915047

MALCOLM PIRNIE

LANDFILL GAS MONITORING REPORT

MARILLA STREET LANDFILL
BUFFALO, NEW YORK

LTV STEEL COMPANY
CLEVELAND, OHIO

MARCH 1994

MALCOLM PIRNIE, INC.

S-3515 Abbott Road
P. O. Box 1938
Buffalo, New York 14219

0848-255-200

MALCOLM
PIRNIE

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MALCOLM PIRNIE

1.0 INTRODUCTION

Decomposition gases (if any) generated within the Marilla Street Landfill (see Figure 1) must be controlled to avoid hazards to health, safety or property in accordance with 6NYCRR Part 360-2.17. The purpose of this document is to describe gas monitoring at the Marilla Street Landfill. The objective of the gas monitoring program is to verify that no substantial gas generation is occurring in the Marilla Street Landfill which would have a potential impact on public health, safety or property.

On February 22, 1994, Malcolm Pirnie, Inc. personnel completed the first of two rounds of gas monitoring at the Marilla Street Landfill. The 3-day event consisted of purging and monitoring of 84 passive vents and two shallow groundwater monitoring wells.

2.0 MONITORING METHODS

2.1 Purging Procedures

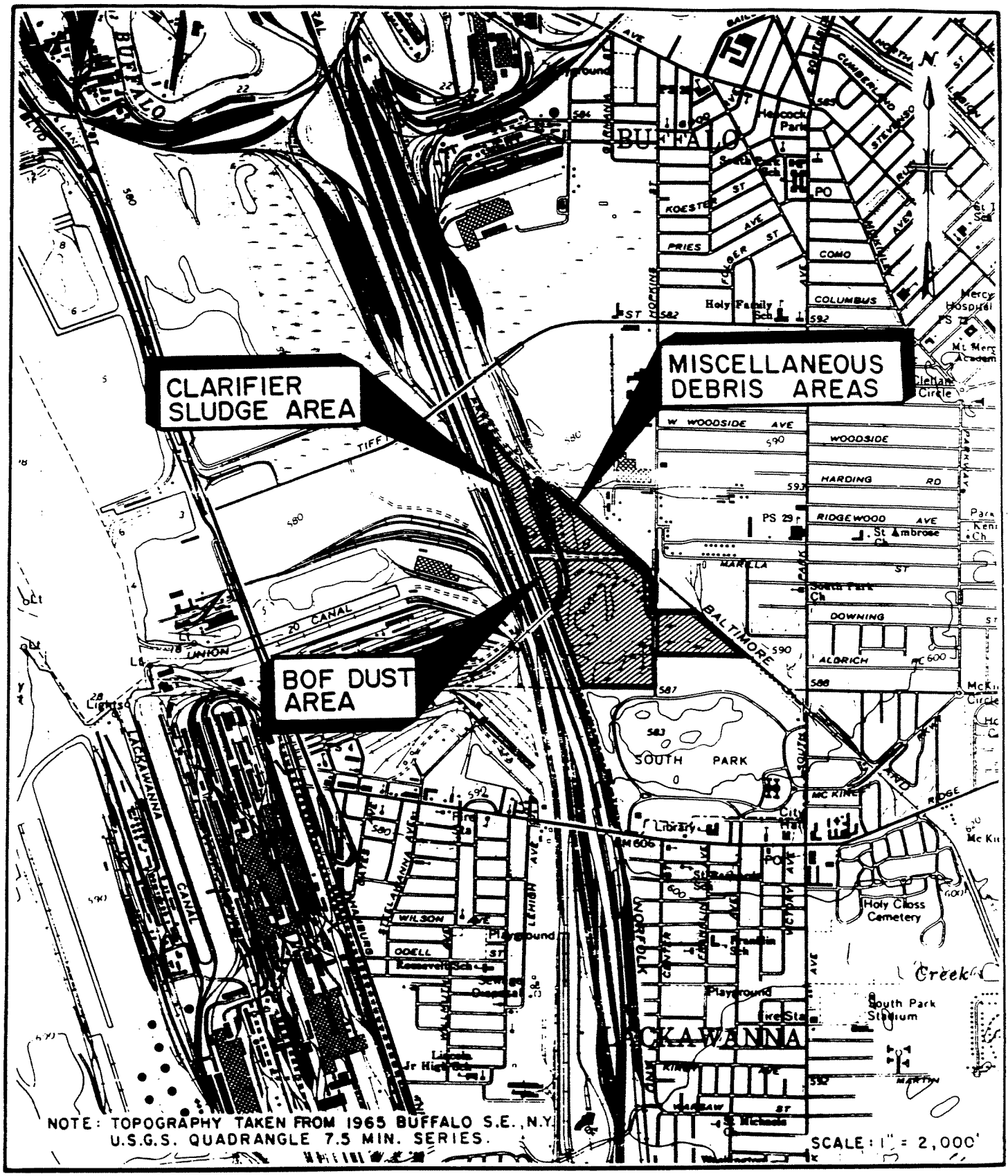
Prior to gas monitoring, the ambient air contained in the vents was purged for five minutes to evacuate the air in the vents and to induce gas flow. Flow was induced by utilizing a portable 12-volt vacuum pump connected to the end of the gas vent. An airtight seal was formed through the use of a steel band placed around a "Saranax" bag. Tygon pump tubing was used to connect the bag to the vacuum pump. To insure that a pressure differential (draw) was created, a slack tube manometer was placed in-line of the vacuum pump and the gas vent. Results showed a typical gradient of 13-inches of water column at each vent. A typical set-up is shown on Figure 2 and Attachment 3.

