INDUSTRIAL WASTES SURVEY
MAPLEWOOD POULTRY
POULTRY PROCESSING

BELFAST, MAINE

November 3 and 4, 1970

MAPLEWOOD POULTRY AND POULTRY PROCESSING
BELFAST BAY
BELFAST, MAINE

At the request of the Maine United States Attorney, the outfalls from Maplewood Poultry and Poultry Processing (also known as Penobscot Poultry) were sampled on November 3 and 4, 1970.

Arthur Johnson and David Stonefield collected the samples and Howard Davis was in charge of the mobile laboratory. The sampling crew assisted in the mobile lab after the samples were collected.

Maplewood Poultry

Maplewood Poultry is located in Belfast, Maine, on the west side of Belfast Bay between the new Veterian Memorial bridge and the old bridge across the bay (Figure 1). On arrival at Maplewood Poultry at 1500 hours on November 3, David Stonefield talked to Mr. Steven Glass, plant manager. Mr. Glass pointed out the three outfalls (Figure 2) and showed him the effluent screens and the grease separator.

The southern most outfall (MP-01) is a concrete pipe which Mr. Glass said carried the waste from the picking room area where the birds were killed and plucked. The effluent was blood colored and varied markedly in quantity.

The middle outfall is located below high water mark just north of an old pier. Mr. Glass said that the corrugated steel pipe carries melted ice from the floor drains in the preparing room. This had the smallest flow of the three outfalls.

The northern most outfall (MP-03) is a corrugated steel pipe which carries from the eviscerating area. This waste is the largest of the three effluents and is passed through screens and a grease separator before it is discharged.

Two samples were collected at each of the three outfalls on November 3 - one for bacteria and one for a general analysis. The general sample was analyzed for pH, color, turbidity, settleable solids, and suspended solids. The temperature of the effluents was also obtained.

On November 4 the three outfalls were sampled for BOD_5 and oil-grease analysis. The temperature of the sample was again recorded.

Poultry Processing

This plant is also located on the west side of Belfast Bay in Belfast, Maine. It is about a half mile south of Maplewood Poultry Plant (Figure 1). Upon arrival at the plant at 1600 hours on November 3, David Stonefield learned from Mr. Gilbert Knight, plant manager, that the plant had shut down at 1430 hours. Mr. Knight showed the FWQA representatives the source of the waste and the location of the outfall. He said that the plant would start operation at 0700 hours on November 4. The samplers decided to return to collect the samples.

The outfall is located at the low water mark of Belfast Bay near the salt water pump house for the condensers (Figure 3). Two pipes were discharging to the Bay. The northern most outfall appeared to be from the condensers. Since the effluent was not colored and did not carry many solids, it was not sampled. The southern outfall effluent was yellowish-red in color. Four samples - bacteria, BOD, oils and greases and a general sample - were taken on Wednesday morning, November 4. All were returned to the mobile laboratory.

Sample Identification

Each sample was tagged with two tags - one sample tag giving lab number, station, date, time, collector and a diagram of the sampling

location; and one chain of custody tag giving collecting agency, lab number, time, date, source of sample, collector's signature and title, and witness's signature and title, plus information on the transfer of the sample. In addition, a prenumbered field data card was filled out for each collection time to record weather conditions and the temperature of the sample.

All samples were returned to the mobile laboratory, located at the Belfast Motor Inn, where the BOD_5 and oil-grease samples were prepared for return to the NEBO laboratory for analysis. The suspended solids and bacteria samples were filtered in the mobile laboratory and returned to the NEBO laboratory for completion of the analysis. All other tests were performed in the mobile laboratory.

Results

Table I summarizes the results of the effluent analysis. These results show that two of Maplewood Poultry effluents, MP-01 and MP-3, and the Poultry Processing effluent, PP-01, were highly colored, turbid and contained large quantities of suspended solids. The oil-grease content and the BOD of these three effluents were above that of normal raw sewage. The bacterial content of MP-01 was extremely high, similar to raw sewage.

The results of analysis on the other outfall from Maplewood Poultry (MP-2) were similar to those expected for diluted raw sewage.

