

**SEWER OUTFALL STUDY**  
**City of Lebanon, New Hampshire**  
**July 15, 1971**

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CITY OF LEBANON, NEW HAMPSHIRE  
JULY 15, 1971

On July 15, 1971, personnel from Region I of the U.S. Environmental Protection Agency, under the supervision of David Stonefield sampled various sewer outfalls in the city of Lebanon, New Hampshire, as well as the Mascoma and Connecticut Rivers (Figure 1 and Table 1).

Kerry Anderson and Robert Myers collected the downstream Connecticut River samples (CN14), and David Stonefield and Paul Murray collected samples from the remaining stations.

This study was designed to develop a case against the city of Lebanon, New Hampshire, under 33 USC 1160.

Connecticut River

The Connecticut River, an interstate body of water, was sampled above the Wilder Dam (CN13) and below its confluence with the Mascoma River (CN14).

Mascoma River

The Mascoma River, an intrastate body of water, was sampled at the Bank Street Bridge in Lebanon, New Hampshire (MSR1) and the Route 12A Bridge in West Lebanon, New Hampshire. (MSR2)

Lebanon

The city of Lebanon, New Hampshire, including the village of West Lebanon, is located on the Mascoma and Connecticut Rivers. Sampling stations were established at the Taylor Street sewer outfall, (LEB1), and the Eldridge Street sewer outfall, (LEB2), in Lebanon and the Bridge Street sewer outfall, (LEB3) in West Lebanon. During sampling,

flow from the Taylor Street sewer was 0.20 mgd and 0.03 mgd from the Bridge Street sewer.

#### Sampling Procedures

Samples at stations MSR1 and MSR2 were collected with a Kemmerer-type sampler and transferred into their storage and shipping containers. All other samples were hand dipped and collected directly in their storage and shipping containers.

Samples for bacterial density, pH, turbidity, and nonfilterable residue were placed in clean, sterile glass bottles. The dissolved oxygen samples were placed in 300 ml BOD bottles and preserved with 2ml manganous sulfate and 2ml of alkali azide reagent. The phosphorus samples were placed in a quart cubitainer and preserved with 5ml of chloroform. The BOD samples were placed in a gallon cubitainer. All samples were iced. A metal thermometer was used to obtain the sample temperature.

The dissolved oxygen, pH and turbidity analyses were performed in the field laboratory. The bacterial (total and fecal coliform) and nonfilterable samples were filtered and the bacterial sample incubated in the Mobile Laboratory and returned the same day with the remaining samples to the Environmental Protection Agency Laboratory in Needham, Massachusetts for analyses.

#### Sample Identification

Each sample was tagged with one chain of custody tag giving collecting agency, lab number, time, date, source of sample, collector's signature and title, 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, temperature of the sample, and sampling location.

### Results

The results of the sampling are summarized in Tables 2 and 3.

