2.11 =169,000	95,000x2.02 =191,900	110,000x1.93 =212,300	130,000x1.83 =238,000
Soda Ash	110,000x2.0 =220,000	155,000x1.03 =279,000	180,000x1.86 =334,800	215,000x1.78 =382,700	240,000x1.7 =408,000
Others	50,000	61,000	73,000	84,000	90,000
Dietetic					
Table Salt	990,000	1,005,000	1,022,000	1,037,000	
Preserving in Salt	50,000	63,000	76,000	88,000	
Shortage	55,000	61,000	67,000	73,000	
Stocks	117,000	90,000	90,000	90,000	
Total	1,825,000	1,983,000	2,200,000	2,394,000	

Supply

Domestic	425,000	483,000	580,000	654,000	70,000
Imported	1,400,000	1,500,000	1,620,000	1,740,000	185,000
Total	1,825,000	1,983,000	2,200,000	2,394,000	255,000

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List No. 21

Computing Basis of Actual Capacity, Production and Equipment in the line with the 5-year Economic Rehabilitation Plan

(Unit : metric ton)

	1949	1950	1951	1952	1953
Average Actual Capacity per annum					
Soda Ash ⓪	110,000÷0.71 =155,000	155,000÷0.75 =207,000	185,000÷0.72 =259,000	215,000÷0.775 =278,000	240,000÷0.8 =300,000
Caustic Soda Ammonia process ⓪	75,000÷0.7 =107,000	95,000÷0.7 =135,000	135,000÷0.7 =193,000	175,000÷0.76 =237,000	210,000÷0.76 =276,000
Electrolytic pro. ⓪	65,000÷0.51 =128,900	80,000÷0.61 =131,000	95,000÷0.62 =153,000	110,000÷0.64 =172,900	130,000÷0.72 =180,000
Soda Ash for Caustic Soda	75,000÷0.7 =107,000	95,000÷0.7 =135,000	135,000÷0.7 =193,000	170,000÷0.7 =243,000	200,000÷0.7 =286,000
Production					
Soda Ash Soda Ash	110,000	155,000	185,000	215,000	240,000
Soda Ash for Caustic Soda	107,000	136,000	193,000	243,000	286,000
Caustic Soda Ammonia pro.	75,000	95,000	135,000	200,000	200,000
Electrolytic process	65,000	80,000	95,000	110,000	130,000
Total	217,000	291,000	378,000	458,000	526,000

(Note : ⓪ - See List No. 22 ⓪ - See List No. 23 ⓪ - See List No. 24)

List No. 21

Computing Basis of Actual Capacity, Production and Equipment in the line with the 5-year Economic Rehabilitation Plan

(Unit : metric ton)

	1949	1950	1951	1952	1953
Average Actual Capacity per annum					
Soda Ash ⊘	110,000÷0.71 =155,000	155,000÷0.75 =207,000	185,000÷0.72 =259,000	215,000÷0.775 =278,000	240,000÷0.8 =300,000
Caustic Soda Ammonia process ⊘⊘	75,000÷0.7 =107,000	95,000÷0.7 =135,000	135,000÷0.7 =193,000	175,000÷0.76 =237,000	210,000÷0.76 =276,000
Electrolytic pro. ⊘	65,000÷0.51 =128,900	80,000÷0.61 =131,000	95,000÷0.62 =153,000	110,000÷0.64 =172,900	130,000÷0.72 =180,000
Soda Ash for Caustic Soda	75,000÷0.7 =107,000	95,000÷0.7 =135,000	135,000÷0.7 =193,000	170,000÷0.7 =243,000	200,000÷0.7 =286,000
Production					
Soda Ash Soda Ash	110,000	155,000	185,000	215,000	240,000
Soda Ash for Caustic Soda	107,000	136,000	193,000	243,000	286,000
Caustic Soda Ammonia pro.	75,000	95,000	135,000	200,000	200,000
Electrolytic process	65,000	80,000	95,000	110,000	130,000
Total	217,000	291,000	378,000	458,000	526,000

(Note : ⊘ - See List No. 22 ⊘⊘ - See List No. 23 ⊘⊘ - See List No. 24)

DECLASSIFIED E.O. 12065 SECTION 3 (E), NARS DATE

List No. 22

SODA ASH (Unit : metric ton)

	1949	1950	1951	1952	1953
Actual capacity under present situation	155,000	155,000	259,000	259,000	297,000
Actual capacity to be increased after recovery of equipment	—	104,000	—	38,000	6,000
Actual capacity to be increased after expansion of equipment.	—	—	—	—	—
Total	155,000	259,000	259,000	297,000	303,000
Average Actual capacity per annum.	155,000	207,000	259,000	278,000	300,000

List No. 23

CAUSTIC SODA, Ammonia process.