TABLE I

SUMMARY DATA

Station	Lab No.	Date	Time	Temp. (°C)	pH Units	Turbidity JTU Hach 2100
Maplewood Poultry						
MP-01	23001	11/3/70	1520	25.5	6.8	110
MP-01	23005	11/4/70	0830	23.0	-	-
MP-02	23002	11/3/70	1535	20.0	7.2	21
MP-02	23006	11/4/70	0840	20.0	-	-
MP-03	23003	11/3/70	1550	12.5	7.2	60
MP-03	23007	11/4/70	0850	9.5	-	-
Poultry Processing						
PP-01	23004	11/4/70	0745	15.0	7.2	95

Station	Color Units	Settleable Solids Ml/l	Suspended Solids mg/l	Oil & Greases mg/l	Total Coliforms counts per 100 ml
MP-01	875	3.0	520	-	16,000,000
MP-01	-	-	-	137	-
MP-02	50	0.2	33	-	260,000
MP-02	-	-	-	57	-
MP-03	450	0.5	250	-	940,000
MP-03	-	-	-	191	-
PP-01	450	1.5	266	220	4,000,000

Station	BOD_5 mg/l	Fecal Coliforms counts per 100 nl
MP-01	-	4,200,000
MP-01	450	-
MP-02	-	2,000
MP-02	102	-
MP-03	-	430,000
MP-03	305	-
PP-01	410	1,600,000

The tests were performed according to the FWQA Standard Methods and the data was verified.

