

ACC 085/PWU

10000/150/357

SARDINI
ATION 2
APR. - J

10000/150/357

SARDINIA, PUBLIC WORKS ORGANIZ-
ATION & REPORT, APRIL 1944
APR. - JUN. 1944

ACE/085/PWU

Sardinia

Radio Works

ORGANIZATION

Report - April 1944

Opened 7 - April 1944
June 1944

ORGANIZATION

Report - April 1944

Report

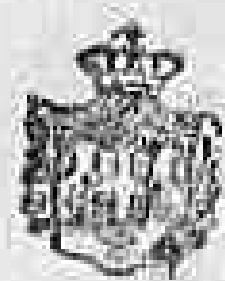
Opened 7 - April 1944
Closed 15 - June 1944

10000-150-357
G.E.R.

THIS FOLDER
CONTAINS PAPERS
FROM APR 44
To JUNE 44
INDEX

085 10

~~17~~



Ministero dei Lavori Pubblici

Direzione Generale Opere Varie

am.

Affari Generali e Personale

N. di prot. 22785

Div.

Salerno, addì 15 GIU. 1944

Allegati N.

Risposta al foglio del

N.

Al Col. L.A. JENNY

Public Works and Utilities

Sub Commission Director

OGGETTO:

Automezzi.-

NAPOLI

Palazzo della Provincia

Si rimette copia della risposta pervenuta dall'Alto Commissariato per la Sardegna, alla richiesta fatta da questo Ministero con nota n. 21010 del 5/5/44, trasmessa alla S.V. per conoscenza, con la quale si fa presente la impossibilità di aderire alla richiesta di automezzi.

IL MINISTRO

A. Turchini

Dr. Col. Thompson

M3-16

(to file)

To see

with

29/6

Dr. Col. Rhodes

Please note & file

6199/c

MINISTRY OF PUBLIC WORKS

22/85

15 June 1944.

Automobiles.

Col. L. A. Jenny
Public Works & Utilities
Sub Commission, Director
Naples.

We submit copy of the reply received from the High Commissioner's Office for Sardinia, to the request made to the Ministry with memo No. 21010 of 5/5/44, transmitted to you for your information. This shows the impossibility of complying with the request for automobiles.

THE MINISTER

A. Tarchiani

6196

ALTO COMMISSARIATO PER LA SARDEGNA
- Ufficio Affari Civile -

Prot.N. 9098/TR

Oggetto: Automezzi.-

Cagliari, 24 maggio 1944

AL MINISTERO DEI LAVORI PUBBLICI

SALERNO

(rif.f.n.21010 del 5/5/1944)

La segnalazione pervenuta a codesto Ministero circa una pretesa esuberanza di autovetture e camion in Sardegna è assolutamente priva di ogni fondamento. A parte la falcidia apportata alla consistenza numerica degli automezzi (durante gli anni di guerra) dall'usura, dalle azioni belliche, lo stato di efficienza di quelli circolanti è andata sempre aggravandosi sin dai primi del settembre dello scorso anno per l'esaurimento delle piccole scorte di gomme e pezzi di ricambio. Oltre a ciò è necessario tenere presente le requisizioni effettuate dall'Autotità Militari dal 1940 in poi per sopperire alle necessità belliche.. Un'ulteriore notevole decurtazione delle disponibilità per i trasporti civili è stata infine apportata dalle requisizioni di autovetture disposte dagli Alleati dal dicembre 1943 ad oggi.

In definitiva con un numero di automezzi per tutte le ragioni di cui sopra minore della metà della consistenza dell'anteguerra, si deve provvedere ai trasporti civili che necessitano invece di automezzi in misura maggiore che non nell'anteguerra, a causa della contrazione del traffico ferroviario.

Le ditte autotrasportatrici che erano riuscite a conservare un certo numero di automezzi, mentre in un primo tempo ne tenevano alcuni inefficienti per mancanza di gomme e pezzi di ricambio, hanno dovuto in un secondo tempo procedere alla demolizione di questi ultimi per trarne pezzi da innestare in quei pochissimi che continuavano ad eseguire servizi.

La prova che la situazione degli automezzi in Sardegna è completamente deficitaria si ha nelle continue richieste che io ricevo dai Prefetti per la derequisizione di automezzi requisiti dalle Autotità Militari e per la cessione o l'impiego provvisorio di automezzi militari a servizi civili, richieste che naturalmente non possono essere accolte, ma determinano purtroppo disservizi specie nei trasporti alimentari, talchè si può dire che nei piccoli centri i rifornimenti non arrivano mai tempestivamente.

BEST COPY POSSIBLE

Non è a dirsi della situazione dei servizi pubblici automobilistici (per trasporto di persone e della posta) le cui linee sono state in gran parte soppresse, lasciando i Comuni in un isolamento pregiudizievole talvolta anche al mantenimento dell'ordine pubblico.

Tale situazione è ben nota alla Commissione Nazionale Alleata, la quale aggiornata dalla scarsità di mezzi autote efficienti, richiede continuamente il mio interessamento presso l'Autorità Militare perchè provveda a mettere a disposizione automezzi necessari per lo sgombero e pulizia della città di Cagliari e per altre esigenze civili.

Gli Alleati stessi al corrente dello stato di usura delle gomme degli automezzi attualmente circolanti ne hanno segnalato il fatto alla Commissione Alleata di Controllo in Napoli al fine di importare dalla Sardegna un certo quantitativo di copertoni e camere d'aria per tenere in efficienza i servizi di particolare importanza (Alimentazione - Sanitari - P.S. - Autoservizi Pubblici) senza di che gli stessi - a breve scadenza - dovrebbero cessare ogni loro attività.

Gravi difficoltà si prospettano infine per il trasporto del grano (della campagna in corso) dai posti di produzione alle località prestabilite.

Sono quindi dolente di dover comunicare che l'attuale dotazione di automezzi relativamente efficienti in Sardegna non permette di venire incontro alle richieste di codesto On.le Ministero.

L'ALTO COMMISSARIO PER LA SARDEGNA
(Generale di Squadra Aerea Pietro Pinna)

F.to

HIGH COMMISSIONER FOR SARDINIA - Office of Civil Affairs.

