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Evaluation of SHRP Equipment

(Non-Destructive Evaluation of Structures)

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Submitted by

P. N. Balaguru
Professor
And
Dharm Bhatt, Mohamed Nazier
Graduate Assistants

Dept. of Civil & Environmental Engineering
Center for Advanced Infrastructure & Transportation (CAIT)
Rutgers, The State University
Piscataway, NJ 08854-8014

NJDOT Research Project Manager
Mr. Carey Younger

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16. Abstract

Non-destructive evaluation of the condition of structures and possible solutions to improve the life of structures are being researched by a number of investigators. The results presented in this report focus on the performance of two instruments that are useful for rapid evaluation of the existing structures. The two instruments were developed as part of the SHRP program and have potential for wide spread use in the Transportation Infrastructure field. The Air Permeability Meter forces air in a pre-vacuumed concrete to estimate the permeability. The Corrosion Meter measures the corrosion potential and corrosion rate.

For air permeability, tests were conducted on a new concrete surface, rough concrete, a newly painted surface and an old painted surface. A large number of readings were taken using two operators. The Corrosion Meter was used to measure corrosion rate and corrosion potential on instrumented bridges. The results were analyzed using statistical methods. The results and the analysis indicate that both instruments provide repeatable results. The evaluation form, which provides answers to specific questions, is presented in appendix A.

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Table of Contents

List of Figures

List of Tables

ABSTRACT

Non-destructive evaluation of the condition of the structure and possible solutions to improve the life of the structure are being researched by a number of investigators. The results presented in this report focus on the performance of two instruments that are useful for rapid evaluation of the existing structures. The two instruments were developed as part of the SHRP program and have potential for wide spread use in the Transportation Infrastructure field. The Air Permeability Meter forces air in a pre-vacuumed concrete to estimate the permeability. The Corrosion Meter measures the corrosion potential and corrosion rate.

For air permeability, tests were conducted on a new concrete surface, rough concrete, a newly painted surface and an old painted surface. A large number of readings were taken using two operators. The Corrosion Meter was used to measure corrosion rate and corrosion potential on instrumented bridges. The results were analyzed using statistical methods. The results and the analysis indicate that both instruments provide repeatable results. The evaluation form, which provides answers to specific questions, is presented in appendix A.

INTRODUCTION

Repair and rehabilitation of transportation infrastructure is becoming a major part of the maintenance program. Two mechanisms that contribute to the deterioration are: corrosion of reinforcing steel in concrete and surface deterioration of concrete resulting in spalling and loss of cross section of structural elements. Good condition evaluation of the existing structure is a prerequisite for proper repair and rehabilitation. Non-destructive evaluation techniques provide excellent means to estimate the condition of structures without causing additional damage to structures.

Results presented in this report deal with two NDT instruments. The first instrument measures surface permeability of concrete surface using forced airflow. The second instrument is used to measure the corrosion potential and corrosion rate. The primary objective of the study was to determine whether the instruments provide reproducible results. A large number of readings were taken using two operators and the results were analyzed to establish the repeatability.

OBJECTIVE

The primary objective of the research was to evaluate the performance of corrosion rate and Air Permeability Meters. The major parameters were reproducibility and reliability.

DESCRIPTION OF INSTRUMENT: Corrosion Instrument (Adapted from Manufacturer's description)

The GECOR 6 Corrosion Rate Meter provides valuable insight into the kinematics of the corrosion process. Based on a steady linear polarization technique it provides information on the rate of deterioration process. The meter monitors the electrochemical process of corrosion to determine the rate of deterioration. This nondestructive technique works by applying a small current to the reinforcing bar and measuring the change in the half-cell potential. The corrosion rate, corrosion potential and electrical resistance is provided by the corrosion rate meter. A photograph of the instrument is shown in Figure 1. More details can be found in Reference 1.

Figure A. Components of the GECOR 6 Corrosion Rate Meter

The GECOR 6 Corrosion Rate Meter has three major components, the rate meter and two separate sensors. Only the larger sensor was used during this project. The sensor is filled with a saturated $Cu/CuSO_4$ solution for the test for half-cell potential. A wet sponge is used between the probe and the concrete surface. Long lengths of wire are also provided to connect the sensor to the rate meter and to connect the rate meter to the reinforcing bar mat of the bridge deck. This is a necessary step for the operation of the meter.

The procedure for the operation of the GECOR 6 Corrosion Rate Meter is as follows:

1. The device should not be operated at temperatures below 0° C (32° F) or above 50° C (122° F). The relative humidity within the unit should not exceed 80%.
2. Use a reinforcing steel locator such as Pachometer to define the layout at the test location. Mark the bar pattern on the concrete surface at the test location.
3. Place a wet sponge and the sensor over a single bar or over the point where the bars intersect perpendicularly if the diameter of both bars is known.
4. Connect the appropriate lead to an exposed bar. The leads from the sensor and exposed reinforcing steel are then connected to the GECOR device.
5. Turn on the unit. The program version appears on the display screen.
   "LG-ECM-06 V2.0
   © GEOCISA 1993"
6. A help message appears on the screen momentarily. This message advises the operator to use the arrows for selecting an option and C.R. to activate an option. The various option are:
   - "CORROSION RATE MEASUREMENT"
   - "RELATIVE HUMIDITY AND TEMPERATURE"
   - "RESISTIVITY MEASUREMENT"
   - "EDIT MEASUREMENT PARAMETERS"
   - "DATE AND TIME CONTROL"
7. Select the option CORROSION RATE MEASUREMENT and press the C.R. key.
8. The screen prompts the user to input the area of steel. Calculate the area of steel using the relationship, Area = 3.142 x D x 10.5 cm. D is the diameter of the bar in centimeters and 10.5 cm (4 in.) is the length of the bar confined by the guard ring. Key in the area to one decimal space. In case of an error, use the B key to delete the previous character. Press the C.R. key to enter the area.
9. The next screen displays:
   "ADJUSTING
   OFFSET, WAIT"
   No operator input is required at this stage. The meter measures the half-cell potential and then nulls it out to measure the potential shift created by the current applied from the sensor.
10. The next screen displays:
   " Er mV OK"
   " Vs mV OK"
   Er (E_{CORR}) is the static half-cell potential versus Cse and is the difference in potential between the reference electrodes, which control the current confinement. Once the Er and the Vs values are displayed, no input is required from the operator.
11. The meter now calculates the optimum applied current I_{CE}. This current is applied through the counter electrode at the final stage of the measurement. The optimum I_{CE} value is displayed. No input is required from the operator.
12. The next screen displays the polarized potential values. No input is required from the operator.

13. The meter now calculates the “balance constant” in order to apply the correct current to the guard ring. It is displayed on the next screen. No input is required from the operator.
14. The meter now calculates the corrosion rate using the data collected from the sensor and input from the operator. The corrosion rate is displayed in $\mu A/cm^2$. Associated parameters including corrosion potential, mV and electrical resistance kΩ can be viewed using the cursor keys.
15. Record the corrosion rate, corrosion potential and electrical resistance.
16. Press the B key to reset the meter for the next reading. The screen will return to CORROSION RATE MEASUREMENT. Repeat the procedure for the next test location.

    The corrosion rate and corrosion potential data can be interpreted using the tables 1 and 2. These tables were taken from manufacturer’s literature.

Table 1 Interpretation of Corrosion Rate Data

I_{CORR} ($\mu A/cm^2$)	Corrosion Condition
Less than 0.1	Passive condition
0.1 to 0.5	Low to Moderate Corrosion
0.5 to 1.0	Moderate to High Corrosion
Greater then 1.0	High Corrosion

Table 2 Interpretation of Half Cell (Corrosion) Potential Readings

Half Cell Potential (mV)	Corrosion Activity
-200 >	90% Probability of No Corrosion Occurring
-200 to –350	Corrosion Activity Uncertain
<-350	90% Probability of Corrosion Occurring

DESCRIPTION OF INSTRUMENT: Permeability Meter (Adapted from manufacturer’s description)

The Concrete Surface Air Flow (SAF) Permeability Meter is a nondestructive technique designed to give an indication of the relative permeability of flat concrete surfaces. The SAF can be utilized to determine the permeability of concrete slabs, support members, bridge decks, and pavement (Manual for the Operation of a Surface Air Flow Field Permeability Indicator, 1994). The concrete permeability is based on airflow out of the concrete under an applied vacuum. The depth of measurement was determined to be approximately 0.5” below the concrete surface. A study between the relationships of SAF readings and of air and water permeability, determined that there is good correlation in the results (Scannell, 1996) Participant’s Workbook: FHWA – SHRP Showcase, (Scannell, 1996). The SAF should not be used as substitute for actual laboratory permeability testing. Cores tested under more standardized techniques will provide a more accurate value for permeability due to the fact that the effects of surface texture and micro cracks have not been fully studied for the SAF.

The SAF can determine permeability of both horizontal surfaces, by use of an integral suction foot, and vertical surfaces, by use of external remote head. The remote head was not used for this project. For transportability the device uses a rechargeable Ni-Cad battery. The suction foot is mounted using three centering springs to allow it to rotate and swivel in relation to the main body. The closed cell foam gasket is used between the foot and the testing surface to create an airtight seal. Two-foot pads are threaded into the suction foot so the operator can apply pressure to compress the gasket. The switches to open the solenoid and hold the current reading are located within easy reach at the base of the handles. Digital displays for the permeability readings and the time are located at the top of the device. A drawing of the instrument is shown in Figure2.

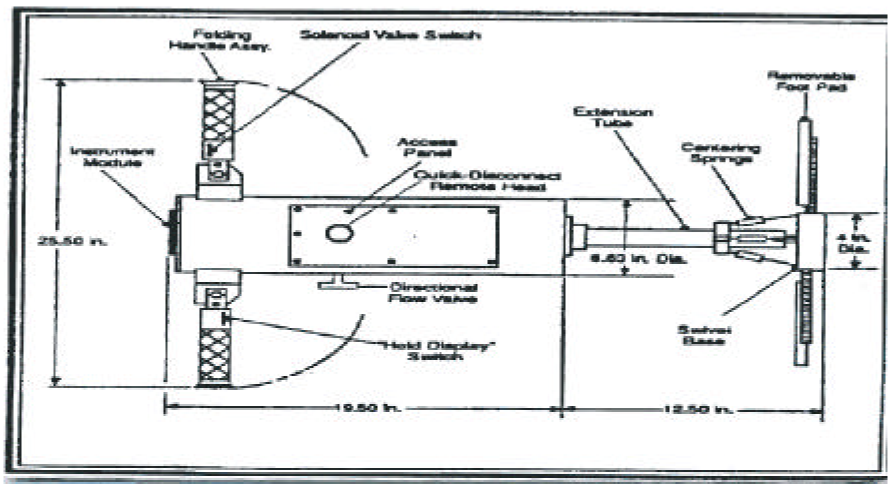

Figure B. Drawing of Concrete Surface Air Flow Permeability Meter

The procedure for the operation of the SAF on horizontal surfaces is as follows:

1. Remove the instrument from its case and install the two-foot pads. The footpads should be screwed all the way into the tapped holes on the suction foot base and then backed out until the aluminum-checkered plates are pointed to the top of the machine.
2. Unfold the two handles by pushing the buttons on either end of the “T” handle lock pins, and removing them. When the handles are horizontal, the lock pins are needed to be inserted in the other holes ion the handle brackets to lock the handles in the extended positions.
3. Make sure all the switches are in the off position and the left handle switch in the RELEASE position. Set the elapsed time indicator to zero by pushing the RESET switch. Ensure that the directional valve switch is in the down position.
4. Charge the battery at least for eighteen hours before testing.
5. Unplug the charger and turn on the power switch, and observe that the digital displays are activated. Turn ON the POWER switches. Wait ten minutes for the

device to warm up. The device should be tested before any field activities to make sure that it is operating correctly. To test the vacuum in a closed system, turn the pump in ON position. Wait thirty seconds. The readings should be stabilizing between 750 to 765 mmHg. To test the device as an open system, leave the PUMP ON and turn ON the solenoid switch. Wait thirty seconds. The readings should stabilize at a value of 29 to 31 SCCM.

6. To check the device on a reference plate, place the closed cell gasket on an impermeable metallic plate. Center the suction over the gasket.
7. Stand on the footpads. About half of the body weight should be placed on the footpads and the other half on the heels. This will compress the gasket and from an airtight seal.
8. Turn ON the PUMP. At this time both the flow and vacuum gages will display values and the elapsed time indicator will start. The vacuum should stabilize greater than 650 mmHg., vacuum. The flow will have a high initial value due to air in the lines, but will stabilize after about fifteen to twenty seconds.
9. Turn ON the solenoid switch.
10. When the elapsed time indicator reads 45 seconds, push the left handle switch to the hold position to freeze the reading. Record the reading at this point. The vacuum should read greater than 50 mmHg, and the flow should be less than 1 SCCM (1 ml/min).
11. Turn OFF the vacuum pump, and the solenoid switch. Turn the switch on the left handle to the release position and push the reset button on the elapsed time indicator. The device is now ready to be moved to the next test spot.
12. Tests on actual concrete surfaces are performed in a manner identical to the initial check test. In some cases, however it may take longer than 45 seconds for the readings to stabilize. Surfaces should be dry, free of dirt or debris, and not cracked, grooved or textured.

The permeability of concrete greatly contributes to the corrosion potential of the embedded steel bas due to water and chloride penetration. The lower the permeability the more resistant the concrete is to chloride penetration. The relative concrete permeability readings provided by SAF can be categorized into low, moderate and high according to the flow rate (ml/min) as illustrated in the table below.

Table 3 Relative Concrete Permeability by Surface Air Flow

Air Flow Rate (ml/min)	Relative Permeability Indicated
0 to 30	Low
30 to 80	Moderate
80>	High

Test Program

A large number of readings were taken using both instruments. The sites for readings were chosen to evaluate whether the instrument can distinguish between good and deteriorated surface, provide repeatable readings and consistent readings, and there is no variation between operators. Two operators took the readings at various times.

Test Program: Corrosion Instrument

Corrosion instrument was evaluated using five new bridge decks on Route 133 in New Jersey.

Electrical connections were made to the top-reinforcing mat of each bridge deck before the placement of the concrete. Five connections were made to Route 130 West bound and four each on the remaining four bridges. A total of one hundred and five readings; twenty-five over Route 130 west bound, and twenty each at the other four bridge decks were taken for each cycle. One cycle represents five sets of readings at five locations. The data collection was repeated five times representing five cycles. Due to the use of epoxy coated reinforcing bars on the bridge deck over RT 130 West Bound, it was necessary to place uncoated reinforcing bars into the top mat. Short lengths of uncoated reinforcing bars were welded to the existing reinforcement. The ends were tapped to accept stainless steel nuts and bolts to attach underground copper feeder cables that were used to connect the meter to the reinforcement in the bridge deck. To ensure accurate readings, the connecting lengths of reinforcing bars were wire brushed to remove the existing corrosion. They were then coated with epoxy and spray painted to seal out moisture. The cables were passed through flexible steel conduits and into rain tight steel enclosure to protect them from the element and from possible tampering. A reinforcing steel locator was needed because locations of reinforcement and connections were not recorded before the placement of the concrete.

Connections were observed during the placement of concrete and were tested after the concrete had hardened to check for broken connections. The connections were found to be working at all locations.

Test Program: Permeability Meter

The Air Permeability Meter was used at six different sites consisting of surfaces with good concrete, surfaces with damaged or rough concrete and a painted concrete surface.

About 500 readings were taken on each surface. These surfaces were chosen to verify that the machine will be able to distinguish between deteriorated and good surface and works well both on both good and deteriorated surfaces.

Following are the site descriptions where the Air Permeability Meter was used:

SITE NO. 1
This site, located at the Livingston Campus, Rutgers University, was a freshly painted surface. This surface had the potential for least permeability.

SITE NO. 2
This site, located at the Livingston Campus, Rutgers University, was an old painted floor inside the building. The paint blistered off in few locations, but the concrete was in good condition.

SITE NO. 3
This site, located at the Livingston Campus, Rutgers University, was an unpainted surface in good condition.

SITE NO. 4
This site was a concrete floor in a residential building, located in East Brunswick. The floor was in good condition.

SITE NO. 5
This site, located at the College Avenue Campus, Rutgers University, was parking deck with surface deterioration and therefore was more permeable than site 4.

SITE NO. 6
This site, located at the Livingston Campus front porch, Rutgers University, had considerably deteriorated concrete.

Experimental Results and Analysis of Data

The data collected was analyzed using a statistical software program called arena. The averages and the standard deviations were computed for all the data sets for both Air Permeability Meter and Corrosion Meter. The results are presented in Tables 4 and 5.

Permeability Meter

The results for the air permeability test are presented in the form of bar diagrams in Figures 1 to 12. The relation between the vacuum (mmHg) vs. flow (SCCM) is also presented to determine whether there is a relationship between these two parameters. The equation for the regression line and the correlation coefficient, R^2 are also presented in these diagrams. The bar diagrams also show the variability of the air permeability in the concrete surface.

Figures 13 to 16 show the bar diagrams and scatter plots of the data taken during the tests by two different operators. The data show that the values taken by both operators seem to be similar, suggesting that the results are repeatable, between the operators. The averages and the standard deviations are presented in Table 4. The results presented in Table 4, the bar charts and the observations made during the collection of data lead to the following observations:

- The instrument can distinguish between good and deteriorated surfaces. Based on the surface conditions, flow (SCCM) had to increase from sites 1 to 6. The surface flow increased from about 4 for the best surface to 50 for the worst surface. The instrument provides more substantial information than visual inspection but not numerical numbers for permeability.

- The results do follow normal distribution for surfaces with low permeability such as painted surfaces. Since the permeability varies considerably between test points of deteriorated surfaces, the variations do not follow normal curve.

- Based on the results obtained, the standard deviation increases with the increase in average. But the increase is not proportional. Therefore the coefficient of variation is larger for surfaces with low permeability.

- Dependable relationship between vacuum and airflow does not exist.

Table 4 – Averages and Standard Deviations: Air Permeability Meter

Site No.	Name of the Site	Average		Standard Deviation	
		Vacuum (mmHg)	**Flow (SCCM)**	**Vacuum (mmHg)**	**Flow (SCCM)**
1	Livingston Campus, Freshly painted surface	779.1016	3.8067	.7901	1.3214
2	Livingston Campus, Old Painted Surface	785.5493	6.1022	2.7287	1.1025
3	Livingston Campus, Unpainted Surface Good condition	793.9028	26.9182	1.5877	4.9644
4	East Brunswick, Slab, Residential Building	775.7684	28.6269	4.2102	3.1949
5	College avenue Campus, Parking Deck	720.8370	42.9351	23.4635	6.8451
6	Livingston Campus, Front porch	764.8377	52.8458	17.9312	4.9876