Chief, Laboratory Branch

Sanitary Engineer

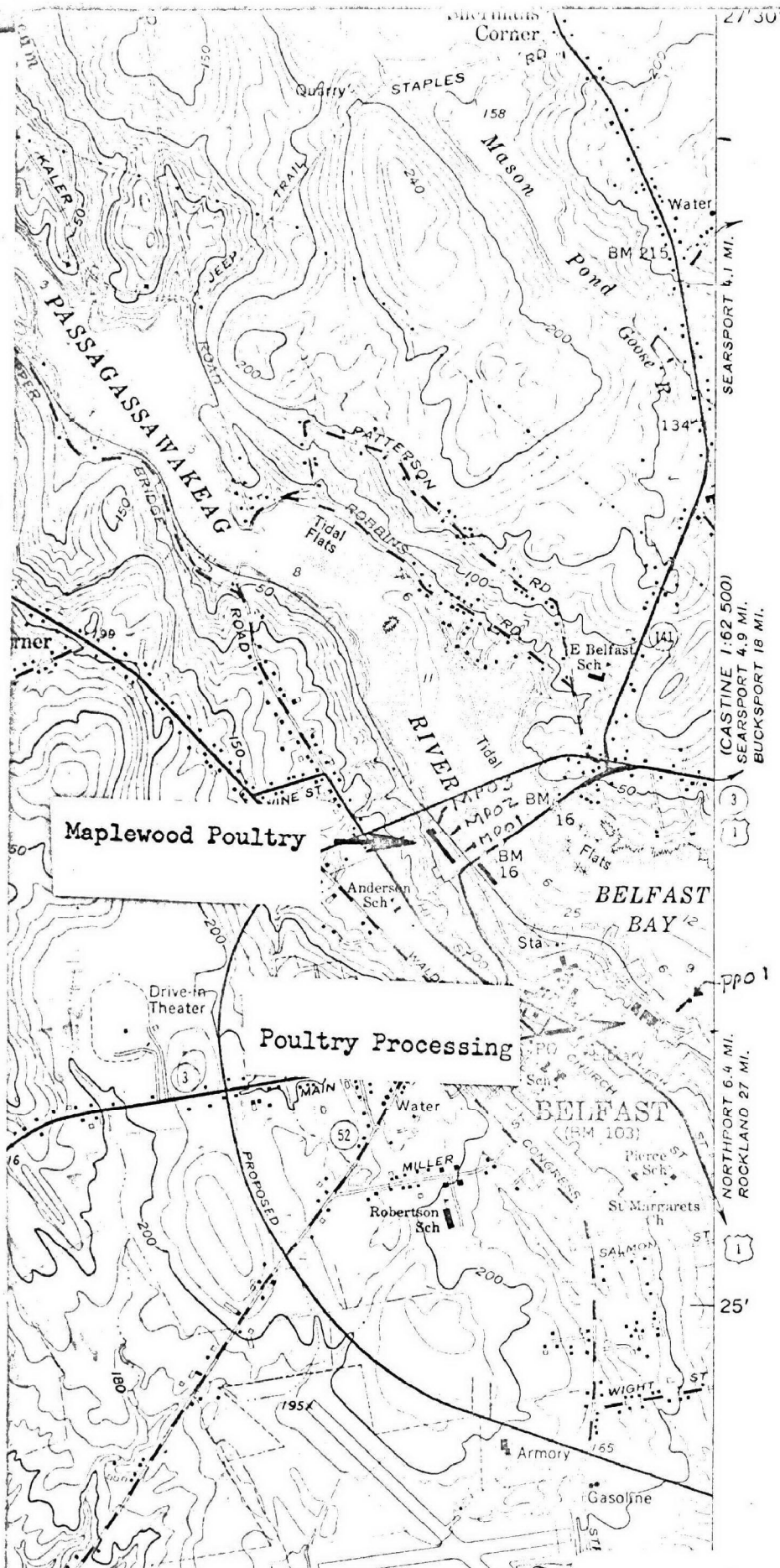
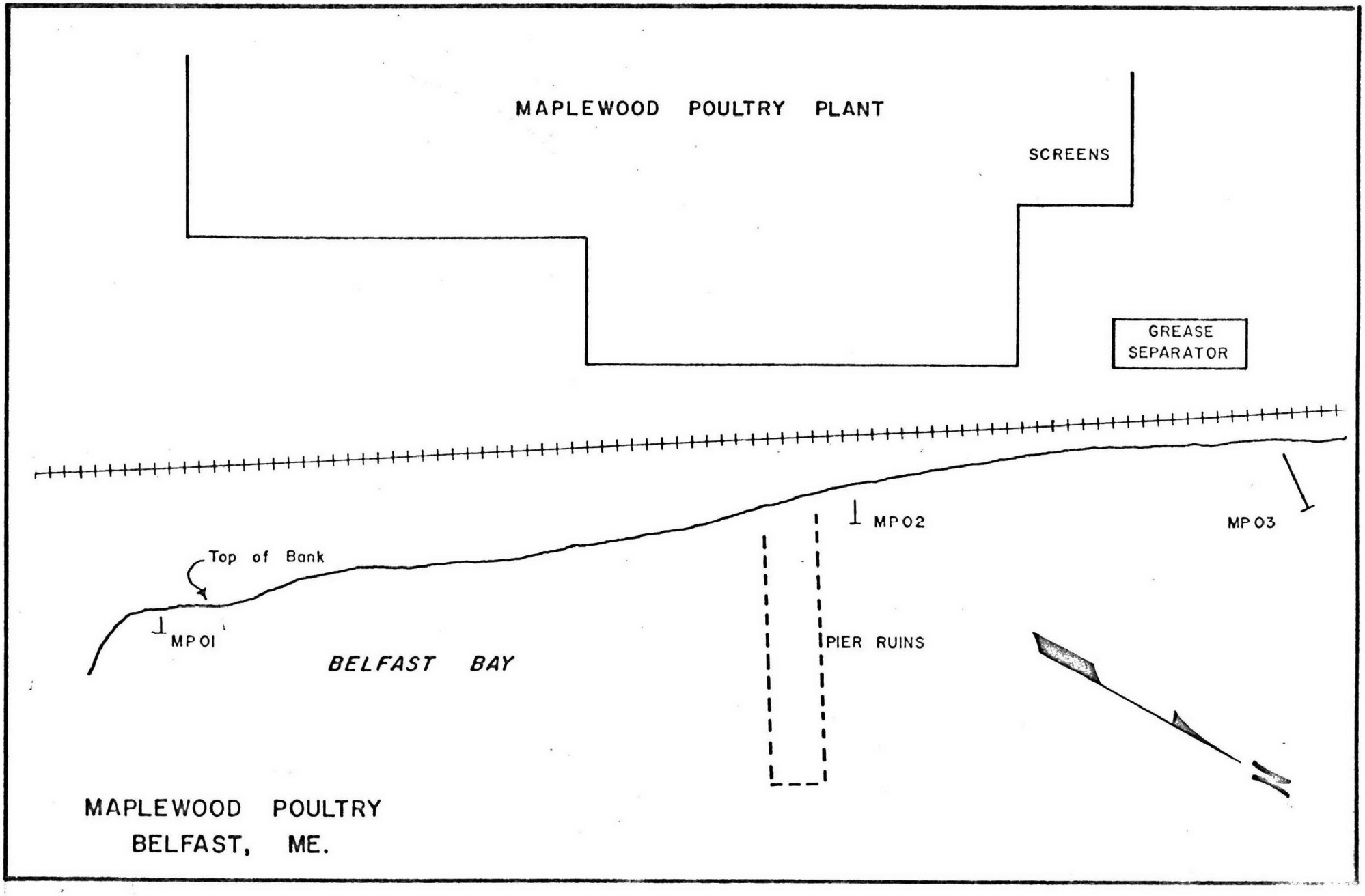


Figure 1
Upper Belfast Bay, Belfast, Maine.