Prot.No. 9098/TR

Subject: Automobiles.

Cagliari, 24 May 1944.

Ministry of Public Works,
Salerno.

Gentlemen:

Ref. Letter No.21010 of 5/5/1944.

The information received by your Ministry regarding an alleged surplus of cars and trucks in Sardinia is absolutely without basis. Apart from the reduction in the number of cars (during the war years) brought about by wear and tear, by enemy action, the conditions of cars in circulation has grown constantly worse from the first days of September 1943 due to the fact that our small stock of tires and spare parts is exhausted. Furthermore, you must bear in mind the requisitioning which was carried out by the Military Authorities from 1940 on in order to meet the war requirements. A further serious curtailment of civilian cars was brought about by the requisitioning of automobiles by the Allies from December 1943 right to this day.

In effect, with the number of cars available less than half of the pre-war total, due to all the reasons outlined above, civilian transportation must be provided which calls for a greater number of cars than during the pre-war period due to the contraction of railroad traffic.

The transportation companies who had succeeded in conserving a certain number of cars and who at one time possessed some cars which did not function well due to lack of tires and spare parts, were later compelled to dismantle these cars in order to take from them certain parts which they used to keep in service the very few cars which were still running.

Proof that the car situation in Sardinia is completely a deficit one can be found in the continued requests which I receive from the Prefects asking that cars requisitioned by the Military Authorities be returned and asking that military vehicles be given over to, or be provisionally employed in civilian service. Needless to say, these requests could not be granted which has led to deterioration of services especially that of food transportation. For instance, in the small localities food supplies never arrive in time.

We will say nothing of the situation which governs public automobile services (for the transportation of passengers or the mails) which lines are in great part suspended, leaving the communities in a harmful isolation sometimes even in the maintenance of public orders.

This situation is well known to the Allied Commission which, advised of the ~~scarcity~~ of means of transportation, requests continually my efforts at the Military Authorities to place the necessary cars at our disposal for the clearing and

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cleaning of the city of Cagliari and for other civil exigencies.

The Allies themselves aware of the state of deterioration of cars currently in use have communicated this fact to the A.C.C. in Naples with a view to importing from Sardinia a quantity of tires and tubes to maintain efficiently services of certain importance (Food, Sanitation, Public Safety, Public Vehicles) without which these will soon have to suspend.

Grave difficulties are in prospect, too, for the transportation of grain (now being harvested) from the points of production to the localities of consumption.

I therefore regret to inform you that the present allotment of vehicles that function relatively well in Sardinia does not permit my complying with the request of your Ministry.

THE HIGH COMMISSIONER FOR SARDINIA

6192

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public works and utilities Sub-Commission
AIO 394

GER/ecb 44

21 May 44.

ACC/085/PWU

Subject: Reconstruction of Cagliari, Sardinia.

To : Ministry of Public Works,
attention: Sig. Tizzano, Director General.

1. Please be good enough to let me know whether you sent a reply to my letter No. ACC/085/PWU, of 17 April 44, on the above subject.
2. I cannot trace such a reply, in our files.

G.E.R.
G.E. THOMAS,
Lieut-Colonel, R.E.
Deputy Director.

6197

(translation)

COPY

Salerno, 14 March 44

MINISTRY OF PUBLIC WORKS

File No. 2515 Div. 3a

To the High Commissioner for
Sardinia, Cagliari

(and for information to the:

Provvisor for the Public Works of Sardinia

Subject :
Town Plan of the City
of Cagliari

The Technical Municipal Office of Cagliari submitted on July 12, 1938 the city plan of the town to be approved by this Ministry.

Such plan was examined by the Superior Council of the Public Works, in a General Meeting held on Oct 31, 41, vote No. 2357. Such Council expressed the opinion that such plan could be approved, having however in mind when preparing detailed sectional plans, the observations expressed in said vote.

Following the instructions given with the Ministry note of Febr 5, 43 to the Provvisorship of the P.W. for Sardinia, to the Royal Prefettura and to the Commune of Cagliari, to the effect that said city plan should be revised and completed on the basis of the suggestions expressed by the Superior Council and other Offices to which it had been submitted, such Ministry would like to receive said Plan, modified and completed in order to give its final approval.

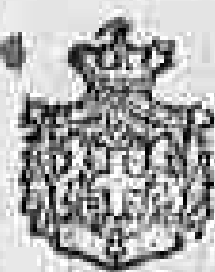
However this Ministry believe useful to examine in advance and find out if this Plan now corresponds or not to the new needs caused by the damages inflicted to the City of Cagliari by the air raids to which it was submitted. For this purpose should be forwarded to this Ministry, together with such Plan, a detailed report pertinent to it with a city map attached showing the districts damaged, marking in different colors the buildings totally destroyed, those seriously damaged and those only slightly damaged.

THE MINISTER

(signed) De Caro

6190

note to place
Sardinia file
Cagliari 11/4



Ministero dei Lavori Pubblici ⁴² ^{DGS} ^{Re}

Direzione Generale **OPERE VARIE**

ISPETTATO GENERALE EDILIZIA E SERVIZI SPECIALI

N. di prot. 2515 Div. 3^a Salerno, addì 14 marzo 1944

Allegati N. _____

Risposta al foglio del _____

N. _____

ALL'ALTO COMISSARIATO

per la Sardegna

C A G L I A R I

OGGETTO: e, per conoscenza:

Piano regolatore della
città di Cagliari.

AL PROVVEDITORE ALLE OO.PP.

per la Sardegna

C A G L I A R I

L'Ufficio tecnico Comunale di Cagliari presentò, in data 12 luglio 1938, il piano regolatore della detta città per l'approvazione da parte di questo Ministero.

Detto piano regolatore fu esaminato dal Consiglio Superiore dei Lavori Pubblici, in Assemblea Generale, col voto n. 2357 del 31 ottobre 1941.

Il predetto consesso espresse il parere che il piano stesso potesse essere approvato, salvo a tener presenti, in sede di compilazione dei piani particolareggiati, varie osservazioni contenute nel voto citato.

