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FINAL REPORT
OF
MALARIA CONTROL DEMONSTRATIONS

WEST POINT, MISSISSIPPI.

1922.

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AGREEMENT

BETWEEN

THE TOWN OF WEST POINT, MISSISSIPPI.

and the

MISSISSIPPI STATE BOARD OF HEALTH,

UNITED STATES PUBLIC HEALTH SERVICE,

AND THE INTERNATIONAL HEALTH BOARD,

FOR CARRYING OUT A PROGRAM OF MALARIA CONTROL
 BY ANTI-MOSQUITO MEASURES IN WEST POINT, MISS.

DURING

1922

1. The cost of the work to be carried out for the control of malaria in West Point, Miss. will be approximately as follows.

ITEMIZED STATEMENT OF WORK AND COST

1- Sanitary Inspector, 6 months at \$100.00 per mo.	\$600.00
2- Cleaning and training existing ditches and runs.	700.00
3- New Ditches.-----	100.00
4- Maintenance of Ditches.-----	200.00
5- Oiler, -----	100.00
6- Oil. -----	100.00
7- Incidentals.-----	200.00
Total -----	\$2000.00

The sum of \$1333.34 will be set aside by the town during 1922 and will be disbursed in accordance with paragraph 5.

2. After the working plan has been in successful operation for one year, the town will make every effort to see that sufficient funds for its continuance are annually appropriated by it. These appropriations are to be based on estimates submitted by the sanitary engineer or other supervising officer representing the co-operating agencies.
- 3.- The co-operating health agencies will provide a sanitary engineer or other officer to supervise the work during 1922. The Mayor will invest this officer with all necessary authority. His duties will be to plan, organize, and supervise the work and to select the inspectors, laborers and whatever additional personnel is needed. It is understood that he will have full authority over all persons directly engaged in the work.

J. A. Farwell

Sheet 2. West Point, Miss.

- 4- The sanitary engineer ~~will~~ or other supervising officer will prepare all monthly progress reports and other reports showing progress of the work in sets of five each, to be distributed as follows.

- (1) To the State Health Officer, Jackson, Miss?
- (2) Office, Malaria Investigations, U.S.P.H.S., Memphis, Tenn.
- (3) Mayor of the town or his accredited representative.
- (4) The International Health Board, 61 Broadway, New York, N.Y.
- (5) Retain copy.

All copies of reports shall be sent first to the State Health Officer and mailed by him to the other co-operating agencies unless otherwise requested by the State Health Officer.

- 5- It is understood that the towns appropriation will be made available for the work as needed during 1922.

- (a) The City's warrants will be issued against the appropriation upon certification by the sanitary engineer or other duly accredited officer, and on approval of the Mayor.
- (b) All bills and vouchers will be presented to the sanitary engineer (or other duly accredited officer) for his certification for payment. This certification will be made only after the accuracy of the time books and bills have been verified.
- (c) The salary of the inspector and the wages of other employees will be determined from time to time, and will be submitted to the Mayor for his approval.
- (d) Changes in the salaries of any of the employees will be made only upon recommendation by the sanitary engineer or other duly accredited officer, and approval of the Mayor.
- (e) A financial statement will be made at the end of each month by the Mayor or his legal representative to the City Council or Board of Aldermen and to the sanitary engineer or other duly accredited officer.
- (f) An account of all disbursements will be kept by the City, and each item will be charged to its appropriate item number as given in the estimates of the sanitary engineer.
- (g) Warrants for the payment of all laborers will be issued by the Mayor or his legal representative, after certification by the sanitary engineer or other duly accredited officer.

- 6- It is further understood and agreed that the State Board of Health will pay \$666.66 of the cost of malaria control work, said amount to be paid to the City at the end of each month as a reimbursing fund covering said part of each months expenditures.

- 7- The town will provide adequate office space, preferably in a Town or County building, for the use of the personnel engaged in the malaria control work.

Sheet 3. West Point, Miss.