(Unit : metric ton)

	1949	1950	1951	1952	1953
Actual capacity under present situation	93,000	121,000	149,000	237,000	237,000
Actual capacity to be increased after recovery equipment	28,000	28,000	88,000	---	78,000
Actual capacity to be increased after expansion of equipment	---	---	---	---	---
Total	121,000	149,000	237,000	237,000	315,000
Average actual capacity per annum	107,000	135,000	193,000	237,000	276,000

List No. 24

CAUSTIC SODA, Electrolytic process

(Unit : metric ton)

	1949	1950	1951	1952	1953
Actual capacity under present situation	128,900	128,900	133,100	172,900	172,900
Actual capacity to be increased after recovery of equipment	---	42,000	39,800	---	14,200
Actual capacity to be increased after expansion of equipment	---	---	---	---	---
Total	128,900	133,100	172,900	172,900	187,100
Average actual capacity per annum	128,900	131,000	153,000	172,900	180,000

List No. 25

Computing Basis of Demand of coal for Production

of Soda in Line with the 5-year Economic Rehabilitation Plan

(Unit : metric ton)

	1949	1950	1951	1952	1953
Soda Ash	110,000X13 =143,000	155,000X1,15 =178,500	185,000X1.05 =199,000	215,000X0.9 =194,000	240,000X0.8 =190,000
Caustic Soda Ammonia pro.	75,000X4.4 =330,000	95,000X3.7 =355,000	135,000X3.3 =445,500	175,000X3.05 =534,000	210,000X2.5 =525,000
Electrolytic pro.	65,000X2.1 =137,000	80,000X2.0 =160,000	95,000X1.83 =173,500	110,000X1.83 =201,000	130.000XY.7 =220,000
Total	610,000	693,500	817,000	929,000	935,000
Others	48,000	55,000	65,000	85,000	90,000
Dereived material of soda	170,000	190,000	220,000	255,000	285,000
GRAND TOTAL	828,000	938,500	1,102,000	1,269,000	1,9210,000

List no. 26

Computing Basis of Distribution of Electric Power for production of Soda in line with the 5-year Economic Rehabilitation Plan.

	power ($\times 10^6$ KWH)	1949 ($\times 10^3$ ㌧)	power	1950	power	1951	power	1952	power	1953
Soda Ash		65(280)		80(342)		95(405)		110(465)		130(546)
Caustic Soda	1302		1438		1587		1740		1919	
Ammonia process		75(45)		95(55)		135(74)		175(92)		210(105)
Electrolytic process		110(36)		155(50)		185(59)		215(65)		240(72)

List no. 27

Computing program for Allocation of necessary materials of Soda Industry in line with the 5-year Economic Rehabilitation Plan.

(unit: metric ton)

	(1949)	(1950)	(1951)	(1952)	(1953)
STEEL					
Rehabilitation	7,016	8,269	9,314	7,741	5,104
Reparation	6,556	6,766	8,487	9,251	8,153
Total	13,572	13,035	17,801	16,068	13,257
PIG-IRON					
Rehabilitation	2,982	3,473	4,488	2,009	2,218
Reparation	1,858	2,272	2,456	2,842	3,028
Total	4,840	5,745	6,974	4,851	5,246
CEMENT					
Rehabilitation	5,000	5,000	5,000	4,000	4,000
Reparation	3,000	4,000	4,000	4,000	4,000
Total	8,000	9,000	9,000	8,000	8,000
TIMBER					
Rehabilitation	26,500	25,000	25,300	15,200	15,200
Reparation	22,700	26,800	28,300	29,900	28,900
Operation	278,000	318,000	380,000	458,000	524,000
Total	327,200	369,800	433,600	503,100	568,100