The vacuum pump of 13 inches of water column removed approximately 1.13 cubic feet per minute. Therefore, prior to sampling approximately 5.6 cubic feet were withdrawn from each vent. At this flow rate approximately four air volumes were removed from the vents prior to sampling to ensure that a representative sample would be obtained.

2.2 Monitoring Procedures

Following five minutes of purging, the airstream was monitored for total volatile organic vapors (TVOV) and explosive/combustible gases [%LEL (Lower Explosive Limit)]. The TVOV concentrations were measured using an Hnu photoionization detector equipped with a 10.2 electron volt lamp. Prior to each monitoring event, the Hnu was calibrated using

FIGURE 1



NEW YORK

QUADRANGLE LOCATION

MALCOLM PIRNIE

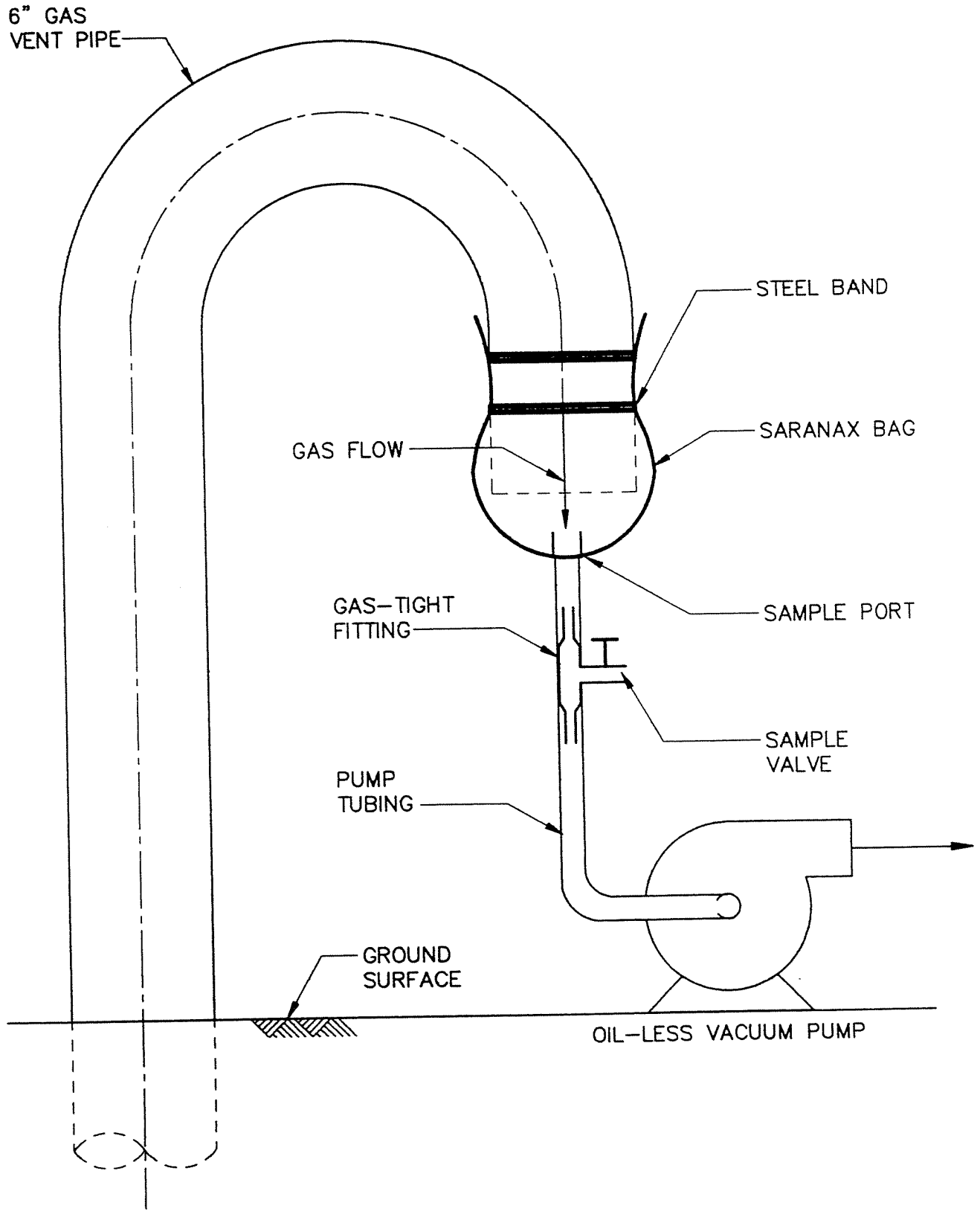
LTV - 19

SITE LOCATION MAP

LTV STEEL COMPANY

MARILLA STREET LANDFILL

MAY 1993



MALCOLM PIRNIE

LTV–25–PIP

MARILLA STREET LANDFILL
GAS VENT MONITORING PLAN

SAMPLE COLLECTION METHOD

LTV STEEL COMPANY

MARCH 1994

isobutylene gas in air, according to the manufacturer's specifications. The tip of the Hnu probe was inserted into the gas stream via a sample port connection in the pump tubing.

The explosive/combustible gases were measured by a LEL/O_2 meter. Prior to field use the LEL/O_2 meter was calibrated using methane gas according to manufacturer's specifications. The tip of the meter was inserted into the gas stream via a sample port connection in the pump tubing, as described above.

3.0 MONITORING RESULTS

The locations of each of the gas vent monitoring locations are shown on Drawings 1, 2 and 3. The organic vapor (HNu) and explosive gas measurements are summarized on Table 1. Volatile organic vapors were detected in only one of the 84 vents. Gas Vent 33 had an organic vapor concentration of 1 ppm which is only slightly above the detection limit of 1 ppm.

Explosive/combustible gas (% LEL) were monitored for in each of the 84 vents and were found to be present in Gas Vents 61, 62, 83, and 84. Gas Vents 61 and 62 are located on the north end of the BOF Dust Area. Gas Vents 83 and 84 are located in the miscellaneous debris area. The results are summarized below:

Gas Vent	% LEL
61	9
62	4
83	5
84	3