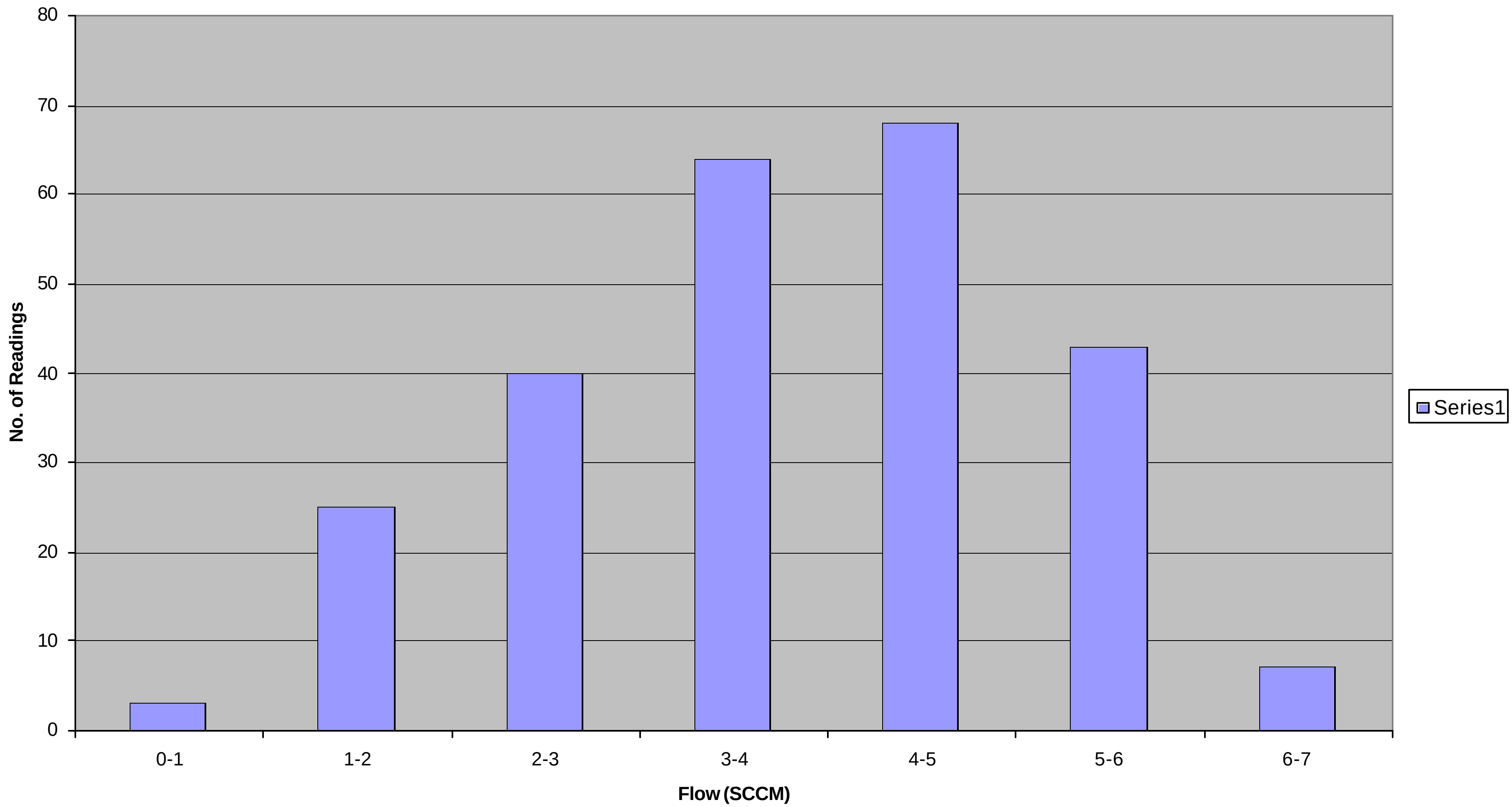

Figure 1 Livingston Freshly Painted Surface - Site No. 1

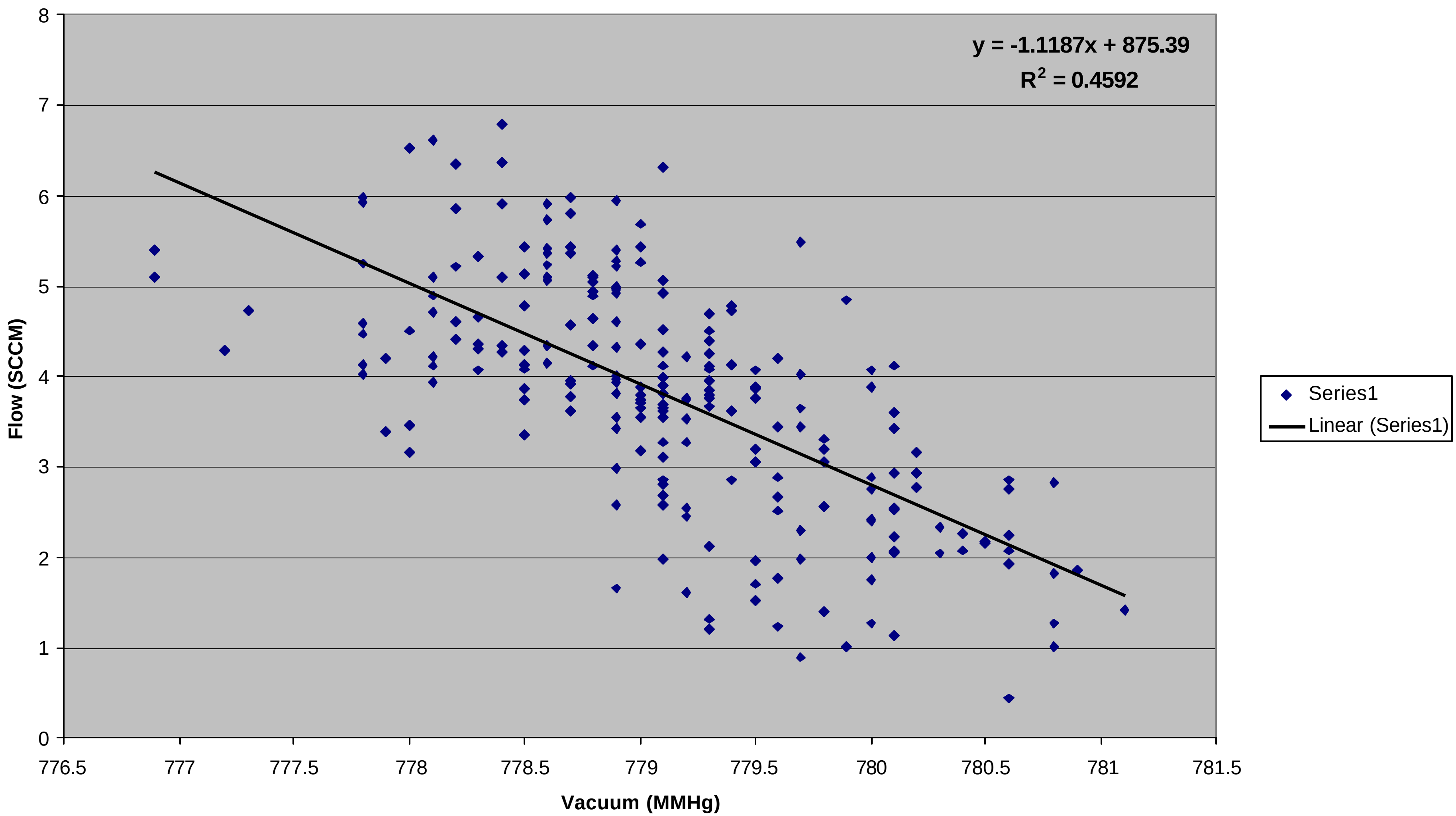

Figure 2 Livingston Freshly Painted - Site N0.1

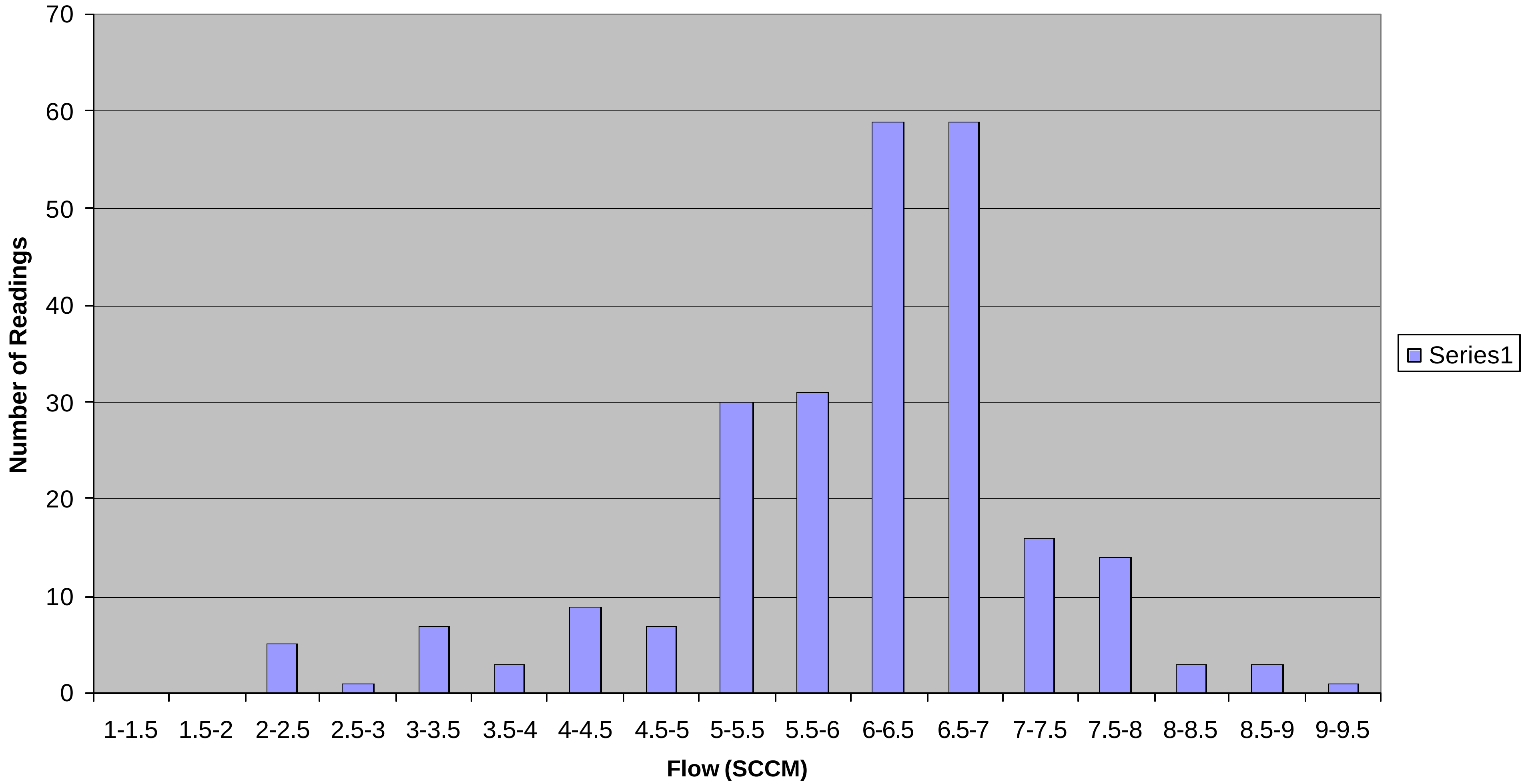

Figure 3 Livingston Data - Site No. 2

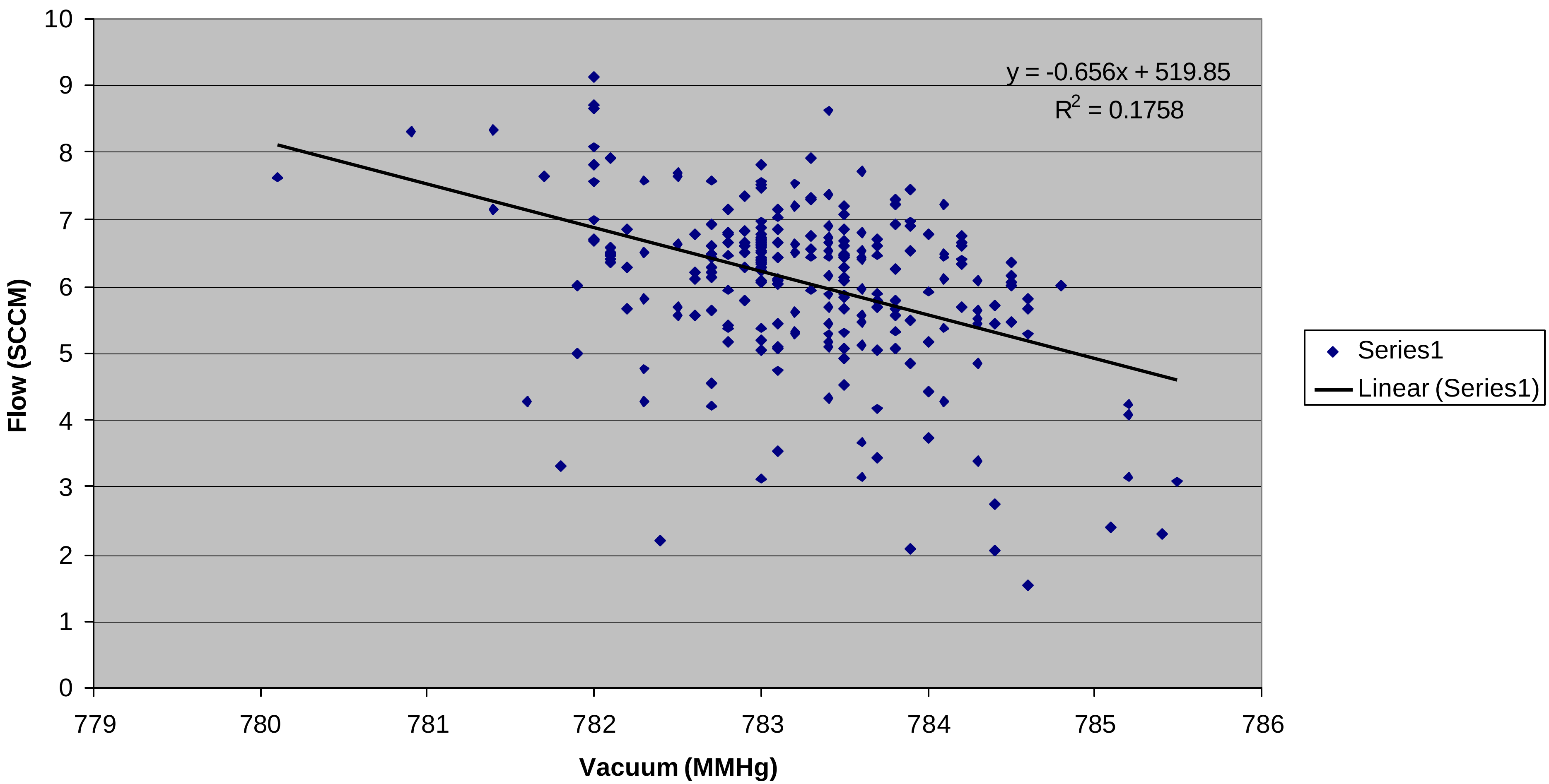

Figure 4 Livingston Data - Site No.2

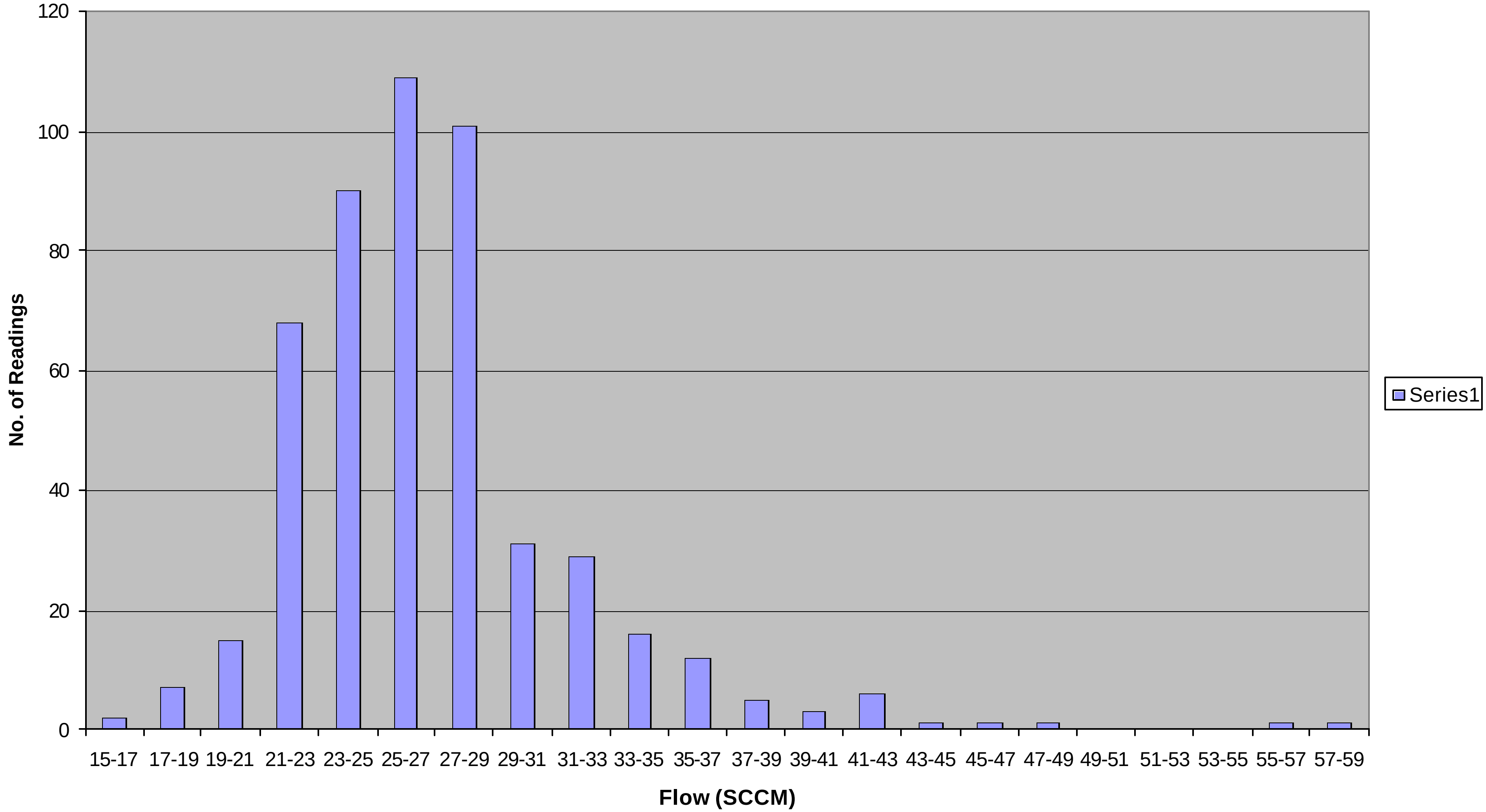

Figure 5 Livingston Data - Site No. 3

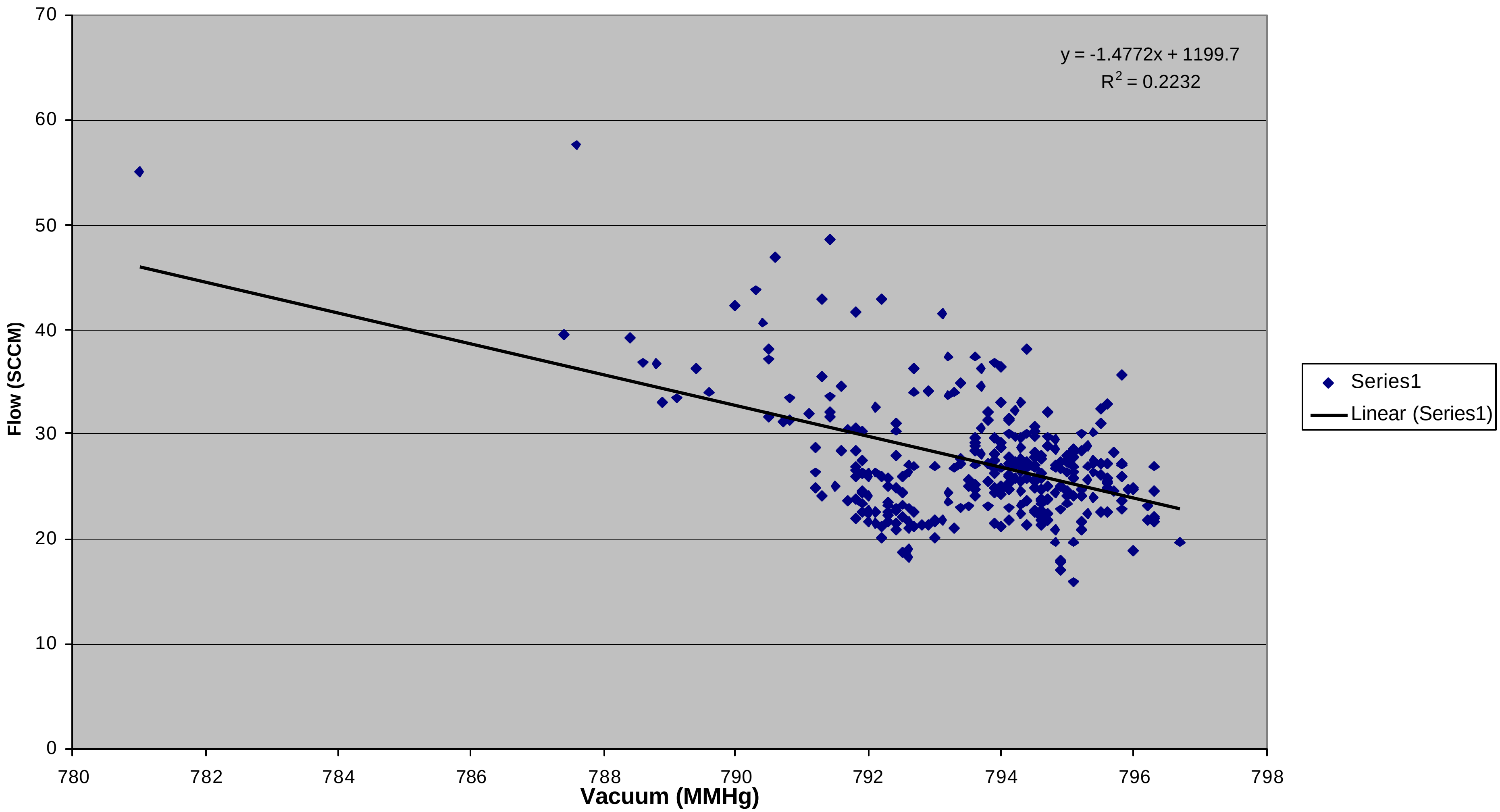

Figure 6 Livingston Data - Site No. 3

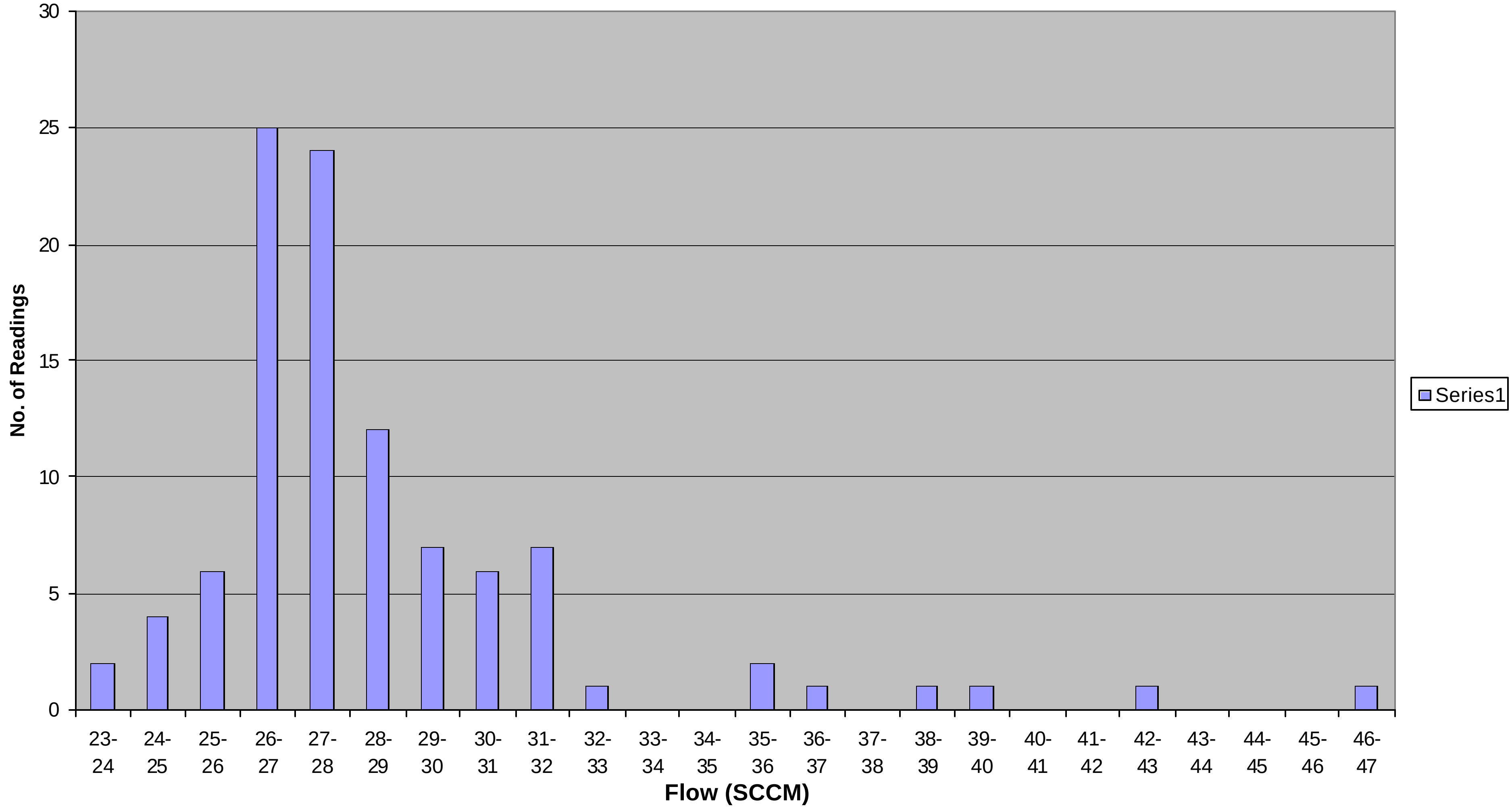

Figure 7 East Brunswick Slab - Site No. 4