MAPLEWOOD POULTRY PLANT
SCREENS
GREASE SEPARATOR
MP 02
MP 03
Top of Bank
MP 01
BELFAST BAY
PIER RUINS
MAPLEWOOD POULTRY
BELFAST, ME.

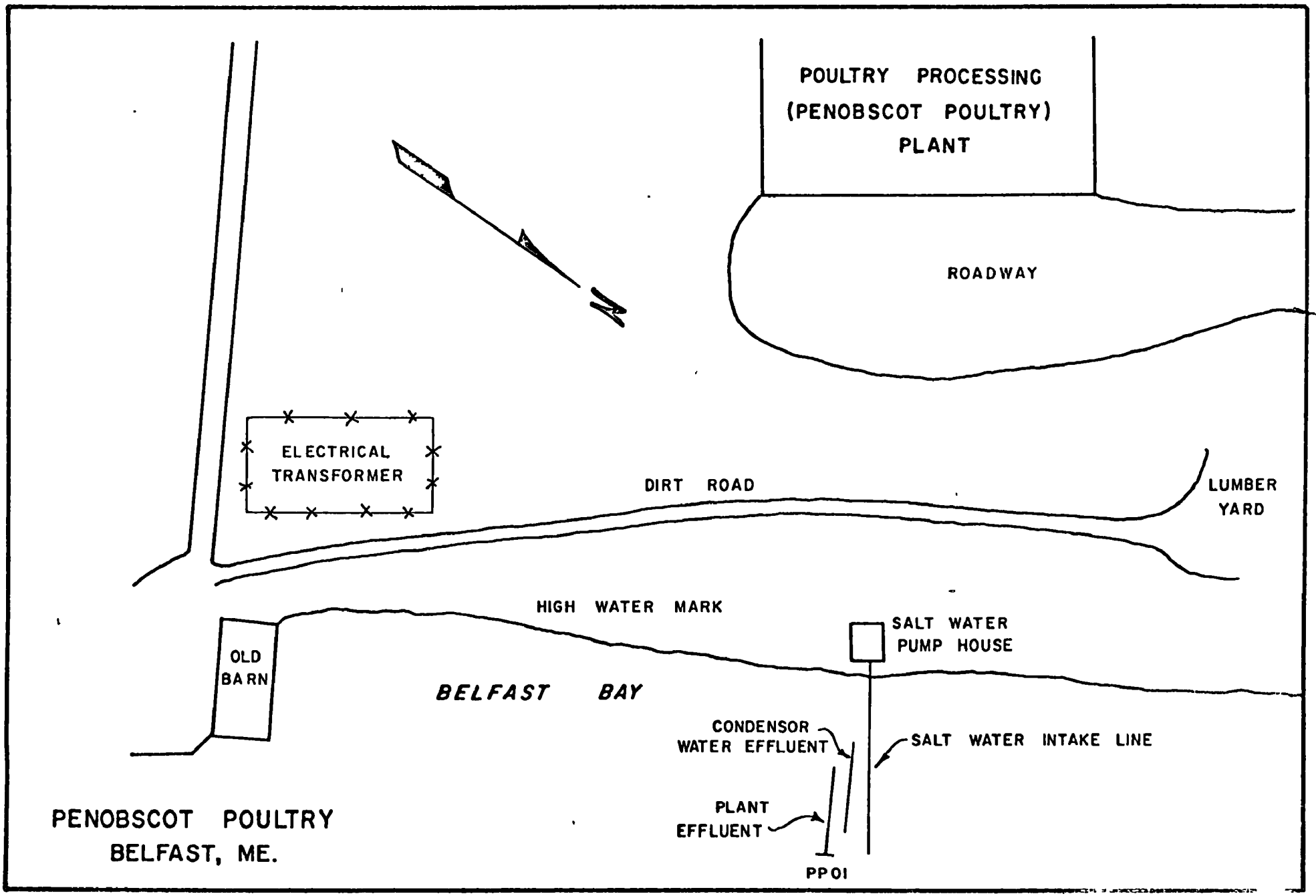
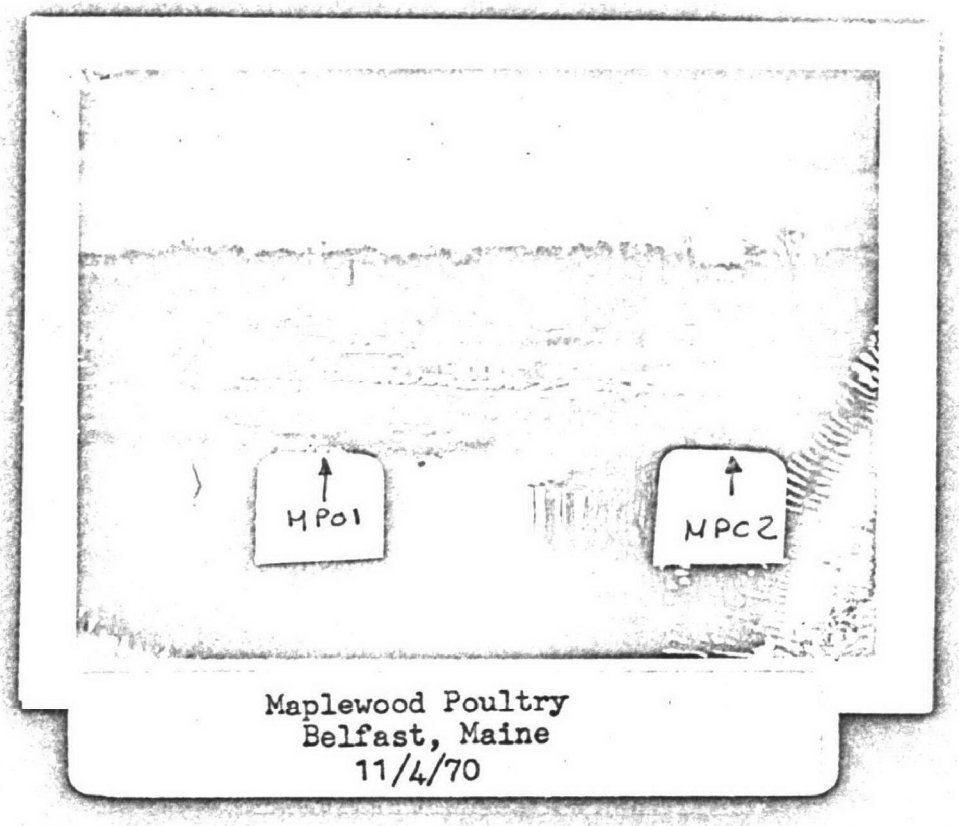