No volatile organic vapors or explosive/combustible gases were detected in the two monitoring wells sampled; MW-5B and MW-6B.

Table 1

LTV STEEL

MARILLA STREET LANDFILL

LANDFILL GAS MONITORING FEBRUARY 1994 RESULTS

Parameter	GV-1	GV-2	GV-3	GV-4	GV-5	GV-6	GV-7	GV-8	GV-9	GV-10	GV-11	GV-12	GV-13	GV-14	GV-15	GV-16	GV-17	GV-18	GV-19	GV-20	GV-21
Volatile organic vapors (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Explosive Gases (%LEL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES: Gas vents were monitored from 2/17/94 through 2/22/94

GV - Gas vent number

ND - Not Detected

Volatile organic vapors not detected = < 1ppm

Explosive gases not detected = < 1%LEL

Table 1 (continued)
LTV STEEL
MARILLA STREET LANDFILL
LANDFILL GAS MONITORING FEBRUARY 1994 RESULTS

Parameter	GV-22	GV-23	GV-24	GV-25	GV-26	GV-27	GV-28	GV-29	GV-30	GV-31	GV-32	GV-33	GV-34	GV-35	GV-36	GV-37	GV-38	GV-39	GV-40	GV-41	GV-42
Volatile organic vapors (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Explosive Gases (%LEL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES: Gas vents were monitored from 2/17/94 through 2/22/94

GV - Gas vent number

ND - Not Detected

Volatile organic vapors not detected = < 1ppm

Explosive gases not detected = < 1%LEL

Table 1 (continued)
LTV STEEL
MARILLA STREET LANDFILL
LANDFILL GAS MONITORING FEBRUARY 1994 RESULTS

Parameter	GV-43	GV-44	GV-45	GV-46	GV-47	GV-48	GV-49	GV-50	GV-51	GV-52	GV-53	GV-54	GV-55	GV-56	GV-57	GV-58	GV-59	GV-60	GV-61	GV-62	GV-63
Volatile organic vapors (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Explosive Gases (%LEL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9	4	ND

NOTES: Gas vents were monitored from 2/17/94 through 2/22/94

GV - Gas vent number

ND - Not Detected

Volatile organic vapors not detected = < 1ppm

Explosive gases not detected = < 1%LEL

Table 1 (continued)
LTV STEEL
MARILLA STREET LANDFILL
LANDFILL GAS MONITORING FEBRUARY 1994 RESULTS

Parameter	GV-64	GV-65	GV-66	GV-67	GV-68	GV-69	GV-70	GV-71	GV-72	GV-73	GV-74	GV-75	GV-76	GV-77	GV-78	GV-79	GV-80	GV-81	GV-82	GV-83	GV-84
Volatile organic vapors (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Explosive Gases (%LEL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	3