In seguito alle disposizioni impartite con la ministeriale 5 febbraio 1943 al Provveditorato alle Opere Pubbliche per la Sardegna, alla R. Prefettura e al Comune di Cagliari, perchè il piano regolatore in questione fosse riveduto ed integrato in conformità alle osservazioni formulate dal Consiglio Superiore e dagli altri organi al cui esame era stato sottoposto, questo Ministero dovrebbe ora ricevere il piano stesso modificato ed integrato, e

:/:

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- 2 -

dovrebbe provvedere alla sua definitiva approvazione.

Senonché questo Ministero ritiene opportuno esaminare preventivamente se il piano regolatore in parola corrisponda o meno alle nuove esigenze createsi per effetto dei danneggiamenti arrecati alla Città di Cagliari dalle offese aeree cui è stata sottoposta.

A tale scopo dovrebbe essere trasmessa a questo Ministero, insieme con detto piano regolatore, una dettagliata relazione in merito, con allegata una planimetrica della città, nella quale siano indicate le zone che hanno subito danni bellici distinguendo, con particolari tinteggiature, gli edifici distrutti, quelli gravemente danneggiati e quelli che hanno subito solo lievi danni.

IL MINISTRO
(F.to De Caro)

M/G

7812

HEADQUARTERS
ALLIED CONTROL COMMISSION
INDUSTRY & COMMERCE SUB-COMMISSION
APO 394

FMR/jf1

12 March 1944

Ref. ACC/5138/IC

SUBJECT: Inspection of Military Depots in Sardinia

TO : Director, Public Works Sub-Commission, HQ ACC

1. Par. 5, memorandum entitled same as above subject, submitted to Chief, War Materials Disposal Sub-Commission, 3 Mar. 44, indicates that a large stock of picks and shovels are located at Magazzino Genio Sezione Telti, Sardinia. Copy of this report is in the files of this sub-commission.

2. This information is forwarded to you as a possible source of these tools in Public Works operations.

W. P. EVANS *W. P. Evans*
Colonel
Director, Industry & Commerce
Sub-Commission

Lt. Col. Rhodes

Pls. have Lt. Col. Hickson and Thompson prepare promptly a list of tools needed for each compartment under the plan of enlarging the Cantoniere. Also pls write to Brig. P. K. Dunlop Regional Control Commission Reg. VI to let us know how much of this is available there so we can arrange for transfer. Brig. Anderson is now operating factories producing picks, shovels and wheelbarrows (100 of them a day now) and we can have what we need. So lets get busy on that.

Ref. 6188

*now
not
needed
H.R.*

File

25/4

A

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works & Utilities Sub-Commission
APO 394

40
WML/in

ACO/OBB/PWU

21 April 1944

Subject : Equipment for road works

To : Ministry of Public Works
Attention of Sig. Tizzano1. The following for road works are available in
Sardinia:-

Pneumatic drills	No. 50
Demolition drills	" 2
Air compressors (light)	" 1
Air compressors (heavy)	" 14

2. We are making arrangements for this equipment to be
shipped to Naples for reconstruction work in Italy addressed
to the Genio Civile Naples.3. Will you please make arrangements for Storing and
advise us of the location.L.A. JENNY
Lt. Col., C.E.
Director.

6187

TO : Public Works and Utilities Sub-Commission,
HQ., A.C.C. *W*

FROM : Regional Commissioner, A.C.C. Region 6.

SUBJECT : Materials for Road Repair.

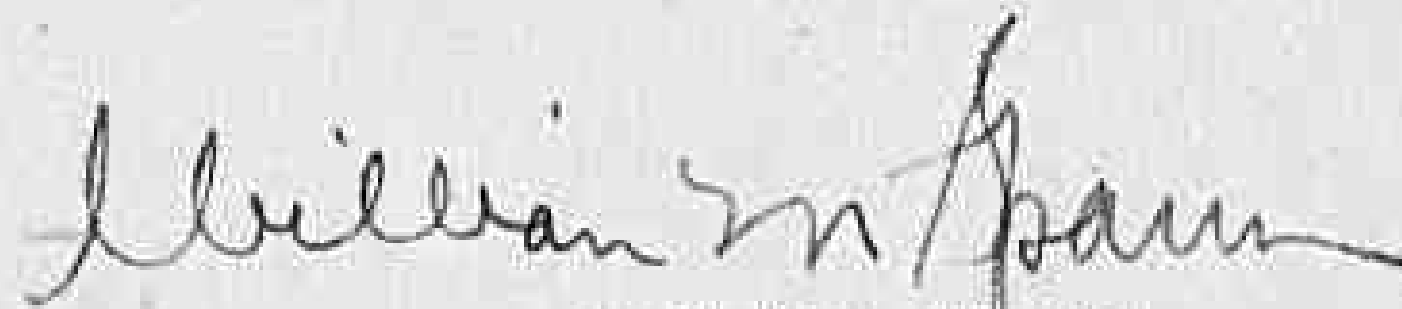
REFERENCE: TPTN/1608/

DATE : 15 April 1944.

1. Further reference is made to letter from Col. Jenny dated 14 March and our reply dated 3rd April.

2. We are attaching copy of an inventory of materials available, which is the property of the Italian Army.

For the Regional Commissioner,



WILLIAM SPANN.
Major A.U.S.

Regional Transportation Officer.

WS/cm

6186

(Translation)

MILITARY COMMAND OF SARDINIA
S.M. Operation Office

File No. 4926/1/25

14 April 1944

SUBJECT: Material for road works.TO : A.C.C. for SARDINIA

Reference to letter of March 24, 1944.

The following materials for road works are
at present available:

1. X - Pnuematic drills
X - Demolition drills
X - Air compressors (light)
X - Air compressors (heavy)
- Picks
- Shovels

No.	50	} Reg'd by Pub Util. S.b.
"	2	
"	1	
"	14	
"	28000	✓ -
"	32000	✓ -

2. - No rollers, decuvilles (cars and tracks)
screeners, hammers sledge-hammers and barrels are
available.

3. - Barrels and sledge-hammers are being built;
those built will be used however for the road works
now being done in the Island.

The Colonel
Chief of Staff
(G.Ledda)

6185

*Noted
Covazzi*

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LAJ/ccb

ACC/085/PTU

Subject: Reconstruction of Cagliari, Sardinia.