- 8- The City will adopt, as a part of the City Ordinances, and make of full force and effect by May 15th, 1922. the Standard Anti-Mosquito Ordinance, attached to this agreement and forming a part thereof.
- 9- It is further understood and agreed that neither the Mississippi State Board of Health, the United States Public Health Service nor the International Health Board shall be held responsible for over drafts or errors in the disbursement of the funds contributed by or through the City of West Point, Miss., which funds are to be disbursed by its Mayor

AGREEMENT

We, the undersigned, being the Mayor and the legally authorized agents of the City Council or Commission of the City of West Point, Mississippi, and the duly authorized agent of the Mississippi State Board of Health and the other co-operating health agencies, hereby certify that we have read the foregoing ~~plan~~ plan for the control of malaria in the City of West Point, Mississippi, and do hereby express our agreement that the work shall be ~~now~~ conducted upon the terms and conditions set forth in this plan.

Dated this 12th day of April, A.D. 1922. in West Point, Miss.

Signed.

W. A. Davis
W.A. Davis, Scientific Asst. for
U.S. PUBLIC HEALTH SERVICE.

Mississippi State Board of Health.

The International Health Board.

J. L. Young
Mayor

FINAL REPORT OF MALARIA CONTROL

WEST POINT, MISS.

1922.

1. GENERAL.

1. Description of town:

- a. Location: West Point, Mississippi., is located in the eastern part of the State a little north of central in Clay County of which it is the county seat.
- b. Railroads: Three railroads run through the town. viz. the M & O. Ry. the Ill. Cent. Ry. and the Southern Ry.
- c. Type of Farming: The type of farming is general. Hay, cotton, corn and stock.
- d. Industries: Two Saw Mills a Handle Factory a Brick Yard, the West Point Spoke Factory a Creamery and Cotton Mill with about 50 families comprise the industries of the town.
- e. Schools: West Point has four schools. The West Point High School, the Consolidated School a Colored School and a Colored College.
- f. Topography: The town site proper is generally level running to slightly rolling adjoining country. The soil is a black loam and clay in which ditches hold up very well. The drainage is in a southerly direction into two drainage canals which empty into Tibbee creek and thence into the Tombigbee river.

2. Population:

- a. Within corporate limits: The 1920 census gives West Point a population of 4400 people about 40 per cent of which are colored.
- b. In the entire area under control the total number of people effected is approximately 5000.

3. Area:

- a. Within corporate limits of the town the area is ~~1-1/2~~⁴ square miles.
- b. The entire area under control is ~~two~~⁴ square miles.

4. Civic Organizations: Chamber of Commerce, Civic League, and New Century Club.

5. City Officials:

The town government consists of a Mayor and board of five Aldermen each representing his respective ward. A part time County Health Officer acting as City Sanitary Officer., and a full time Sanitary Inspector put on for the anti-malaria control work.

Final Report of Malaria Control, West Point, Miss. 1922.

1. General - continued.

6. Description of work done:

- a. Dates work started and completed: A preliminary survey was made of the town March 8, 1922., and the cooperative anti-malaria program submitted to the Mayor and Board of Aldermen at their regular meeting April 4, 1922 at which time it was decided to put on the work this season. Construction work was started April 17, 1922 under the direction of Scientific Assistant, W.A. Davis, U.S. Public Health Service, and supervised by Sanitary Engineer, C.R. Cox, of the International Health Board. The construction work was completed about the first of the following July. The construction consisted of clearing, brushing, regrading and cleaning 10 miles of existing ditches and digging 1400 ft. of new ditches. This work was all done by hand labor. Forty dug well, which were open and not used, were stocked with Gambusia affinis. Weekly inspection of these wells showed that the fish control in these places was about 40 per cent perfect. The fish dieing and having to be replaced in 57 wells twice during the season. Regular weekly inspection of ditches, wells and barrow pits and ponds were made through out the season and oiled as necessary. A total of 78.2 miles of ditches being oiled during the season. In addition to the above mentioned cleaning and re-grading of ditches the following work was done by the railroads running through the town. viz. The M & O Ry. 7900 feet of ditches along their right of way. The Ill. Cent. Ry. 1000 feet. The Southern Ry. 850 feet. The City Street department cleaned and maintained 2500 feet of street and road side ditches and the Cotton Mill took care of 200 feet of ditch on there property.
- b. Organization of personnel: The personnel included a Sanitary Engineer supervising the construction work, one Sanitary Inspector, acting as foreman, and a crew of colored laborers the number varying from time to time to meet the requirements of the work, and one oiler who assisted the inspector in his work when not engaged in oiling. The Inspector acting as foreman and supervising the maintenance work.
- c. Anopheles control measures: Drainage, Oiling and Fish control were the principle methods used in the control and eradication of the Anopheles mosquitoes.
- d. Culex control Measures: The natural breeding places were controled by draining, filling, oil and fish. At the begining of the work a house to house inspection was made of the town and as many as possible of the artificial mosquito breeding places eliminated at the time this inspection was made. The people were told about the work and instructed in mosquito control measures about the yard and house. These house to house inspections were continued through out the season as time would premit with the result that while Culex control was not 100 per cent perfect, due a great deal to heavy rains, it was kept down to a minimum.