List No. 26

Computing Basis of Distribution of Electric Power for Production of Soda in line with the 5-year Economic Rehabilitation Plan

	Power ($x10^6$KWM)	1949 ($x10^3$t)	Power	1950	Power	1951	Power	1952	Power	1953
Soda Ash		65(280)		80(342)		95(405)		110(465)		130(546)
Caustic Soda	1302		1438		1587		1740		1919	
Ammonia process		75(45)		95(55)		135(74)		175(92)		210(105)
Electrolytic process		110(36)		155(50)		185(59)		215(65)		240(72)

List No. 27

Computing Program for Allocation of Necessary Materials of Soda Industry

in line with the 5-year Economic Rehabilitation Plan.

(Unit : metric ton)

STEEL

	1949	1950	1951	1952	1953
Rehabilitation	7,016	8,269	9,314	7,741	5,104
Reparation	6,556	6,766	8,487	9,251	8,153
Total	13,572	13,035	17,801	16,068	13,257

PIG-IRON

Rehabilitation	2,982	3,473	4,488	2,009	2,218
Reparation	1,858	2,272	2,456	2,842	3,028
Total	4,840	5,745	6,974	4,851	5,246

CEMENT

Rehabilitation	5,000	5,000	5,000	4,000	4,000
Reparation	3,000	4,000	4,000	4,000	4,000
Total	8,000	9,000	9,000	8,000	8,000

TIMBER

Rehabilitation	26,500	25,000	25,300	15,200	15,200
Reparation	22,700	26,800	28,300	29,900	28,900
Operation	278,000	318,000	380,000	458,000	524,000
Total	327,200	369,800	433,600	503,100	568,100

O U T L I N E

O F

U B E S O D A I N D U S T R I A L C O M P A N Y , L T D .

MAY ,1947.

UBE SODA INDUSTRIAL CO., LTD., Tokyo Branch Office

c/o Nakanigokan, 6, Marunouchi, 3-chome, Chiyoda-ku, Tokyo.

Tel: (23) 2889, 3794

DECLASSIFIED E.O. 11652 SECTION 3 (E)(1)(D) NSC

OUTLINE OF UBE SODA INDUSTRIAL CO.,LTD.

A. Name of Firm: UBE SODA KOGYO KABUSHIKI KAISHA
(Ube Soda Industrial Co.,Ltd.)

B. Location :

a. Head Office & Plant :
5,253, Okiube, Ube City,
Yamaguchi-Pref.

b. Branch Office :
Tokyo (c/o Nakanigokan, 6, Marunouchi,
3-chome, Chiyoda-ku, Tokyo,Japan)

Osaka (c/o Terasoma Bldg.,
6, Yokohori, 2-chome, Osaka, Japan)

Shigeyasu (Omine-town, Mine-Country,
Yamaguchi Pref.)

C. Capital : Normal ¥11,250,000
Paid-up ¥9,375,000

D. Line of Business :
Manufacture and Sales of Soda Ash, Caustic Soda and Calcium Chloride by ammonia-soda process (Solvey Process)

E. Name of Directors:

Nobuyoshi, KUNIYOSHI	-	The President
Kitaro, FUJIKAWA	-	The Managing Director
Goroku, KUNIYOSHI	-	The Standing "
Taruhiko, KUNIYOSHI	-	The Chief of General Affairs Dpt.
Kensaku, FUJITA	-	The Chief of Business Dpt.
Tomoharu, KOYAMA	-	The Chief of Production "

F. Stockholders :

a. Stocks are held by many small owners amounting to 3,350 persons, most of them being citizens in Ube City, Yamaguchi Prefecture.
It deserves special mention that there is not a single stockholder keeping 10% or more of total stocks.

b. The firm is not controled by any Zaibatsu or any restricted concern.

c. Classification of stockholders by number of holding stocks is shown below:

- continued -

DECLASSIFIED E.O. 12065 Section 3-402/NNDG No.

