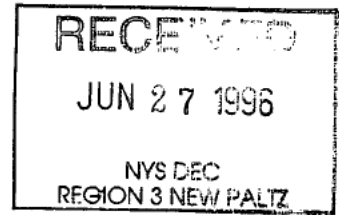


SP



Crawford & Associates
Engineering Consultants, Planners, Geologists

551 Warren Street • Suite 301 • Hudson, New York 12534
TEL (518) 828-2700 • FAX (518) 828-2723



June 20, 1996

New York State Environmental Conservation (NYSDEC)
21 South Putt Corners Road
New Paltz, New York 12561

ATTN: Steven Parisio, Regional Geologist
Department of Solid Waste

RE: **Town of Hurley Landfill Closure**
Post-Closure Monitoring and Facility Maintenance Manual Final
Revisions
C&A # H0169.01

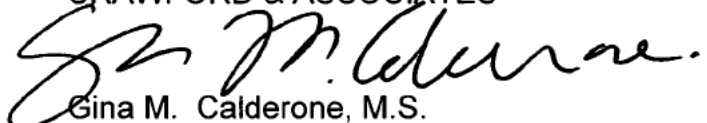
Dear Steve:

Enclosed herein is a copy of the final June 1996 version of the Post-Closure Monitoring and Facility Maintenance Manual for the Closure of the Hurley Landfill. The sections revised in the copy enclosed herein are the Explosive Gas Monitoring Section and the Groundwater Monitoring Section for the on-site and off-site monitoring points.

The revisions in the Groundwater Monitoring section were made in conjunction with our last meeting at your office. The revisions to the gas monitoring section were completed on the basis of a meeting between Mark DeIbalzo from this office and Mr. Perry Metha at the Hurley Highway Garage.

Please contact me should you have any questions regarding the enclosed report.

Very truly yours,
CRAWFORD & ASSOCIATES


Gina M. Calderone, M.S.
Hydrogeologist

enclosures

c: Mr. Perry Metha, P.E.

Mr. James Craven, Town of Hurley

Mrs. Linda Cook, Town of Hurley Highway Superintendent

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Crawford & Associates
Engineering Consultants, Planners, Geologists

APPENDIX B

**POST-CLOSURE MONITORING AND
FACILITY MAINTENANCE MANUAL
FOR THE CLOSURE OF THE
HURLEY LANDFILL
TOWN OF HURLEY, ULSTER COUNTY, NEW YORK**

PREPARED FOR:

**TOWN OF HURLEY
P.O. BOX 569
HURLEY, NEW YORK 12443**

PREPARED BY:

**CRAWFORD & ASSOCIATES
ENGINEERING CONSULTANTS
551 WARREN STREET
HUDSON, NEW YORK 12534**

PROJECT NO. C&A #H0169.0

**DECEMBER 1991
REVISED MAY 1993
REVISED MARCH 1994
REVISED JUNE 1996**

I. INTRODUCTION

This Post-Closure monitoring and Facility Maintenance Manual has been prepared in conformance with 6 NYCRR Part 360-Solid Waste Management Facilities. This manual describes the tasks necessary for maintenance of the site, periodic inspections and the monitoring of groundwater, surface water and leachate at the facility. This manual will be used by municipal personnel as a guide for maintenance and facility monitoring for a minimum of thirty (30) years.

In general, the following is required:

- Drainage must be maintained to prevent ponding and erosion of the cover.
- Soil cover integrity, slopes, cover vegetation, drainage structures and gas venting structures must be maintained during the post closure monitoring and maintenance period.
- Environmental monitoring points must be maintained and sampled during the post-closure period. Annual summary reports must be submitted to the New York State Department of Environmental Conservation (NYSDEC) and the Ulster County Health Department. Annual baseline, quarterly routine and contingency monitoring, when warranted, must be performed on groundwater, surface water, and leachate samples.
- Maintenance of the leachate collection, storage, transport and disposal system is required for as long as leachate is capable of adversely impacting

the environment.

- A vegetative cover must be established and maintained on all exposed final cover material within four months after placement or adequate measures must be taken to ensure the integrity of the final cover system.

- Records must be maintained of the total volume of leachate stored and removed from the facility and all sampling and analysis results.

II. FACILITY MAINTENANCE MANUAL

A monthly inspection will be performed on the facility to ensure that problems with the cover, drainage structures, gas vents, leachate collection system and wet wells do not occur.