To : Ministry of Public Works,
attention: Sig. Tizzano, Director General.

Place in new file for Sardinia
17 April 44.

The city of Cagliari has suffered very much war damage. Some consideration is now being given to the reconstruction of some of the buildings there. In connection with this problem the question has arisen as to whether it would be wise to undertake such work at this time, or if it would not be better to wait until after the war and possibly make certain beneficial changes in the plan of the city itself at that time.

In order to permit this matter receiving attention by all interested parties I wish to recommend that you have a plan prepared in the same manner as you did for Naples, and possibly using the same colouring scheme so that the same colors mean the same thing on all such plans, showing which portions have been totally destroyed, 75%, 50%, 25% and slightly damaged.

With such a plan it will then be possible to give serious consideration as to the best procedure to be followed insofar as Cagliari is concerned.

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L.A. JENNY,
Lt.-Col., C.E.,
Director.

HEADQUARTERS
ALLIED CONTROL COMMISSION
R.C. & M.G. Section
APO 394

085
PW & U ✓
RCIO
35

Ref/392/4/CA.

17 April 1944.

SUBJECT: Building and New Construction in SARDINIA.

TO : R.C. Region VI.

1. Reference your HQ/1095 of 11 April 1944.
2. The whole question of re-building and town planning has been a subject of discussion between Director of Public Works and Utilities Sub-Commission, and the Italian Minister of Public Works. It is considered highly undesirable to allow unplanned building and reconstruction and, therefore, suspension of the Royal Decree No. 1231, referred to in your letter, is to be avoided for the time being.
3. Before rebuilding is done in a city like Cagliari which has been much damaged by war, a map showing the damage should be prepared and a town planning scheme arrived at between the Sub-Commission, the Ministry, the High Commissioner and yourself.
4. The Director of the Public Works and Utilities Sub-Commission is approaching the Italian Minister of Public Works who will communicate with the High Commissioner of Sardinia on the matter.

[Signature]
NORMAN E. FISKE
Colonel,
Deputy Executive
Commissioner.

Copy to: Econ. Section - For Public Works & Utilities Sub-Commission.

6183

17 apr
91

REAR HEADQUARTERS
ALLIED CONTROL COMMISSION
APO 39h
Public Health Sub-Commission

From Sec (P.W.)
U-4207
PW+UV ✓ *085*
Rlw

ACC/3027/PH

13 April 1944

SUBJECT: - Water Treatment Plant,
Sassari, Sardinia.

TO : - Public Works and Utilities Sub-Commission.

Reference ~~telephone~~ conversation with Col. Rhodes, herewith
copy of report by Sanitary Engineer on Water Treatment Plant, Sassari,
Sardinia.

G. S. Parkinson
Brigadier
G. S. PARKINSON, Brigadier
Director, Public Health Sub-Commission

Incl:
Copy ACC/3027/PH dated 22 Mar. 44.

Col Rhodes
6182

14 apr
94

REAR HEADQUARTERS
ALLIED CONTROL COMMISSION
APO 394

Public Health Sub-Commission

ACC/3027/TH

22 March 1944

SUBJECT: - Inspection of Water Treatment Plant,
Sassari, Sardinia.

TO : - Director, Public Health Sub-Commission.
(Thru: - Chief, Public Health Section)

1. On 14 March 1944 an inspection was made of the Water Treatment Plant for Sassari in company with the Provincial Genio Civile, Ufficiali Sanitari Comunali and Ist. Lt. E. A. Manselli of this office.

2. A description of the source of supply and the treatment follows:

Source of Supply.

At the present time all water for Sassari comes from two impounded reservoirs which are located approximately 5 kilometers east of the city. A map with the water shed outlined, is attached. The area of the water shed is approximately 17.92 sq. kilometers or approximately 7.0 square miles. In addition to a large part of the water shed being under cultivation, there is one main highway crossing it as well as one railway line. The highway which leads from Sassari to the commune of Osilo parallels the stream which feeds the reservoirs and which has its source in the village of Osilo. From the map it will be seen that approximately three quarters of the village of Osilo drains directly into the stream source. From this Commune, as well as from the highway and cultivated land there is bound to be considerable contamination entering the reservoir. Some of the entering contamination, however, would naturally be taken care of by storage if the reservoirs were full. Unfortunately the reservoirs are considerably less than half full. The total capacity of the reservoirs when full is approximately 125,000,000 gallons.

Another supply, said to be obtained from a spring gallery source, is about ready to be put into the pipe line feeding the city. This latter supply was not inspected. Approximately 12 liters per second is claimed to be the capacity of this new source. This amount represents approximately 260,000 per day.

Quantity of Water.

From the amount of slum used per day and knowing the quantity of slum applied per liter, it has been estimated that the plant output is approximately 500,000 gallons per day. This quantity is not sufficient to provide a 24 hour service for the 25,000 resident people and the relatively large number of Italian soldiers. On the basis of only the resident population, less than 10 gallons per person per day is supplied. The new supply will not provide any additional water for consumption because the water will be filtered first and there are limits imposed by the filter capacity. The new supply, however, will provide a partial relief for the present inadequate and extremely low reservoir supply.

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ACC/3027/PH - Inspection of Water Treatment Plant, Sassari - (Continued)
22 March 1944

Upper Treatment Plant.

As stated above the present source of supply is obtained from two impounding reservoirs. These two reservoirs are made by impounding water in back of two large granite dams constructed across the same stream bed. The upper reservoir, the largest of the two, is located approximately $\frac{1}{2}$ to $\frac{3}{4}$ miles above the lower dam.

Water entering the treatment plant can either be taken from the upper or lower reservoirs through pipe lines.