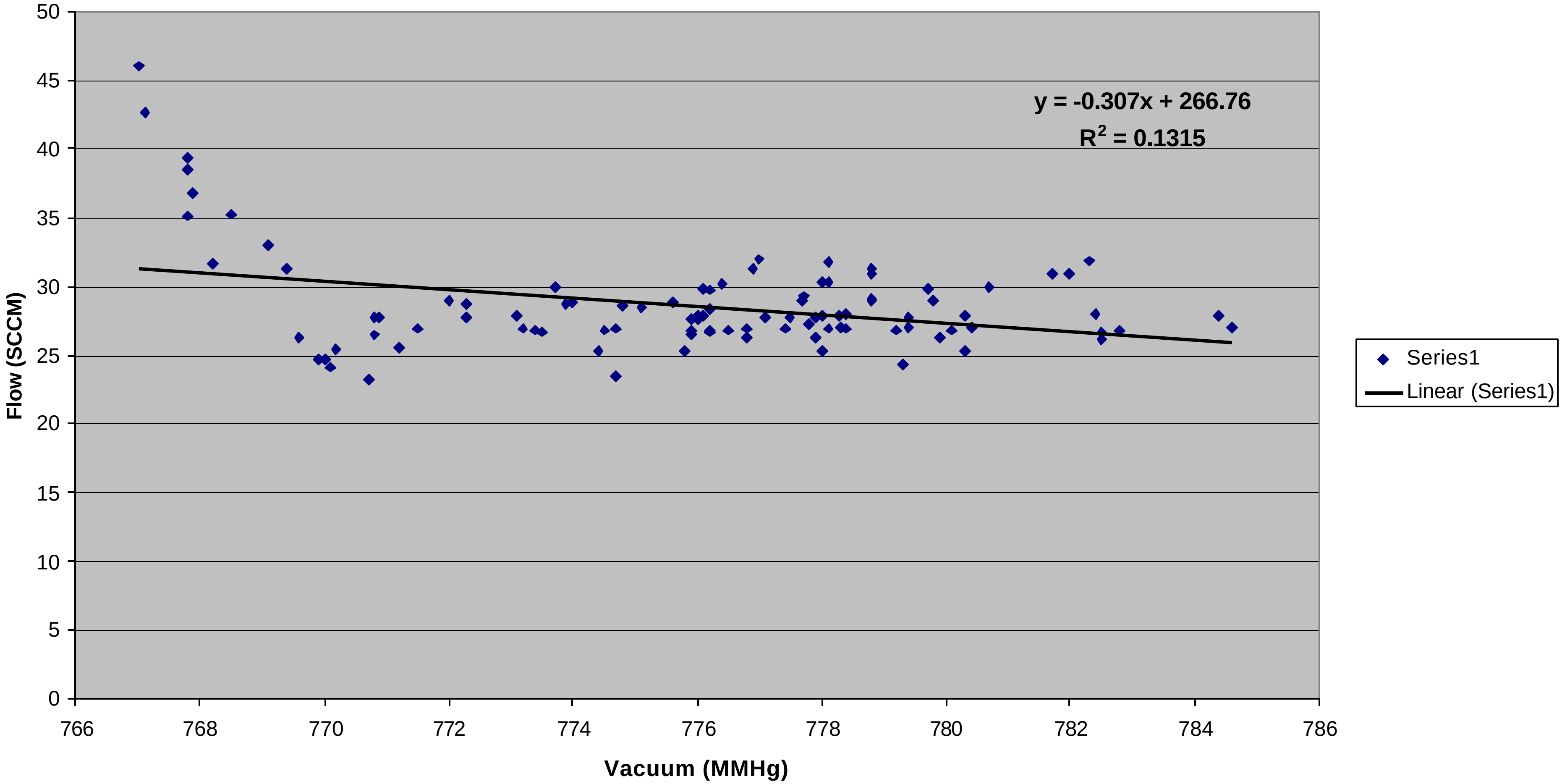

Figure 8 East Brunswick Slab - Site No. 4

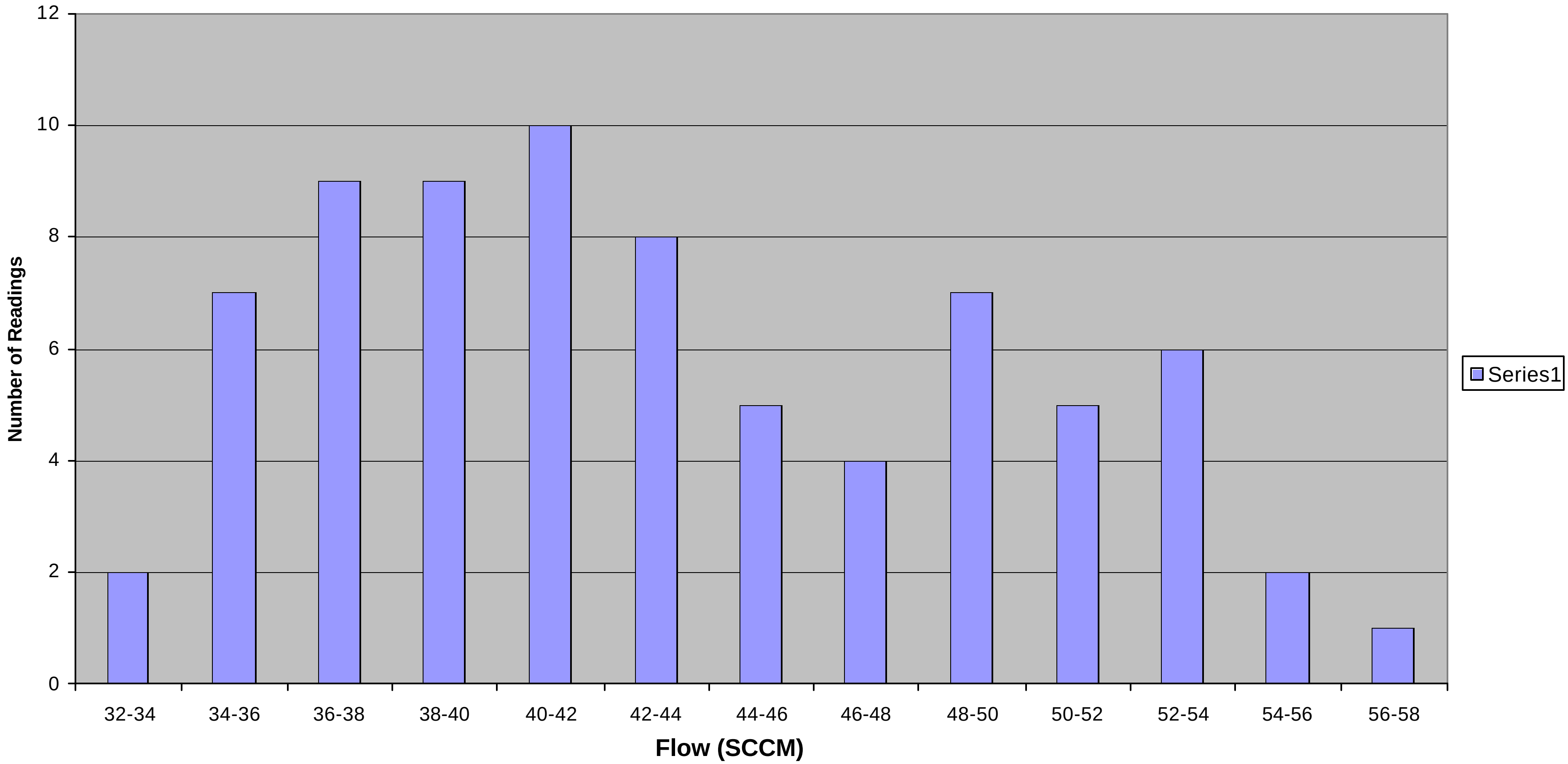

Figure 9 College Ave Data - Site No. 5

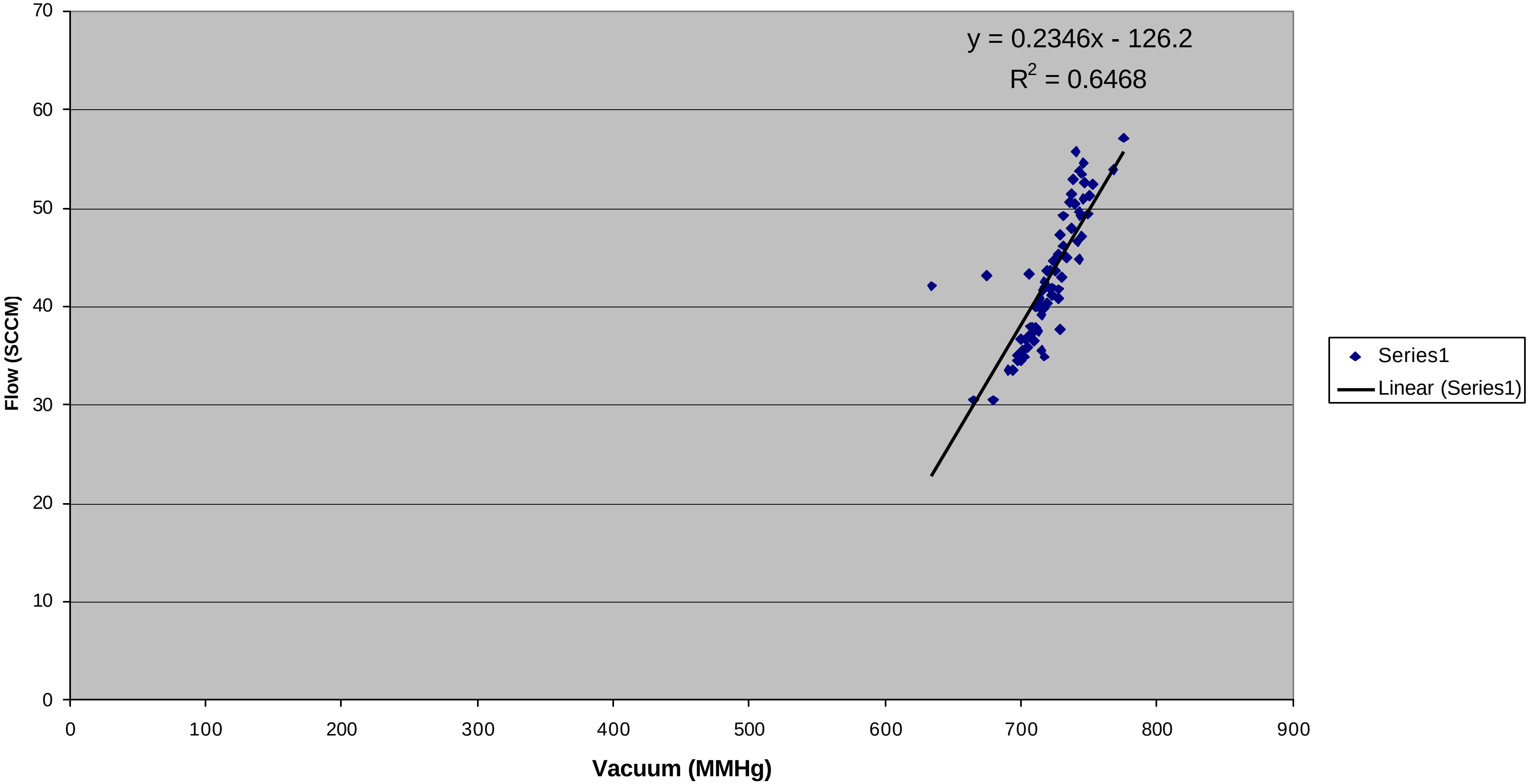

Figure 10 College Ave Data - Site No. 5

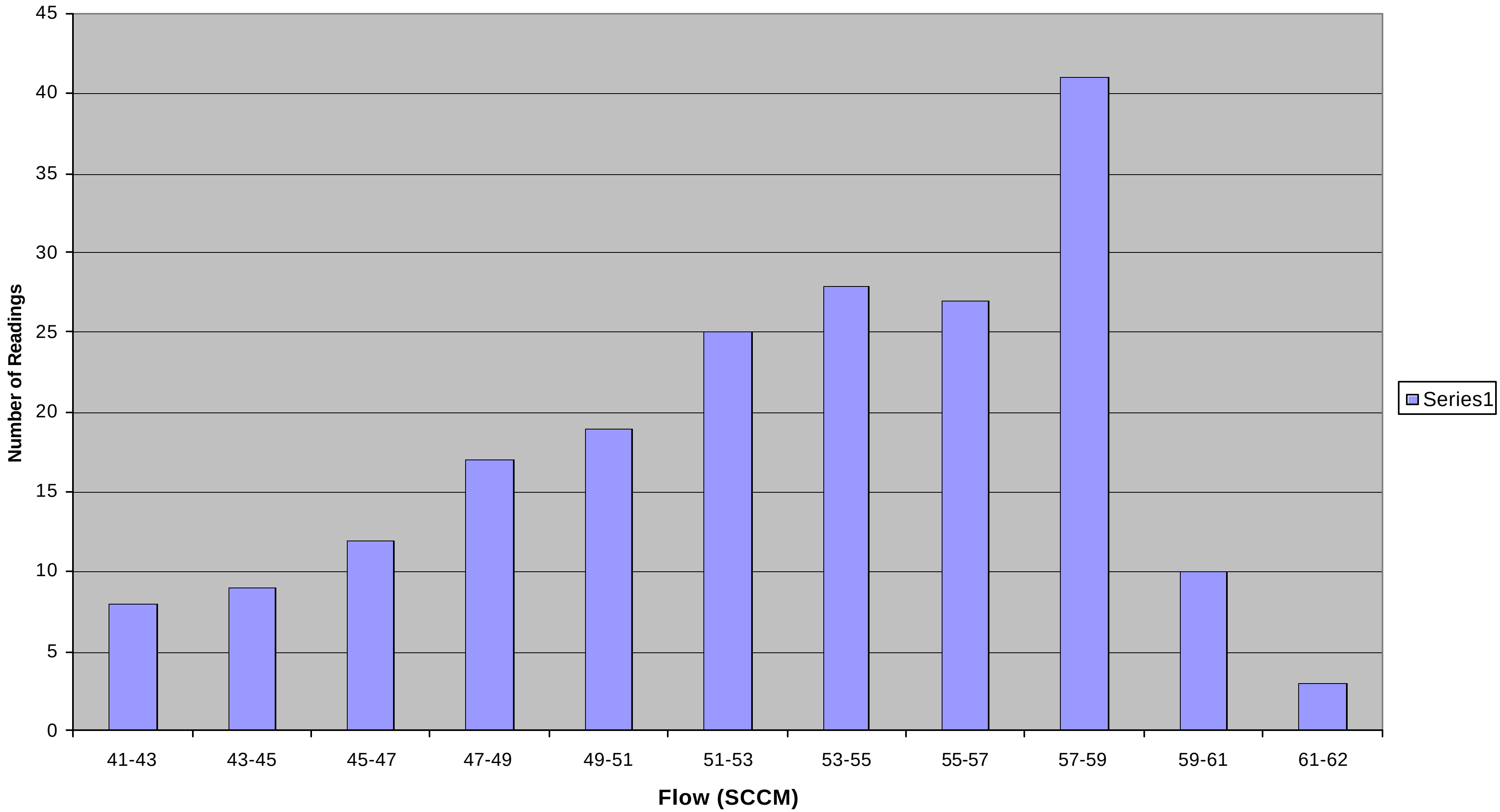

Figure 11 Livingston Front Porch - Site No. 6

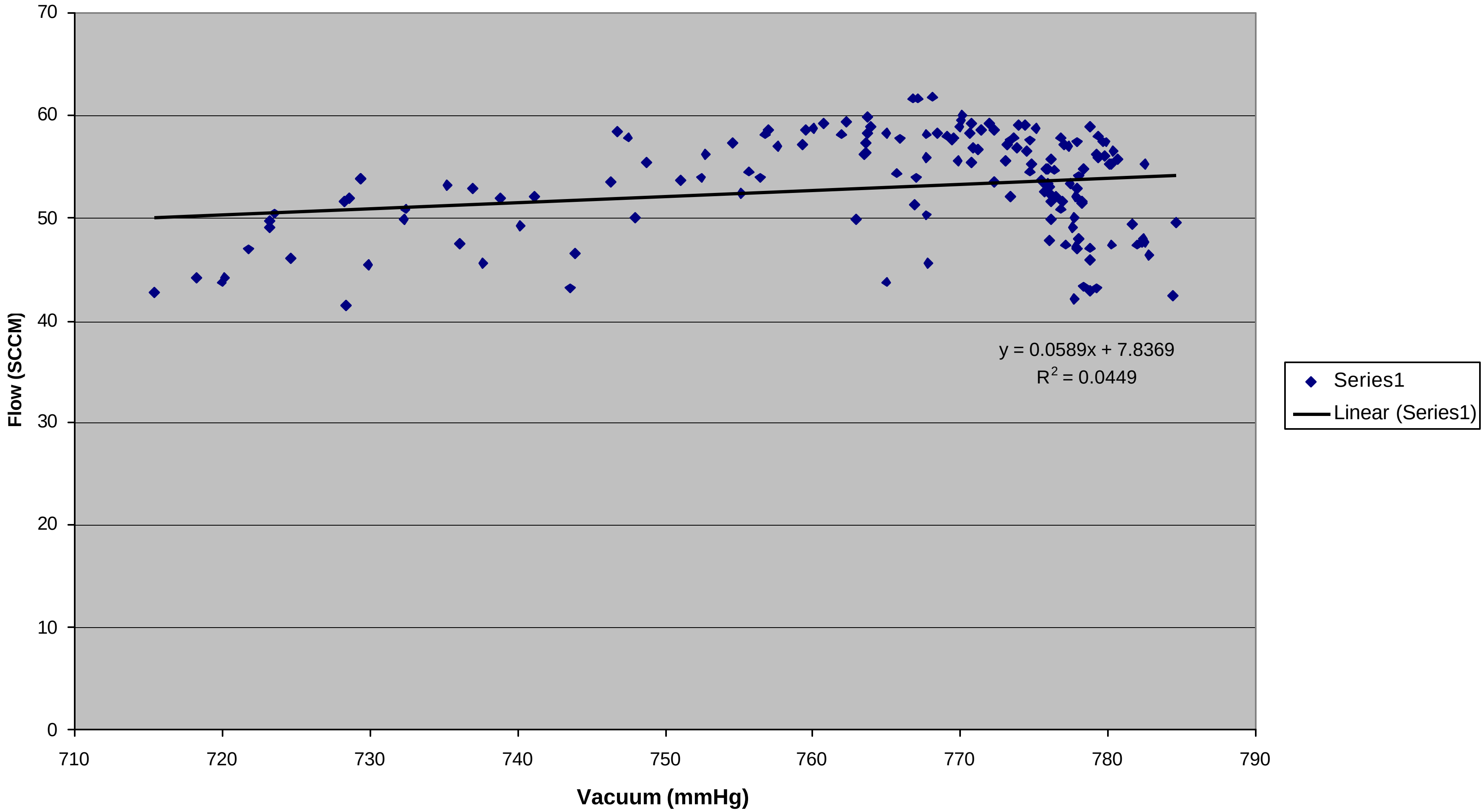

Figure 12 Livingston Front Porch - Site No. 6

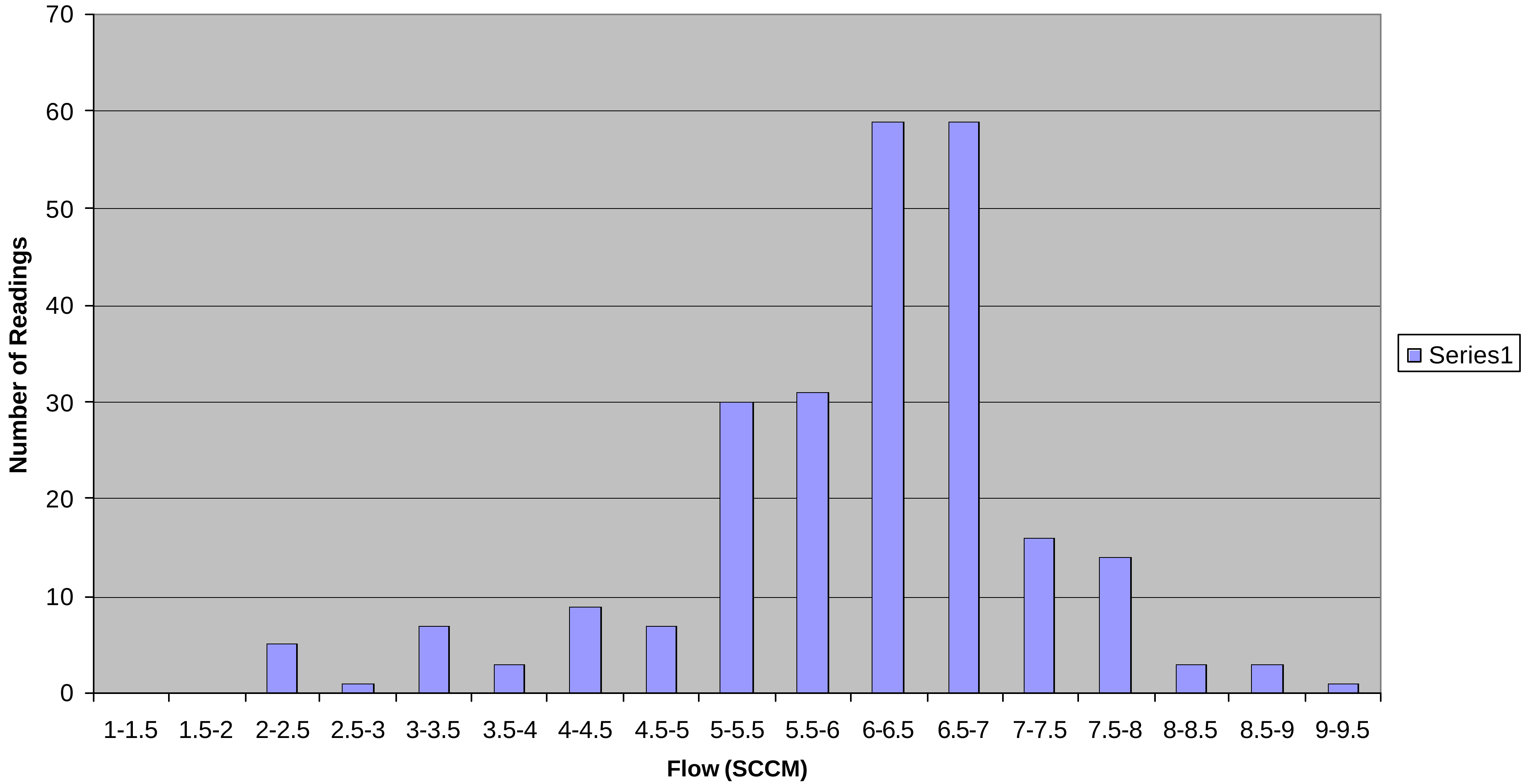

Figure 13 Livingston Data - Operator 1

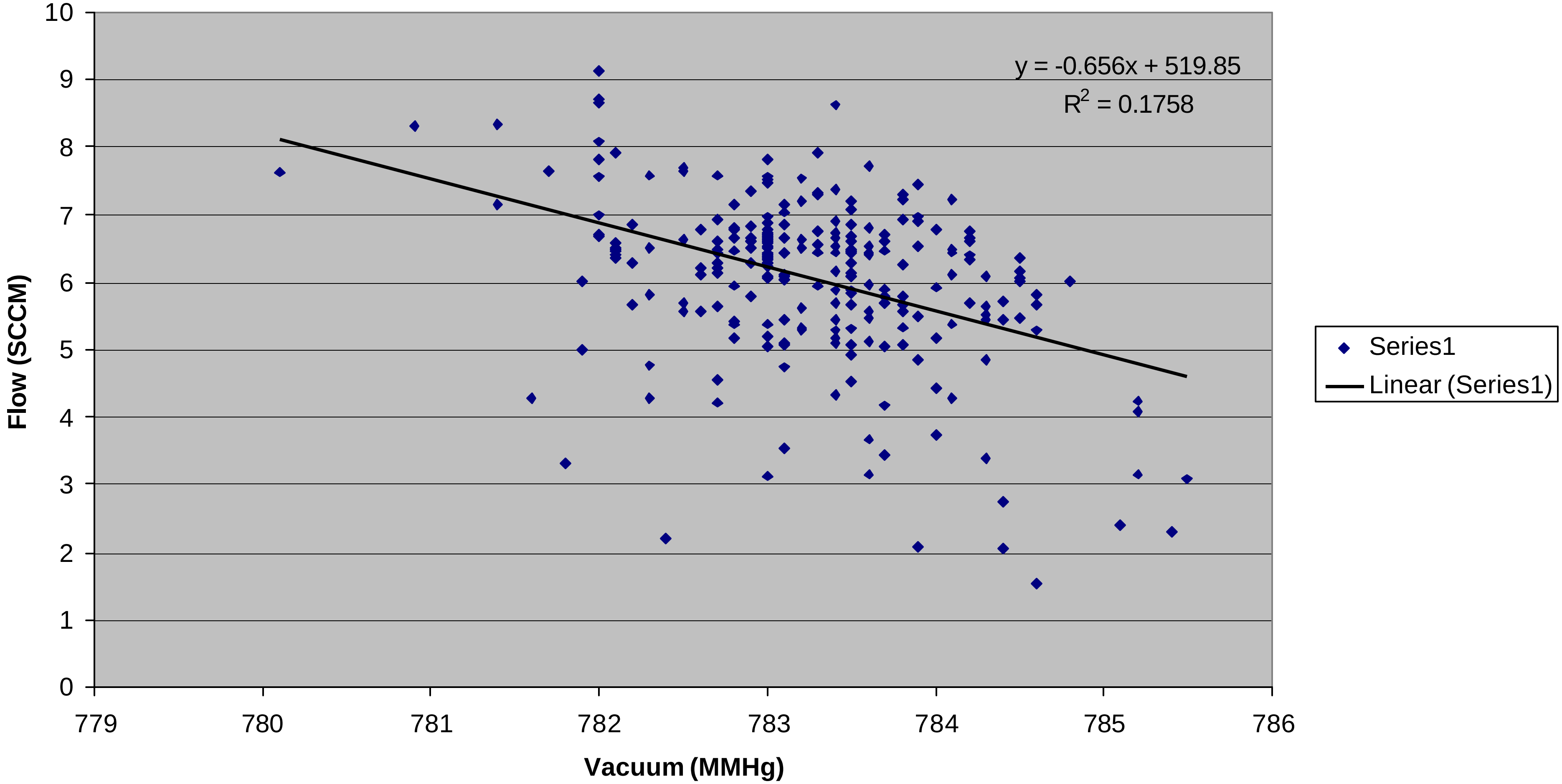

Figure 14 Livingston Data (Operator 1)