A. Drainage Structures

The inspections will include visual checks of all culverts, rip-rap, swales, and berms/benches if present to ensure erosion problems are not occurring. Any problems associated with these will be repaired immediately and restored to "new" condition. Eroded soil or displaced rip-rap should be replaced. Exposed soil will be reseeded, fertilized, and mulched.

B. Cover System

Areas of concern with the cover system will include erosion, loss of vegetative cover, settlement or cracking on the top or side slopes.

If cracks or settlement occur, the inspector will determine if the barrier layer is affected.

Available data (EPA/625/4-91/025 Seminar Publication: Design and Construction of RCRA/CERCLA Final Covers) show that soils can withstand maximum tensile strains of 0.1 to 1.0 percent. If the lower limit (0.1%) is used for design, the maximum allowable value of distortion (δ/L) is

approximately 0.05, and can be represented by the following:

$$\frac{\delta}{L} = 0.05$$

L

δ = settlement at the center of the depression

L = radius of the depression

For example, suppose that a circular depression develops in the cover system. The depression has a diameter of 20 ft (radius (L) of 10 ft), a distortion constant of 0.05, and therefore the maximum allowable settlement (δ) is 10 ft. x 0.05 = 0.5 ft (6 inches). Therefore, if the settlement at the center of the depression exceeds 6 inches, the clay barrier layer may have cracked from the tensile strains caused by the settlement and will be investigated further.

Excavation will be done, by hand, to prevent further damage to the barrier layer, and if the barrier layer has been damaged, it will be repaired prior to replacing cover soils.

The clay portion of the barrier layer will be repaired by addition of bentonite to the exposed areas and blending of the soil. Approximately two percent (2%) of the total volume of soil to be repaired should be bentonite. Areas should be tamped and compacted in six inch (6") lifts. Geomembranes will be patched and seamed in accordance with manufacturers construction

specifications.

C. Gas Venting System

Visual inspections of the gas vents will be performed. The inspector will check for plugged vents and settlement around the vents. Minor settlement will be filled in with top soil to an elevation higher than the surrounding area, to facilitate drainage away from the vent and to avoid ponding. Major settlement (greater than one foot (1') in depth) will require additional investigation. The area around the gas vent should be excavated down to the barrier layer. Any damage to the barrier layer should be repaired in a manner similar to the cap repair outlined in B above. Cover soils around the vents will be replaced to an elevation above the surrounding soil to ensure drainage away from the vent is maintained.

Sensory inspections will be done on each vent to ensure that the vents are working properly. This inspector will stand at least ten feet (10') away from the vent and focus on the discharge end of the vent. If gas is venting, gas "waves" will refract the light around the vent (similar to heat waves rising from a road surface in summer). The inspector will then stand approximately twenty five feet (25') downwind of the vent in order to determine if the methane gas odor can be detected. If no gas "waves" or odor are detected, the inspector will inspect the vent for clogs or plugs and remove any located.

Any damaged vents will be repaired by cutting out the damaged section with a hand saw and replacing with two PVC couplings, one at each end of the

repaired areas, and new piping. Severely damaged vents will be replaced as per original construction specifications.

D. Leachate Collection System

Visual inspections will be performed on the Leachate Collection System. The inspector will inspect each manhole by removing the cover to ensure surcharging is not occurring. If surcharging is occurring, the manhole will be pumped dry and the leachate transmission lines will be cleaned with sewer cleaning equipment. The leachate discharge lines will be inspected for clogging and cleaned if necessary. Leaking will be evidenced by leachate outbreaks on the outer edges of the cover over the Leachate Collection System.

The inspector will weekly inspect the monitoring wells at the wetwells to determine any leakage between the primary and secondary containment systems.

The inspector will inspect the Leachate Collection System for evidence of leaking. If such leaking is occurring the location of the leak will be determined and repaired to construction specifications.

Verification of the leak will be accomplished by sampling the liquid and testing for baseline parameters. The results will be analyzed to determine if the liquid is possible leachate. If the liquid is not verified as leachate, further investigation will be conducted to determine the source of the liquid.

E. Leachate Collection Wet Wells

Visual inspection will be performed on the Leachate Collection Wet Wells. The inspector will inspect each wet well by removing the cover to ensure that the design capacity is not being exceeded. If the design capacity is being exceeded the frequency at which all wet wells are being pumped out will be increased. If little or no leachate is present in the wet wells each manhole will be checked and the leachate collection/discharge will be inspected for clogging.