1. General, continued.

6. Description of work done:

e. Special problems. None.

7. Status of work for 1923.

Upon completion of the work this season an estimate of cost of maintenance was submitted to the Mayor and approved by him. This estimate of cost is to be included in the city budget for continuing the work in 1923. The City administration with the exception of the Mayor changes January 1, 1923. The retiring board approved the work as done this season and were well pleased with the results of it. Public sentiment as expressed by the people was most favorable and the writer is practically assured that the work will be kept up in 1923.

2. COST DATA.

A statement of expenditures and cost data for 1922 is appended.

3. MALARIA STATISTICS

At the time the work was started the physicians of the town were visited with a view of obtaining from them or their records data that could be used to measure the success of the work this season. The information received and the data collected was found to be of no use in this connection. The physicians of the town were requested to furnish the supervisor of the work with weekly reports of the calls and visits, with name and address, of the cases of malaria treated by them during the season, 1922 starting from the time the work was started. These reports were sent and collected by the County Health Officer. At the time this report is written they are incomplete and would be of no use for comparative data for the reduction of malaria in 1922 over 1921. Statements obtained from the local physicians and the County Health Officer at the close of the work this season as to the prevalence of malaria in the town during the summer and fall showed a marked decrease. Reports from druggist were that their sales of Quinine, Chill Tonics and mosquito repellents were much decreased over previous seasons. The County Health Officer reported that up to October 1st, that with one exception the cases of malaria reported and investigated by him were either contracted out of the area under control or relapse cases.

4. RECOMMENDATIONS FOR 1923.

It is recommended that maintenance of the original anti-malaria construction work completed in 1922 be continued in 1923. That a full time inspector be employed to direct and take charge of this work. The inspector to successfully conduct the work should be a man with some experience in work of this character and should devote his full time to it during the mosquito breeding season. Much of the success or failure of mosquito control, especially the control of the house mosquito, depends upon the inspector and the time he has to devote to Culex mosquito breeding around houses and it is important that this type of mosquito be controlled in anti-malaria work as well as the Anopheles or malaria mosquito.

4. RECOMMENDATIONS FOR 1923, continued.

Within the corporate limits of the City there are 40 unused dug well that are open and the source of breeding many Culex mosquitoes. These wells were stocked with fish twice during 1922. Inspection showed that the fish did not do well in these places and weekly oiling of them was necessary to control the mosquito breeding. Filling at the time the construction work was done was not practical as available material was not obtainable. It is recommended that these well be filled as fast as possible with nonperishable material collected by the City trash and cleaning department and that this work be done this winter and spring thus eliminating this source of mosquito production entirely.

In starting the maintenance work in the spring the work should start in time to keep ahead of the first crop of mosquitoes. The work will consist of cleaning and regrading the existing ditches, care being taken in grading not to lower the bottom of the ditches below the grade of culverts. All ditches should be graded so that water will not stand in them in pot holes during the dry season. Ditches holding water throughout the season should be kept free from grass and vegetation in order that they may be properly oiled when necessary. The edges of barrow pits and ponds, not drained, should be kept free of vegetation and well stocked with top minnows (Gambusia affinis).