POULTRY PROCESSING
(PENOBSCOT POULTRY)
PLANT
ROADWAY
ELECTRICAL
TRANSFORMER
DIRT ROAD
LUMBER
YARD
HIGH WATER MARK
SALT WATER
PUMP HOUSE
OLD
BARN
BELFAST BAY
CONDENSOR
WATER EFFLUENT
SALT WATER INTAKE LINE
PLANT
EFFLUENT
PP01
PENOBSCOT POULTRY
BELFAST, ME.

FIGURE 3



Maplewood Poultry
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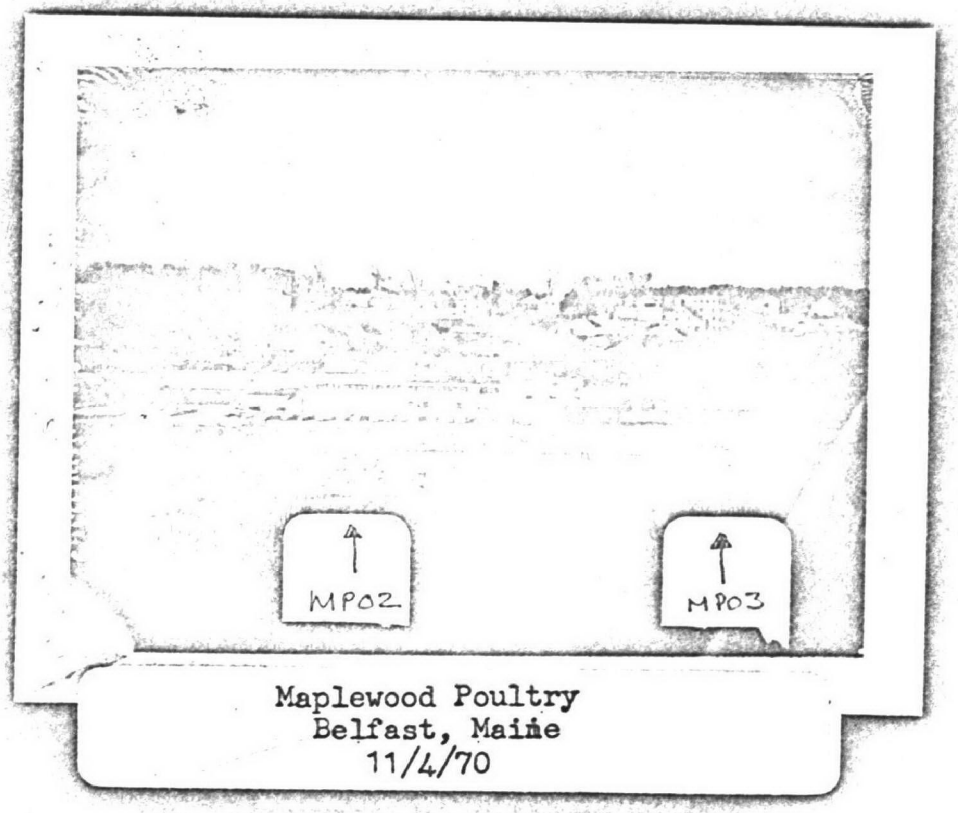