The first step in the treatment process is aeration over a step aerator at the bottom of which alum is applied. The alum dosage is set at 50 mg. per liter (2.9 grains per gallon). Following this the water is put through coagulation basins. At the end of the flow through the basins there was a good floc. However, the floc did not form as readily as it might have. When the authorities were questioned as to the pH value of the raw water they answered that it was 8.8 but after coagulation, using 50 ppm of alum, the pH was said to have dropped to 5.0. It was also claimed that when the water carried an excess amount of turbidity the alum dosage was increased. This latter statement is in conflict with the one regarding the pH values. No such pH reduction as reported could possibly be made without resorting to the use of another acid. What actually is happening with regard to coagulation at this plant is that the floc is forming too late, allowing an excess to be carried over to the filters. In fact, the exact adjustment of the alum dosage at this plant is exceedingly essential in order to obtain the desired results. The greater part of cleansing the water must be accomplished before it is put into the first roughing filters because the filters are not the regular or conventional type sand filters. These units are actually only roughing filters piped in series. The filter media is about one eighth inch diameter gravel laid to a depth of 4 to 6 inches. From this it will be seen that any excess floc carried over from the coagulation basin and not taken out by the first unit will be broken up in passing through the gravel and piping. This bad feature of breaking the floc is hastened further by piping the effluent approximately four kilometers to a reservoir nearer the city.

Collecting Reservoir.

Water from the roughing filter plant as well as water from the new spring gallery source is piped to a collecting reservoir which is located approximately one kilometer east of the city. The purpose of the reservoir is to provide storage for the lower or final filter system. The water that comes from the upper filter shows that the color removal has not been complete and that there is no evidence of any floc left. Furthermore the water from the new spring gallery source will not receive alum application but will be allowed to mix with the surface treated water. It is believed that the original intent was that some floc should remain in the water which would be removed by the lower filters.

Final Filtration Plant.

The final filtration plant is located on the very outskirts of the city and consists of two series of filters. The first units of these filters, - piped in parallel - have approximately 40 cms. of sand depth. The sand in the filters is somewhat coarser than would be found in a regular or conventional type gravity filter. The effluent from these filters are piped to a series of slow sand filters, - piped in parallel. Sand in these filters was found to be very fine and about 30 to 40 cms. in depth. The effluent from the final series of filters appeared to be clear but exceptionally slow in action.

AGC/3027/PH - Inspection of Water Treatment Plant, Sassari - (Continued)
22 March 1944.

After filtration, the water is carried to a small clear water well where chlorine is added. From this well water is pumped to a number of distributing reservoirs. At the plant there is no apparatus available for testing for excess chlorine in the water.

From the information obtained at the plant this later treatment is carried out in a very hit or miss basis. Chloride of lime is used. It is supposed to be 33% available chlorine, but because of its being old it is believed to be less than 25%. If the chloride of lime has a 33% available chlorine content, the dosage would be at the rate of 1 mg. per liter (1 ppm.).

What the dosage actually is no one knows. Neither does anyone know what the excess chlorine content of the water is and therefore cannot tell whether this treatment is effective or not except by rare bacteriological tests.

Recommendations.

It is recognized by the authorities that the upper filter system will not continue to function very long. In fact, it was stated that the plant would not last a years time. When that time comes the point of alum application may have to be changed and the present coagulation basins by-passed. In this case or even if the present system were kept operating a more accurate procedure of alum application must be adopted in order to procure the maximum amount of purification before filtration.

As for chlorination, either a starch iodine or an ortho-tolidin testing set must be made available and periodic checks made on the excess chlorine content. A residual of 0.3 to 0.5 ppm. should be maintained at all times.

PH/LST/ja

EDMOND W. TRAGER
Captain, Sn. C.
Sanitary Engineer.

REAR HEADQUARTERS
ALLIED CONTROL COMMISSION
APO 394
Public Health Sub-Commission

22 March 1944

ACC/3027/PB

SUBJECT: - Sanitary inspection of Water Treatment
Plant, Maddalena, Sardinia.

THRU : - Chief, Public Health Section.

TO : - Director, Public Health Sub-Commission.

1. On 15 March 1944 an inspection was made of the water treatment plant of Maddalena, Sardinia in company with a civilian employee of the British Navy. This employee was working under the direction of Commander R. W. Bishop, RNVR, Officer in charge of Works, c/o NDIC, Maddalena. Commander Bishop's main function, in so far as the water supply is concerned, has been in regard to quantity rather than quality.

2. A description of the treatment plant follows:

The source of supply is from an impounded reservoir formed by building a large granite dam across a stream. There are no villages on the water shed but there is some pasture land and areas under cultivation.

Water flows by gravity from an intake tower in the reservoir into a rapid mixing basin. Alum solution, applied at the rate of 32 mg. per liter (1.86 grains per gal.), is piped to a point in the line immediately before this basin. To provide quick mixing there are electric motor driven paddles in this basin but for some reason or other these paddles are rarely used. Following the mixing basin there are two coagulation basins piped in series.

Although this plant has facilities for making PH tests, it is known that the alum dosage is not applied at the optimum PH value for coagulation. To obtain the best results this procedure is necessary both in regard to the production of good water and in saving materials. Aluminum sulphite is a material that is likely to be critical item on the Island of Sardinia because there are filter plants using this material at Cagliari, Sassari and Maddalena.

As for the quantity of water flowing through this plant the figures obtained do not appear to be very reliable. It was claimed that the flow through the plant was set at a rate of 6 liters per second which is equivalent to 129,600 gallons per day. On the other hand, with two filters each having an area of 415 cc (13.6 ft.) by 280 cc (9.2 ft.), which is approximately 125 square feet each, the amount of water that should be produced daily at a rate of 2 gals. per square foot per minute is 720,000 gallons per day. Furthermore, it was claimed that the average daily flow was 1000 cu. meters (approximately 250,000 gallons).

The filters are the conventional type gravity filters and with some small amount of supervision and re-adjustments of the chemical dosages (both alum and chlorine, this plant should produce excellent results at all times.

Chlorine application is accomplished by the use of chlorine gas machine applied into the filter effluent line before storage in the clear water well. After some storage in the clear well the water is passed through a closed charcoal filter activated by an electric current.

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ACC/3027/PH - Sanitary Inspection of Water Treatment Plant,
Maddalena, Sardinia - (Continued)

22 March 1941.

Following this the water is pumped to the city. A test of excess chlorine by ortho-tolidin showed only 0.05 ppm. (0.05 mg. per liter). This quantity is not sufficient and therefore the chlorine dosage should be stepped up to 0.3 to 0.5 ppm.

PR/ENT/ja

LEONARD W. TRAGER
Captain, Sn. C.
Sanitary Engineer.