TABLE I  
CITY OF LEBANON, NEW HAMPSHIRE  
Sampling Locations

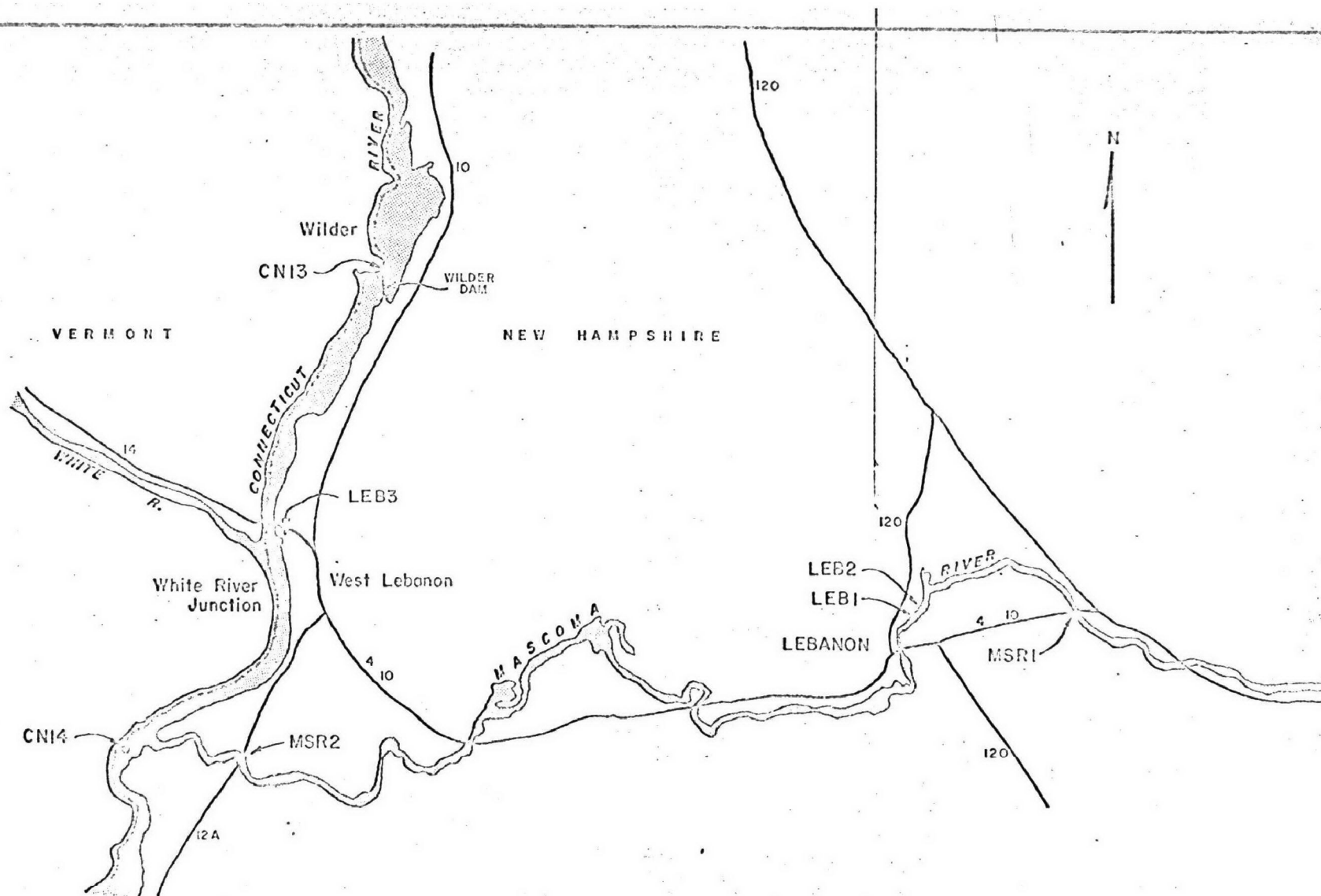
<u>Station</u>	<u>Latitude</u> ° ' "	<u>Longitude</u> ° ' "	<u>Description</u>
CN13	43 40 03	72 <del>18</del> 00 18 14	Connecticut River above the Wilder Dam
<del>CN14</del>	<del>43 38 06</del>	<del>72 18 14</del> 19 44	Connecticut River below con- fluence with the Mascoma River
MSR1	43 38 50	72 16 06	Mascoma River at Bank Street Bridge Routes 4 & 110
MSR2	43 38 04	72 19 03	Mascoma River at Route 12A Bridge
LEB1	43 38 39	72 15 14	Taylor Street sewer outfall Lebanon, New Hampshire
LEB2	43 38 40	72 15 10	Eldridge Street sewer outfall Lebanon, New Hampshire
LEB3	43 39 03	72 18 50	Bridge Street sewer outfall West Lebanon, New Hampshire

TABLE 2  
Summary of Data  
City of Lebanon, New Hampshire  
July 15, 1971

Number	Station	Time	Temp °C	DO (mg/l)	BOD 5-Day (mg/l)	pH SU	Turbidity (JTU)	Total N.F. Residue (mg/l)	Total P (mg/l)	Total Coliforms (per 100 ml)	Fecal Coliforms (per 100 ml)
27420	LEB1	1025	19.0	-	160	7.3	90	25.7	17.28	36,000,000	1,000,000
27421	LEB2	1040	26.5	-	2.7	7.6	2	3.9	0.08	100,000	900
27422	LEB3	0945	20.0	4.2	190	7.7	48	58.8	15.04	44,000,000	4,800,000

TABLE 3  
Summary of Data  
Connecticut River & Mascoma River

Number	Station	Sample Depth	Time	Temp <sup>o</sup> C	DO (Mg/l)	BOD 5-Day (mg/l)	pH SU	Turbidity (JTU)	Total N.F. Residue (mg/l)	Total P (mg/l)	Total Coliforms (per 100 ml)	Fecal Coliforms (per 100 ml)
27410	CN13	20.0	0850	23.0	6.1	K1.2	6.9	3	7.6	0.24	3000	860
27411	CN14	2.0	1055	23.0	7.0	1.2	7.3	3	-	0.24	37000	110
27412	MSR1	1.0	1010	20.5	8.8	K1.2	6.9	3	-	0.04	13000	30
27413	MSR2	1.0	1100	21.5	8.3	1.4	7.0	3	-	0.24	60000	2000



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