NOTES: Gas vents were monitored from 2/17/94 through 2/22/94

GV - Gas vent number

ND - Not Detected

Volatile organic vapors not detected = < 1ppm

Explosive gases not detected = < 1%LEL

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ATTACHMENT 1

Field Data Sheets

FIELD INVESTIGATION REPORT

DATE _____

DAY | S | M | T | W | TH | F | S |

Project [redacted]-223 No. _____

Contractor _____

Subject MARILLA STREET L.F. GAS Monitoring

To _____

WEATHER	Brite Sun	Clear	Overcast	Rain	Snow
TEMP.	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid		

	HNU READING (ppm)	Combustable GASES (% LEL)
GASVENT #		
33	1 Near Wells -16A, 16B	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0 ~~Vent Plug~~ Vent plugged High VACUUM Reading >16" Hg
47	0	0
48	0	0

5/18/94

DISTRIBUTION: 1. Proj. Mgr.
2. Field Office
3. File
4. Owner

Signature _____ Title _____

Wiley-Fisk Form 8-3

FIELD INVESTIGATION REPORT

DATE 2/22/04

DAY S M T W TH F S (T)

Project [redacted] 223 No.

Contractor

Subject MARINA STREET L.F. GAS Monitoring

To

WEATHER	Bright Sun	Clear ✓	Overcast	Rain	Snow
TEMP.	To 32 ✓	32-50	50-70	70-85	85 up
WIND	Still	Moder ✓	High	Report No.	
HUMIDITY	Dry ✓	Moder	Humid		

	HNU READING (ppm)	Combustable GASES (% LEL)	
GASVENT #			
49	0	0	
50	0	0	
51	0	0	
52	0	0	
53	0	0	
54	0	0	
55	0	0	
56	0	0	
57	0	0	
58	0	0	
59	0	0	
60	0	0	
1/22/04 61	0	9	BOF DUST AREA
62	0	4	BOF DUST AREA
63	0	0	
64	0	0	

DISTRIBUTION: 1. Proj. Mgr.
2. Field Office
3. File
4. Owner

Signature _____ Title _____

Wiley-Fisk Form 8-3

FIELD INVESTIGATION REPORT

DATE 2/22/94

DAY: S M T W TH F S (T checked)

Project 0848-223 No. ______

Contractor ______

Subject MARILLA STREET L.F. GAS Monitoring

To ______

WEATHER: Brite Sun / Clear (checked) / Overcast / Rain / Snow
TEMP.: To 32 (checked) / 32-50 / 50-70 / 70-85 / 85 up
WIND: Still / Moder (checked) / High
HUMIDITY: Dry (checked) / Moder / Humid
Report No.

2/22/04
river edge AREA *

GASVENT #	HNU READING (ppm)	COMBUSTABLE GASES (% LEL)
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	0	0
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	0	0
80	0	0

DISTRIBUTION: 1. Proj. Mgr.
2. Field Office
3. File
4. Owner

Signature ______ Title ______

Wiley-Fisk Form 8-3

FIELD INVESTIGATION REPORT

DATE 2/22/94

DAY S M T W TH F S (T)

Project [redacted]-223 No. _____

Contractor _____

Subject MARILLA STREET L.F. GAS Monitoring

To _____

WEATHER	Brisk Sun	Clear	Overcast	Rain	Snow
TEMP.	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid		

	HNU READING (ppm)	Combustable GASES (% LEL)
GASVENT #		
81	0	0
82	0	0
83	0	5
84	0	3
MW-5B	0	0
MW-6B	0	0

near ells 7 & 6B

DISTRIBUTION: 1. Proj. Mgr.
2. Field Office
3. File
4. Owner

Signature _____ Title _____

Wiley-Fisk Form 8-3

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ATTACHMENT 2

Calibration Documentation

HNU PHOTOIONIZATION ANALYZER CALIBRATION DOCUMENTATION

Meter Description: Hnu Date: 2/17/94

Model #: _____ Time: 0830

Serial #: 801279 Personnel: RLD/JP

Probe S/N / Lamp Used: S/N _____ / 10.2 eV

Type of Calibration Gas Used: Isobutylene

Span Setting: 9.8

Gas Cylinder Pressure Reading: N/A psi

Battery Check (Present Condition of Battery): 90% (% Charge)

Selected Calibration Range: ~~0-50~~ 0-250 ppm

Initial Span Control Setting: 9.8

Calibrated Span Control Setting: 9.8

Meter Reading Prior to Calibration: 56 ppm

Actual Meter Calibration Reading: 56 ppm

Additional Comments:

Signature Documentation: [signature]