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NOTES ON SARDINIAVisit 6th, 7th and 8th April 1944.

1. With Lt.Col.Lapper I arrived in Cagliari on the evening of the 5th April, and we left for Naples early on the morning of the 9th April. The intervening period was spent in discussions and certain inspections; I met the following:-

Brig.Carr, Regional Commissioner.

Col.Hale, Depy. " "

Maj.Price, Provincial Commissioner. Cagliari Province.

Maj.Spann, i/c Transport, Communications and P.W.matters

Capt.Smith, Public Works Officer, Cagliari.

Capt.Brooke, Public Health Officer.

Sig.Buttini, Provveditore alle Opere Pubbliche.

Brig.Carr had only been on the Island about 2 weeks, and when we arrived had been away for several days on a tour of inspection. From October to December the Commissioner was Brig.Boulnois, followed by Brig.Dunlop. Within a few months there have been 3 Commissioners. Col.Hale has, I understand, ~~been~~ his appointment since October and so has Maj.Spann. Capt.Smith was sent to Sardinia only three months ago, his major task being to assist the Italian Authorities in the clearing up of the town of Cagliari. This is a town, the capital of the Island, with a normal population of well over 100,000. The present population is estimated at about 50,000. It was subjected in the spring of 1943 to three very heavy daylight bombings by the American Air Force, and it would be impossible to imagine a town more completely wrecked. It is scarcely possible to travel 100 yds. in any direction, without seeing wreckage and debris.

The port is a considerable one, with berthing space for 6 or 8 Liberty ships at a time and numerous smaller vessels; there are also ~~various~~ Naval

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The port is a considerable one, with berthing space for 6 or 8 Liberty ships at a time and numerous smaller vessels; there are also ~~various~~ Naval facilities. Unloading of ships is continuous night and day. I noted a large collier from England discharging coal, and ~~various~~ stocks of lead, and other things, ready for export.

The only other town of any size in the Island is Sassari in the north, with a population of 65,000. There was no bombing there, and in common with the rest of the Island, with the exception of Cagliari, it is intact.

The population of Cagliari is rapidly increasing as people return to their homes, even though they may be severely damaged.

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2. Coal Situation.

Col. Hale holds the view that the coal-mining programme in Sardinia has been, up to now, what he calls a "fizzle". On the Sardinian railway, for example, only a few of the 51 locomotives have been converted (at much trouble and expense) to burn Sardinian coal. It has a high sulphur content, and leaves a large proportion of ash. There is the curious paradox, in consequence, that engines burning British coal draw trains of trucks to and from the mines and ports, the said trucks carrying Sardinian coal. Col. Hale has asked for imported coal at the rate of about 800 tons a month, of which he hopes to get up to 150 tons a month for the Cagliari Gas Works. Although these works are in the centre of the town (we visited them but could not make an examination; they were locked-up), by a fortunate chance they remained practically undamaged. So also the local electric-power station.

I showed Col. Hale the letter that I delivered later to Sig. Buttini (refer to A attached) concerning the salvage of sunken ships. Details of these ships and ports will be given later in this report, but as regards Porto Olbia, Porto Torres, and Porto San Antioco, Col. Hale thought that there may be no great urgency for the salvage work. I said, however, that the orders to Sig. Buttini appeared to be clear, and presumably he would go ahead.

Col. Hale is particularly interested in the Cagliari gas undertaking, and he gave me the particulars noted on the attached papers (marked B).

Although 300 tons of coal a month would be needed for full production the distribution system has been so severely damaged that 50 to 70% of the mains have had to be "blanked off".

Col. Hale gave me the following additional information :-

- (a) The Italian High-Commissioner for the Island is Maj. General Pinna, late of the Italian Air Force,

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Col.Hale gave me the following additional information :-

- (a) The Italian High-Commissioner for the Island is Maj.General Pinna, late of the Italian Air Force, who was captured in Abyssinia, and during the time of his internment in India became fairly proficient in English. He is a native-born Sardinian. He took up his appointment last January.
- (b) The Italian Garrison is Commanded by Maj.General Magli, and Col.Hale thinks that it now numbers about 200,000 men. Up to a recent date the figure was 250,000. He holds strong views about this, and considers, probably rightly, that it is a scandal that so many officers and men should be crowding towns and villages all over the Island, with literally nothing to do. Col.Hale considers that

3.

these men are becoming demoralised, the people on whom they are billeted are tired of them, and they are a "general nuisance". He agreed with me that there is here a great reservoir of unused labour, some of which at least could be profitably used for road and bridge work on the Mainland.

(c) Sometime ago a Decree was passed in Sardinia prohibiting people from carrying out works of repair and rebuilding. Sig. Buttini had been to him the day before to ask for the Regional Commissioner's assistance in getting the Decree rescinded, with particular reference to present conditions in Cagliari. This matter was also mentioned to me, later, by Brig. Carr himself. He said that he proposed to take a little time to consider the matter, because though in certain cases labour and local materials may be plentiful e.g. particularly stone and cement, there may be important questions of Town Planning involved. Cagliari is an ancient town with numerous narrow and tortuous streets, and it may be the case that extensive improvement and widening schemes ought to be put in hand. This will be a major question of policy, finance, and engineering; if wholesale reconstruction of damaged buildings is now permitted, the carrying out of such much-needed improvements might be seriously prejudiced. And on the question of critical structural materials, which might be wanted in large quantities, he agreed that a strict and unified control is essential.

We may ~~may~~ ^{be} probably consulted at a later date about this matter. In the meantime it might be advantageous to discuss it with the Minister, since the same conditions apply to towns outside Sardinia, ~~mainland~~.