F. Vectors

The presence of any vectors on the site will be determined. If present, exterminating or removal treatment will be implemented.

G. Other Facilities and Structures

All monitoring well casings, locks, fences, gates, manholes, pipes and clean-outs will be inspected to ensure that they are undamaged and functional. All damages will be repaired immediately and all structures will be re-secured.

H. Monthly Inspection Reports

After each monthly inspection, a report will be prepared and submitted to the Town of Hurley. Information about the inspection will include the date and time of the inspection personnel conducting the inspection, visual

observations of the inspectors, a list of items inspected and a brief description of any repair work including the nature of the damage, the repairs completed, and the estimated cost of the repairs. Also, any items that will need future attention or repairs not completed during the inspection, along with any other comments will be included. The inspection reports will be submitted to the Department of Solid Waste within one week of the inspection.

III. ENVIRONMENTAL MONITORING PLAN
(THIS SECTION WAS REVISED JUNE 1996)

A. Monitoring Wells

1. On-Site Groundwater Monitoring

Eight monitoring wells were installed around the perimeter of the Hurley Landfill. These wells were constructed in October of 1990, as part of the Hydrogeological Evaluation for the Closure Investigation.

The number of on-site monitoring wells which will continue to be sampled has been minimized and will consist of MW-1, MW-4, MW-6A and MW-7. These monitoring wells will be monitored on an annual basis in accordance with Table 1. The surface water sites consist of SS-3 and Betty and Rays Stream. These sites will also be monitored on an annual basis. In addition, a composite wetwell sample will be taken from the two wetwells and analyzed annually.

The on-site monitoring wells and surface sites will be monitored annually for Baseline Parameters and triannually for Expanded Parameters. In the event that the on-site test data consistently indicate the presence or absence of a particular contaminant then the continued testing of the parameter will be re-evaluated in conjunction with the NYSDEC.

TABLE 1

<u>ON-SITE MONITORING SITES</u>	<u>PARAMETERS</u>	<u>FREQUENCY</u>
<u>Monitoring Wells</u>		
MW-1, MW-4, MW-6A	Baseline Analysis	Annual
MW-7	Expanded Analysis	Triannual
<u>Surface Sites</u>		
SS-3, Betty and Rays	Baseline Analysis	Annual
	Expanded Analysis	Triannual
<u>Wetwell</u> (Composite)	Expanded Analysis	Annual

- Notes:
- (1) Each monitoring well and surface site will be analyzed for the specified analysis.
 - (2) The triannual Expanded Parameter testing will re-evaluated after every sampling event in order to further characterize the leachate composite.
 - (3) Monitoring well MW-4 will be re-installed and added to the monitoring network.

2. Off-Site Residential Well Testing

Seven residential wells on Collier and Dughill Road have been sampled and analyzed for selected parameters. These seven wells are listed in Table 2. On the basis of the data evaluated in the September 1994 Supplemental Residential Water Well Testing Report, prepared by Crawford & Associates, the residential wells on Collier Road and Dughill Road will continued to be monitored in order determine any landfill leachate influence. Table 2 outlines the off-site monitoring program.

TABLE 2
OFF-SITE MONITORING

<u>Off-Site Monitoring Sites</u>	<u>Parameters</u>	<u>Frequency</u>
Residential Wells		
1. [REDACTED]	8 Selected parameters: Total dissolved solids, Alkalinity, Iron, Manganese, Chloride, Sodium, Ammonia, And Barium	Annual
2. [REDACTED]		
3. [REDACTED]		
4. [REDACTED]		
5. [REDACTED]		
6. [REDACTED]		
7. [REDACTED]		

The off-site monitoring program will be periodically re-evaluated and adjusted if appropriate depending on the water quality data. The water quality in these wells currently exhibits leachate influence; however, due to the recent landfill closure, the off-site groundwater quality is expected to improve. In particular, the [REDACTED] residential well will be closely monitored to determine if remediation measures of this well will be necessary. Any further monitoring, or development of remedial measures, will be developed in accordance with the Ulster County Health Department and the NYSDEC.

3. Surface Water Monitoring

Two surface water sites will continued to be monitored at the Hurley landfill. One of the surface sites is off site at Betty and Rays stream. The other sampling point is on site at SS-3. Both of these surface water points will be monitored annually. Any modification to this surface water monitoring program will be approved by the NYSDEC.