Date/Time: 2/17/94 / 0835

Project: LTV - GAS vent monitoring

Project #: 0848-255-

FORMS.CAL

HNU PHOTOIONIZATION ANALYZER CALIBRATION DOCUMENTATION

Meter Description: Hnu Date: 2/18/94

Model #: _____ Time: 0840

Serial #: 801279 Personnel: RLO/JP

Probe S/N / Lamp Used: S/N _____ / 10.2 eV

Type of Calibration Gas Used: Isobutylene

Span Setting: 9.8

Gas Cylinder Pressure Reading: FULL psi

Battery Check (Present Condition of Battery): 90% (% Charge)

Selected Calibration Range: 0-250 ppm

Initial Span Control Setting: 9.8

Calibrated Span Control Setting: 4.9

Meter Reading Prior to Calibration: ~~86~~ 40 ppm

Actual Meter Calibration Reading: 56 ppm

Additional Comments:

Signature Documentation: [signature]

Date/Time: 2-18-94 / 0845

Project: LTV - GASUNT Monitoring

Project #: 084X-255

FORMS.CAL

HNU PHOTOIONIZATION ANALYZER CALIBRATION DOCUMENTATION

Meter Description: HNU Date: 2/22/94

Model #: 101 274 Time: 0815

Serial #: 101 274 Personnel: RLD/JP

Probe S/N / Lamp Used: S/N _____ / 10.2 eV

Type of Calibration Gas Used: Isobutylene

Span Setting: 9.8

Gas Cylinder Pressure Reading: FULL psi

Battery Check (Present Condition of Battery): 90 (% Charge)

Selected Calibration Range: 0-250 ppm

Initial Span Control Setting: 4.8

Calibrated Span Control Setting: 4.8

Meter Reading Prior to Calibration: 54 ppm

Actual Meter Calibration Reading: 56 ppm

Additional Comments:

Signature Documentation: [signature]