(d) He regards duty in Sardinia for American and British officers as mainly a business of "carrying on". There was no change in the middle of February, since A.M.G. powers in the Island had

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- (d) He regards duty in Sardinia for American and British officers as mainly a business of "carrying on". There was no change in the middle of February, since A.M.G. powers in the Island had practically never been exercised. There is no war-damage problem except in minor instances, save in Cagliari itself, where it happens to be most severe.
- (e) He thought that Italian Genio Civile staff under Sig. Buttini are doing fairly well, and there is no need in his view for more Allied Engineer Officers.
- (f) The Officer Commanding Allied Forces in the Island is Brig. Webster, an Air Force Officer, who has his Headquarters near Cagliari. I was given to understand that this Officer has made it clear

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to every body that he is the supreme authority, and that he intends to have his own way irrespective of A.C.C. arrangements, or any thing else. [I shall indicate, later, that demands are being made on the Italian Civil Authorities by both the Naval, Air Force, and Army (Allied), this being in contravention of the A.C.C. Directive (see para. 4 of this report) dated 23 March 1944; and which bears the concurrence, if not the Authority, of General Alexander].

(g) I was given ~~WMA~~ approximate figures of the Allied Garrison. It is unnecessary to state these, and it suffices to say that there are at least 20 times as many American troops in the Island than British, excluding the R.A.F., which is in some strength in the North of the Island.

3. Public Works Position.

Maj. Spann is in general charge, but I gathered that his time is spent (as to between 50 and 75%) on things like railway matters, road transport, coastal shipping, and so on. The week before he had been to Naples for several days. I asked him why he had not called to see us in this Sub-Commission, seeing that he deals with our problems, at least to an appreciable extent. He replied that he had visited Naples on the suggestion of Col. Fitch. The only Sub-Commissions with which he had ever been in contact ~~WMA~~ were Transportation, and Industry and Commerce; the latter mainly relating to Petroleum products.

Capt. Smith works under Maj. Spann, and also under Maj. Price, the Commissioner for Cagliari Province. He is a qualified Civil Engineer like Maj. Spann, and deals with things in and about Cagliari City; occasionally he goes up to 50 miles from Cagliari for special work Maj. Price wants him to do. ~~WMA~~ the Island there are only two other Provinces besides Cagliari, viz, Nuoro, and Sassari.

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Road conditions are reported to be generally good, and not a single bridge in the Island was either bombed or mined; the important main roads have asphalted surfaces viz,

- (a) Cagliari to Porto San Antioco
- (b) Cagliari to Sassari
- (c) From the latter to Nuoro

The rest are all of water-bound macadam but in fair condition. Maintenance work has gone on smoothly and it is well organised. There is some anxiety because the stock of asphalt is now down to only 2,000 barrels. This was somehow left behind by the Germans. The R.A.F. have asked for it for air-fields construction, and it is likely they will get it.

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Gas Works

I have already referred to the Cagliari position and certain detailed information (noted on the sheet B attached). The only other works on the Island serve Sassari. They are undamaged, but cannot operate because of coal shortage. Both are owned by the same private Company. Major Spann has heard of no applications to increase charges to the consumers, and the same applies to water undertakings.

Sewerage.

Conditions are normal everywhere except in Cagliari town, where repairs are going on steadily, and as fast as the enormous amount of debris will allow.

Water Supplies.

These are also normal everywhere, and even Cagliari has an ample supply. First-aid repairs to mains have been done and there is no particular shortage of pipes, valves etc. I saw a good stock of these, in fact, in a depot above the town. The sources are about 35 kilometres away, one to the West and one to the North. There are also two zones of supply, High Level and Low Level. The undertaking is under Municipal control, the City Engineer being Sig. Crespi, who is reported to be a very able official. Until some months ago the water was sterilised by chlorine, but since there are no stocks available now the City is having to "take a chance", and trust to the purity of the water at the two sources.

I was surprised to find that Capt. Smith had very little first-hand information on the matter, generally. He had never visited the reservoirs nor the sterilisation site. He said that Capt. Brooke, the Public Health Officer, had seemed to resent his taking any action.

On hearing this I called Capt. Brooke, and asked him for an explanation. Pointing out to him that though it might be his function to concern himself with the quality of the water the problem, generally, must have wide engineering implications. Capt. Brooke's explanation was not very satisfactory to my mind, but I think that in the future, as the result of the conversation, Capt. Smith will be allowed to take his proper part.

The town of Sassari had asked for a considerable extension of its undertaking viz., a new reservoir, pipe line, and so on. They had asked Major Spann to provide transport for materials but he had, quite properly I think, refused. Information about this Proposal was rather vague, but there may possibly be a further reason behind it, viz. the possible starting up of an ammonia production plant, a matter about which we may hear more in due course, through Industry and Commerce.

There seems to be a strong backing to this Sassari project, as a kind of "normal peace-time proposal". I told Major Spann that it seemed to me right to resist it strongly, unless it proved conclusively to be bound up with the ammonia-production idea, and even then it would be necessary for Industry and Commerce to make out a case.

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At La Maddalena, in the Straits between Sardinia and Corsica there is an important Naval Base. Capt. Brooke had had information that there are serious water-supply difficulties. He did not know whether these are from the medical and quality aspect, or whether there are engineering questions involving storage, quantities, distribution, and pressure. He proposed to go up by air to the place within a few days and find out. If such questions are involved, he promised to refer them to Major Spann and Capt. Smith.

I ascertained that about a month ago Capt. Trager, of the Public Health Sub-Commission, had been over to Sardinia specially on water-supply questions, spending two or three weeks there. He had seen Capt. Brooke, but neither Major Spann nor Capt. Smith knew anything about his visit until Capt. Brooke mentioned it to me. (I have since seen Brigadier Parkinson, Director of the Public Health

Sub-Commission, and he has promised to let us have a copy of Capt. Trager's report. It may prove interesting.)

4. Sig. Buttini (Provveditore).

I had two conversations with Sig. Buttini, who appeared to me to be a very competent official. (I was told today, by Sig. Pugliese, that Sig. Buttini has recently been offered the corresponding appointment in Sicily, at Palermo, by the Director General. Sig. Buttini has expressed a wish to continue at Sardinia.)

Incidentally, he is highly spoken of by Col. Hale, Major Spann and others at Cagliari.

I had previously raised with Col. Hale the important point underlined in para. 2a of the Directive (Ref. 125/18/CA dated 23 Mar. 44.) and see para. 2f above. This states that "All but the most routine dealings between the Italian Administration and the Allied Military Authorities must be conducted through the Commission". If the Italian Government is directly represented on a control board or committee, the Military may deal direct, without the intervention of the Commission.