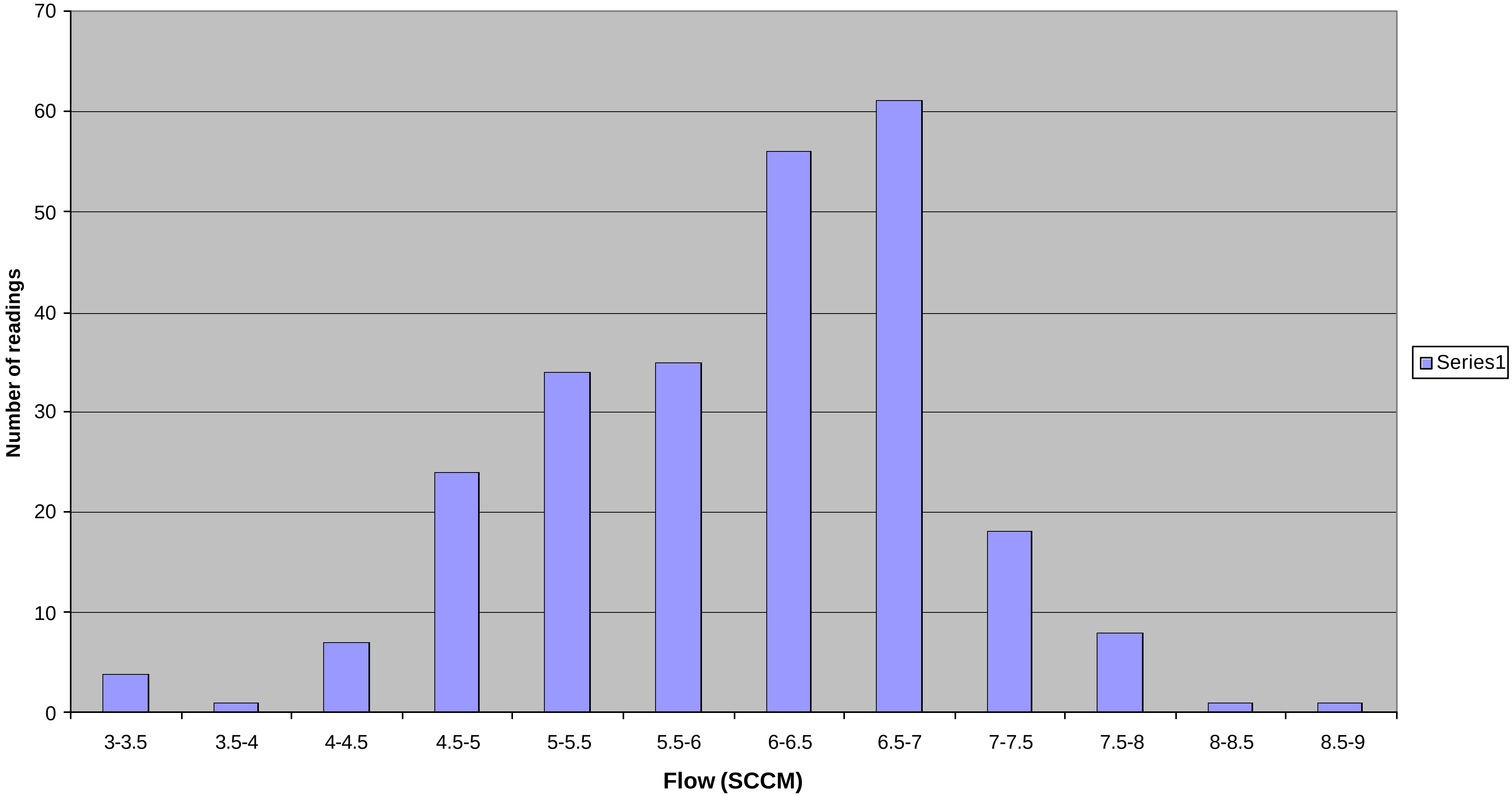

Figure 15 Livingston Data (Operator 2)

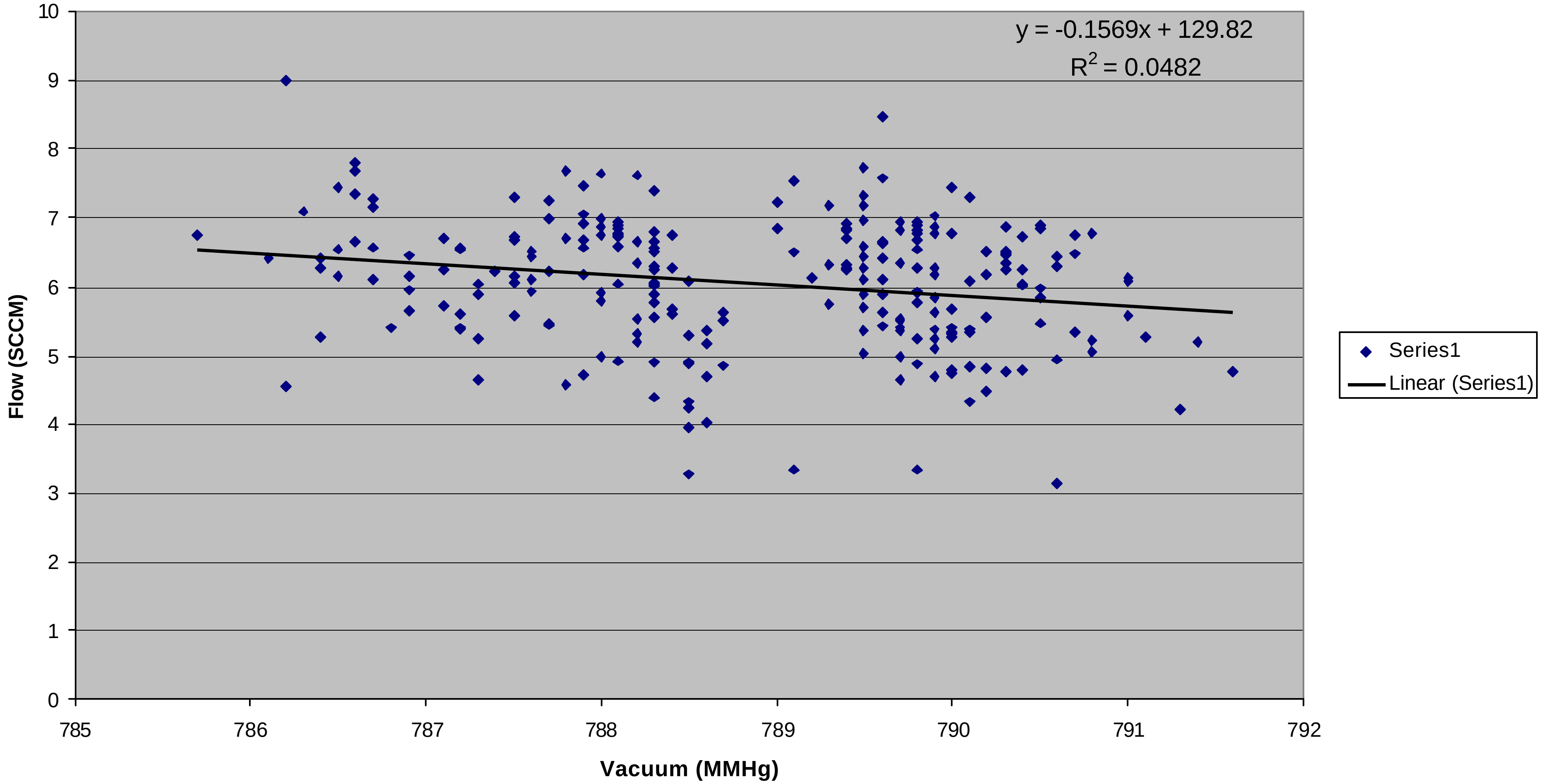

Figure 16 Livingston Data (Operator 2)

Corrosion Meter

The results for the Corrosion Instrument test are presented in Figures 17-31. The figures show the frequency distribution of Corrosion Rate, Corrosion Potential, and the relationship between the two for the five sites. Regression equations and correlation coefficients, R^2 are also presented for the relationships between Corrosion rate and Corrosion Potential, Figures 27 to 31.

The averages and the standard deviations are presented in Table 5. The results presented in Table 5, the bar charts and the observations made during the collection of data lead to the following observations:

- The instrument provides repeatable and consistent readings. Note that variation should be expected across the deck area because the corrosion levels could be different.

- Since all the decks are new, it was expected that the readings should be in a small range and the instrument confirms this expectation.

- Both the corrosion rate and corrosion potential do not follow any trend. This should be expected because there is very little corrosion activity and the values are real random numbers produced by initial rust.

- There is no relationship between corrosion rate and corrosion potential. Low corrosion rate is the reason for this observation

- The standard deviations are very high compared to averages because the corrosion level is very low and hence the noise is high.

- The instrument can be operated without any difficulty both in the laboratory and in the field. The authors recommend the use of this instrument for corrosion measurements.

Table 5 – Average and Standard Deviation: Corrosion Meter

Site No.	Name of the Site	Average		Standard Deviation	
		Corrosion Rate, uA/cm²	Corrosion Potential, mV	Corrosion Rate, uA/cm²	Corrosion Potential, mV
1	Rt. 130 West bound	0.1645	30.40	0.1008	35.80
2	North Main Street Eastbound	0.2329	-77.70	0.1959	47.14
3	North Main Street Westbound	0.1733	-151.62	0.0650	63.23
4	Wycoff Eastbound	0.1793	-70.94	0.1307	49.16
5	Wycoff Westbound	0.1561	-198.57	0.1207	1181.23

