

REFERENCE 7

NEWFOUNDLAND AND LABRADOR HYDRO
REPORT ON
1982/83 CLIMATOLOGICAL MONITORING
PROGRAM

PREPARED BY: Newfoundland and Labrador Hydro
Engineering & Construction Division
Transmission Line Design Group

DATE: August 1983

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1.0 SUMMARY

The climatological study concluded on 1983-05-31 was the sixth in an annual series conducted by Newfoundland and Labrador Hydro.

The study included the accumulation of data related to wind speed and direction, ice accumulation on passive and active collectors.

This report summarizes the data collected during the period of 1982-06-01 to 1983-05-31 and recommends.

- (1) The continuation of the Passive Ice Meter Program.
- (2) Wind data continued to be collected at Hawkes Bay and 4-Mile Pond.
- (3) The Rosemount Ice Detector operated at 4-Mile Pond only.
- (4) The test towers be monitored from November 1983 to May 1984 on the Long Range Mountains only, with a provision for one visit to Southern Labrador.
- (5) Relocate anemometer at Levis' Gulch to Daniel's Harbour mine area.

2.0 OBJECTIVES

The "Report on 1981/82 Climatological Monitoring Program" will review the individual components of the study funded under Hydro Work Order 3044 and backcharged to L.C.D.C. Work Order 9750.

All the data collected during the 1982/83 observation period will be presented.

Conclusions will be drawn based on the accumulated data and recommendations will be made as to the future direction of the program.

3.0 INTRODUCTION

The 1982/83 Climatological Monitoring Program incorporated three programs designed to collect raw data with a goal to optimize transmission line design and route selection parameters for the HVDC line.

The Passive Ice Meter and Test Tower Sites provide data related to icing conditions, that affect the HVDC transmission line, from Labrador to Soldier's Pond and in particular at selected locations along the proposed HVDC line routes.

The Anemometer Sites provide data related to another design parameter of transmission lines: wind speed, direction and peak gust conditions.

The Salt Contamination provides data related to the effects of a marine climate on the operation and deterioration of the transmission line.

This report presents the summarized data collected from June 1982 to May 1983.

4.0 DISCUSSION OF PROGRAM

4.1 PASSIVE ICE METER

May 15, 1983 marked the completion of the sixth successful Passive Ice Meter (PIM) observation period. Observer cooperation was good at most sites and the data reported on the daily and monthly observation sheets have been comprehensive.

Data collected from the twenty-seven sites is tabulated in Appendix I Summary of Ice Meter Data.

In general, the information documented during the 1982/83 season showed less ice accretion than previous years. The six years data will now provide a good base for an icing profile for the province.

4.2 ANEMOMETER

The wind data programs at both Sunnyside and Yankee Point were terminated in 1982. The units at Hawkes Bay and 4-Mile Pond were operated year round.

However, the bendix unit at Holyrood failed in service and was replaced by the unit from Sunnyside. In early 1983 this unit failed and was subsequently replaced by the unit from Yankee Point.

4.2 ANEMOMETER (Cont'd.)

The anemometer unit at Levis Gulch did not operate at all this observation period. The existing unit and cups were replaced, however, the cups were lost again shortly thereafter. These were replaced and were subsequently blown off again. The unit was taken out of its location in early May. (the door on the shelter was blown off twice).

It is speculated that tremendously strong winds accounted for the damage this year. It is considered that in order to effectively obtain reliable data at Levis Gulch, the site should be monitored at least bi-weekly.

4.3 ROSEMOUNT ICE DETECTOR

The Rosemount Ice Detector Program was curtailed for the 1982/83 season to include only the 4-Mile Pond site.

The data was to be incorporated with an CEA R & D project for a Ice Free Anemometer, however, due to technical problems both the Ice Free Anemometer and the Rosemount were not put in service.

4.4 TEST TOWER SITES

The Test Tower Program for the 1982/83 season began in early December 1982; with visits to Long Range Mountain Crossing area and including the Labrador sites. This winter was unusually mild thus no substantial accumulations were observed. As in previous years, the Pinware Valley was ice free on all the observation trips.

All 18 sites were visited as regularly as weather would permit and the collected data is tabulated in Appendix 6.4 - Summary of Test Tower Data.

4.5 SALT CONTAMINATION AND CORROSION

Monitoring of the four (4) salt contamination sites in the Straits area was terminated at the end of 1982.

The last three months of data is presented in graphic form in Appendix 6.4 Contamination data.

No salt corrosion studies were undertaken during the 1982/83 observation period.

4.6 TEST SPANS

During the 1982/83 observation period the three test span were not instrumented. All three test spans were visited regularly and treated as passive collectors.

5.0 CONCLUSIONS AND RECOMMENDATIONS

With the completion of the 1982/83 Climatological Data Collection Program another year of ice and wind information has been added to the existing data base established to enhance the HVDC Transmission Line Design Parameters and Route Selection.

It is recommended that the Climatological Program continue for 1983/84 with scope of the Program to be as follows:

- (1) Maintain PIM Program.
- (2) Maintain wind data collection at Hawkes Bay and 4-Mile Pond - Holyrood.
- (3) Continue the monitoring of the test towers and test spans (Passive) along the Long Range Mountains area only, with provision for one visit to Southern Labrador.
- (4) Maintain the RID at 4-Mile Pond, Holyrood.
- (5) Relocate anemometer at Levis Gulch to Daniel's Harbour mine area.