Description	No. of Stockholders	No. of Stocks	Approx. Percentage of Total Stocks
10,000 or more	2	27,451	12 %
1,000 "	23	49,261	22
500 "	29	19,202	9
100 "	304	54,255	24
50 "	428	28,137	12
20 "	940	27,585	12
10 "	1275	17,044	8
9 or less	349	2,065	1
Total	3,350	255,000	100

G. History of Firm :

a. The Ube Soda Industrial Co., Ltd. was organized with a capital of ¥7,500,000 on 10 Oct. 1936, constructing Caustic Soda Plant by ammonia process, Capacity of which was 150 metric tons per day,
The plant started its operation in January, 1937.
The capital was increased to ¥11,250,000 in Sept. 1940.
Soda Ash Plant having 200 metric tons'capacity per day by Solvey Process was further constructed and started its operation in Dec., 1940.
Thus, the firm has been manufacturing Soda Ash, Caustic Soda, and Magnecium and Calcium Chlorides as by-products calculoted as Soda Ash with daily production capacity of 400 metric tons of Crude Bicarbonate, that is, 150 metric tons of Caustic Soda and 200 metric tons of Soda Ash.

b. Mergers or amalgamations

Blank

c. Branches, subsidiaries or affiliates the firm has outside of Japan.

Blank

- continued -

H. Outline of Plant :

The plant was constructed at this plane under the following conditions :

1. Ample supply of fuel coal from colliery near by
2. Easy supply of lime stone and ammonia as raw materials
3. Transportation by land and sea

a. Site — 48,959 Tsubo (39.18 Acres)

b. Total Floor Area of Buildings — 10,675 " (8.72 ")

c. No. of Employees (as of 30 April, 1947)

Technical Staff	82	persons
Administrative Staff	128	"
Worker	889	"
	(Male 793)	
	(Female 96)	

d. Principal products :

Soda Ash	(grade 99%)
Caustic Soda	solid(97.5%); solution(45.0%)
Calcium Chloride	" (70.0%); " (37.0%)

e. Production Capacity :

Crude Bicarbonate as Soda Ash (goods in process) 400 metric tons/day

Soda Ash (finished product) 200 metric tons/day

Caustic Soda (finished product) 150 metric tons/day

f. Actual Production during Recent Months;

Description	Period	Feb.47	Mar.47	Apr.47	Total
Goods in Process	Total Soda Ash	1,116	1,000	1,755	3,861
Finished Product	Soda Ash	867 (X)	863	1,242	2,972
	Caustic Soda,solid	175	165	370	710
	Calcium Chloride (37% Soln.)	535	330	726	1,591
	" " (Solid)	-	-	117	117
Total of Products		1,577	1,358	2,455	5,390

- continued -

DECLASSIFIED E.O. 12065 SECTION 3 (E), MMS NO.

(x) Calculated from 37% solution of Caustic Soda (458; 482 and 971 metric tons of the liquor for Feb. Mar. and Apr. 47 respectively)

I. Quantity & Value of Principal Product, 1938 through 1946.

Year	Product		Quantity(metric ton)	Value(¥)
1938	Caustic Soda,	Solid	24,672	5,251,772
1939	" "	"	38,093	8,332,176
	" "	Soln.	1,562	312,561
1940	Caustic Soda,	Solid	35,767	9,025,686
	" "	Soln	5,435	1,368,681
1941	" "	Solid	32,643	9,810,896
	" "	Soln	5,382	1,522,476
	Soda Ash		6,523	937,119
1942	Caustic Soda,	Solid	14,635	4,126,347
	" "	Soln	5,363	1,429,685
	Soda Ash		6,670	735,632
1943	Caustic Soda,	Solid	13,738	4,226,423
	" "	Soln	7,559	2,040,327
	Soda Ash		13,456	2,396,491
1944	Caustic Soda,	Solid	4,187	1,599,553
	" "	Soln	6,497	2,156,720
	Soda Ash		18,751	4,445,141
1945	Caustic Soda,	Solid	1,469	734,500
	" "	Soln	1,567	720,820
	Soda Ash		12,465	3,739,500
1946	Caustic Soda,	Solid	2,358	14,088,740
	" Soda " Ash	~~Soln~~	3,782	16,550,500