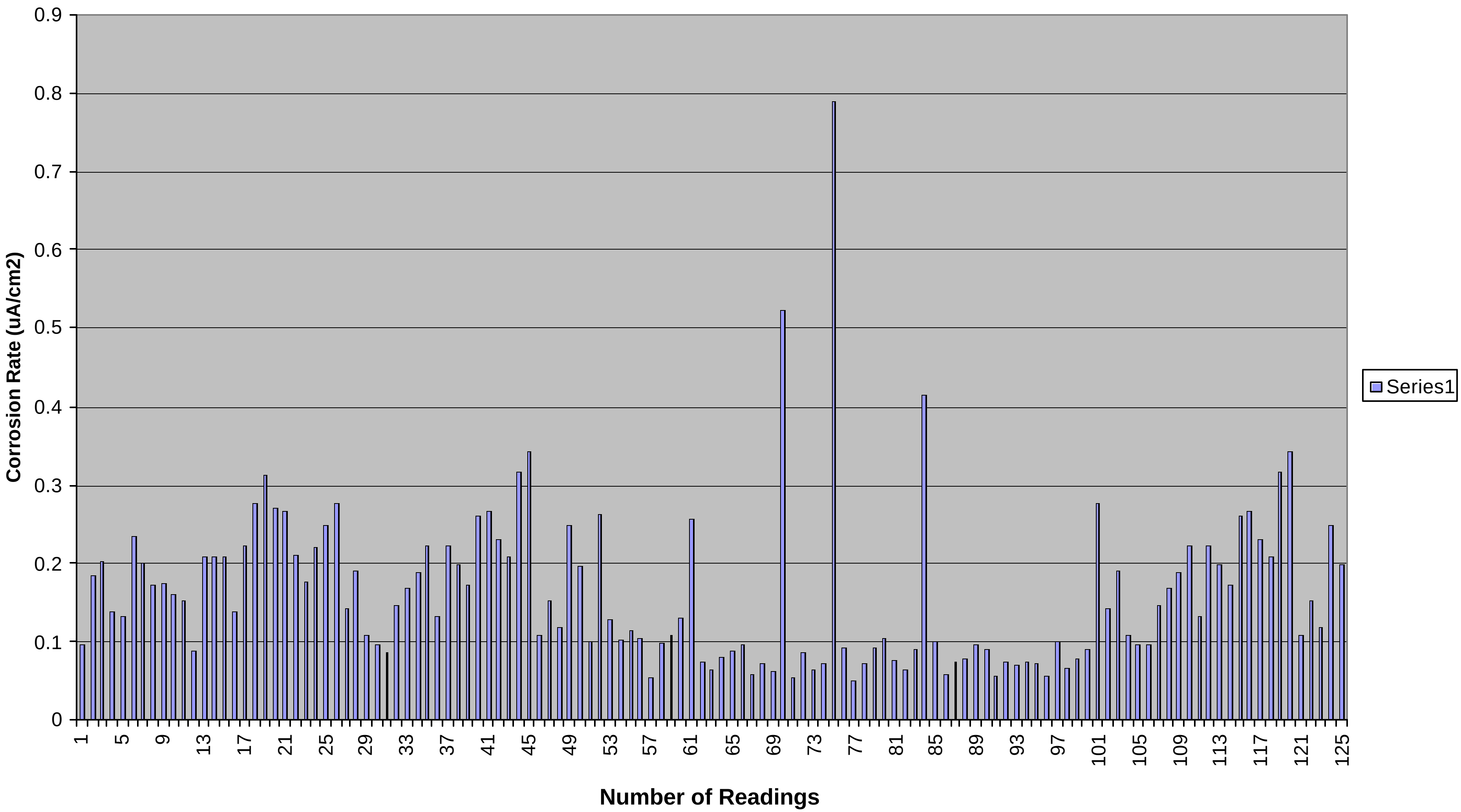

Figure 17 Corrosion Rate: Rt. 130 West Bound Data

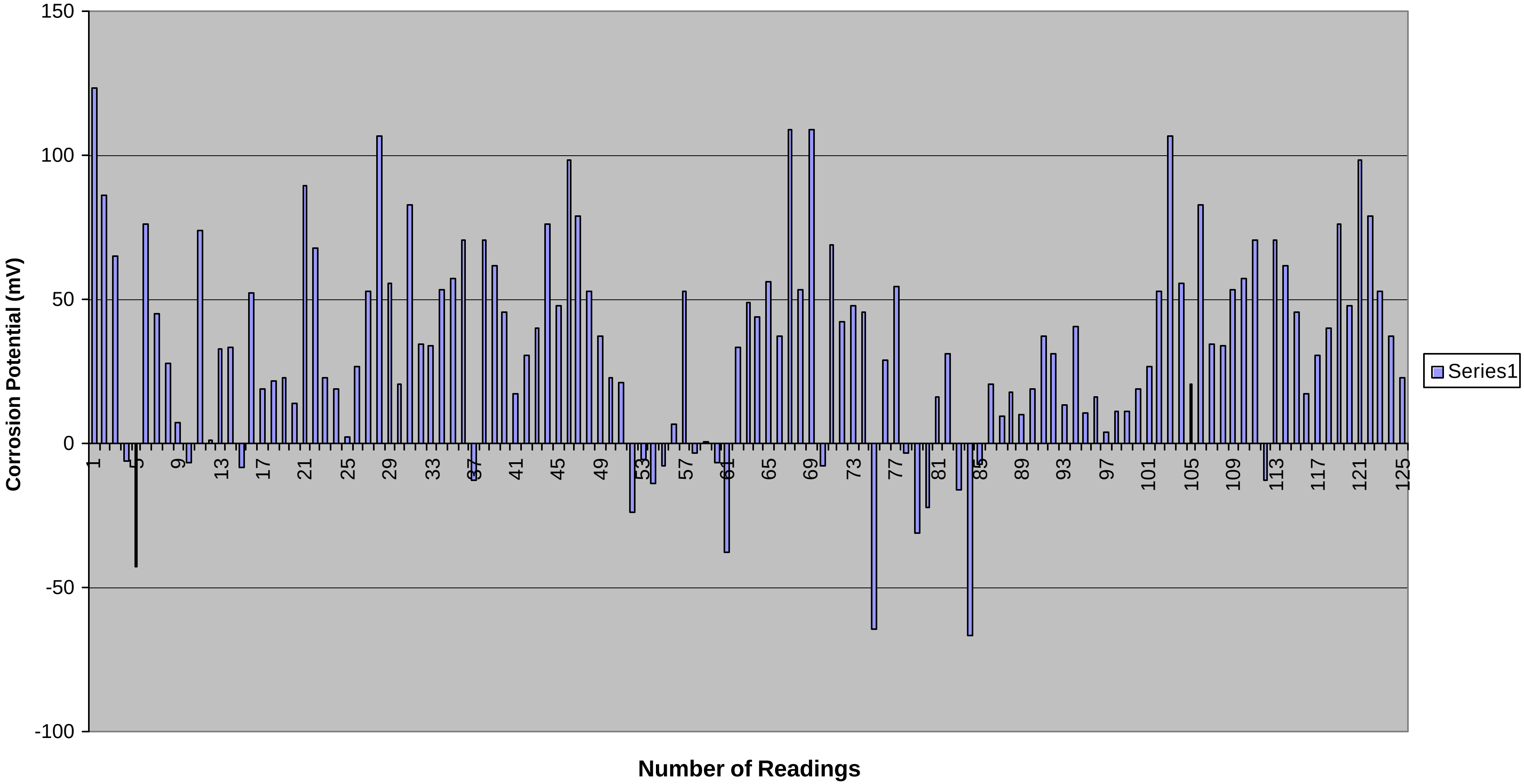

Figure 18 Corrosion Potential: Rt. 130 West bound Data

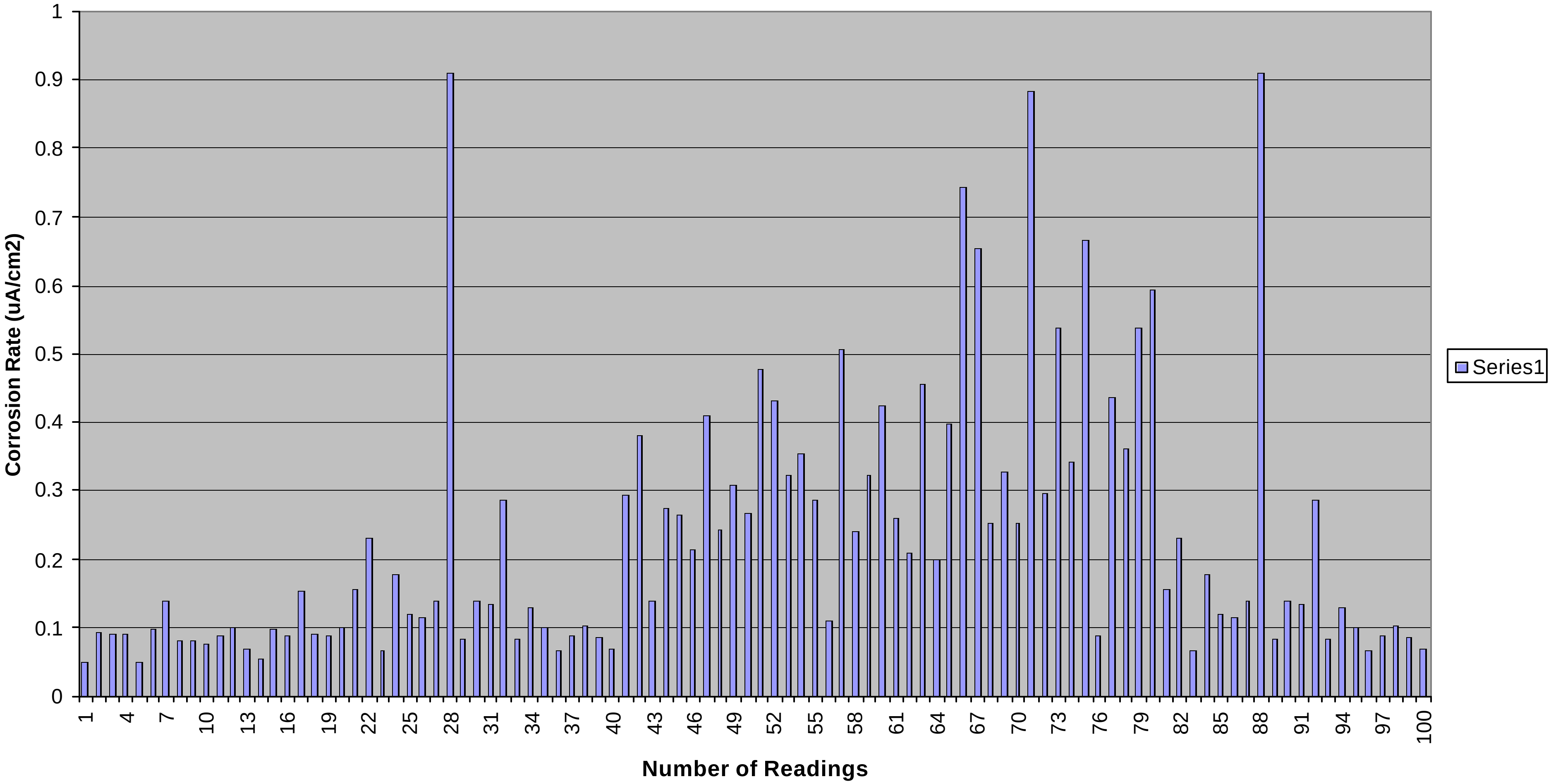

Figure 19 Corrosion Rate: North Main Street East Bound Data

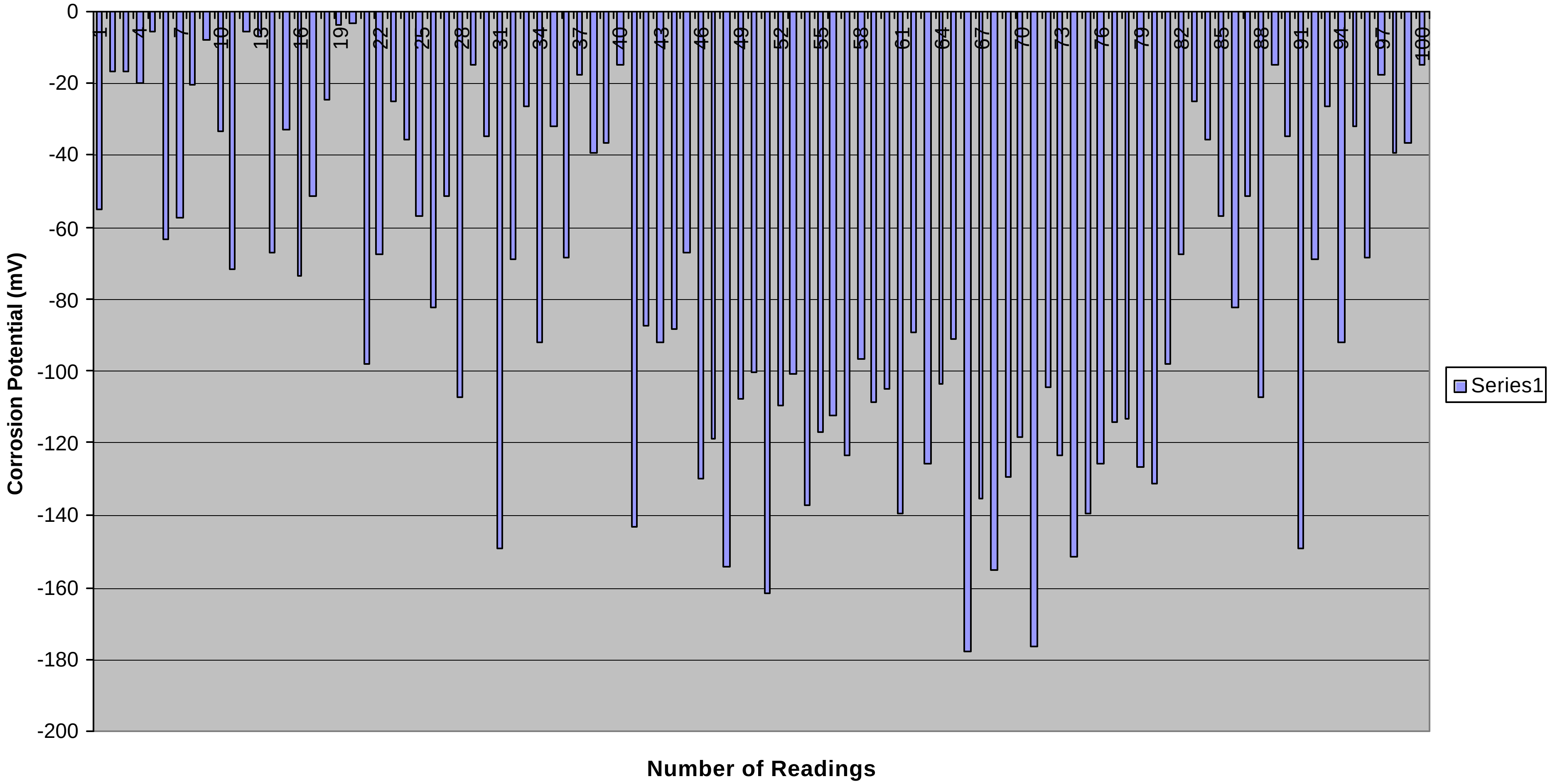

Figure 20 Corrosion Potential: North Main Street East Bound Data

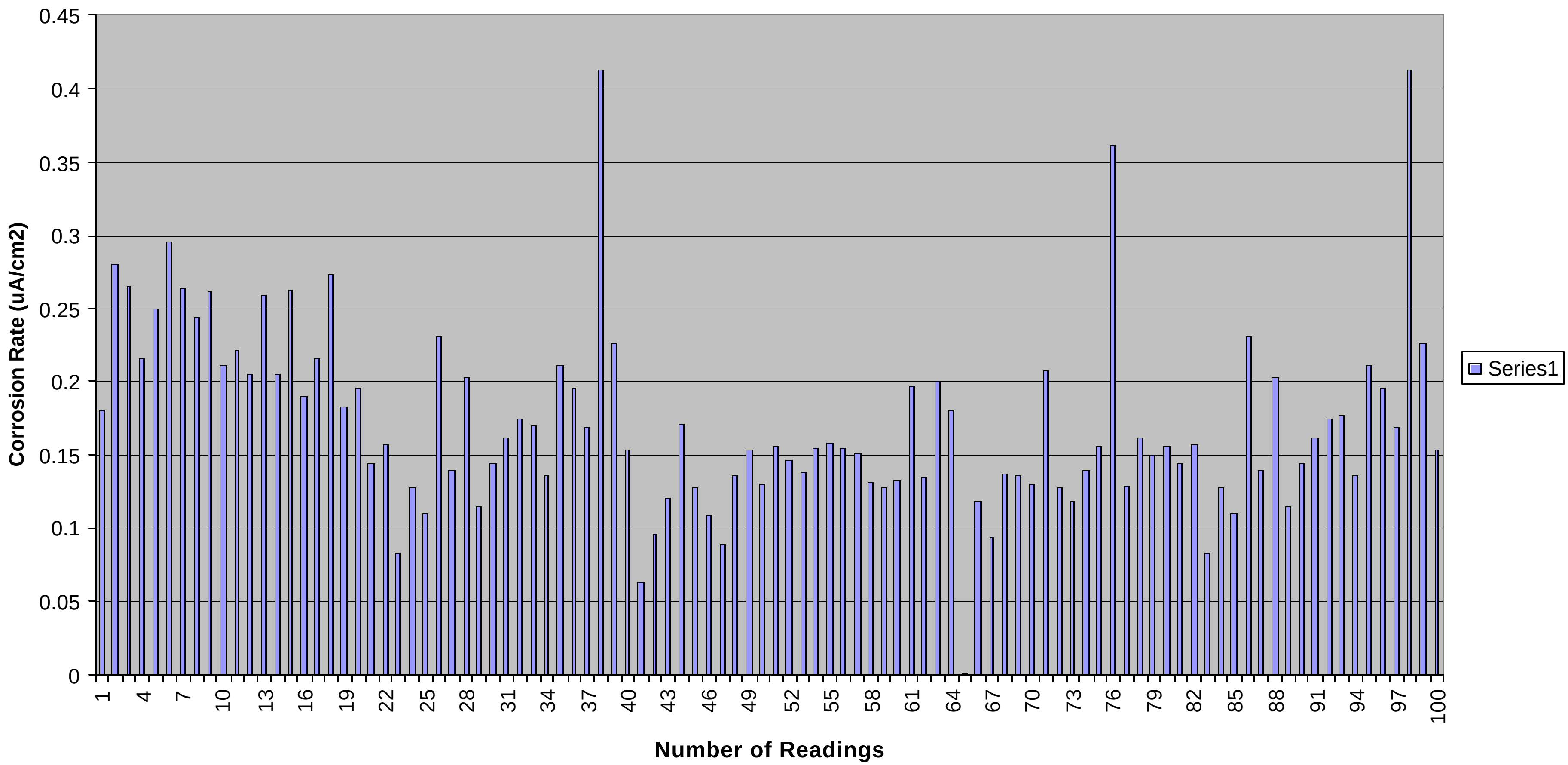

Figure 21 Corrosion Rate: North Main Street West Bound Data

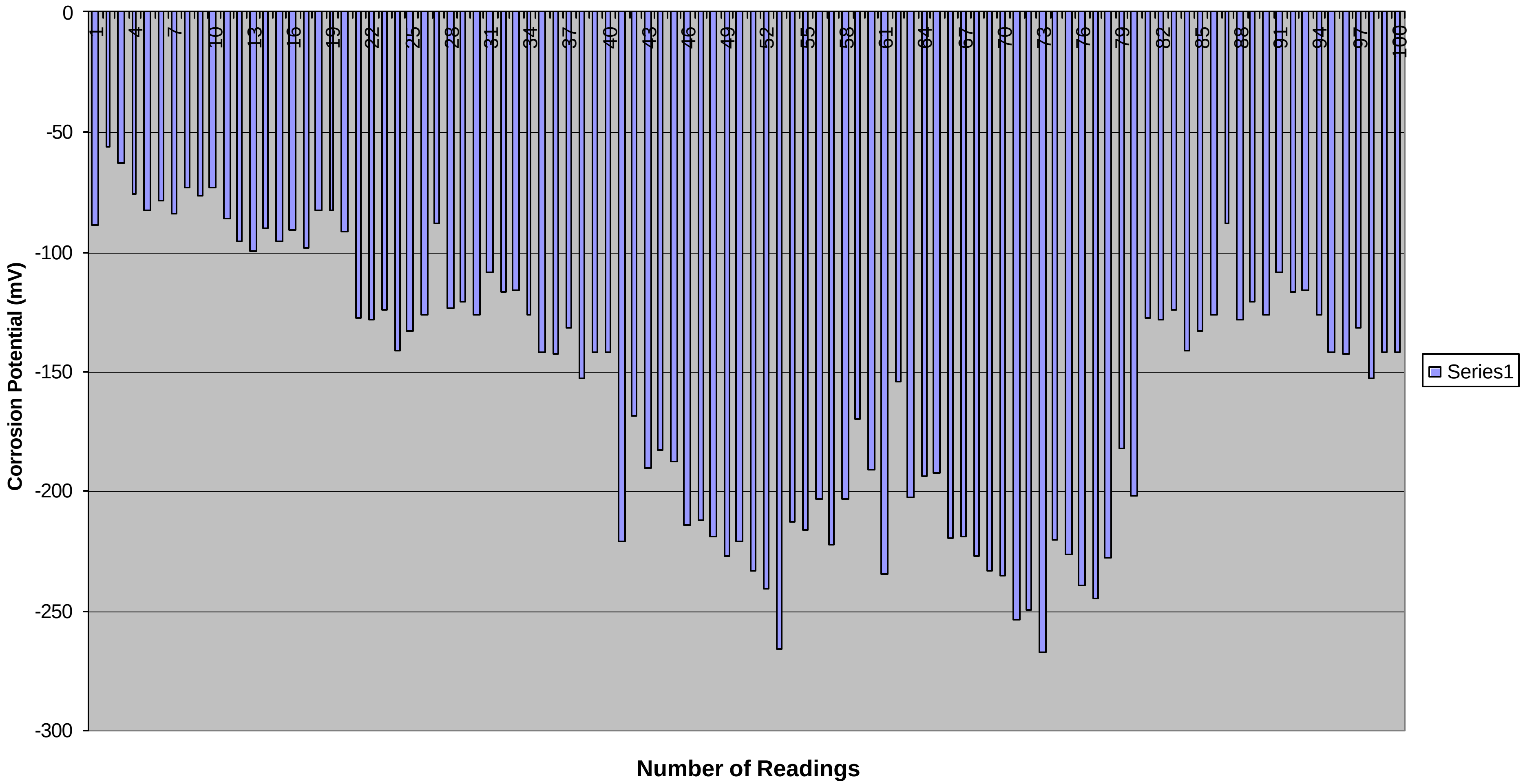

Figure 22 Corrosion Potential: North Main Street West Bound Data

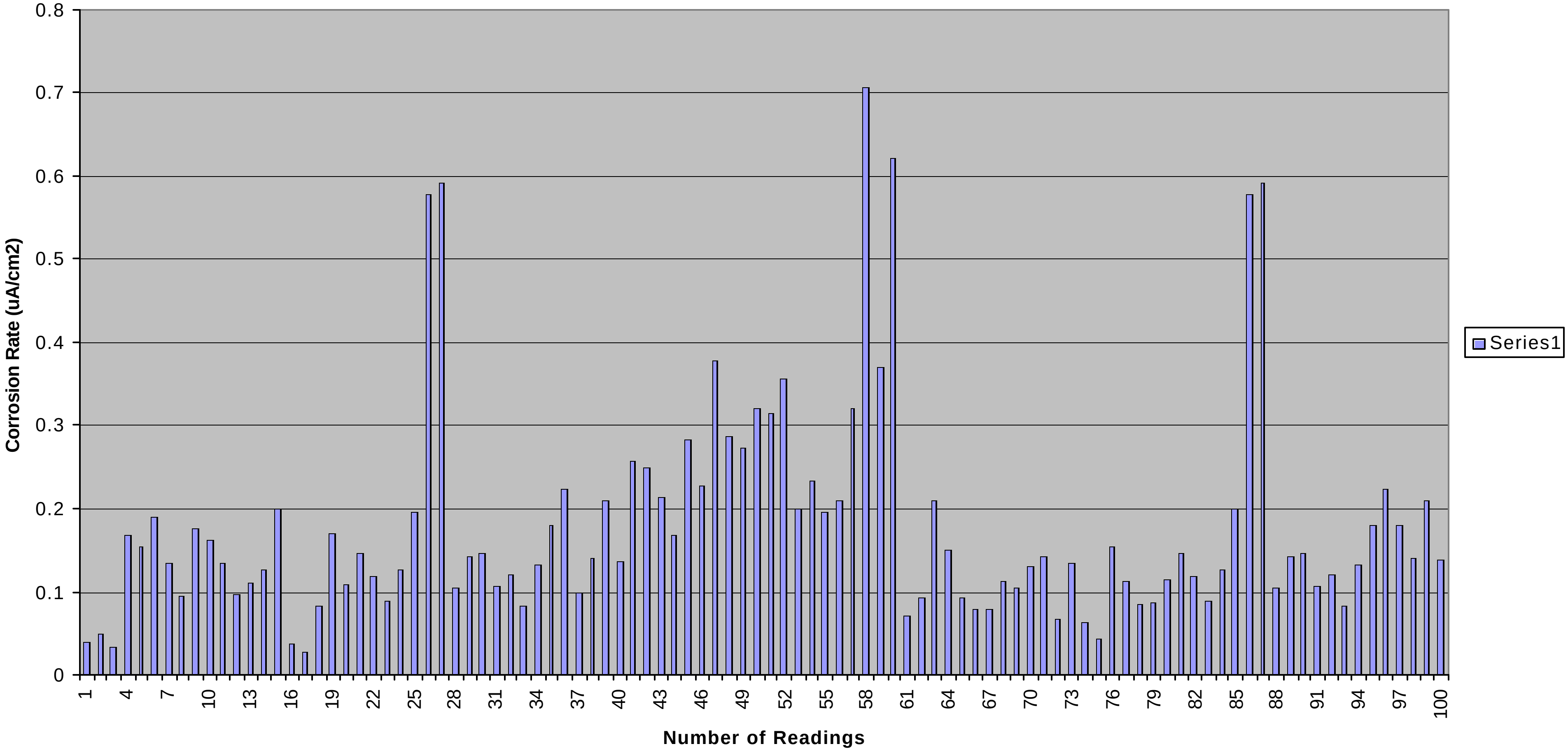

Figure 23 Corrosion Rate: Wycoff's Bridge East Bound Data

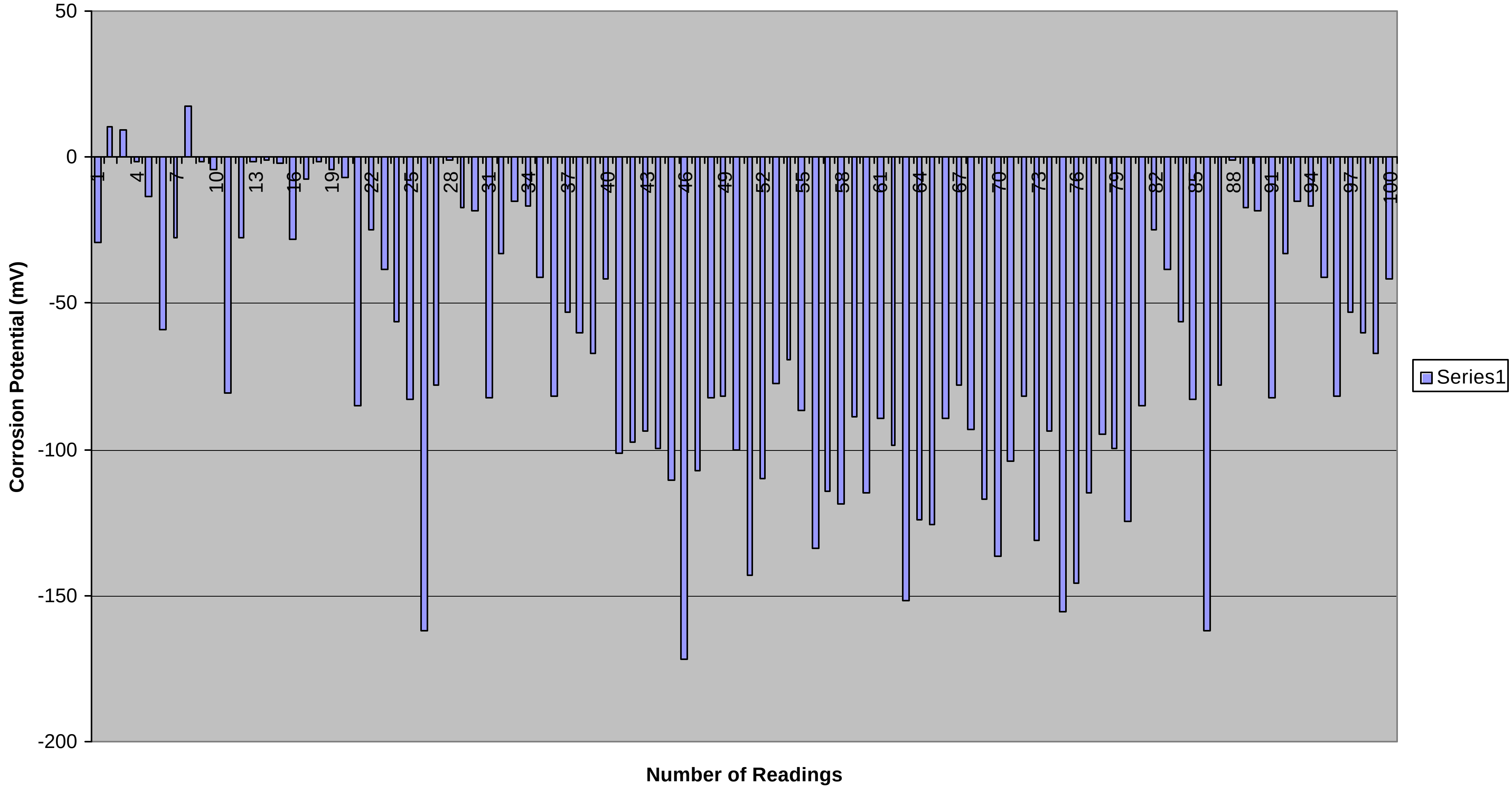

Figure 24 Corrosion Potential: Wycoff's Bridge East Bound Data

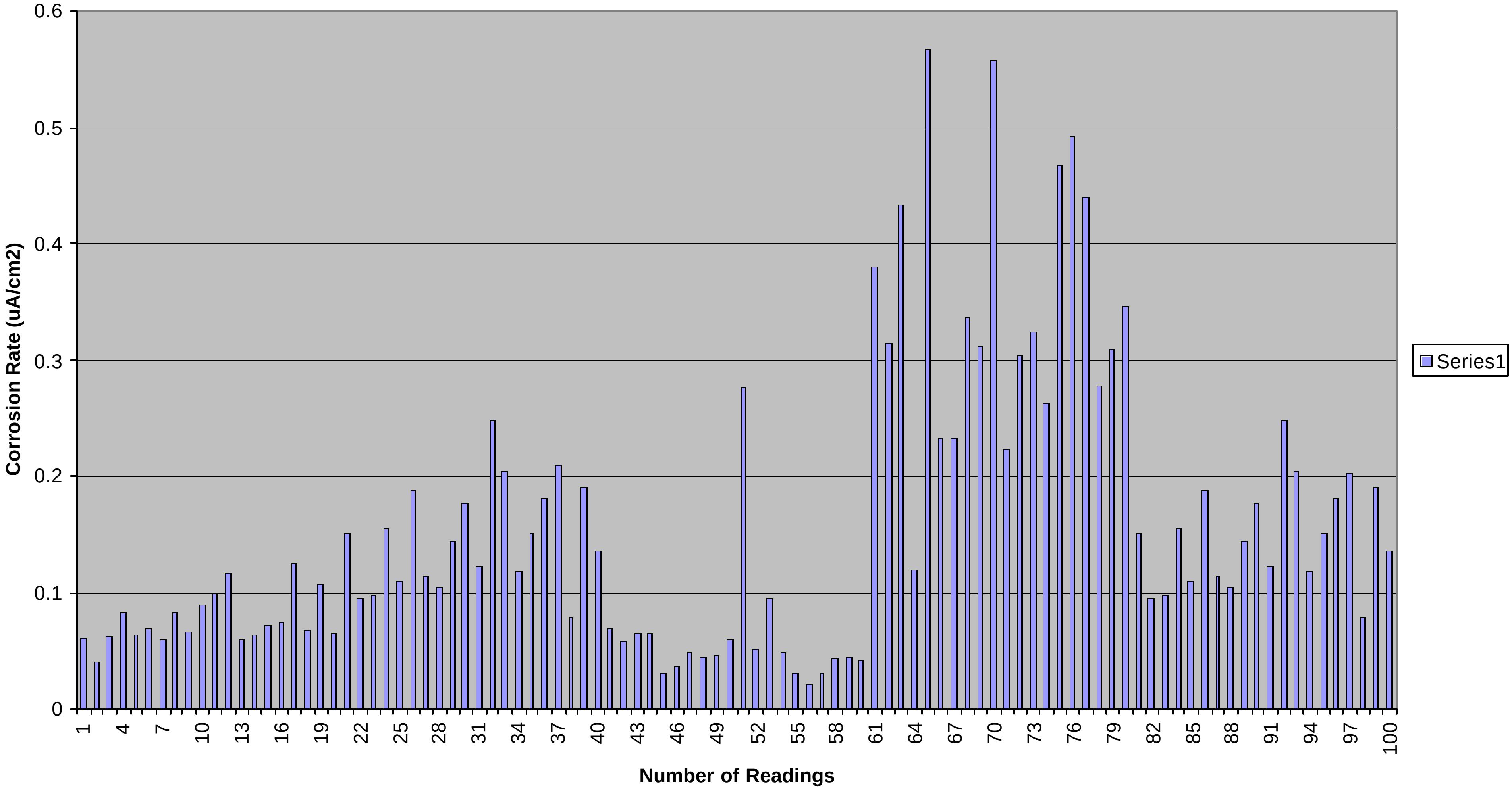

Figure 25 Corrosion Rate: Wycoff's Bridge West Bound Data

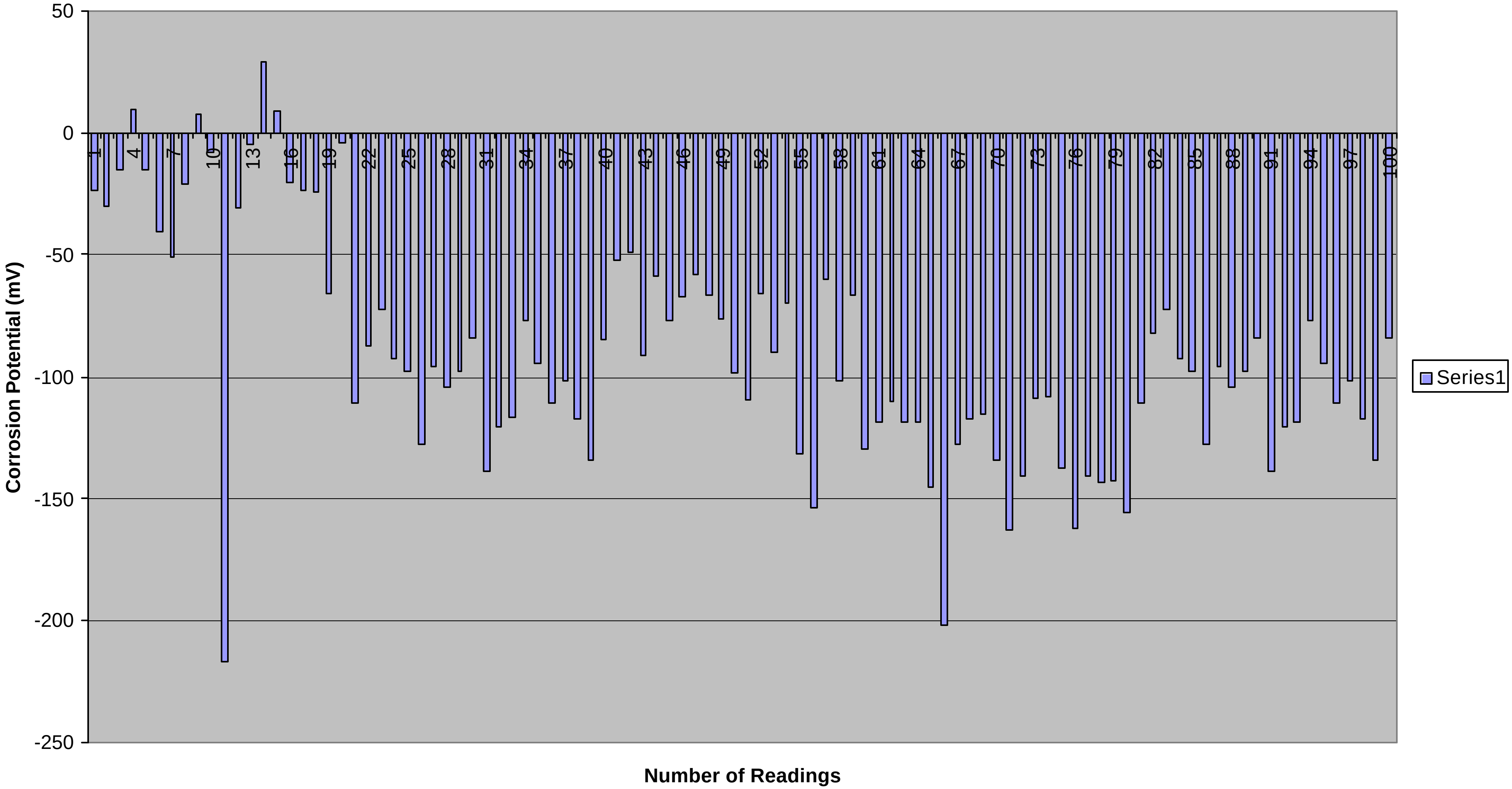

Figure 26 Corrosion Potential: Wycoff's Bridge West Bound Data

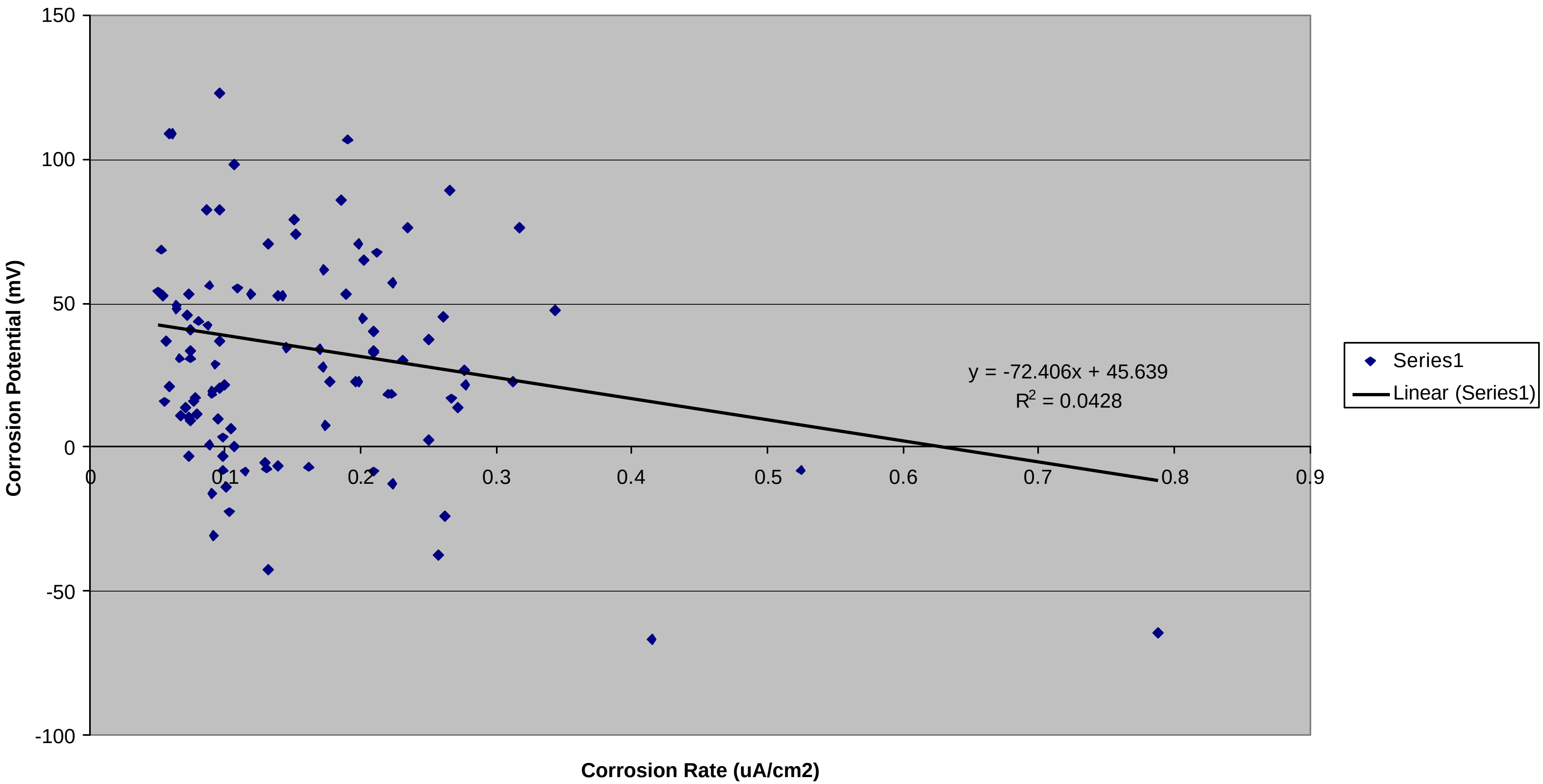

Figure 27 Corrosion Potential vs. Corrosion Rate: Rt. 130 West Bound - Scatter Plot

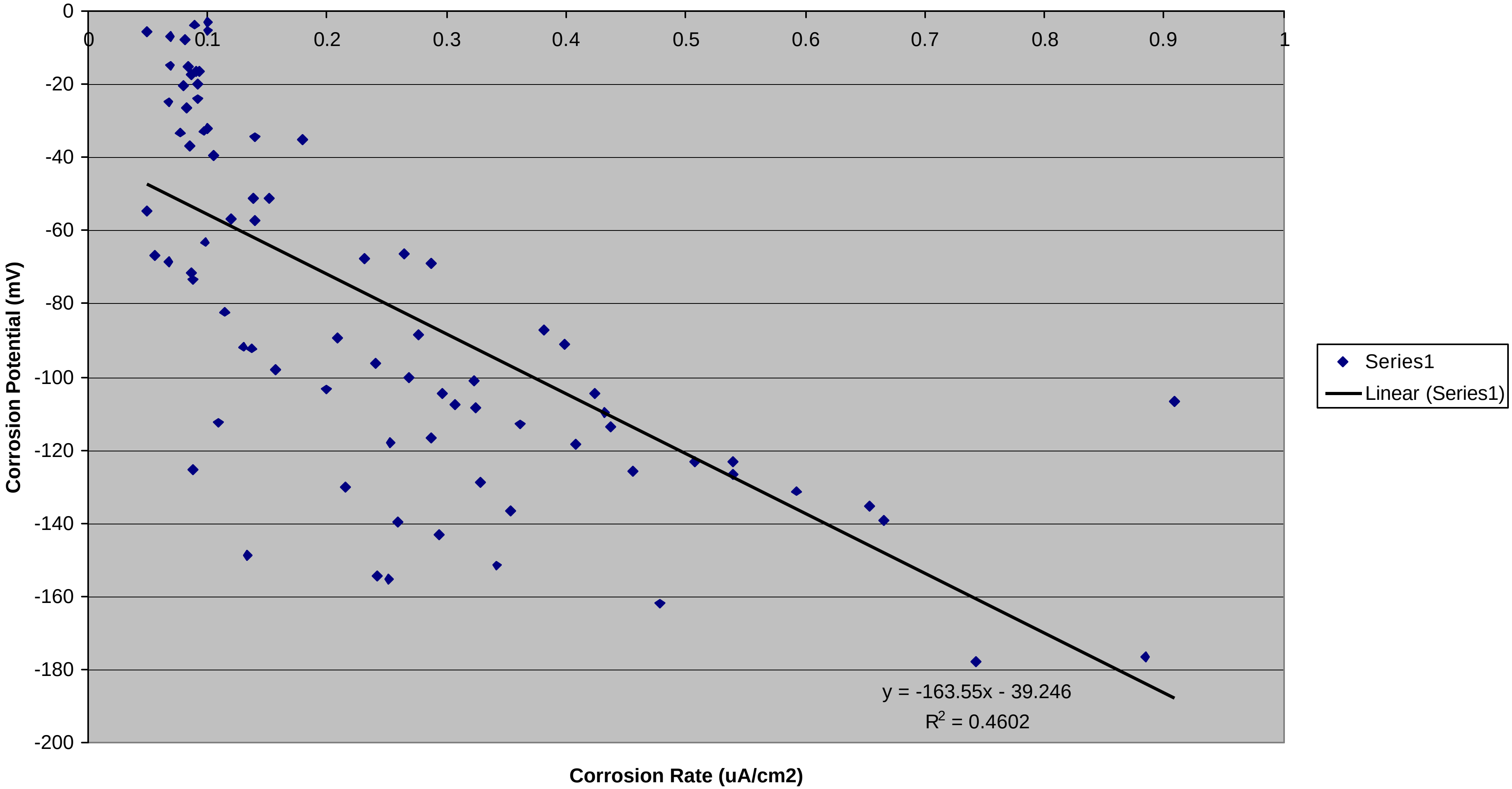

Figure 28 Corrosion Potential vs. Corrosion Rate: North Main Street East Bound - Scatter Plot

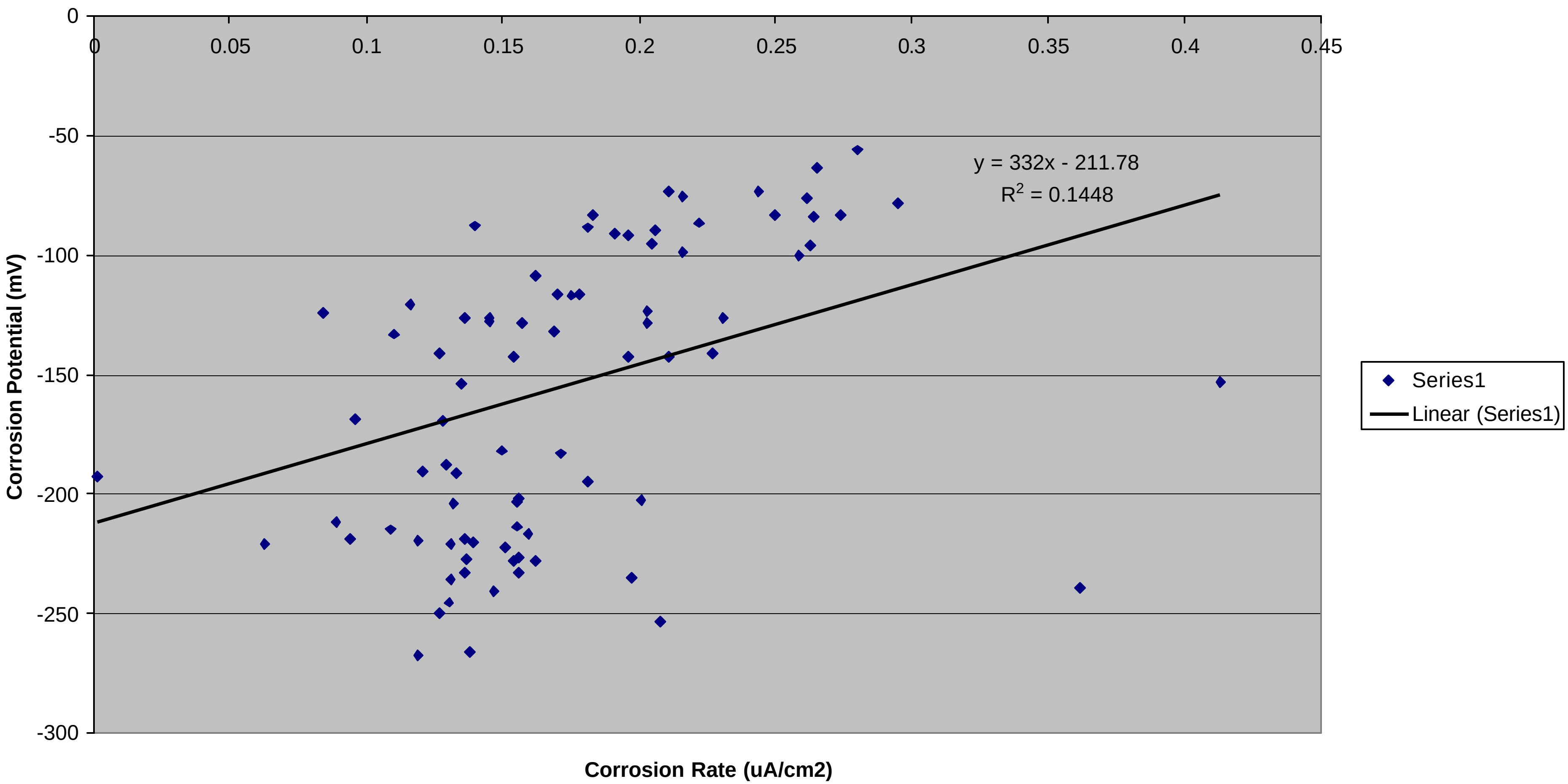

Figure 29 Corrosion potentail vs. Corrosion Rate: North Main Street West Bound - Scatter Plot

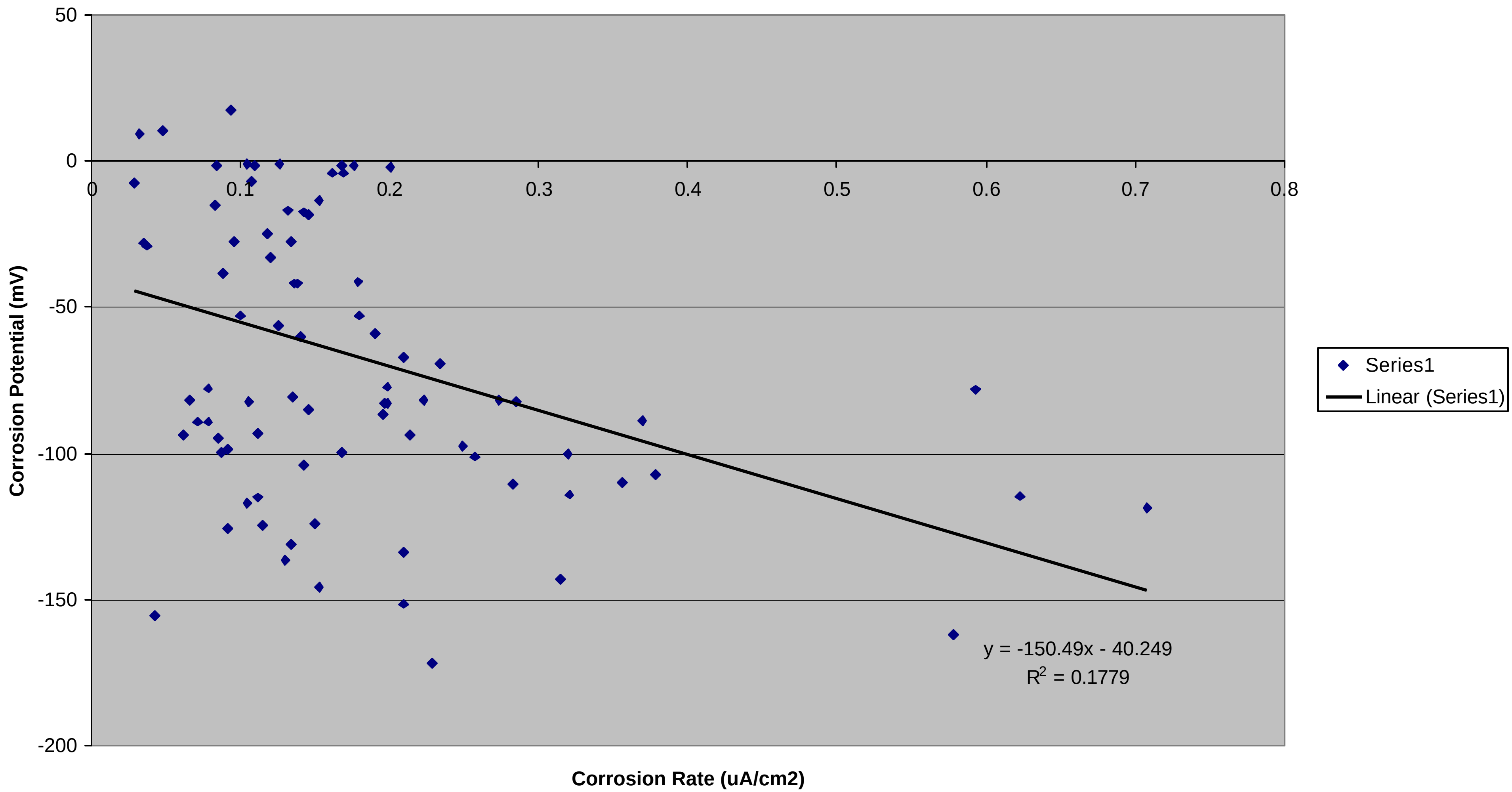

Figure 30 Corrosion Potential vs. Corrosion Rate: Wycoff's Bridge East Bound - Scatter Plot

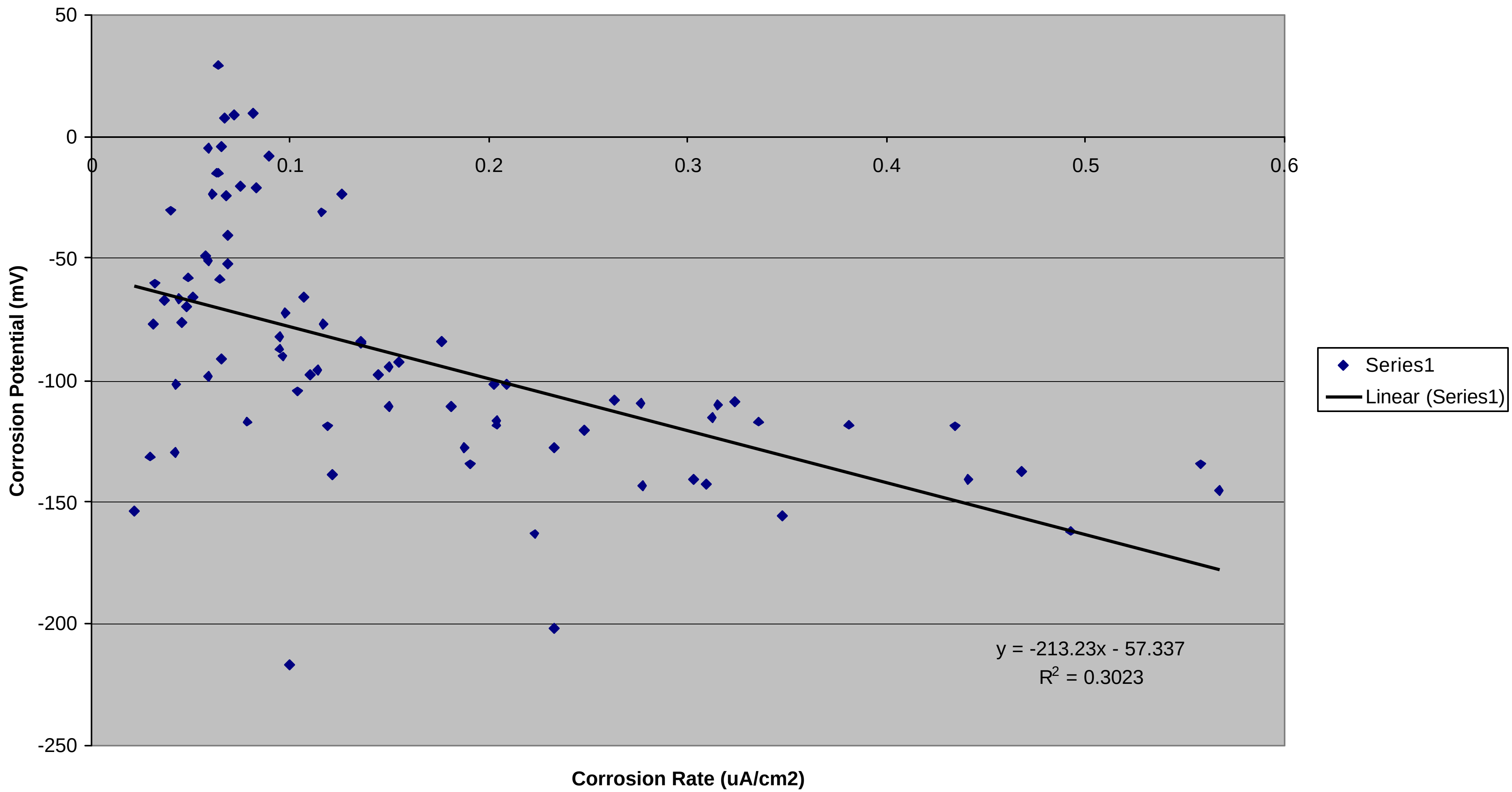

Figure 31 Corrosion Potential vs. Corrosion Rate: Wycoff's Bridge West Bound - Scatter Plot

CONCLUSIONS

Based on the experimental results and their analysis and observations made during the testing the following conclusions can be drawn. Both instruments are easy to operate and the instructions provided by the manufacturers are adequate for operating the instruments.

Permeability Meter