Maplewood Poultry
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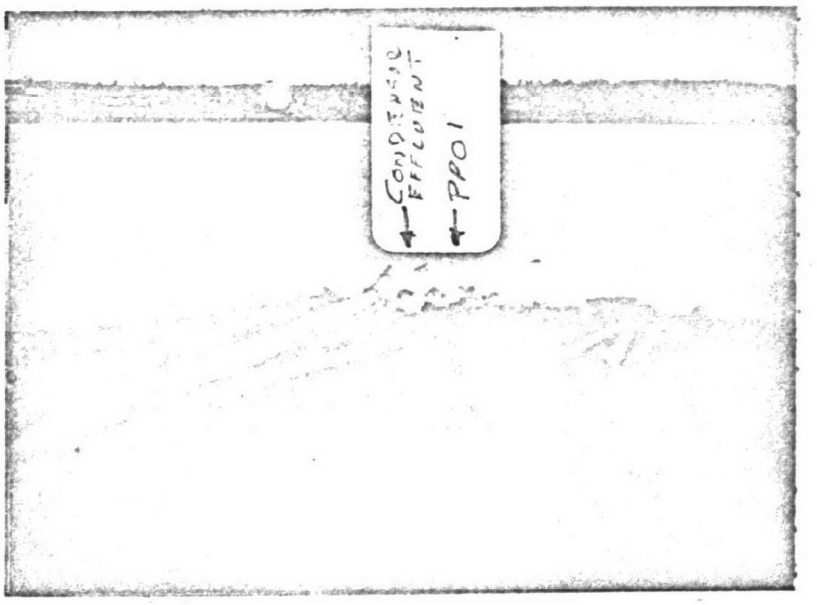
Figure 4



Poultry Processing
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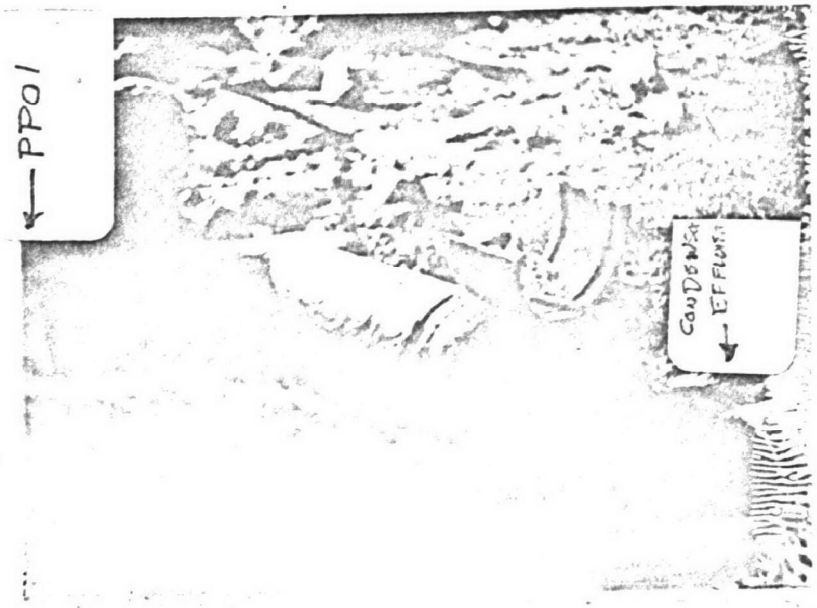

Poultry Processing
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Figure 5