- 6.1 Summary of Passive Ice Meter Data
- 6.2 Summary of Anemometer Data
- 6.3 Summary of Test Tower Data
- 6.4 Contamination Data

APPENDIX 6.1

SUMMARY OF PASSIVE ICE

METER DATA

SUMMARY OF PASSIVE ICE METER DATA

1982 - 1983

LOCATION	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY
WABUSH	-	Trace of rime, wet snow & glaze 3 days.	3 cm rime & wet snow, trace of glaze - 3 days	No Accum.	Trace of glaze 2 days.	Trace of glaze 2 days. Trace of rime - 2 days.	Trace of rime 1 day. 1 cm /wet snow 1 day.	Trace of glaze - 1 day.
CHURCHILL FALLS	-	-	0.1 cm rime 1 day.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.
GOOSE BAY	0.2 cm & trace of glaze - 2 days.	0.2" & trace of glaze - 2 days.	Trace of glaze 1 day.	No Accum.	Trace of rime.	Glaze & rime max. 1.0 cm 9 days.	No Accum.	1.1 cm wet snow - 1 day.
POINT AMOUR	No Accum.	No Accum.	No Accum.	2.5" glaze 3 days.	No Accum.	1" glaze 1 day.	No Accum.	No Accum.
YANKEE POINT	No Accum.	No Accum.	No Accum.	2" Glaze - 1 day.	1" Glaze - 1 day	2½" Glaze 1 day.	No Accum.	No Accum.
PLUM POINT	No Record	0.8 cm rime 2.5 cm wet snow 2 days.	No Accum.	2-6 cm glaze & Icicles 2 days	Trace of glaze.	0.4 cm glaze & Icicles 4 days.	No Accum.	No Accum.
HAWKES BAY	No Accum.	No Accum.	No Accum.	2" wet snow 1 day.	No Accum.	1/4" glaze 1 day.	No Accum.	No Accum.
DANIELS HR.	No Accum.	No Accum.	Trace of freezing rain - 1 day.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.
GROS MORNE NATIONAL PARK	No Accum.	-	0.2 cm rime 5 days. 0.4 cm glaze - 3 days.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.
PORT AUX BASQUE	No Accum.	7 cm wet snow 2 days.	6 cm wet snow 2 days.	Trace of wet snow - 2 days.	2-4 cm wet snow 2 days.	No Accum.	No Accum.	No Accum.
BURNT POND	No Accum.	No Accum.	1/4" glaze 1 day.	No Accum.	No Accum.	13/16" glaze 1 day.	No Accum.	No Accum.

SUMMARY OF PASSIVE ICE METER DATA

1982 - 1983

LOCATION	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY
BUCHANS	-	No Accum.	0.2-0.3" glaze 3 days.	No Accum.	No Accum.	Trace of glaze 1 day.	No Accum.	No Accum.
SPRINGDALE	No Accum.	No Accum.	No Accum.	No Accum.	Trace of glaze 1 day.	Trace of glaze 1 day.	-	No Accum.
STONY BROOK	-	No Accum.	No Accum.	No Accum.	Trace of rime (0.2") - 3 days.	Trace of rime 1 day.	No Accum.	No Accum.
GANDER AIRPORT	-	-	0.4-0.8 cm glaze & icicles 2 days.	Trace of rime & glaze - 4 days.	0.5 cm glaze & rime - 5 days.	Glaze, wet snow & icicles max. 0.7 cm 6 days.	Glaze with ice pellets imbedded, 3" long icicles 2 days. --	No Accum.
BAY D'ESPOIR	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.
SUNNYSIDE	-	-	No Accum.	-	No Accum.	0.2 cm rime 1 day.	No Accum.	No Accum.
WESTERN AVALON	-	No Accum.	0.3-0.8 cm glaze - 3 days.	0.5 cm glaze 1 day.	No Accum.	0.5 cm glaze 1 day.	No Accum.	No Accum.
HOLYROOD	-	-	-	-	No Accum.	1/8" freezing rain & wet snow - 1 day.	No Accum.	No Accum.
HARBOUR DEEP	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.	1 in. glaze 3 days.	No Accum.	No Accum.
PORT BLANDFORD	No Accum.	4" wet snow 1 day.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.	No Accum.
DEER LAKE	No Accum.	No Accum.	Trace of rime 2 days.	0.5 cm glaze 1 day.	-	-	-	-

APPENDIX 6.2

SUMMARY OF ANEMOMETER DATA

ABSTRACT OF THE WIND

SUMMARY

YANKEE POINT

	JUNE 82	JULY 82	AUG. 82	SEPT. 82	OCT. 82	NOV. 82	DEC. 82	JAN. 83	FEB. 83	MAR. 83	APR. 83	MAY 83
Total Mileage for Month	7,772	3,684	6,342	5,752	6,423		NON OPERATIONAL					
Greatest Mileage in 24 Hrs.	572	418	536	538	660							
Greatest Mileage & Prevailing Dir. for 1 Hr.	30 E	26 NW	36 W	W 32	SW 40							
Date of Greatest Mileage for 1 Hr.	29	12	14, 15 23	10	26							
Average Speed for Month (mph)	10.8	11.5	14.2	12.9	12.5							
Longest Continued - Direction	NW	NW	W	E	E							
- Hours	69	86	91	62	38							
Prevailing Direction - By Mileage	NW 1,665	NW 2,839	W 4,196	NW 1,894	E 1,926							
- By Total Hrs.	139	214	238	95	139							
Peak Gust (mph)	SW 42	NW 34	W 42	W 48	SW 52							

NOTE: Instrument records in imperial units.

ABSTRACT OF THE WIND

SUMMARY

4 MILE POND

	JUNE 82	JULY 82	AUG. 82	SEPT. 82	OCT. 82	NOV. 82	DEC. 82	JAN. 83	FEB. 83	MAR. 83	APR. 83	MAY 83
Total Mileage for Month	NON OPERATIONAL				11,101	10,062	NON OPERATIONAL		6,609	NON OPERATIONAL		6,003
Greatest Mileage in 24 Hrs.					948	1,288			852			574
Greatest Mileage & Prevailing Dir. for 1 Hr.					52 S	65 S			44 SE			30 E
Date of Greatest Mileage for 1 Hr.					4	7			13			29
Average Speed for Month (mph)					18.5	21.7			18.8			15.8
Longest Continued - Direction					NW	SW			N			NE
- Hours					39	64			30			37
Prevailing Direction - By Mileage					SW 3,456	SW 4,690			E 1,427			E 1,557
- By Total Hrs.					141	165			81			43
Peak Gust (mph)					S-62	S-86			SE-52			S-42

25 Days
Only19 Days
Only15 Days
Only18 Days
Only

NOTE: Instrument records in imperial units.