J. Stock of Raw Materials, Fuels and Finished Products as of 30 April, 1947 (Unit : Metric ton)

a. Raw Materials :

Salt	(grade ca. 87.0%)	2,334
Lime Stone	(grade 88.5%)	2,097

b. Fuels :

Soft Coal, average cal. value 5,200 cal. (23,350 B.T.U.)..	44
Hard Coal, average ca. value 4,000 cal. (7,250 B.T.U.)..	72
Coke, average cal. value 5,600 cal. (11,000 B.T.U.).	112

c. Finished Products :

Soda Ash (97.5%)	723
Caustic Soda, Solm. (37%)	363
Calcium Chloride, Solid (70%)	96
" " Soln. (37%)	355

File

Name of Manager: Nobuyoshi Kuniyoshi

Address: 5,253 Okiube, Ube City, Date July 18, 1946.
Yamaguchi Ken

Report of the Products

1. Name of Firm Ube Soda Industrial Co., Ltd.

2. Location 5,253 Okiube, Ube City,
Yamaguchi Ken.

3. Products

Name of Products	Quantity(unit ton)
a. Caustic Soda	-
b. Soda Ash	-
c. Salt	217.4

The Manager of Firm

Nobuyoshi Kuniyoshi.

HEADQUARTERS [illegible] MIL. GOVT DETACHMENT GROUP
YAMAGUCHI, HONSHU
APO 929

AUTHORIZATION TO OPERATE

1 February 1946
(Date)

SUBJECT: Operation of UBE SODA INDUSTRIAL CO., LTD.

TO : Kobayashi Kuniyoshi, Manager

1. Inasmuch as your "Application for the operation of and report on industrial facilities" does not contemplate physical modification or conversion of equipment or facilities of the factory, as defined in paragraph 2, memorandum AG 300.5 (24 Nov 45) ESS/IN dated 24 November 1945, and inasmuch as the factory is producing essential civilian consumer commodities as defined in paragraph 3a, Directive No. 3, dated 22 September 1945, Headquarters SCAP, the operation of Ube Soda Industrial Co., Ltd is approved and you may manufacture the civilian commodities set forth in your application dated 23 January 1946.

2. This approval grants authority only to operate. The acquisition of materials, parts, tools, sub-assemblies, etc., and the disposition of finished products and establishment of selling prices will be in accord with the regulations of the Japanese government.

For the Military Government Officer: Yamaguchi Ken

(Signature) STANLEY J. THALL

1st Lt, CE M. G. O.
(Rank) (Branch)

Serial No. 62 Yamaguchi Ken

DECLASSIFIED

37TH MIL GOVT DETACHMENT
Yamaguchi
APO 929

1 February 1946

ANNEX NO. 1

Permission is granted to Ube Soda Industrial Co., Ltd. Ube City, Yamaguchi Ken, to produce the following items listed below:

a. Caustic Soda

b. Soda Ash

c. Salt

STANLEY J. THILL
1st Lt, CE
Mil Govt Officer

DECLASSIFIED E.O. 11652 SECTION

Approved
1 Feb 1945

Jan 23. 1946

Application for operation of

and

Report on Industrial Facilities

Ube Soda Industrial Co., Ltd.

Application for operation of

and

Report on Industrial Facilities

To:

Thru:

Name and Address of Reporting unit

5,253 Okiube, Ube City,

Yamaguchi Prefecture.

Ube Soda Industrial Co., Ltd.

Jan. 23 , 1946.

1. Name of Facility

Ube Soda Industrial Co., Ltd.

2. Location

5,253 Okiube, Ube City,

Yamaguchi Prefecture.

3. Name of President

Nobuyoshi Kuniyoshi

DECLASSIFIED E.O. 12065 SECTION 3 NLJ/NND 63

4. History

a. Date of construction Oct. 10, 1936.

b. Date of first operation On Dec. in 1937.

c. 1935-1941 Production(Annual Value in Yen, quantities of principal products by units or weights)

Year	Products	Annual value in Yen	Quantities by weights.
1935-1937	-	--	-
1938	Caustic Soda Solid	¥5,251,772.00	24,672 t.
1939	Caustic Soda Solid	¥8,332,176.00	38,093 "
	Liquid	312,561.00	1,562 "
1940	Caustic Soda Solid	¥9,025,686.00	35,767 "
	Liquid	1,368,681.00	5,435 "
1941	Caustic Soda Solid	¥9,810,896.00	32,643 "
	Liquid	1,522,476.00	5,382 "
	Soda Ash	937,119.00	6,523 "

d. Present capitalization in Yen

Nominal capital ¥ 11,250,000.00

Paid-up capital ¥ 9,375,000.00

e. Changes made in capital structure since 1935.