Date/Time: 2-22-94 / 0920

Project: LTV GASKET Monitoring

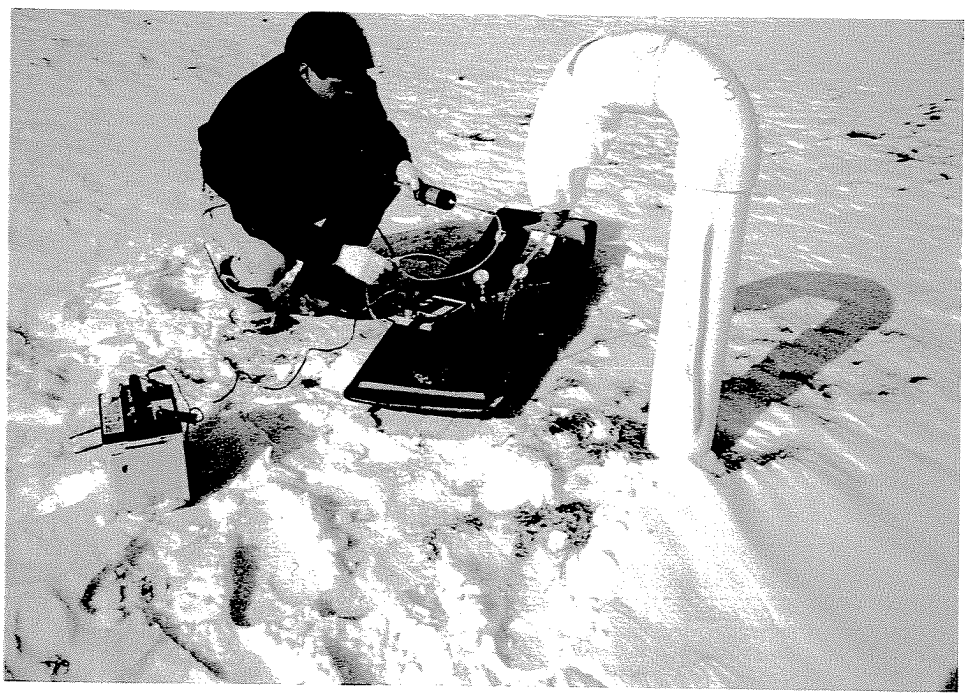
Project #: 0848-255

FORMS.CAL

MALCOLM PIRNIE

ATTACHMENT 3

Photographs



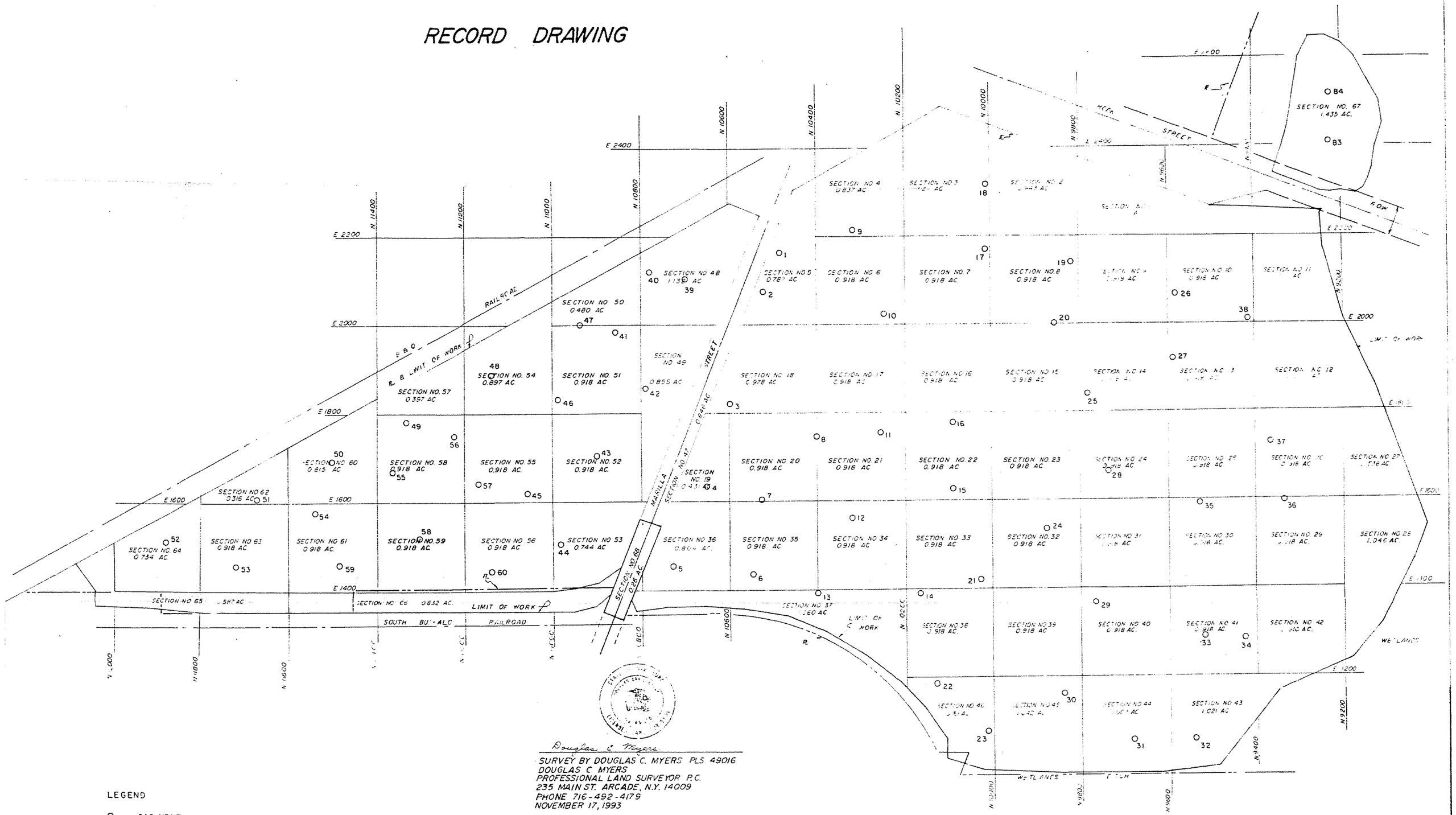
PROJECT:

LTV Marilla St. Landfill

DESCRIPTION:

Typical gas purging and monitoring setup.

RECORD DRAWING



Douglas C Myers

SURVEY BY DOUGLAS C. MYERS PLS 49016
DOUGLAS C MYERS
PROFESSIONAL LAND SURVEYOR P.C.
235 MAIN ST. ARCADE, N.Y. 14009
PHONE 716-492-4179
NOVEMBER 17, 1993

LEGEND

○ GAS VENT

NOTE : PLACEMENT AND LABELING OF GAS VENTS ADDED BY MALCOLM PIRNIE, INC. MARCH 1994.