ABSTRACT OF THE WINDSUMMARY

HAWKES BAY

JUNE 82 JULY 82 AUG. 82 SEPT. 82 OCT. 82 NOV. 82 DEC. 82 JAN. 83 FEB. 83 MAR. 83 APR. 83 MAY 83

Total Mileage for Month	7,136	7,873	9,435	9,858	7,190	11,378	11,576	*9,086	6,421	9,665	9,578	9,656
Greatest Mileage in 24 Hrs.	472	590	564	546	664	558	760	630	580	494	540	518
Greatest Mileage & Prevailing Dir. for 1 Hr.	30 NW	28 SW	34 SW	34 SW	36 SW	46 N	46 NW	50 SE	38 SE	36 NW	30 SW	36 SW
Date of Greatest Mileage for 1 Hr.	3	2	21	24	25	16	27	17	4	6	30	2
Average Speed for Month (mph)	10.2	10.6	12.7	13.7	12.3	15.8	15.6	13.0	9.7	13.0	13.3	13.0
Longest Continued - Direction	E	SW	SW	SW	NE	SW	NW	NW	NW	SW	NE	E
- Hours	22	50	47	51	64	69	37	37	24	28	27	49
Prevailing Direction - By Mileage	E 2,303	SW 3,891	SW 6,898	SW 5,011	SW 1,931	SW 4,134	SW 3,614	SW 2,210	E 1,454	E 1,942	E 3,906	E 3,817
- By Total Hrs.	217	254	406	287	110	208	168	119	143	167	255	260
Peak Gust (mph)	45 SW	38 SW	44 SW	46 SW	44 SW	55 N	56 E	70 SE	46 SE	44 SW	44 SW	44 SW

NOTE: Instrument records in imperial units.

* Recorder
out of
order on
7,8,11,& 16
for total of
44 hrs.

APPENDIX 6.3

SUMMARY OF TEST TOWER DATA

TABLE OF DATA

SITE # PW1 PINWARE RIVER

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg
09-12-82	20	(0)	- 20	Bare	-
27-01-83	30	320	- 22	Bare	-
02-03-83	10	300	- 10	Bare	-
05-04-83	12	120	- 2	Bare	-
04-05-83	10	120	-2	Bare	-

TABLE OF DATA

SITE # PW2 PINWARE RIVER

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
09-12-82	20	10	- 20	Bare	-
27-01-83	30	320	- 22	1 1/2" Glaze & rime on tower leg	320
02-03-83	10	300	- 10	Bare	-
05-04-83	10	120	- 2	Bare	-
04-05-83	10	120	- 2	Bare	-

TABLE OF DATA

SITE # PW3 PINWARE RIVER

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
09-12-82	10	10	- 20	Bare	-
27-01-83	20	320	- 20	Bare	-
02-03-83	10	300	- 10	Bare	-
05-04-83	6	120	- 2	Bare	-
04-05-83	10	120	- 2	Bare	-

TABLE OF DATA

SITE # PW4 PINWARE RIVER

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (De
09-12-82	10	10	- 20	Bare	-
27-01-83	15	320	- 20	Bare	-
02-03-83	5	300	- 10	Bare	-
05-04-83	5	120	- 2	Bare	-
04-05-83	5	120	- 2	Bare	-

TABLE OF DATA

SITE #4 L'ANSE AU LOUP

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
09-12-82	20	10	- 20	2 1/2" Glaze with hard rime on tower leg. 2 1/2" width on guys - glaze overlaid with hard rime.	10
27-01-83	33	320	- 22	1 1/2" on guys (hard rime) 1" on tower leg.	140
02-03-83	10	300	- 10	8" glaze on tower leg guys base.	120
05-04-83	30	120	- 5	4" med. to hard rime on tower leg.	120
04-05-83	Not visited due to weather conditions.				

TABLE OF DATA

SITE #4a L'ANSE AU LOUP

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
09-12-82	20	10	- 20	1 1/4" Glaze overlaid with hard rime at 5' level of tower leg.	10
27-01-83	29	320	- 22	3/4" hard rime on tower leg. 1" hard rime on guys.	140
02-03-83	10	300	- 10	1 1/2" glaze on tower leg guys bare.	120
05-04-83	----- not visited ----- (weather conditions)				
04-05-83	----- not visited ----- (weather conditions)				

TABLE OF DATA

SITE #3 HILLS OF ST. JOHN'S

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
09-12-82	10	300	- 6	Trace of glaze on tower legs & guys.	-
27-01-83	-----	-----	not visited due to weather conditions	-----	-----
02-03-83	5	300	- 5	Bare	-
05-04-83	5	120	- 5	1 1/2" rime tower leg.	120
04-05-83	35	120	- 2	Trace of glaze.	120

TABLE OF DATA

SITE #9 28 MILE SECTION

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
14-12-82	0	-	- 19	Bare	-
27-01-83	2	210	- 5	Trace of glaze.	-
02-03-83	10	120	- 10	1/2" glaze on tower & guys.	120
05-04-83	2	120	0	3" hard rime on tower leg.	120
04-05-83	-----	-----	not visited temp. 10°C	-----	-----

TABLE OF DATA

SITE #10 MAIN RIVER

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (De
09-12-82	5	10	- 5	Bare	-
29-01-83	-	-	- 7	Bare	-
02-03-83	5	120	- 10	Bare	-
05-04-83	2	120	0	Bare	-
06-05-83	----- Not visited temp. 10°C -----				

TABLE OF DATA

SITE #13 PARSONS POND

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
14-12-82	0	-	- 20	Bare	-
29-01-83	-	-	- 5	Bare	-
02-03-83	18	120	- 10	1/4" glaze on guys only.	120
05-04-83	2	120	- 2	Bare	-
06-05-83	-----	-----	Not visited temp. 10°C	-----	-----

TABLE OF DATA

SITE #15

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
14-12-82	0	0	- 20	Bare	-
29-01-83	-	-	- 5	Bare	-
02-03-83	18	120	- 10	1/4" glaze on guy wire.	120
05-04-83	2	120	- 2	Bare	-
06-05-83	-----	-----	Not visited temp. 10°C	-----	-----

TABLE OF DATA

SITE #14 PARSONS POND

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (De
14-12-82	25	330	- 20	1/2" hard rime at 5' level tower leg. 1" hard rime guys.	330
29-01-83	Calm	-	- 5	8" rime on tower leg.	210
02-03-83	28	120	- 8	1/2" glaze on tower leg.	210
05-04-83	2	120	- 2	3" hard rime tower leg.	120
06-05-83	-----	-----	Not visited temp. 10°C	-----	-----