Organized the company with a capital of ¥7,500,000.00 on Oct. 10, 1936.

Increased the capital to ¥ 11,250,000.00 on Nov. 13, 1940.

f. Name and address of parent company

Blank

g. Number of shares outstanding

225,000

h. Number of stockholders

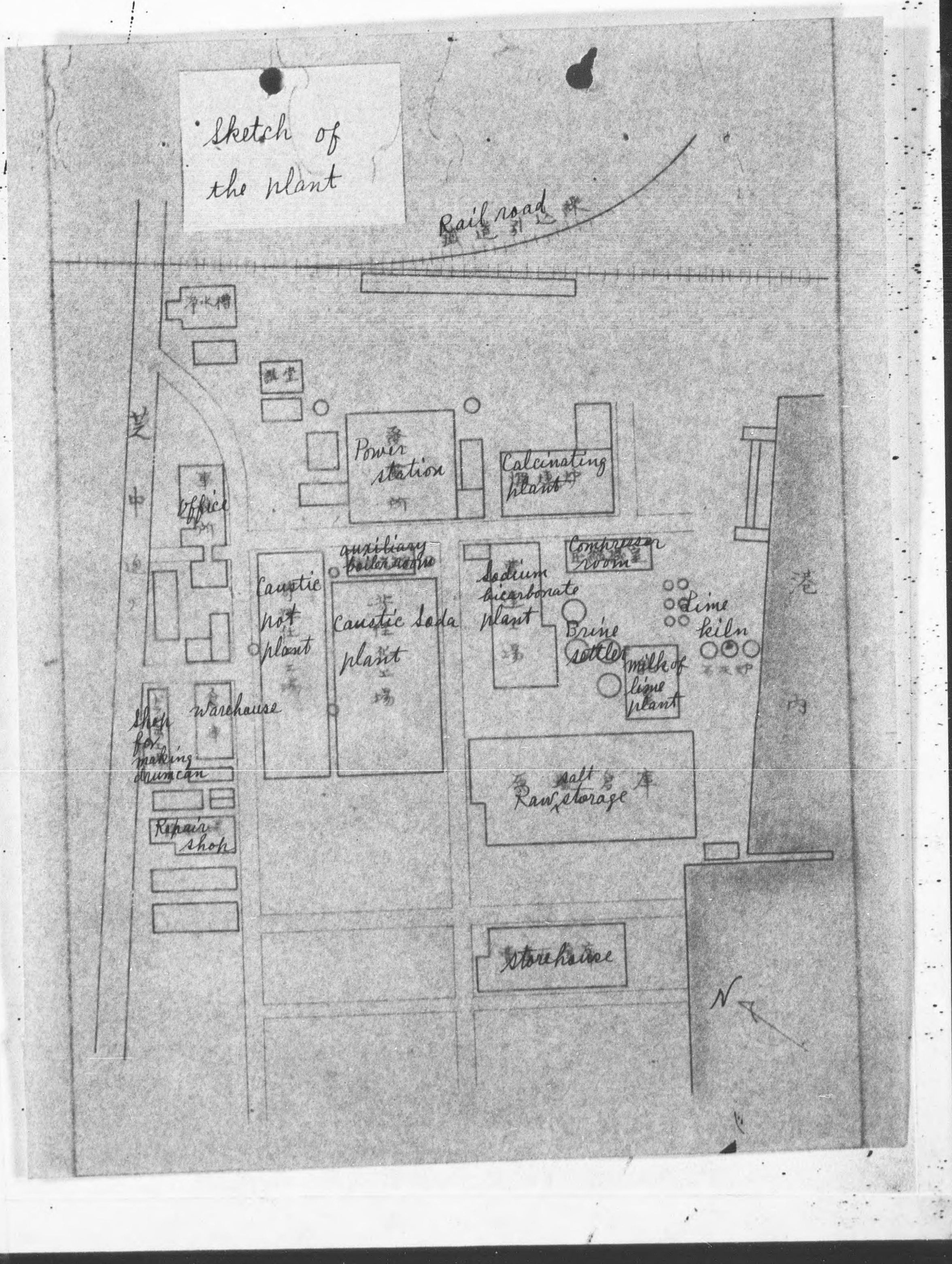
3,350

No stockholders owing 10% or more of total.