- The instrument can distinguish between good and deteriorated surfaces. Based on the surface conditions, flow (SCCM) had to increase from sites 1 to 6. The surface flow increased from about 4 for the best surface to 50 for the worst surface. Note that the instrument is not designed to provide actual permeability numbers.

- As expected, the distribution was a bell shape curve or normal curve for best surface having less scatter or standard deviation.

- Based on the results obtained, both the average value and the standard deviation should be used to determine the condition of the surface.

- Dependable relationship between vacuum and airflow does not exist.

Corrosion Meter

- The instrument provides consistent results and variations. Note that variation should be expected across the deck area.

- Since all the decks are new, it was expected that the readings should be in a small range and the instrument confirms this expectation.

- Both the corrosion rate and corrosion potential do not follow any trend. This should be expected because there is very little corrosion activity and the values are real random numbers produced by initial rust.

- There is no relationship between corrosion rate and corrosion potential. The authors believe that since the corrosion levels were very low, there is a lack of relationship between corrosion potential and corrosion rate.

RECOMMENDATIONS

Based on the results obtained and the experience of the operators, the author recommends the use of both the instruments for measuring permeability and corrosion. The results from Air Permeability Meter should be used only as a semi quantitative measure.

References

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2.
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4. Scannel, William T. Participant's Workbook: FHWA-SHRP Showcase, U.S. Department of Transportation, Concorr Inc., Ashburn, July, 1996

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Appendix A

This appendix presents the completed survey forms distributed through SHRP program.

Appendix B

This appendix presents the data obtained at the various locations for both Air Permeability and Corrosion Meters.