4. Leachate Monitoring Points

The perimeter leachate collection system discharges leachate to two wet wells on the site. Samples from these two wetwells will be composited and tested for Expanded Parameters on an annual basis. Once the leachate has been characterized, the continued sampling for a full Expanded parameter analysis will be evaluated in conjunction with the NYSDEC.

B. Sampling Schedule

The sampling schedule is that shown in Tables 1 and 2. Once a substantial database is obtained the Town of Hurley, along with the NYSDEC will evaluate the testing results and determine if the current monitoring schedule will be modified, discontinued, or left in place.

C. Contingency Monitoring

The Hurley Landfill post closure monitoring program described herein constitutes contingency monitoring. Since past analytical results indicate contamination as defined in 6 NYCRR Part 360, the monitoring program described herein constitutes contingency monitoring as defined by the NYSDEC. Contingency monitoring will continue until the elevated parameter(s) is shown not to be landfill derived or that the release from the landfill has been mitigated. Any modifications to this contingency monitoring program will be developed in conjunction with the NYSDEC.

D. Sampling Procedures

Laboratory personnel must carry out the procedures and plans that follow when groundwater samples are taken at all contracted facilities. Modification of protocols will only be accomplished upon written approval of the director of the contracted laboratory and the NYSDEC Division of Solid Waste Region 3. The laboratory will ensure that all personnel are technically competent and fully trained and certified for Site Safety work involved with hazardous waste and will ensure that all equipment required for these

protocols are of the best available technology and appropriate for their task and properly maintained to the manufacturer's specifications.

2. Pre-Sampling Procedures

Field Service Supervisor shall assign a sampling team of at least two people to carry out the contracted work and establish a date and time agreeable with the NYSDEC Division of Solid Waste Region 3.

The sampling team shall be responsible for the following:

- a. Assemble and inspect all field equipment necessary for sample collection and ensure that it is clean and free of contaminants and in good working order.
- b. Ensure a good stock of all necessary items.
- c. Calibrate all equipment to manufacturing specifications.
- d. Establish a list and prepare bottles that will ensure the integrity of all groundwater samples for analysis. Sample shipping containers will be clean and contaminant free and contain ice or freezer packs adequate to keep the samples at 4°C until the samples reach the laboratory. All bottles will be packed to prevent breakage during transportation.
- e. The exact location and proper identification of each well will be

known by the sampling team or established with a representative of the Ulster County Department of Solid Waste or their engineer.

- f. Schedule travel, well evacuation and sampling for the day.
- g. Arrange for proper collection of evacuated water and cleaning fluids if necessary.

3. Groundwater Sample Collection

- a. Well Evacuation

Well Opening

Upon arrival the sampling team shall examine the well for any damage or tampering. They will report any problems to the lab director who will contact the NYSDEC Division of Solid Waste Region 3.

Overgrowth of vegetation may be removed or reported to the site manager.

No anti-rust agents or chemicals will be used on or near any part of the well.

It is advised that well caps be tapped slightly before opening as a check for wasp or bee nesting. At no time will the use of insecticides be permitted around or near any part of the well.

The escaping gas from the well may be sampled with hazardous gas screening equipment such as Organic Vapor Analyzer or Combustible Gas meters, at the discretion of the sampling team or upon contracted agreement with the NYSDEC Division of Solid Waste Region 3.

The need for respiratory equipment and evacuated water treatment will be determined.

Any hazardous gas readings shall be reported to the lab director.

All foreign matter such as rain water, dirt or debris shall be cleared to prevent anything from dropping into the well.

Gloves appropriate for the protection of the sampling team will be used and changed as needed and before sampling to prevent contamination of the wells and samples.

Water Level Determination

All water level measurement will be taken from the top of the

well casing.

Care will be taken so as not to confuse the security casing with the well casing and accurate field notes will be kept that reflect the upper level reference point.

Water level meters with electronic indicators and accurate to one hundredth of one foot (.01') or one eighth of an inch (1/8) and will measure the distance between the top of the well casing and the top of the standing water.

The well will be sounded and the volume of water determined.

The Water Level indicator shall be decontaminated before it is used again.

Well Evacuation

Each monitoring well will be evacuated and sampled using a dedicated bailer. Sampling will be conducted from the upgradient well to the downgradient wells in order to minimize any potential cross contamination.