TABLE OF DATA

SITE #2

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
14-12-82	-	-	- 18	3" soft rime at 5' level tower leg. 4" soft rime guys.	210
28-01-83	20	320	- 18	1 1/2" rime on tower leg. 1 1/2" rime on guys (trace of glaze underneath)	210
02-03-83	20	120	- 4	1/4" glaze 5' level of tower leg.	210
05-04-83	5	120	- 2	3" hard rime.	120
04-05-83	18	120	- 2	1" pendant glaze on 5' level of tower leg.	120

TABLE OF DATA

SITE #2a PORTLAND CREEK

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
14-12-82	20	330	- 21	Bare	-
27-01-83	28	290	- 18	1" hard rime on tower leg. 1" on guys trace of glaze opposite direction.	210
02-03-83	-----	-----	Not visited due to weather conditions would assume base based on other towers		-----
05-04-83	8	120	- 4	7" hard rime.	120
04-05-83	5	120	10	Bare	-

TABLE OF DATA

SITE #2B PORTLAND CREEK

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Dec)
14-12-82	25	330	- 21	2 1/2" soft rime at 5' level of tower leg, Guys 2" - 4" soft rime.	210
27-01-83	35	320	- 18	6" rime on tower leg. 3" rime on guys.	210
02-03-83	20	120	- 10	Bare	-
05-04-83	5	120	- 4	6" hard rime.	120
06-05-83	5	120	10	Bare	-

TABLE OF DATA

SITE #2c

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
14-12-82	10	330	- 20	Bare	-
27-01-83	2	10	- 5	Bare	-
02-03-83	-----	-----	Not visited due to weather conditions Would assume to be base based on other towers in area.		
05-04-83	8	120	- 4	1" hard rime tower leg.	120
06-05-83	5	120	10	Bare	-

TABLE OF DATA

SITE #2d

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (Deg)
14-12-82	2			1/4" hard rime on tower 1/4" hard rime on PIM.	180
29-01-83	2	10		2 3/4" hard rime on tower leg. 2 1/2" hard rime on PIM.	210 210
02-03-83	-----		Not visisted due to weather conditions Would assume to be base based on other tower in areas.	-----	
05-04-83	8	120	- 4	8" hard rime.	
06-05-83	5	120	10	Bare	-

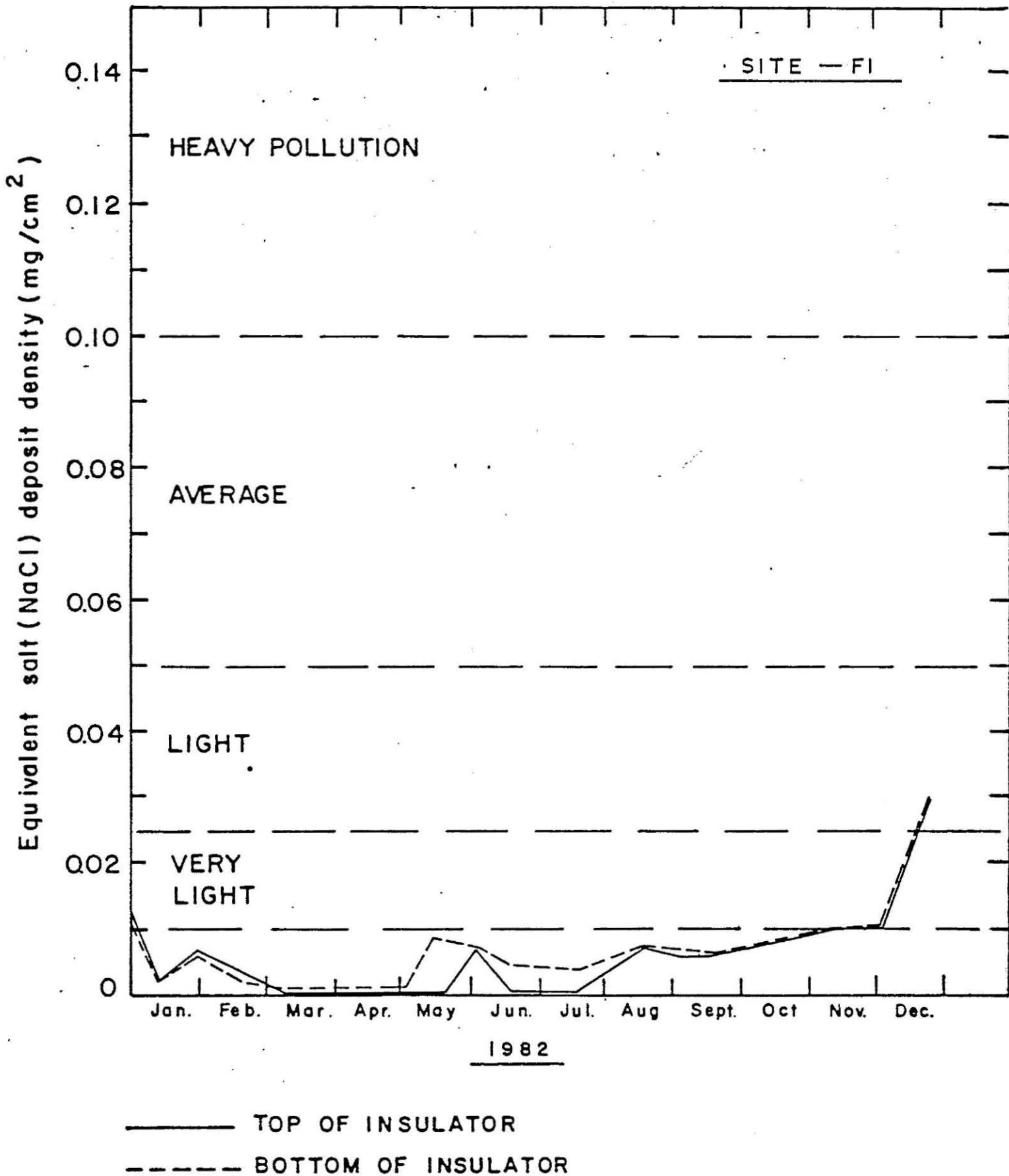
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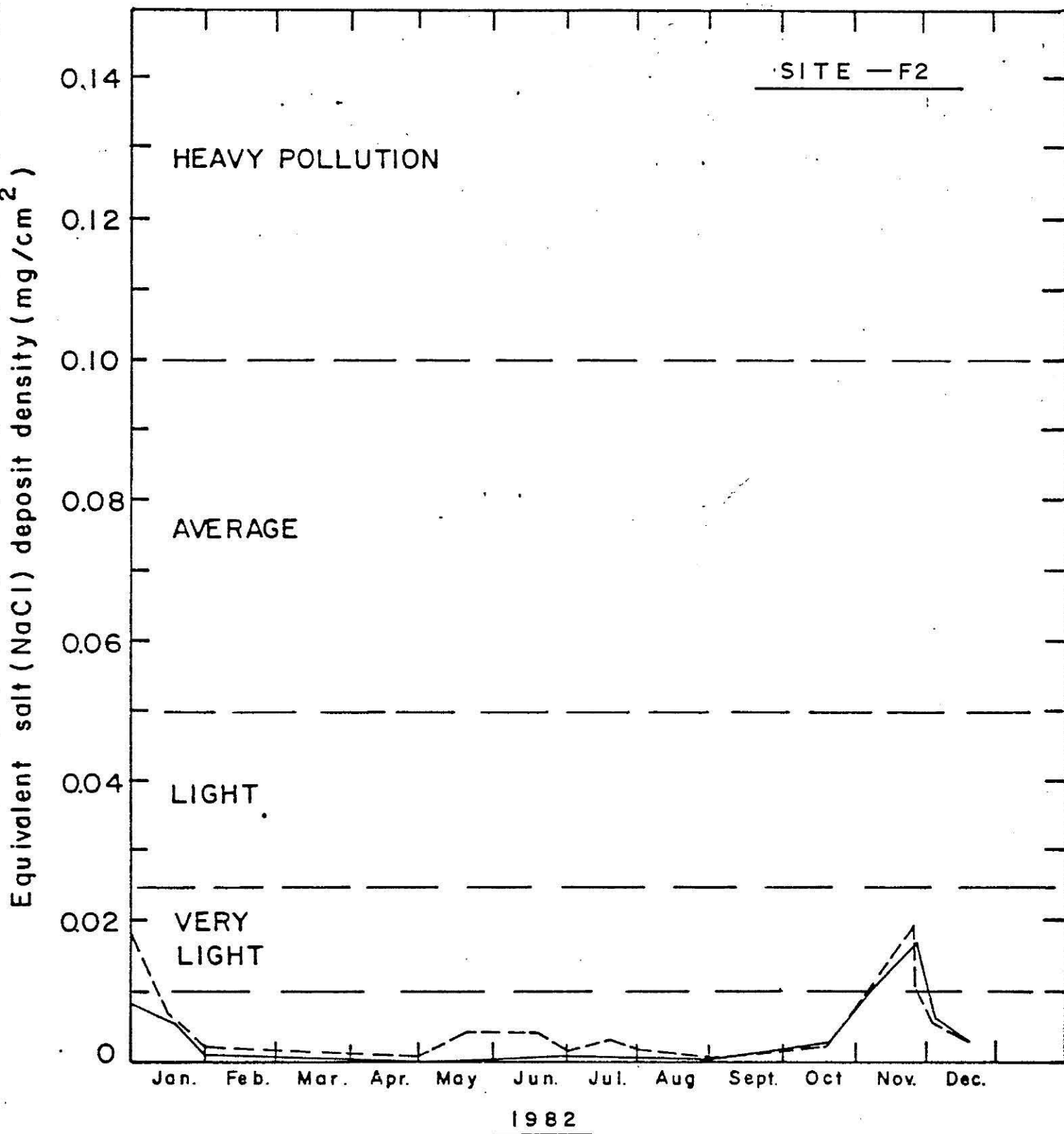
SITE #2e