Air permeability data tables

Table 6: Livingston Freshly Painted Surface – Site No. 1

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
776.9	5.1	778.4	4.33	778.9	4.98	779.1	2.85	779.5	3.77
776.9	5.4	778.4	5.09	778.9	3.55	779.1	4.27	779.5	3.06
776.9	5.4	778.4	4.27	778.9	5.94	779.1	3.98	779.5	3.89
777.2	4.28	778.4	5.09	778.9	4.32	779.1	4.93	779.5	3.86
777.2	4.28	778.5	4.08	778.9	4.6	779.1	3.9	779.6	1.23
777.3	4.73	778.5	3.74	778.9	4.96	779.1	6.31	779.6	1.77
777.8	5.25	778.5	3.86	778.9	5.22	779.1	3.65	779.6	2.89
777.8	4.59	778.5	3.36	778.9	5.29	779.1	2.59	779.6	2.52
777.8	4.47	778.5	4.13	778.9	4.98	779.1	2.85	779.6	2.67
777.8	5.98	778.5	5.13	778.9	4.92	779.1	4.93	779.6	3.44
777.8	5.92	778.5	4.78	778.9	2.98	779.2	3.74	779.6	4.21
777.8	4.01	778.5	4.13	778.9	3.42	779.2	2.55	779.7	2.3
777.8	4.14	778.5	5.44	778.9	3.96	779.2	2.45	779.7	0.89
777.9	3.4	778.5	4.28	778.9	3.94	779.2	1.6	779.7	1.98
777.9	4.2	778.6	5.91	778.9	3.81	779.2	3.76	779.7	3.45
778	6.54	778.6	4.16	778.9	4	779.2	4.22	779.7	3.65
778	4.51	778.6	5.07	778.9	4.99	779.2	3.27	779.7	4.02
778	3.15	778.6	5.24	778.9	2.59	779.2	3.53	779.7	5.49
778	3.46	778.6	5.09	778.9	5.4	779.2	3.27	779.8	3.3
778	3.46	778.6	4.33	779	3.64	779.2	3.53	779.8	1.4
778.1	4.22	778.6	5.41	779	3.54	779.3	1.31	779.8	2.57
778.1	4.71	778.6	5.37	779	3.71	779.3	1.19	779.8	3.06
778.1	6.61	778.6	5.74	779	3.8	779.3	2.13	779.8	3.19
778.1	4.12	778.6	5.09	779	5.69	779.3	3.79	779.9	1.02
778.1	5.09	778.6	4.33	779	5.26	779.3	3.77	779.9	4.84
778.1	4.9	778.6	5.09	779	4.36	779.3	4.08	780	3.89
778.1	3.93	778.7	5.81	779	3.18	779.3	4.69	780	2.42
778.2	5.86	778.7	5.36	779	3.75	779.3	4.12	780	2.89
778.2	5.22	778.7	5.98	779	3.72	779.3	4.38	780	1.76

778.2	4.6	778.7	4.58	779	3.89	779.3	3.85	780	1.27
778.2	6.35	778.7	3.62	779	5.43	779.3	3.66	780	1.99
778.2	4.6	778.7	3.92	779	5.26	779.3	4.25	780	2.75
778.2	6.35	778.7	3.78	779.1	1.97	779.3	3.95	780	2.39
778.2	4.4	778.7	5.44	779.1	2.81	779.3	4.51	780	4.07
778.3	4.66	778.7	5.44	779.1	2.68	779.3	3.95	780	3.89
778.3	4.35	778.7	3.95	779.1	3.1	779.4	4.77	780.1	3.59
778.3	4.3	778.8	4.95	779.1	5.06	779.4	3.61	780.1	3.43
778.3	5.33	778.8	4.11	779.1	4.52	779.4	4.14	780.1	2.07
778.3	4.07	778.8	4.9	779.1	3.7	779.4	4.73	780.1	2.04
778.3	5.33	778.8	5.12	779.1	3.62	779.4	4.14	780.1	2.55
778.4	6.36	778.8	4.64	779.1	3.27	779.4	2.85	780.1	2.22
778.4	6.78	778.8	5.05	779.1	4.11	779.5	1.96	780.1	1.13
778.4	5.91	778.8	4.64	779.1	3.55	779.5	1.7	780.1	2.93
778.8	5.09	779.1	3.81	779.5	1.52	780.1	2.54		
778.8	4.33	779.1	3.65	779.5	3.19	780.1	4.12		
778.9	1.66	779.1	2.59	779.5	4.06	780.2	3.15		
780.2	2.94								
780.2	2.77								
780.3	2.04								
780.3	2.33								
780.4	2.27								
780.4	2.07								
780.5	2.18								
780.5	2.16								
780.6	0.44								
780.6	1.93								
780.6	2.07								
780.6	2.85								
780.6	2.75								
780.6	2.25								
780.6	0.44								
780.6	1.93								
780.8	1.27								
780.8	2.82								
780.8	1.82								
780.8	1.02								
780.8	1.27								
780.9	1.86								
781.1	1.41								

Table 7: Livingston data – Site No. 2

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
781	55.14	791.8	23.94	792.4	22.63	792.4	21.58	793.7	28.15
787.4	39.55	791.8	25.94	792.4	24.93	792.4	22.96	793.8	27.19
787.6	57.64	791.8	26.51	792.4	31.11	792.4	28.01	793.8	31.43
788.4	39.15	791.8	26.96	792.5	23.23	792.4	30.4	793.8	32.06
788.6	36.82	791.8	28.51	792.5	24.45	792.4	31.11	793.8	23.17
788.8	36.67	791.8	28.51	792.5	26.01	792.4	20.92	793.8	23.17
788.9	33.01	791.8	30.63	792.5	26.01	793.2	24.49	793.8	25.43
789.1	33.5	791.9	27.62	792.5	18.73	793.3	21.08	793.8	27.19
789.4	36.25	791.9	30.29	792.5	22.1	793.3	26.82	793.8	31.43
789.6	33.97	791.9	22.6	792.5	24.44	793.3	34.05	793.8	32.06
790	42.24	791.9	23.44	792.6	21.01	793.3	34.05	793.8	32.06
790.3	43.81	791.9	24.42	792.6	21.69	793.3	34.05	793.9	21.5
790.4	40.72	791.9	24.66	792.6	26.37	793.4	27.26	793.9	24.46
790.5	31.64	791.9	26.17	792.6	27.11	793.4	27.69	793.9	24.91
790.5	37.2	791.9	26.17	792.6	18.27	793.4	34.88	793.9	26.61
790.5	38.13	791.9	26.41	792.6	18.97	793.4	23.02	793.9	27.49
790.6	46.84	792	21.64	792.6	22.93	793.4	23.02	793.9	28.15
790.7	31.26	792	22.4	792.7	21.15	793.4	27.69	793.9	36.8
790.8	31.34	792	22.66	792.7	22.58	793.5	25	793.9	24.91
790.8	33.39	792	24.15	792.7	26.99	793.5	25.7	793.9	26.16
791.1	32.04	792	25.88	792.7	34.02	793.5	23.18	793.9	26.61
791.2	24.88	792	26.17	792.7	36.32	793.5	25.7	793.9	27.49
791.2	26.33	792.1	26.43	792.7	36.32	793.6	24.22	793.9	27.49
791.2	28.75	792.1	21.5	792.7	36.32	793.6	24.81	793.9	28.15
791.3	35.56	792.1	22.52	792.8	21.44	793.6	25.27	793.9	29.68
791.3	42.93	792.1	22.52	792.9	34.18	793.6	27.13	793.9	29.68
791.3	24.19	792.1	22.52	792.9	21.38	793.6	28.42	794	21.16
791.4	31.7	792.1	22.56	792.9	34.18	793.6	28.93	794	24.81
791.4	33.66	792.1	32.52	793	21.82	793.6	29.21	794	25.05
791.4	48.66	792.2	42.88	793	26.91	793.6	29.65	794	26.85
791.4	32.06	792.2	20.23	793	20.22	793.6	37.45	794	28.77
791.5	25.09	792.2	21.28	793	21.63	793.6	25.27	794	28.77
791.6	34.7	792.2	25.97	793	26.91	793.6	25.27	794	29.14
791.6	28.39	792.3	22.58	793	26.91	793.6	28.42	794	29.14
791.6	28.39	792.3	23.29	793.1	41.54	793.6	28.42	794	32.95

791.7	30.44	792.3	23.61	793.1	21.78	793.6	29.21	794	36.39
791.7	23.69	792.3	21.64	793.1	41.54	793.6	29.65	794	24.26
791.8	30.63	792.3	22.18	793.2	23.53	793.6	29.65	794	24.81
791.8	41.65	792.3	25.04	793.2	33.82	793.7	30.58	794	24.81
791.8	21.98	792.3	25.77	793.2	37.45	793.7	34.62	794	25.05
						793.7	36.21	794	25.05
794.1	25.36	794	26.85	794.6	24.83	794.5	29.77	795	27.49
794.1	25.98	794	26.85	794.6	25.74	794.5	30.37	795	27.97
794.1	26.03	794	28.77	794.6	26.22	794.5	30.75	795	27.97
794.1	26.03	794	28.77	794.6	26.22	794.5	22.57	795	23.42
794.1	27.02	794	32.95	794.6	27.73	794.5	22.7	795	23.42
794.1	27.29	794	36.39	794.6	27.73	794.5	24.85	795	24.12
794.1	27.29	794.1	21.74	794.6	27.98	794.5	24.85	795	24.66
794.1	27.79	794.1	23.06	794.6	21.31	794.5	24.85	795	26.36
794.1	27.79	794.1	24.81	794.6	21.79	794.5	25.46	795	27.49
794.1	27.79	794.1	24.82	794.6	21.79	794.5	25.46	795.1	15.86
794.1	30.05	794.1	25.36	794.6	23.39	794.5	25.63	795.1	19.8
794.1	30.13	794.1	25.98	794.6	23.39	794.5	25.63	795.1	24.12
794.1	31.38	794.1	26.03	794.6	23.77	794.5	26.82	795.1	25.82
794.1	31.38	794.1	30.05	794.6	23.77	794.5	26.82	795.1	26.4
794.1	31.59	794.1	30.13	794.6	23.89	794.5	27.13	795.1	26.4
794.2	27.34	794.1	31.38	794.6	24.83	794.5	27.13	795.1	27
794.2	27.34	794.1	31.59	794.6	24.83	794.5	27.85	795.1	27.03
794.2	32.26	794.1	24.7	794.6	25.74	794.5	28.34	795.1	27.03
794.2	25.8	794.1	24.7	794.6	25.74	794.6	21.31	795.1	27.86
794.2	25.8	794.1	24.81	794.6	26.22	794.6	21.79	795.1	28.29
794.2	26.92	794.1	24.81	794.6	27.73	794.6	22.11	795.1	28.51
794.2	26.92	794.1	24.82	794.6	27.98	794.6	22.7	795.1	28.66
794.2	26.92	794.1	25.36	794.7	21.86	794.6	23.89	795.1	15.93
794.2	29.77	794.4	23.74	794.7	22.44	794.8	27.17	795.1	19.8
794.3	22.41	794.4	25.8	794.7	23.92	794.8	28.54	795.1	19.8
794.3	23.33	794.4	25.8	794.7	28.91	794.8	29.54	795.1	25.82
794.3	25.51	794.4	26.75	794.7	29.84	794.8	29.54	795.1	25.82
794.3	26.44	794.4	27.48	794.7	29.84	794.8	19.81	795.1	27
794.3	26.44	794.4	30.12	794.7	32.16	794.8	20.91	795.1	27.86
794.3	27.5	794.4	38.19	794.7	32.16	794.8	28.54	795.1	27.86
794.3	27.7	794.4	21.31	794.7	21.86	794.8	28.54	795.1	28.29
794.3	28.76	794.4	23.74	794.7	23.92	794.9	17.11	795.1	28.59
794.3	28.76	794.4	25.8	794.7	23.92	794.9	17.91	795.2	20.91
794.3	32.98	794.4	25.8	794.7	25.1	794.9	22.81	795.2	21.62
794.3	33.04	794.4	26.75	794.7	28.91	794.9	25.1	795.2	21.62
794.3	22.41	794.4	27.48	794.7	28.91	794.9	26.7	795.2	21.62
794.3	23.33	794.4	27.48	794.8	19.81	794.9	27.43	795.2	24.17
794.3	24.57	794.4	27.48	794.8	20.91	794.9	27.43	795.2	24.17
794.3	25.51	794.5	22.57	794.8	24.39	794.9	17.81	795.2	24.77
794.3	25.51	794.5	22.7	794.8	24.39	794.9	25.1	795.2	24.77

794.3	25.51	794.5	25.46	794.8	24.39	795	23.42	795.2	28.37
794.3	27.03	794.5	25.63	794.8	26.8	795	24.66	795.2	30.12
794.3	27.7	794.5	26.82	794.8	26.8	795	24.66	795.2	20.91
794.3	28.76	794.5	27.13	794.8	26.82	795	26.36	795.2	20.91
794.3	29.57	794.5	27.85	794.8	26.82	795	27.36	795.2	24.17
794.4	21.31	794.5	27.85	794.8	27.17	795	27.36	795.3	22.44
795.6	25.33	795.3	25.7	795.8	25.9	796.3	26.93		
795.6	25.53	795.3	25.7	795.8	25.9	796.7	19.77		
795.6	25.83	795.3	26.93	795.8	27.2	796.7	19.77		
795.6	27.23	795.3	28.93	795.9	24.77	795.6	22.62		
795.6	32.86	795.3	28.93	795.9	24.77	795.6	24.84		
795.6	22.62	795.4	24.08	796	18.87				
795.6	24.84	795.4	24.08	796	24.87				
795.6	25.83	795.4	26.41	796	18.87				
795.6	27.23	795.4	27.25	796	24.81				
795.7	24.6	795.4	27.25	796.2	21.82				
795.7	28.34	795.4	27.61	796.2	23.1				
795.7	28.34	795.4	30.21	796.2	23.1				
795.8	23.74	795.5	22.49	796.3	21.68				
795.8	23.74	795.5	26.03	796.3	21.93				
795.8	25.9	795.5	27.21	796.3	22.08				
795.8	27.09	795.5	27.21	796.3	24.55				
795.8	27.09	795.5	31.06	796.3	26.93				
795.8	27.2	795.5	32.47	796.3	21.68				
795.8	35.66	795.5	22.49	796.3	21.93				
795.8	22.87	795.5	26.03	796.3	22.08				
795.8	22.87	795.5	31.06	796.3	24.55				

Table 8: Livingston Surface – Site No. 3

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
780.1	7.63	782.7	4.21	783	6.63	783.4	5.28	783.7	3.43
780.9	8.31	782.7	4.55	783	6.67	783.4	5.46	783.7	4.16
781.4	7.16	782.7	5.65	783	6.68	783.4	5.68	783.7	5.05
781.4	8.35	782.7	6.14	783	6.71	783.4	5.88	783.7	5.69
781.6	4.28	782.7	6.21	783	6.72	783.4	6.17	783.7	5.69
781.7	7.66	782.7	6.27	783	6.77	783.4	6.45	783.7	5.78
781.8	3.32	782.7	6.43	783	6.87	783.4	6.54	783.7	5.91
781.9	5.01	782.7	6.5	783	6.96	783.4	6.65	783.7	6.48
781.9	6.01	782.7	6.6	783	7.47	783.4	6.72	783.7	6.6
782	6.69	782.7	6.92	783	7.52	783.4	6.74	783.7	6.7
782	6.7	782.7	7.58	783	7.56	783.4	6.9	783.8	5.06
782	6.98	782.8	5.16	783	7.83	783.4	7.38	783.8	5.34
782	7.56	782.8	5.38	783.1	3.53	783.4	8.62	783.8	5.56
782	7.83	782.8	5.43	783.1	4.74	783.5	4.52	783.8	5.66
782	8.07	782.8	5.95	783.1	5.07	783.5	4.94	783.8	5.78
782	8.65	782.8	6.48	783.1	5.1	783.5	5.06	783.8	6.26
782	8.72	782.8	6.66	783.1	5.45	783.5	5.31	783.8	6.92
782	9.12	782.8	6.78	783.1	6.05	783.5	5.67	783.8	7.23
782.1	6.36	782.8	6.79	783.1	6.05	783.5	5.84	783.8	7.29
782.1	6.4	782.8	7.15	783.1	6.1	783.5	5.88	783.9	2.09
782.1	6.48	782.9	5.79	783.1	6.12	783.5	6.08	783.9	4.86
782.1	6.49	782.9	6.29	783.1	6.43	783.5	6.1	783.9	5.5
782.1	6.52	782.9	6.52	783.1	6.45	783.5	6.14	783.9	6.53
782.1	6.59	782.9	6.6	783.1	6.65	783.5	6.27	783.9	6.9
782.1	7.92	782.9	6.6	783.1	6.85	783.5	6.42	783.9	6.97
782.2	5.67	782.9	6.66	783.1	7.04	783.5	6.46	783.9	7.43
782.2	6.28	782.9	6.83	783.1	7.15	783.5	6.47	784	3.74
782.2	6.86	782.9	7.35	783.2	5.29	783.5	6.49	784	4.43
782.3	4.29	783	3.12	783.2	5.33	783.5	6.6	784	5.17
782.3	4.76	783	5.05	783.2	5.62	783.5	6.69	784	5.92
782.3	5.8	783	5.18	783.2	6.51	783.5	6.84	784	6.78
782.3	6.52	783	5.39	783.2	6.52	783.5	7.09	784.1	4.28
782.3	7.58	783	6.06	783.2	6.63	783.5	7.21	784.1	5.38
782.4	2.21	783	6.09	783.2	7.21	783.6	3.14	784.1	6.12
782.5	5.58	783	6.24	783.2	7.54	783.6	3.68	784.1	6.45
782.5	5.68	783	6.27	783.3	5.95	783.6	5.12	784.1	6.49

782.5	6.64	783	6.28	783.3	6.45	783.6	5.48	784.1	7.23
782.5	7.66	783	6.32	783.3	6.56	783.6	5.58	784.2	5.69
782.5	7.7	783	6.36	783.3	6.75	783.6	5.98	784.2	6.33
782.6	5.57	783	6.38	783.3	6.75	783.6	6.39	784.2	6.39
782.6	6.12	783	6.39	783.3	7.31	783.6	6.41	784.2	6.6
782.6	6.21	783	6.43	783.3	7.32	783.6	6.45	784.2	6.66
782.6	6.77	783	6.51	783.3	7.92	783.6	6.45	784.2	6.75
784.3	5.51	786.8	5.39	788	4.99	788.5	3.28	789.6	5.88
784.3	5.65	786.9	5.65	788	5.78	788.5	3.95	789.6	6.1
784.3	6.09	786.9	5.96	788	5.9	788.5	4.23	789.6	6.41
784.4	2.06	786.9	6.16	788	6.74	788.5	4.33	789.6	6.63
784.4	2.76	786.9	6.46	788	6.87	788.5	4.88	789.6	6.66
784.4	5.44	787.1	5.72	788	6.97	788.5	4.9	789.6	7.58
784.4	5.71	787.1	6.25	788	6.97	788.5	5.28	789.6	8.46
784.5	5.48	787.1	6.71	788	7.65	788.5	6.08	789.7	4.64
784.5	6.02	787.2	5.37	788.1	4.93	788.6	4.03	789.7	5
784.5	6.06	787.2	5.41	788.1	6.04	788.6	4.68	789.7	5.36
784.5	6.17	787.2	5.6	788.1	6.6	788.6	5.17	789.7	5.4
784.5	6.34	787.2	6.54	788.1	6.72	788.6	5.36	789.7	5.51
784.6	1.53	787.2	6.56	788.1	6.75	788.7	4.85	789.7	5.53
784.6	5.29	787.3	4.64	788.1	6.77	788.7	5.51	789.7	6.35
784.6	5.66	787.3	5.25	788.1	6.85	788.7	5.62	789.7	6.83
784.6	5.8	787.3	5.87	788.1	6.88	789	6.84	789.7	6.93
784.8	6.03	787.3	6.03	788.1	6.93	789	7.23	789.8	3.33
785.1	2.4	787.4	6.22	788.2	5.2	789.1	3.34	789.8	4.87
785.2	3.16	787.5	5.59	788.2	5.31	789.1	6.5	789.8	5.25
785.2	4.08	787.5	6.06	788.2	5.53	789.1	7.53	789.8	5.76
785.2	4.25	787.5	6.15	788.2	6.35	789.2	6.13	789.8	5.9
785.4	2.3	787.5	6.69	788.2	6.67	789.3	5.75	789.8	5.93
785.5	3.09	787.5	6.73	788.2	6.67	789.3	6.32	789.8	6.27
785.7	6.76	787.5	7.31	788.2	7.62	789.3	7.18	789.8	6.54
786.1	6.4	787.6	5.93	788.3	4.4	789.4	6.24	789.8	6.68
786.2	4.55	787.6	6.11	788.3	4.89	789.4	6.26	789.8	6.78
786.2	9	787.6	6.43	788.3	5.56	789.4	6.32	789.8	6.83
786.3	7.1	787.6	6.53	788.3	5.76	789.4	6.7	789.8	6.83
786.4	5.27	787.7	5.44	788.3	5.88	789.4	6.83	789.8	6.88
786.4	6.28	787.7	5.47	788.3	6.01	789.4	6.85	789.8	6.93
786.4	6.41	787.7	6.23	788.3	6.04	789.4	6.9	789.9	4.7
786.5	6.16	787.7	6.98	788.3	6.06	789.5	5.03	789.9	5.1
786.5	6.54	787.7	7.26	788.3	6.25	789.5	5.36	789.9	5.24
786.5	6.55	787.8	4.58	788.3	6.3	789.5	5.69	789.9	5.37
786.5	7.43	787.8	6.71	788.3	6.49	789.5	5.89	789.9	5.63
786.6	6.65	787.8	7.7	788.3	6.56	789.5	6.1	789.9	5.84
786.6	7.34	787.9	4.72	788.3	6.66	789.5	6.27	789.9	6.17
786.6	7.68	787.9	6.18	788.3	6.8	789.5	6.44	789.9	6.27
786.6	7.81	787.9	6.56	788.3	7.38	789.5	6.58	789.9	6.77

786.7	6.1	787.9	6.69	788.4	5.61	789.5	6.95	789.9	6.86
786.7	6.56	787.9	6.9	788.4	5.67	789.5	7.19	789.9	7.02
786.7	7.17	787.9	7.05	788.4	6.27	789.5	7.32	790	4.74
786.7	7.27	787.9	7.46	788.4	6.74	789.5	7.74	790	4.79

790.1	7.31	790	5.27
790.2	4.49	790	5.31
790.2	4.8	790	5.34
790.2	5.55	790	5.39
790.2	5.57	790	5.68
790.2	6.18	790	6.78
790.2	6.5	790	7.44
790.2	6.52	790.1	4.32
790.3	4.77	790.1	4.82
790.3	6.24	790.1	4.83
790.3	6.33	790.1	5.33
790.3	6.46	790.1	5.37
790.3	6.47	790.1	5.38
790.3	6.52	790.1	6.09
790.3	6.86	783	6.61
790.4	4.79	783	6.53
790.4	6.02	783	6.58
790.4	6.25	783.6	6.53
790.4	6.72	783.6	6.8
790.5	5.48	783.6	7.72
790.5	5.83	783.4	4.33
790.5	5.98	783.4	5.1
790.5	6.85	783.4	5.17
790.5	6.88		
790.6	3.14		
790.6	4.94		
790.6	6.3		
790.6	6.44		
790.7	5.34		
790.7	6.48		
790.7	6.74		
790.8	5.06		
790.8	5.21		
790.8	6.77		
791	5.59		
791	6.09		
791	6.13		
791.1	5.26		
791.3	4.22		
791.4	5.2		
791.6	4.75		