i. Funds received from Government(Bounties, subsidies, etc.)

Blank

DECLASSIFIED - NOT FOUND RESTRICTED



DECLASSIFIED E.O. 12065 SECTION 3 NLZ/NARS DATE:

5. Description

a. Principal products

1. War-time

Caustic Soda, Soda Ash, Magnesium Chloride.

2. At present

Caustic Soda, Soda Ash, Salt.

3. Planned for 1946-47.

Caustic Soda, Soda Ash.

b. Capacity (per Year)

1. War-time

Caustic Soda	36,000 t.
Soda Ash	54,000 "
Magnesium Chloride	10,000 "

2. At present

Caustic Soda	36,000 t.
Soda Ash	54,000 "
Salt	12,000 "

3. 1946-47(with unrestricted access to materials)

Caustic Soda	36,000 t.
Soda Ash	54,000 "

DECLASSIFIED E.O. 11652 SECTION 3 (E)(1)(D) NND

c. Number of Employees

1. War-time

843 (men 613) Scholars 452
(women 230)

2. At present

440 (men 374)
(women 66)

3. 1946-47(At maximum capacity)

770 (men 650)
(women 120)

6. Machinery & Equipment in plant

a. Lime kiln part

production of carbon dioxide and milk of lime
capacity 1,500 tons per day

b. Sodium Bicarbonate part

capacity as Soda Ash 400 tons per day

c. Calcination part

capacity Soda Ash 200 tons per day

d. Causticityation part

capacity as solid Caustic Soda 150 tons per day

e. Caustic pot part

capacity solid Caustic Soda 150 tons per day

f. Power part

capacity steam 140 tons per hour

power 12,000 k.w.

DECLASSIFIED E.O. 11905 SECTION 3 (E), NARS Date

7. Present stocks of Raw Material, Supplies and unfinished goods.

Description	Quantity	Condition
Raw salt	4,376 t.	Private
Lime stone	11,336 "	"
Caustic lye	260 "	"

8. Present stocks of Finished goods.

Description	Quantity	Condition
Solid Caustic Soda	3 t.	Private
Magnesium chloride	1 "	"

DECLASSIFIED E.O. 12065 SECRET 5-61, NARS Date

9. Present stocks of Fuel

Description	Quantity
Brown Coal	1,753 t.
Anthracite	1,217 "
Cokes	620 "

10. Additional machinery and Equipment needed for maximum production 1946-1947.

Blank

11. Raw Materials and Supplies required (monthly)

a. for present capacity (5b2 above)

Description	Quantity
Raw salt	17,000 t.
Lime stone	25,000 "
Ammonia	135 "

b. For Maximum (5b3 above)

Description	Quantity
Raw salt	17,000 t.
Lime stone	25,000 "
Ammonia	135 "

DECLASSIFIED E.O. 12065 SECTION 3 402/NNSS NT

12. Fuel required (monthly) (not included present stocks)

Description	Quantity
Brown Coal	31,000 t.
Anthracite	2,750 "

13. Additional personnel needed (not locally available)

Blank

14. Prices(Current selling prices in Yen of principal products)

Description	Unit	Price
Caustic Soda	per ton	¥1,600.00
Soda Ash	"	¥ 980.00
Salt	"	¥ 600.00 (provisional price)

15. Remarks (Include here any factors hampering production not already mentioned and any recommendations I consider necessary)

Blank

16. Certification by applicant

I certify that the information contained herin is true to the best of my knowledge and belief.

Signed N. Kuniyoshi

Title Ube Soda Industrial Co., Ltd.
Nobuyoshi Kuniyoshi
President.