DATE	WIND SPEED (MPH)	WIND DIR. (TRUE)	TEMP. °C	ACCUMULATION NOTED	DIRECTION OF ACCUMULATION (deg)
14-12-82	CaLm	-	- 20 ⁰ C	Bare	-
28-01-83	24	290	- 22	Bare	-
02-03-83	15	120	- 4 ⁰	Bare	-
05-04-83	5	120	- 4 ⁰	Bare	-
04-05-83	10	120	10 ⁰ C	Bare	-

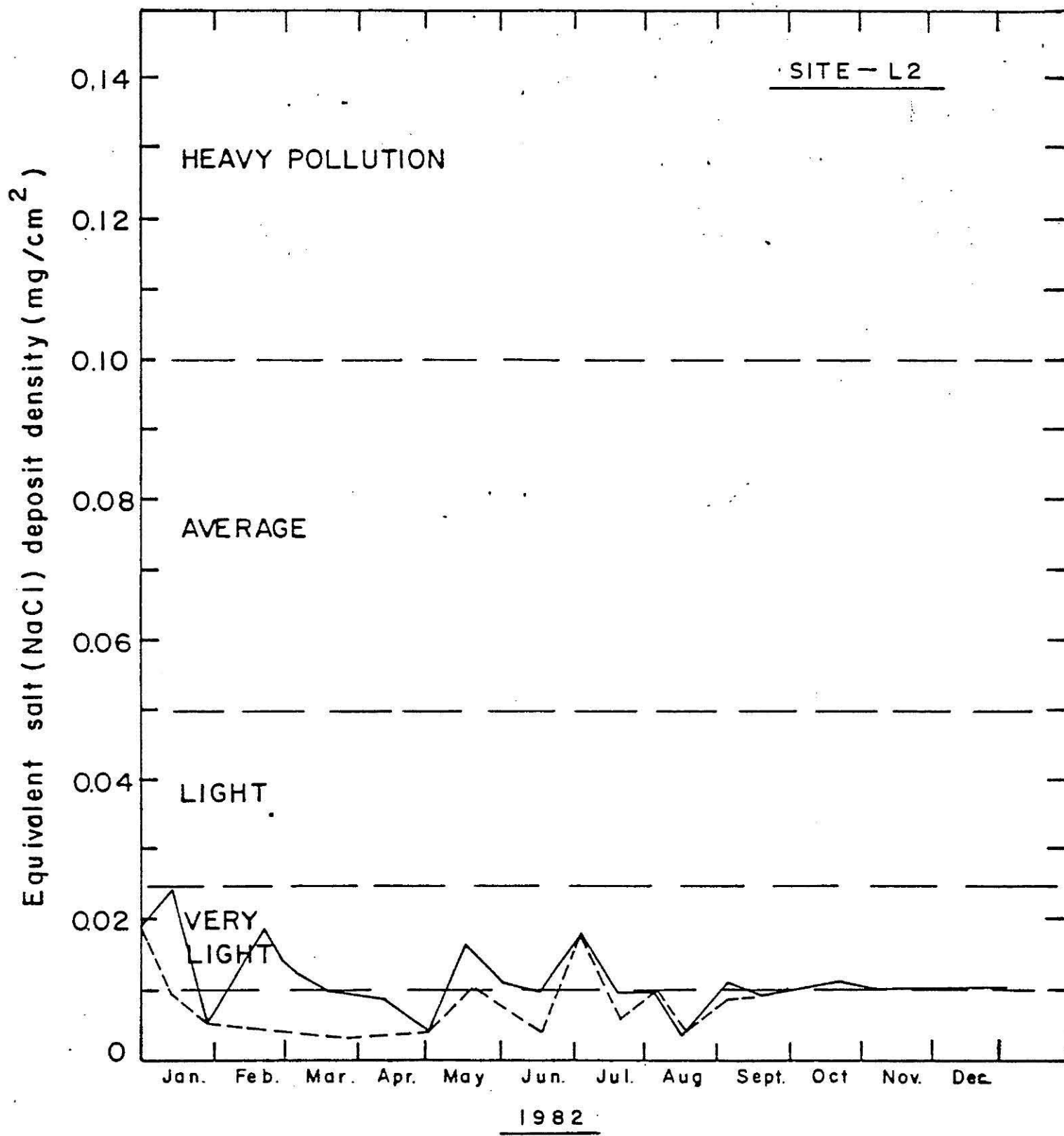
APPENDIX 6.4

CONTAMINATION DATA

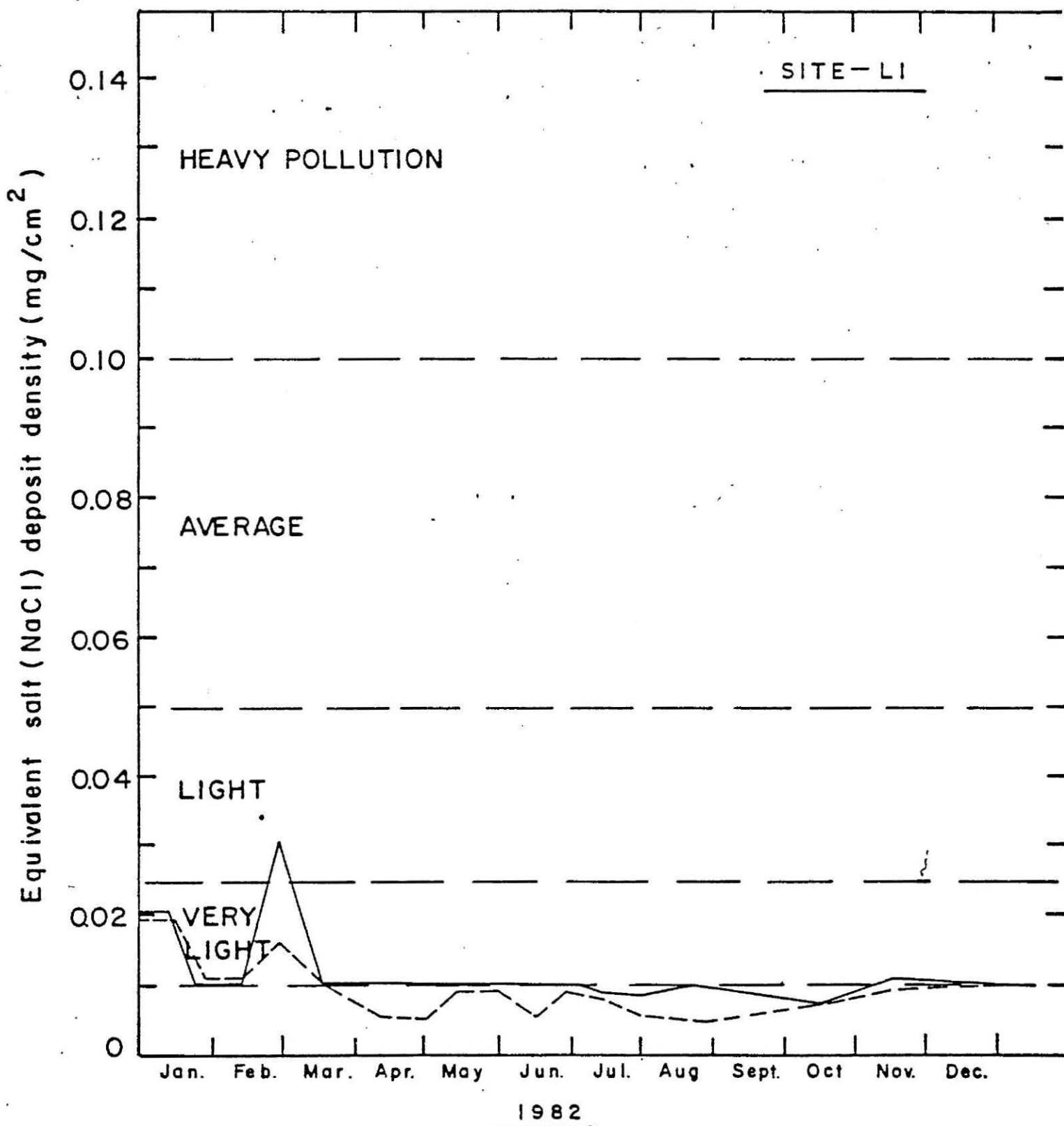




——— TOP OF INSULATOR
- - - - BOTTOM OF INSULATOR



—— TOP OF INSULATOR
----- BOTTOM OF INSULATOR



—— TOP OF INSULATOR
----- BOTTOM OF INSULATOR

- 7.1 Location of Anemometers
- 7.2 Location of Test Sites & Test Spans
- 7.3 Location of Salt Contamination Sites
- 7.4 Contamination Structure