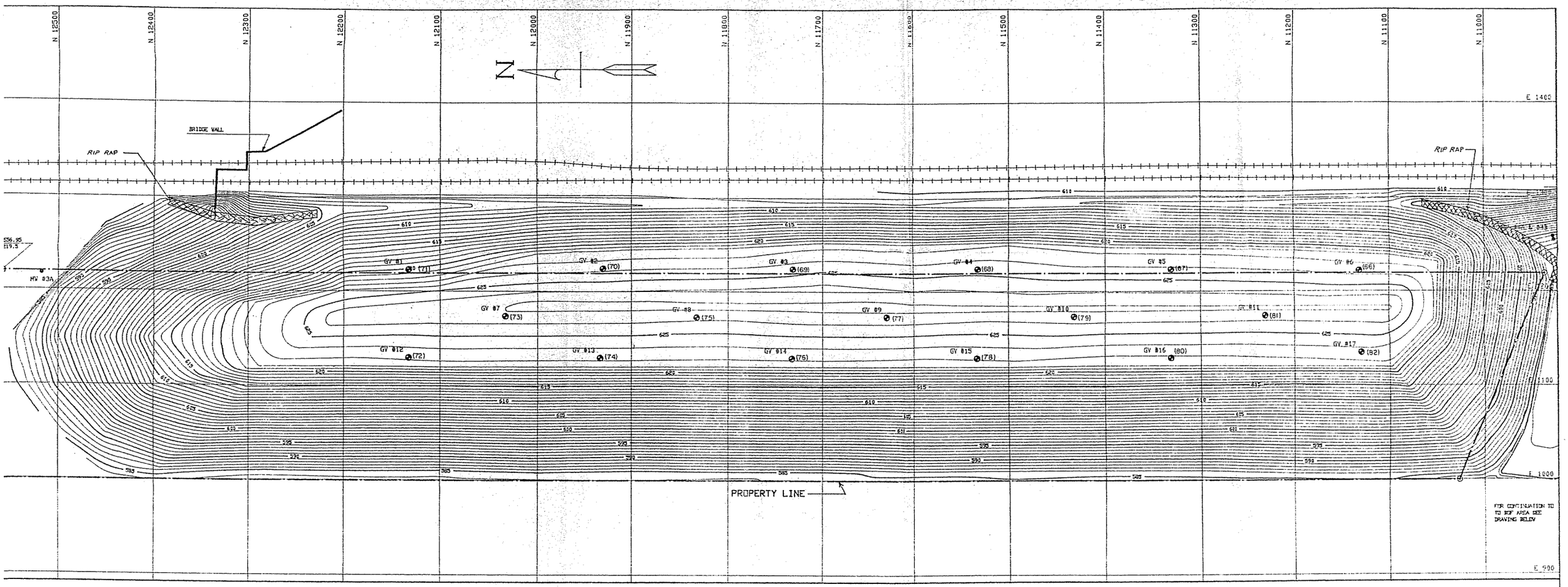
1 INCH = 100 FEET

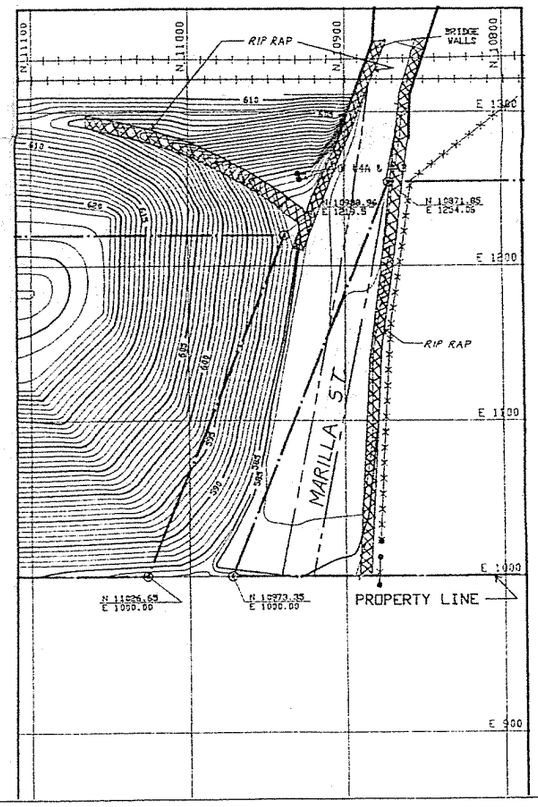
100 0 100 200

key map

MARILLA STREET LANDFILL
LTV STEEL COMPANY
BUFFALO, NEW YORK

Sheet No 32





Certificate of Surveyor

I, the undersigned, hereby certify that this map is true and correct. The property line information shown on this map was collected from property maps of LTV Steel and was not checked for accuracy. No property corners were set in the field