A house to house inspection and survey of the town should be made and all artificial or potential breeding places of Culex mosquitoes eliminated early in the season. Water pipes and yard taps should be inspected at this time and all leaks reported to the owner of the property and the City water department with instructions that they be fixed at once. A record should be kept of these places by the inspector in order that he may check them up from time to time. Systematic weekly inspection of the area under control should be made by the inspector throughout the mosquito breeding season and he should direct the oiler in his work. Each house owner and tenant should be instructed in keeping their premises and yards free from artificial mosquito breeding places and it should be the duty of each one to inspect their ^{yards} ~~places~~ at least once a week for these places and destroy them. Cooperation of the people with the City and those in charge of the work will aid greatly to the success of it.

Acknowledgement.

Acknowledgement is made to the Mayor and Board of Aldermen, the County Health Officer, the People of West Point, and the Railroads running thru the town for the aid and cooperation given by them which aided greatly to the success of the work.

Itemized estimate of cost of maintenance for 1923 attached.

Respectfully,

W.A. Davis

W.A. Davis,

Scientific Assistant,

U.S. Public Health Service.

ESTIMATED COST OF MAINTENANCE,
FOR
1923

1. Inspector 6 months @ 100.00 per month, -----	\$ 600.00
2. Oiler, 4 months @ \$50.00 per month, -----	200.00
3. Oil, estimated cost, -----	100.00
4. Labor for maintenance of ditches, -----	300.00
5. Incidentals, -----	50.00
	<u>\$1250.00</u>

The above estimate of cost of maintenance for the work in 1923 is based on the cost of the original construction work.

Respectfully,

W.A. Davis

W.A. Davis,

Scientific Assistant,

U.S. Public Health Service.

FINANCIAL STATEMENT.

SOURCE OF FUNDS.

City of West Point, Miss. -----	\$ 1333.34
Mississippi State Board of Health, -----	333.33
International Health Board, -----	333.33
Total -----	\$ 2000.00

COST

EXPENDITURES BY ITEMS, WEST POINT, MISS.
1922.

Item.	
1--- Sanitary Inspector, 6 mos. @ \$100.00 per mo. --	\$ 600.00
2--- Cleaning and training existing ditches and runs,	546.55
3 -- New Ditches, -----	28.00
4 -- Maintenance of ditches. -----	116.25
5 -- Oiler, -----	97.50
6 -- Oil, -----	63.43
7 -- Incidentals, -----	138.57
Total -----	\$ 1592.30

TOTAL EXPENDED
1922.

City of West Point, Miss. -----	\$ 1061.54
Mississippi State Board of Health, -----	265.38
International Health Board, -----	265.38
Total -----	\$ 1592.30

UNEXPENDED BALANCE, DECEMBER 31, 1922.

City of West Point, Miss. -----	\$ 271.80
Mississippi State Board of Health, -----	67.95
International Health Board, -----	67.95
Total -----	\$ 407.70

Respectfully,

W.A. Davis

W.A. Davis,

Scientific Assistant,

U.S. Public Health Service,

COST DATA, 1922 .

WEST POINT, MISSISSIPPI, MALARIA CONTROL.

Area Controlled -- 4 square miles.

Population effected -- 5000 people.

Items.

a. Drainage.

New ditches,	-----	\$ 28.00
(Miles dug .3 -- Cost per mile -- \$93.33)	-----	
Cleaning and training existing ditches and streams,	-----	724.95
(Miles cleaned 10 -- Cost per mile, \$72.50)	-----	
(Foreman and Inspector, -----	\$200.00)	
(Labor, -----	452.59)	
(Transportation -----	3.50)	
(Tools and supplies -----	61.86)	

b. Maintenance,

-----	379.39
(Miles 44 -- Cost per mile, \$8.62	
(Foreman and Inspector, -----	\$208.33)
(Labor, -----	158.75)
(Tools and supplies -----	12.31)

c. Oiling,

-----	396.29
(Foreman and Inspector, -----	\$175.00)
(Oiler, -----	132.50)
(Oil, -----	65.43)
(Transportation, -----	2.25)
(Tools and supplies, -----	21.11)

d. Fish Control,

-----	65.67
(Inspector, -----	16.67)
(Labor, -----	46.25)
(Supplies -----	.75)

Total ----- \$1592.30

Respectfully,

W.A. Davis

W.A. Davis,
Scientific Assistant,
U.S. Public Health Service,