Table 9: East Brunswick Slab – Site No.4

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
767	46.06	776	27.63	780.4	27.08
767.1	42.63	776	27.91	780.7	29.98
767.8	39.4	776.1	27.83	781.7	30.87
767.8	38.51	776.1	29.91	782	30.91
767.8	35.18	776.2	29.71	782.3	31.83
767.89	36.75	776.2	26.83	782.4	27.98
768.2	31.66	776.2	26.75	782.5	26.09
768.5	35.25	776.2	28.39	782.5	26.73
769.1	32.97	776.4	30.24	782.8	26.86
769.4	31.24	776.5	26.82	784.4	27.91
769.6	26.21	776.8	26.91	784.6	27.04
769.9	24.72	776.8	26.2	780.1	26.77
770	24.7	776.9	31.23	780.3	25.29
770.1	24.12	777	31.92	780.3	27.87
770.2	25.46	777.1	27.75		
770.7	23.13	777.4	26.92		
770.8	27.79	777.5	27.81		
770.8	26.43	777.7	28.93		
770.8	27.81	777.73	29.23		
770.9	27.75	777.8	27.33		
771.2	25.49	777.9	27.75		
771.5	26.92	777.9	26.23		
772	28.91	778	25.29		
772.3	28.73	778	27.9		
772.3	27.75	778	30.38		
773.1	27.83	778.1	31.71		
773.2	26.92	778.1	30.3		
773.4	26.85	778.1	26.91		
773.5	26.71	778.3	27.82		
773.7	29.98	778.32	27.1		
773.9	28.73	778.4	26.99		
774	28.77	778.4	28.02		
774.4	25.32	778.8	28.91		
774.5	26.81	778.8	29.01		
774.7	26.93	778.8	30.91		
774.7	23.41	778.8	31.24		
774.8	28.54	779.2	26.87		
775.1	28.41	779.3	24.39		
775.6	28.75	779.4	27.81		
775.8	25.32	779.4	27.02		

775.9	26.41	779.7	29.9
775.9	26.82	779.8	28.87
775.9	27.61	779.9	26.21

Table 10: College Ave Data – Site No. 5

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
634.4	42.07	727.2	41.74
665.2	30.51	727.3	40.77
674.2	43.12	727.8	45.17
679.5	30.44	728.6	37.55
679.7	30.51	728.9	47.26
691.1	33.54	729.4	43.04
694.2	33.52	730.8	49.13
697.8	35.09	731	49.17
698.2	34.49	731.6	46.22
698.7	34.87	731.9	45.05
700.1	36.7	733.9	44.96
700.2	34.48	735.3	50.68
700.9	35.52	737	48.01
702.8	34.85	737	51.5
703.4	36.62	738.4	52.78
704.6	35.89	739.5	50.46
706.2	43.3	740.6	55.65
707	37.08	741.7	46.66
707	37.9	742	49.74
708.4	37.72	742.1	44.73
709.7	36.55	742.8	53.88
710	39.95	744	49.19
710.2	37.7	744.7	47.12
712.7	37.45	745.1	53.56
713.6	40.87	746.1	49.13
714.2	40.38	746.1	50.95
714.6	39.22	746.3	54.57
715.3	35.52	746.9	52.61
715.3	39.64	749.7	49.29
715.7	41.6	750.1	51.31
716.7	41.85	753.3	52.36
717.2	34.86	767.8	53.93
717.2	39.81	775.4	57.18
717.7	42.59		
719.5	43.61		
720	40.35		
720.3	41.92		
721.8	43.73		
722.5	41.94		

723	41.15

Table 11: Livingston Front Porch – Site No. 6

Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)	Vacuum (mm Hg)	Flow (SCCM)
728.4	41.4	778.1	47.99	737	52.91	779.8	55.97	772.3	58.56
728.4	41.4	778.1	47.99	776.1	52.94	779.3	56.11	757	58.58
777.73	42	778.1	47.99	735.3	53.17	752.8	56.21	771.5	58.65
777.73	42	723.3	49.02	735.3	53.17	763.5	56.23	771.5	58.65
784.4	42.41	777.7	49.08	775.9	53.2	763.6	56.3	775.1	58.73
715.5	42.64	777.7	49.08	775.9	53.2	780.4	56.41	760.1	58.83
778.8	42.81	740.3	49.18	777.5	53.26	774.5	56.51	778.8	58.84
778.8	42.81	781.7	49.31	776	53.34	771.2	56.69	778.8	58.84
743.6	43.11	784.6	49.56	746.4	53.41	771.2	56.69	764	58.95
779.2	43.13	723.3	49.62	772.3	53.44	773.9	56.76	770	58.95
779.2	43.13	763	49.8	772.3	53.44	770.9	56.85	774	59.02
778.4	43.28	732.3	49.81	751.1	53.56	777.4	56.89	774.4	59.04
778.4	43.28	732.3	49.81	775.6	53.56	757.6	56.96	770.8	59.17
765	43.67	776.2	49.87	729.4	53.71	777	57.05	772	59.19
720	43.71	777.8	49.91	729.4	53.71	759.3	57.09	772	59.19
720.2	44.13	777.8	49.91	729.4	53.72	773.2	57.13	760.8	59.22
718.3	44.22	748.1	50.02	729.4	53.72	773.2	57.13	762.3	59.41
729.9	45.45	767.8	50.31	756.5	53.83	754.6	57.28	770.1	59.48
729.9	45.45	723.6	50.4	752.5	53.88	763.7	57.32	763.8	59.83
737.7	45.48	732.5	50.84	767	53.93	778	57.33	770.2	60.01
767.89	45.49	732.5	50.84	778.1	54	779.9	57.33	766.8	61.71
778.8	45.9	776.8	50.89	778.1	54	778	57.33	767.1	61.71
778.8	45.9	766.9	51.3	765.78	54.41	779.7	57.35	768.2	61.77
724.6	46.07	778.3	51.43	755.7	54.53	773.4	57.49	778	52.8
782.8	46.29	778.3	51.43	774.7	54.58	773.4	57.49	772.3	58.56
743.9	46.43	778.32	51.56	776.4	54.69	769.4	57.5		
721.8	46.89	778.32	51.56	778.4	54.8	774.7	57.58		
778	46.93	728.3	51.61	778.4	54.8	766	57.66		
778	46.93	728.3	51.61	775.9	54.81	776.8	57.8		
778.8	47.11	776.9	51.66	776	54.82	769.6	57.88		
778.8	47.11	776.2	51.68	774.8	55.21	747.54	57.9		
777.9	47.16	728.7	51.89	780.3	55.24	773.7	57.92		
777.9	47.16	728.7	51.89	780.1	55.29	773.7	57.92		
782	47.33	738.9	51.9	782.5	55.29	769.1	57.97		
780.3	47.34	777.9	52.04	748.8	55.35	779.4	58.06		
777.1	47.44	777.9	52.04	770.8	55.41	756.8	58.12		

736.1	47.49	776.5	52.09	770.8	55.41	767.8	58.12
736.1	47.49	741.2	52.1	769.9	55.5	762	58.17
782.5	47.68	773.5	52.1	773.1	55.53	763.8	58.26
782.3	47.71	773.5	52.1	773.1	55.53	764.97	58.27
776.1	47.86	776.2	52.22	780.7	55.66	768.5	58.27
782.4	47.97	755.2	52.45	776.2	55.69	770.7	58.34
778.1	47.99	775.8	52.53	767.8	55.81	746.8	58.43
778.1	47.99	778	52.8	779.4	55.84	759.5	58.56

GECOR 6 Corrosion Rate Meter Data Tables

Table 12: Rt. 130 West Bound- cycle 1

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.096	123.2
	2	0.185	86.1
	3	0.203	65.1
	4	0.138	-6
	5	0.132	-42.4
B2	1	0.235	76.2
	2	0.202	45.1
	3	0.172	27.9
	4	0.174	7.6
	5	0.161	-6.8
B3	1	0.152	74.1
	2	0.088	1
	3	0.21	33.2
	4	0.209	33.6
	5	0.209	-8.3
B4	1	0.139	52.3
	2	0.222	18.6
	3	0.277	21.8
	4	0.313	23.1
	5	0.271	13.7
B5	1	0.266	89.3
	2	0.212	67.5
	3	0.177	23
	4	0.22	18.7
	5	0.25	2.3

Table 13: Rt. 130 West Bound- cycle 2

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.276	26.8
	2	0.142	52.5
	3	0.19	107
	4	0.109	55.4
	5	0.096	20.9
B2	1	0.096	82.8
	2	0.145	34.6
	3	0.169	34.1
	4	0.189	53.1
	5	0.223	57.2
B3	1	0.132	70.9
	2	0.223	-12.5
	3	0.198	70.8
	4	0.173	61.7
	5	0.261	45.7
B4	1	0.267	16.9
	2	0.231	30.4
	3	0.209	40
	4	0.317	76.3
	5	0.343	47.7
B5	1	0.107	98.2
	2	0.151	78.7
	3	0.119	52.8
	4	0.25	37.3
	5	0.198	22.8

Table 14: Rt. 130 West Bound- cycle 3

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.093	28.7
	2	0.05	54
	3	0.073	-3.2
	4	0.092	-30.6
	5	0.103	-22.2
B2	1	0.077	15.9
	2	0.066	30.7
	3	0.091	-16
	4	0.414	-66.4
	5	0.099	-7.7
B3	1	0.058	21
	2	0.075	9.6
	3	0.078	17.5
	4	0.095	10.1
	5	0.091	19.4
B4	1	0.056	37.1
	2	0.075	31
	3	0.071	13.5
	4	0.074	40.5
	5	0.073	10.6
B5	1	0.055	15.7
	2	0.099	3.5
	3	0.067	11
	4	0.079	11.3
	5	0.091	18.8

Table 15: Rt. 130 West Bound- cycle 4

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.276	26.8
	2	0.142	52.5
	3	0.19	107
	4	0.109	55.4
	5	0.096	20.9
B2	1	0.086	82.8
	2	0.145	34.6
	3	0.169	34.1
	4	0.189	53.1
	5	0.223	57.2
B3	1	0.132	70.9
	2	0.223	-12.5
	3	0.198	70.8
	4	0.173	61.7
	5	0.261	45.7
B4	1	0.267	16.9
	2	0.231	30.4
	3	0.209	40
	4	0.317	76.3
	5	0.343	47.7
B5	1	0.107	98.2
	2	0.151	78.7
	3	0.119	52.8
	4	0.25	37.3
	5	0.196	22.8

Table 16: Rt. 130 West Bound- cycle 5

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.1	21.5
	2	0.262	-23.9
	3	0.129	-5.3
	4	0.101	-13.9
	5	0.115	-8.2
B2	1	0.104	6.7
	2	0.054	52.4
	3	0.098	-3.2
	4	0.107	0.4
	5	0.13	-7.1
B3	1	0.258	-37.5
	2	0.074	33.6
	3	0.064	49.1
	4	0.08	43.8
	5	0.088	56.1
B4	1	0.096	37.1
	2	0.058	109.3
	3	0.073	53.1
	4	0.061	109.2
	5	0.524	-8.1
B5	1	0.053	68.6
	2	0.087	42.1
	3	0.064	47.9
	4	0.072	46
	5	0.788	-64.5

Table 17: North Main Street East Bound- cycle 1

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.05	-54.9
	2	0.093	-16.8
	3	0.09	-16.7
	4	0.091	-19.8
	5	0.05	-5.8
B2	1	0.098	-63.1
	2	0.14	-57.4
	3	0.08	-20.3
	4	0.081	-8.1
	5	0.077	-33.1
B3	1	0.087	-71.5
	2	0.1	-5.6
	3	0.069	-6.9
	4	0.056	-66.9
	5	0.097	-32.9
B4	1	0.088	-73.6
	2	0.152	-51.3
	3	0.091	-24.2
	4	0.089	-3.6
	5	0.1	-3.1

Table 18: North Main Street East Bound- cycle 2

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.156	-98
	2	0.231	-67.8
	3	0.068	-24.8
	4	0.179	-35.5
	5	0.12	-57.1
B2	1	0.115	-82.2
	2	0.139	-51.3
	3	0.909	-106.9
	4	0.084	-15.2
	5	0.14	-34.5
B3	1	0.134	-148.9
	2	0.287	-69
	3	0.083	-26.7
	4	0.13	-92
	5	0.101	-32
B4	1	0.067	-68.4
	2	0.087	-17.6
	3	0.105	-39.5
	4	0.085	-36.8
	5	0.069	-15

Table 19: North Main Street East Bound- cycle 3

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.259	-139.6
	2	0.209	-89.6
	3	0.455	-125.8
	4	0.2	-103.4
	5	0.398	-91.2
B2	1	0.743	-177.9
	2	0.654	-135.6
	3	0.252	-155.4
	4	0.328	-129.1
	5	0.253	-118
B3	1	0.884	-176.6
	2	0.296	-104.6
	3	0.539	-123.5
	4	0.342	-151.6
	5	0.666	-139.2
B4	1	0.088	-125.5
	2	0.438	-114.1
	3	0.361	-113.3
	4	0.539	-126.7
	5	0.593	-131.3

Table 20: North Main Street East Bound- cycle 4

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.294	-143.5
	2	0.382	-87.3
	3	0.138	-92.2
	4	0.276	-88.6
	5	0.264	-66.6
B2	1	0.215	-130.2
	2	0.409	-118.6
	3	0.242	-154.6
	4	0.307	-107.7
	5	0.269	-100.3
B3	1	0.478	-162.1
	2	0.432	-109.6
	3	0.323	-100.9
	4	0.354	-137
	5	0.288	-117
B4	1	0.11	-112.5
	2	0.507	-123.4
	3	0.241	-96.4
	4	0.324	-108.4
	5	0.424	-104.7

Table 21: North Main Street East Bound- cycle 5

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.156	-98
	2	0.231	-67.8
	3	0.068	-24.8
	4	0.179	-35.5
	5	0.12	-57.1
B2	1	0.115	-82.2
	2	0.139	-51.3
	3	0.909	-106.9
	4	0.084	-15.2
	5	0.14	-34.5
B3	1	0.134	-148.9
	2	0.287	-69
	3	0.083	-26.7
	4	0.13	-92
	5	0.101	-32
B4	1	0.067	-68.4
	2	0.087	-17.6
	3	0.105	-39.5
	4	0.085	-36.8
	5	0.069	-15

Table 22: North Main Street West Bound- cycle 1

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.181	-88.8
	2	0.28	-56.2
	3	0.265	-63.5
	4	0.216	-75.9
	5	0.25	-83
B2	1	0.295	-78.2
	2	0.264	-84.1
	3	0.244	-73.5
	4	0.262	-76.4
	5	0.211	-73.6
B3	1	0.222	-86.4
	2	0.205	-95.5
	3	0.259	-99.8
	4	0.206	-89.9
	5	0.263	-95.7
B4	1	0.191	-91.2
	2	0.216	-98.5
	3	0.274	-83.1
	4	0.183	-83.2
	5	0.196	-91.7

Table 23: North Main Street West Bound- cycle 2

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.145	-127.4
	2	0.157	-128.1
	3	0.084	-124.5
	4	0.127	-140.9
	5	0.11	-133.4
B2	1	0.231	-126.4
	2	0.14	-87.8
	3	0.203	-128.6
	4	0.116	-120.8
	5	0.145	-126.3
B3	1	0.162	-108.6
	2	0.175	-116.7
	3	0.178	-116.1
	4	0.136	-126.5
	5	0.211	-142.3
B4	1	0.196	-142.9
	2	0.169	-131.5
	3	0.413	-153.3
	4	0.227	-141.5
	5	0.154	-142.3

Table 24: North Main Street West Bound- cycle 3

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.197	-234.9
	2	0.135	-154.2
	3	0.201	-202.5
	4	0.181	-194.3
	5	0.001	-192.7
B2	1	0.119	-219.7
	2	0.094	-218.7
	3	0.137	-227.1
	4	0.136	-233.2
	5	0.131	-235.8
B3	1	0.208	-253.5
	2	0.127	-249.7
	3	0.119	-267.4
	4	0.139	-220.5
	5	0.156	-226.3
B4	1	0.362	-239.2
	2	0.13	-245.3
	3	0.162	-227.6
	4	0.15	-181.7
	5	0.156	-201.9

Table 25: North Main Street West Bound- cycle 4

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.063	-220.7
	2	0.096	-168.6
	3	0.121	-190.3
	4	0.171	-183.2
	5	0.129	-187.8
B2	1	0.109	-214.7
	2	0.089	-211.8
	3	0.136	-218.8
	4	0.154	-227.5
	5	0.131	-221.1
B3	1	0.156	-233.3
	2	0.147	-240.4
	3	0.138	-266.2
	4	0.155	-213.3
	5	0.159	-216.6
B4	1	0.155	-203.3
	2	0.151	-222.4
	3	0.132	-203.8
	4	0.128	-169.7
	5	0.133	-191.1

Table 26: North Main Street West Bound- cycle 5

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.145	-127.4
	2	0.157	-128.1
	3	0.084	-124.5
	4	0.127	-140.9
	5	0.11	-133.4
B2	1	0.231	-126.4
	2	0.14	-87.8
	3	0.203	-123.6
	4	0.116	-120.8
	5	0.145	-126.3
B3	1	0.162	-108.6
	2	0.175	-116.7
	3	0.17	-116.1
	4	0.136	-126.5
	5	0.211	-142.3
B4	1	0.196	-142.9
	2	0.169	131.5
	3	0.413	-153.3
	4	0.227	-141.5
	5	0.154	-142.3

Table 27: Wycoff's Bridge East Bound- cycle 1

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.038	-29
	2	0.048	10.5
	3	0.033	9.7
	4	0.168	-1.3
	5	0.153	-13.3
B2	1	0.19	-59.2
	2	0.134	-27.3
	3	0.094	17.1
	4	0.176	-1.3
	5	0.162	-4.2
B3	1	0.135	-81
	2	0.096	-27.5
	3	0.11	-1.2
	4	0.126	-0.7
	5	0.2	-2.2
B4	1	0.036	-28.1
	2	0.028	-7.6
	3	0.084	-1.7
	4	0.169	-3.8
	5	0.108	-7.2

Table 28: Wycoff's Bridge East Bound- cycle 2

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.146	-85.3
	2	0.118	-25
	3	0.089	-38.3
	4	0.125	-56.7
	5	0.198	-82.9
B2	1	0.578	-162.3
	2	0.593	-78.2
	3	0.105	-1
	4	0.142	-17.7
	5	0.146	-18.5
B3	1	0.106	-82.7
	2	0.12	-33.2
	3	0.083	-14.9
	4	0.132	-16.9
	5	0.179	-41.7
B4	1	0.223	-82.1
	2	0.18	-52.7
	3	0.14	-60.2
	4	0.21	-67.5
	5	0.138	-41.9

Table 29: Wycoff's Bridge East Bound- cycle 3

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.071	-89.2
	2	0.092	-98.4
	3	0.21	-151.5
	4	0.15	-124.1
	5	0.092	-125.9
B2	1	0.078	-89.2
	2	0.078	-77.6
	3	0.112	-93.4
	4	0.105	-117.6
	5	0.13	-136.6
B3	1	0.142	-104.6
	2	0.066	-82
	3	0.134	-131.4
	4	0.062	-94.1
	5	0.043	-155.6
B4	1	0.153	-146.2
	2	0.112	-115.1
	3	0.085	-94.8
	4	0.088	-99.7
	5	0.115	-124.8

Table 30: Wycoff's Bridge East Bound- cycle 4

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.257	-101.1
	2	0.249	-97.7
	3	0.214	-94
	4	0.168	-99.6
	5	0.283	-110.4
B2	1	0.229	-172
	2	0.379	-107.3
	3	0.285	-82.3
	4	0.274	-81.9
	5	0.32	-100.3
B3	1	0.314	-143.2
	2	0.356	-110.2
	3	0.198	-77.4
	4	0.234	-69.8
	5	0.195	-86.5
B4	1	0.21	-134.2
	2	0.321	-114.2
	3	0.708	-118.9
	4	0.369	-89
	5	0.623	-114.7

Table 31: Wycoff's Bridge East Bound- cycle 5

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.146	-85.3
	2	0.118	-25
	3	0.089	-38.3
	4	0.125	-56.7
	5	0.196	-82.9
B2	1	0.578	-162.3
	2	0.593	-78.2
	3	0.105	-1
	4	0.142	-17.7
	5	0.146	-18.5
B3	1	0.106	-82.7
	2	0.12	-33.2
	3	0.083	-14.9
	4	0.132	-16.9
	5	0.179	-41.7
B4	1	0.223	-82.1
	2	0.1	-52.7
	3	0.14	-60.2
	4	0.21	-67.5
	5	0.136	-41.9

Table 32: Wycoff's Bridge West Bound- cycle 1

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.061	-23.6
	2	0.04	-30.4
	3	0.063	-14.6
	4	0.082	9.6
	5	0.064	-15.1
B2	1	0.069	-40.19
	2	0.059	-51.2
	3	0.083	-20.9
	4	0.067	7.9
	5	0.089	-7.8
B3	1	0.1	-216.7
	2	0.116	-30.9
	3	0.059	-4.7
	4	0.064	29.4
	5	0.072	9.1
B4	1	0.075	-20.5
	2	0.126	-23.3
	3	0.068	-24
	4	0.107	-65.8
	5	0.066	-4.3

Table 33: Wycoff's Bridge West Bound- cycle 2

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.15	-111.2
	2	0.095	-82.3
	3	0.098	-72.2
	4	0.155	-92.9
	5	0.11	-98.1
B2	1	0.188	-127.8
	2	0.114	-95.8
	3	0.104	-104.5
	4	0.144	-97.6
	5	0.176	-83.8
B3	1	0.121	-139
	2	0.248	-120.8
	3	0.204	-118.6
	4	0.117	-77
	5	0.15	-94.6
B4	1	0.181	-111.2
	2	0.202	-101.7
	3	0.079	-117.4
	4	0.191	-134.8
	5	0.136	-84.1

Table 34: Wycoff's Bridge West Bound- cycle 3

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.381	-118.2
	2	0.315	-110.2
	3	0.4344	-118.8
	4	0.119	-118.8
	5	0.567	-145.1
B2	1	0.233	-202.1
	2	0.233	-127.9
	3	0.336	-117.2
	4	0.312	-115
	5	0.558	-134.9
B3	1	0.223	-163.6
	2	0.303	-140.6
	3	0.324	-10905
	4	0.263	-108.7
	5	0.468	-137.5
B4	1	0.492	-162.3
	2	0.441	-141.1
	3	0.277	-143.5
	4	0.309	-142.9
	5	0.347	-155.8

Table 35: Wycoff's Bridge West Bound- cycle 4

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.069	-52.4
	2	0.057	-49.4
	3	0.066	-91.5
	4	0.065	-58.7
	5	0.031	-77.5
B2	1	0.037	-67.4
	2	0.049	-57.8
	3	0.044	-66.9
	4	0.046	-76.9
	5	0.059	-98.6
B3	1	0.276	-109.4
	2	0.051	-65.9
	3	0.096	-90.3
	4	0.048	-69.7
	5	0.03	-131.4
B4	1	0.021	-153.7
	2	0.032	-60.3
	3	0.043	-101.8
	4	0.044	-66.4
	5	0.042	-129.4

Table 36: Wycoff's Bridge West Bound- cycle 5

Connection #	Reading No.	Corrosion Rate, uA/cm²	Corrosion Potential, mV
B1	1	0.15	-111.2
	2	0.095	-87.3
	3	0.098	-72.2
	4	0.155	-92.9
	5	0.11	-98.1
B2	1	0.188	-127.8
	2	0.114	-95.8
	3	0.104	-104.6
	4	0.144	-97.6
	5	0.176	-83.8
B3	1	0.121	-139
	2	0.248	-120.8
	3	0.204	-116.6
	4	0.117	-77
	5	0.15	-94.6
B4	1	0.181	-111.2
	2	0.209	-101.7
	3	0.079	-117.4
	4	0.191	-134.8
	5	0.136	-84.7