I raised it also with Sig. Buttini who told me, in effect, that prior to the Armistice the Italian Military Authorities on the Island had always given direct instructions to the "Azienda Autonoma Statale della Strada" (A.A.S.S.). The Allied Military Command continues to do precisely the same, through the Italian Military Authorities and not through A.C.C. Regional Headquarters. The A.A.S.S. is in a sense under him, Sig. Buttini, and they keep him posted about what is going on. Since the Armistice 35 million lire has been spent in this way. He did not know where this money was coming from, but supposed that it may be found from the budget of the Italian Army. He emphasised the fact that he has no say in the matter save in an "ex post facto" sense, and he could quite understand that neither Col. Hale nor Major Spann knew nothing about it. (The question is, to my mind, whether the Directive is being followed, and whether there is a control ^{by} committee. I was not able to ascertain this.)

The High Commissioner has considerable Public Works powers, but these are limited to specific sums of money. He had ~~allocated~~ last October 22 million lire, and in February 45 million lire. Sig. Buttini thought that this 67 million lire may last till June. The Government financial year runs usually from the 1st. July to 30th. June, therefore there will then be a third allocation. He thought that not less than 2/3 of the money is being devoted to the Cagliari war damage.

On the question of sunken ships I showed him the letter dated 3 April (copy sent to us) marked A attached.

The position now is as follows:-

- (a) In Cagliari port the S.S. Rita, 8,000 tons, salvaged in April 43, but sunk again following a bombing in May; holed to extent of 150 sq. m.

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- (a) In Cagliari port the S.S. Rita, 8,000 tons, salvaged in April 43, but sunk again following a bombing in May; holed to extent of 150 sq. m. Also the S.S. Capo Figalo, 8,000 tons, is now being salvaged by the Italian Navy, along with tugs, small ships and motor launches etc.
- The S.S. Capo Melle, 6,000 tons, was salvaged last November, but is not in navigable condition though the boilers and machinery are good. The same applies to S.S. Paolo, 8,000 tons, which has a good hull and was salvaged last November, but the engines are in bad condition.
- The S.S. Albissola, 7,000 tons, was salvaged last October, and has already left with a cargo of Sardinian coal.

(From the above, therefore, there is one 8,000 ton ship to be salvaged; one is being salvaged now of similar size, together with smaller boats; and two large ships are already salvaged but are not in navigable condition.)

- (b) At Porto Olbia there is one large ship the S.S. Nirvo being salvaged now, and another the S.S. Tarna San Jose of medium tonnage, salvage to be started, also some small vessels.
- (c) At Porto Torres there is the S.S. Luigi Razza stated to be of large tonnage.
- (d) At Porto ^{Sax} Antioco there is the S.S. Sfinge, salvaged and almost repaired.
- (e) At Porto Golfo degli Aranci there is the S.S. Cor Jesus, said to be of large tonnage; can be salvaged.

5. Remarks.

- (a) The position in Sardinia, from a Public Works standpoint, is a simple one as compared with Sicily and the Mainland. War-damage is localised and limited, roads and bridges throughout the Island are in fair condition and well maintained, the Italian civil population is competently managed, and there is no need to increase the number of Allied engineer personnel.
- (b) As to Cagliari, the main operational problem, I was invited to join Brigadier Carr and Major Price in an inspection tour on the 8th. April. All the debris is being cleared, but very slowly, by trucks and a small Decauville track, to a site near the sea. I raised the question whether quicker progress could not be made by clearance of the streets, in the first instance, to nearer sites (as was done in London), with removal at a later date to the final site. This would mean double-handling, however, and on the whole it is probably better to let the Italians continue on their present system. Cagliari is not London, and there is not the same urgency for very rapid street clearance.
- (c) We also visited the local cement works, the only one in the Island. It can produce 5,000 tons a month, and has plant and spares enough for the next five or six months. Raw materials are within a mile or two of the works. Production seems to be ample to meet all Island needs, including that of the Allied Forces.
- (d) There are two main questions:-
 - (i) Rebuilding in relation to Town Planning, if any, possibly to be discussed with the Minister as a general matter, and not one specially applicable to Cagliari (refer to para. 2c above).
 - (ii) As to Allied Forces requirements not being "channelled" through A.C.C. (refer to para. 4 above)

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Spare copy attached

-7-

R. E. Rhodes
Lt. Col. R.E.

14. 4. 44

GAS WORKS, CAGLIARISignor Marchioni, Mgr.

7 April 1944

1. Maximum possible daily output of gas: 10,000 cu/m.
2. Average daily output prior to closing: 9000 cu/m.
3. Possible daily output without excessive work on street mains: 3000 - 4000 cu/m.
4. Coal consumption: one ton of coal per 500 cu/m of gas.
5. Coal required per month for anticipated production: 150 tons imported coal plus 10% Sulcis coal.
6. Middle gasometer is the only one now usable: capacity, 2500 cu/m.
7. Maximum output possible using only the middle gasometer: 4000 cu/m.
8. Anticipated length of time to repair distribution system so as to produce 3000 - 4000 cu/m per day: 2 months.
9. Coke production: 700 kg per ton of coal.
10. Tar production: 40 kg per ton of coal.
11. Ammonia and naphthalene have never been dealt with commercially as by-products.
12. Estimated caloric value of gas: 3200 calories per cu/m.
13. General Remarks. Plant is old style design with hand-fed horizontal retorts. Was undamaged by bombing except by a falling timber on smallest of three gasometers. The crown sheet on the largest of the three had badly rusted and had been removed but not renewed prior to bombing. There are a few unused spare retorts and other sundry supplies on the premises.

3. Possible daily output without excessive work on street mains: 3000 - 4000 cu/m.
4. Coal consumption: one ton of coal per 500 cu/m of gas.
5. Coal required per month for anticipated production: 150 tons imported coal plus 10% Sulcis coal.
6. Middle gasometer is the only one now usable: capacity, 2500 cu/m.
7. Maximum output possible using only the middle gasometer: 4000 cu/m.
8. Anticipated length of time to repair distribution system so as to produce 3000 - 4000 cu/m per day: 2 months.
9. Coke production: 700 kg per ton of coal.
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Col. Inf.

Deputy Regional Commissioner

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