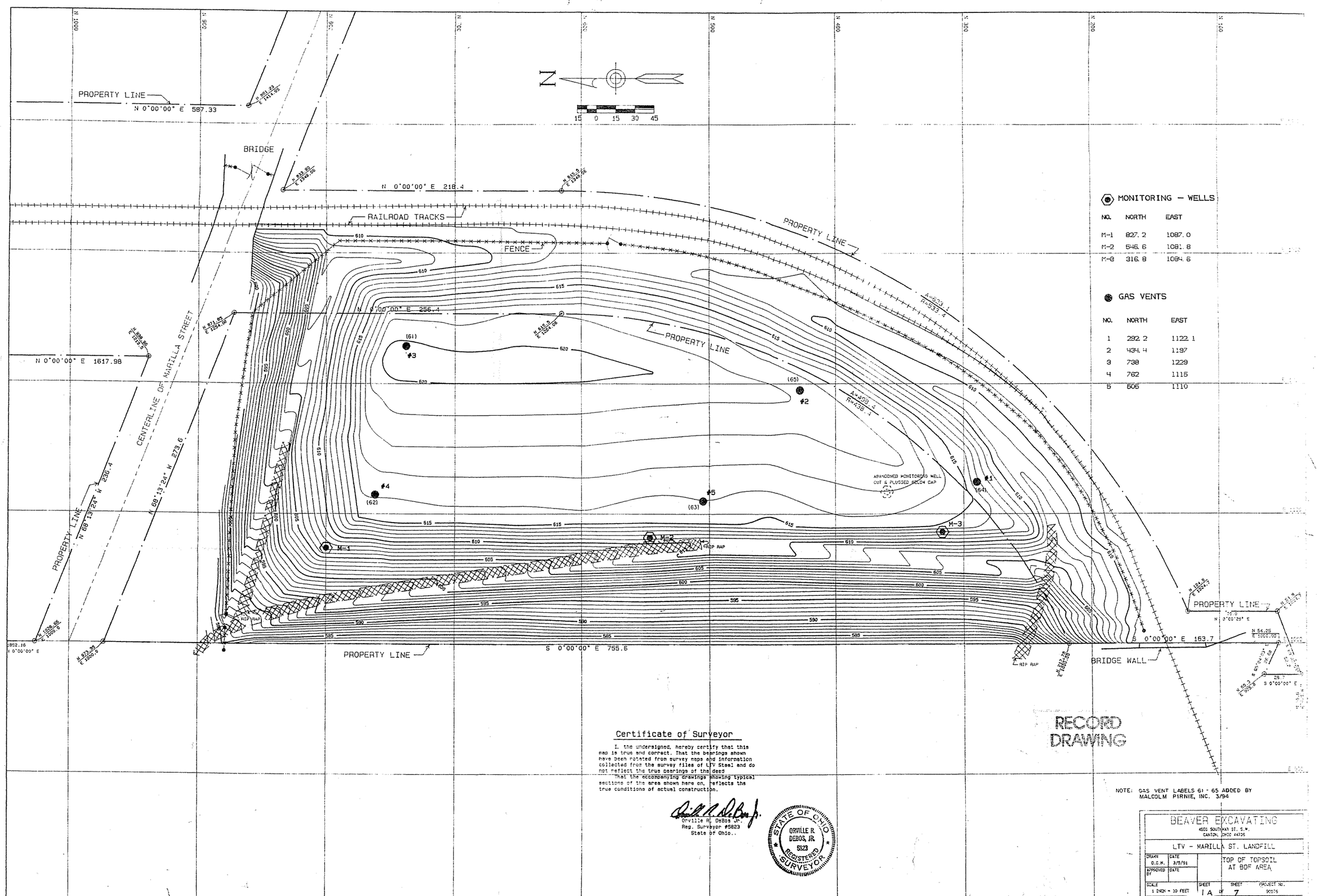
Orville R. DeBos Jr.
Reg. Surveyor #5823
State of Ohio.

STATE OF OHIO
ORVILLE R. DEBOS, JR.
5823
REGISTERED SURVEYOR

RECORD DRAWING

NOTE: GAS VENT LABELS 66 - 82 ADDED BY MALCOLM PIRNIE, INC. 3/94

BEAVER EXCAVATING 4656 SOUTHWAY ST. S.W. CANTON, OHIO 44706	
LTV - MARILLA ST. LANDFILL	
DRAWN: S.C.H. DATE: 10/7/91	FINAL GRADING AT CLARIFIER AREA AND MARILLA ST.
APPROVED BY: DATE:	
SCALE: 1" = 50'	SHEET OF SHEET PROJECT No.



MONITORING – WELLS

NO.	NORTH	EAST
M-1	827.2	1087.0
M-2	546.6	1081.8
M-3	316.8	1084.6

GAS VENTS

NO.	NORTH	EAST
1	292.2	1122.1
2	434.4	1197
3	738	1229
4	762	1115
5	505	1110

RECORD DRAWING

Certificate of Surveyor

I, the undersigned, hereby certify that this map is true and correct. That the bearings shown have been rotated from survey maps and information collected from the survey files of LTV Steel and do not reflect the true bearings of this deed.

That the accompanying drawings showing typical sections of the area shown here on, reflects the true conditions of actual construction.

Orville R. DeBos Jr.
Reg. Surveyor #5823
State of Ohio..

STATE OF OHIO
ORVILLE R. DEBOS, JR.
5823
REGISTERED SURVEYOR

NOTE: GAS VENT LABELS 61 - 65 ADDED BY MALCOLM PIRNIE, INC. 3/94

BEAVER EXCAVATING
4500 SOUTHWAY ST. S.W.
CANTON, OHIO 44706

LTV - MARILLA ST. LANDFILL

TOP OF TOPSOIL AT BOF AREA

DRAWN	DATE	SHEET	SHEET	PROJECT NO.
D.C.H.	3/5/91	1A	OF 7	90076
APPROVED BY	DATE			
SCALE 1 INCH = 30 FEET				