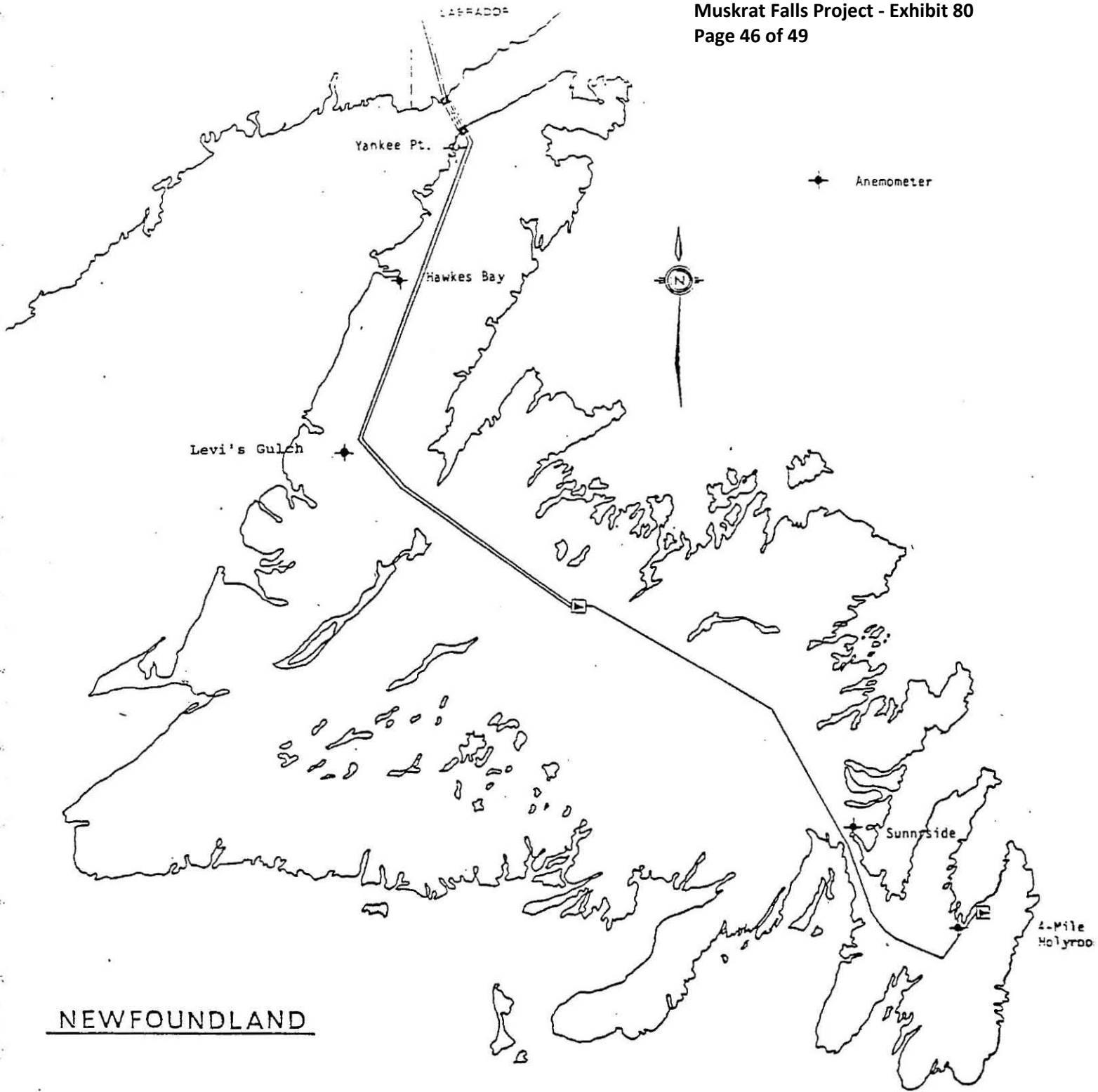


FIGURE 7.1
LOCATION OF ANEMOMETERS

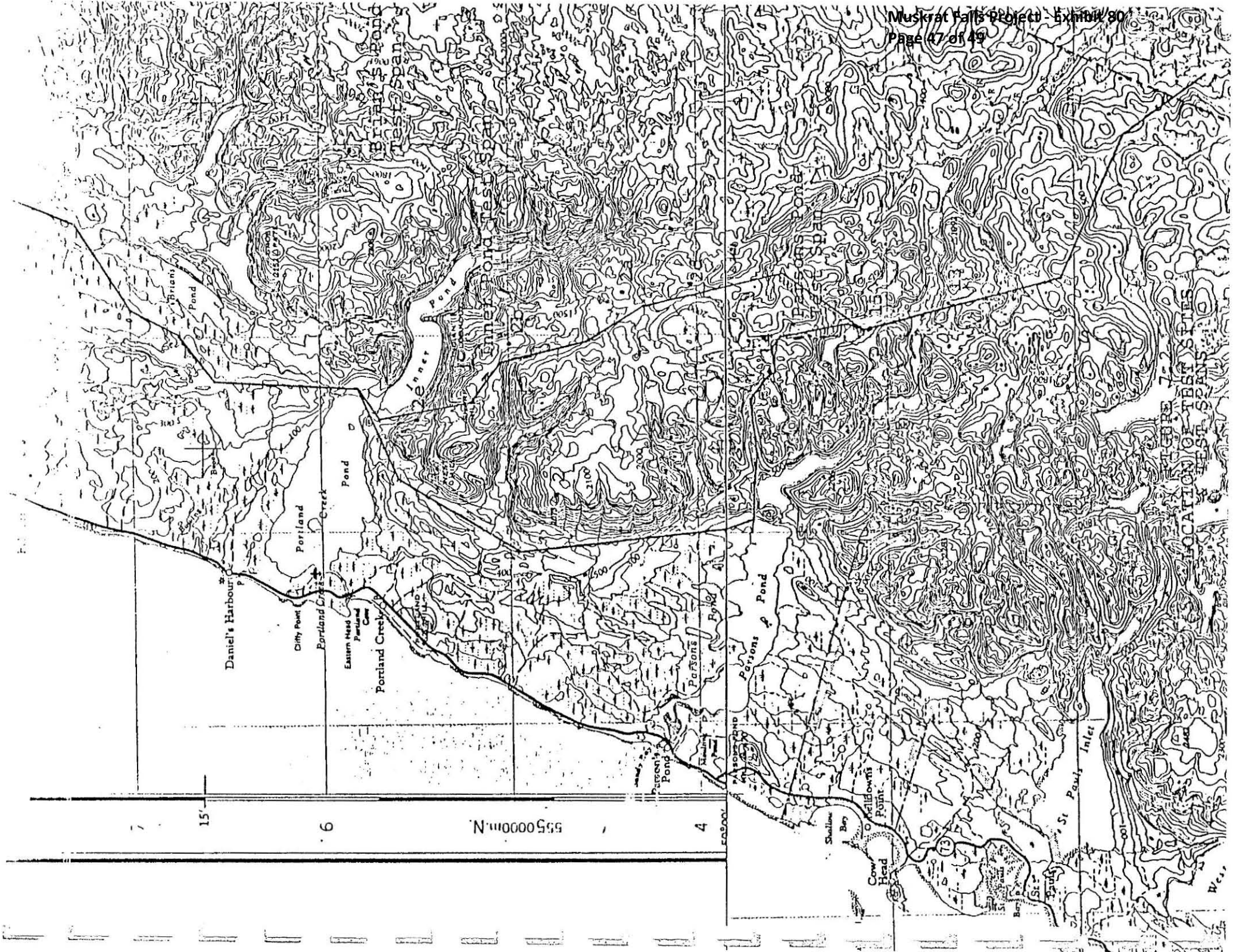
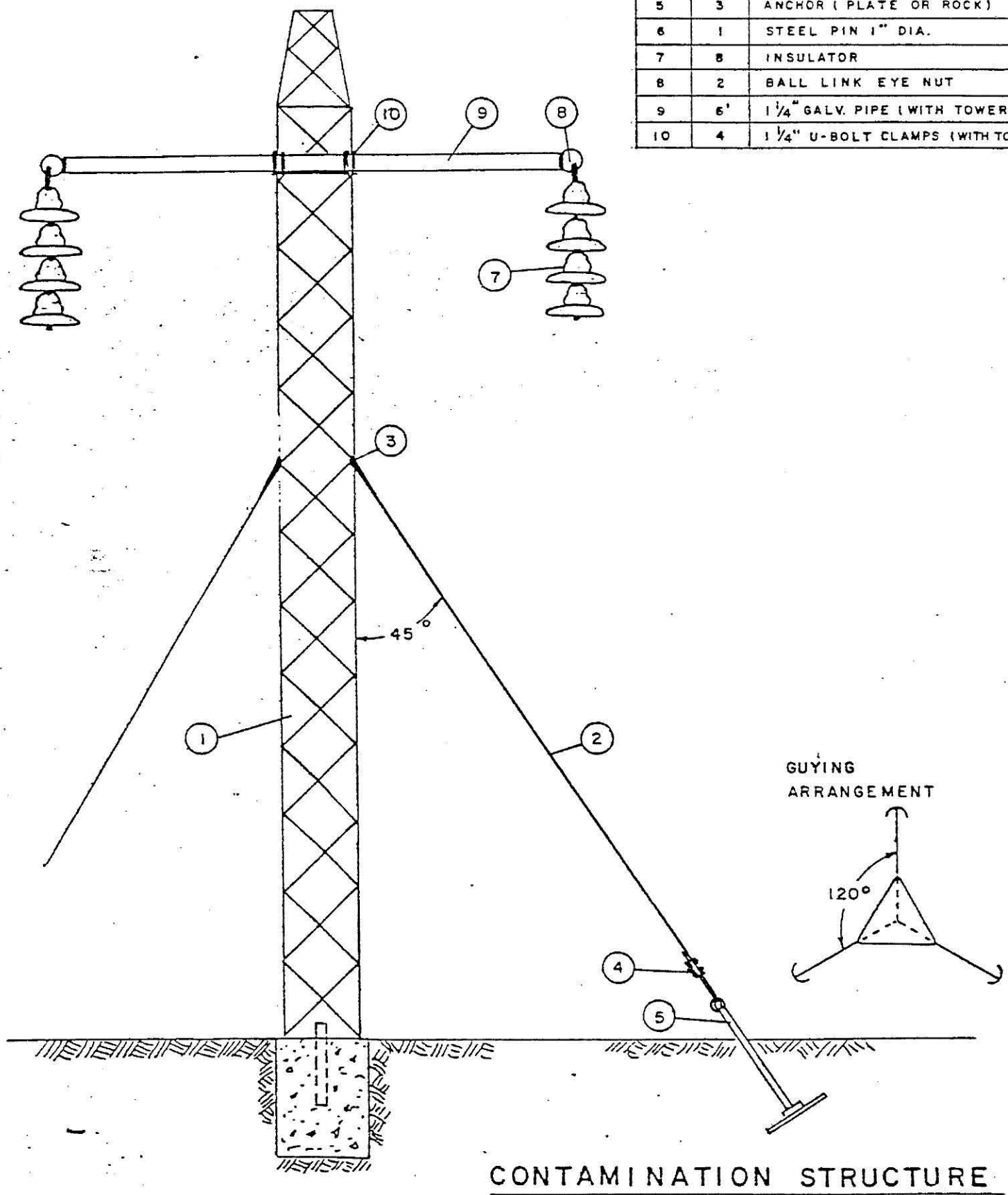


FIGURE 7
LOCATION OF TEST SITES

FIGURE 8
LOCATION OF TEST SITES

FIGURE 9
LOCATION OF TEST SITES

1	1	26' DME 3 TOWER C/W BASE
2	AS REQD	3/8" GUY WIRE
3	3	PREFORMED GUY GRIP 3/8"
4	3	3-BOLT CLAMP
5	3	ANCHOR (PLATE OR ROCK)
6	1	STEEL PIN 1" DIA.
7	8	INSULATOR
8	2	BALL LINK EYE NUT
9	6'	1 1/4" GALV. PIPE (WITH TOWER)
10	4	1 1/4" U-BOLT CLAMPS (WITH TOW)



CONTAMINATION STRUCTURE

FIGURE 7.4