Any free product or sheening of immiscible products will be reported to the lab director. The presence of these contaminants may alter analysis and stop further sampling of

the well. All evacuated water will be placed in buckets for removal (an treatment if necessary).

Under some conditions the evacuated waste will be returned to the groundwater as surface run off, within twenty five (25) meters of the well after all sampling is complete, if it is established that the practice will not significantly alter the volume or composition of the surface runoff, percolation rate or leachate of the groundwater.

Under normal conditions the wells will be evacuated for four (4) volumes of standing water. Wells may be evacuated five (5) volumes on agreement with the contracted facility. Wells may be evacuated using Teflon bailers with teflon coated bailer wires, or submersible pumps. Wells that are less than twenty five feet (25') may be evacuated with peristaltic pumps and dedicated polyethylene tubing.

Wells which recover slowly and will not regenerate beyond the screen level in less than four (4) volumes of evacuated water are considered Dry Wells. Dry Wells are evacuated to screen level twice after regeneration to within one foot (1') of their original static water levels.

Wells will be evacuated so as to avoid the agitation of the bottom sediments at a rate which matches the regeneration

rate of the well. Wells are checked for water volume height before, during and after evacuation. Wells are evacuated well enough in advance of the sampling to ensure the full recovery of the well to within six inches (6") of the standing water level at the time of sampling.

b. Sampling

Sampling begins when the well has been properly evacuated and allowed to recover to within six (6") inches of its original static. Sampling bottles are individually numbered and labeled for location, date, time sampler's name, analysis intended, and preservatives. Teflon bailers with teflon coated wires are used for sampling.

The first bailer full of water is used as a rinse. The second bailer full of water is used for pH, temperature and conductivity readings. pH, temperature and conductivity readings are checked again after all sampling is complete to evaluate changes of the analyte.

Volatile samples are collected first, followed by TOC organic samples, metals and the remainder of the containers are filled in order that remains consistent for subsequent wells.

Samples are immediately sorted in coolers, packed with ice

and returned to the laboratory without ever leaving the custody of the sampling team. Custody seals are used if shipping is needed.

c. Record Keeping

The sampling team will keep written record of the following:

- Day of week, date times of evacuation and sampling
- Weather conditions
- Conditions of the well (damage, foliage, outside interference, atmospheric, etc.)
- Readings of Air Monitoring Devices
- Names of sampling teams members
- Methods of evacuation
- Water levels before, during and after evacuation
- Depth to bottom of well (soundings)
- Volume of water evacuated and method of disposal of purged water
- Physical properties of evacuated water (immiscible layers, color turbidity)
- Decontamination and cleaning procedures for well equipment used at more than one well
- Sample label information
- Complete Chain of Custody papers which contain all the information on the sample label and the samplers signature.

The signature of anyone at the Landfill involved with sampling, the time and condition of the bottles as they arrived at the laboratory and the signature of the person at the laboratory responsible for their custody.

4. Surface Water Sample Collection

Grab samples will be collected in the ponds to the north and west of the landfill and the stream near Betty & Ray's Convenience Store on Route 28A. Sampling will be done just beneath the waters surface. The sample will be collected directly into the sample bottle or into intermediate clean, wide mouth jars if preservations are used.

5. Field QA/QC

Trip Blanks are prepared for all sampling events each day and are handled with the regular samples at the site.

Equipment blanks may be taken for each days analysis.

6. Equipment Decontamination

Decontamination of equipment can be done both in the laboratory and field. Although, with groundwater sampling equipment, decontamination will be done in the laboratory and dedicated to a sampling point on that day of sampling. Other equipment used can

be cleaned in the field. The field sampling equipment cleaning and decontamination is as follows:

- a. Non-phosphate detergent plus tap water was to remove visible particulates and oils and grease.
- b. Tap water rinse.
- c. Distilled/de-ionized water rinse.
- d. 10% Nitric acid rinse (diluted with DI Water) Only if samples are being analyzed for metals.
- e. Deionized/distilled water rinse (if nitric acid rinse)
- f. Acetone (pesticide grade) rinse only if samples are being analyzed for organics.
- g. Total air dry or pure nitrogen blow out.
- h. Distilled/de-ionized water rinse.

7. Equipment List

Groundwater Sampling

Equipment used for groundwater sampling generally falls into two categories; evacuation of well casing and collection of sample.

Equipment for evacuation can include:

- Teflon bailer (bottom fill) with teflon wire
- Stainless steel bottom fill bailer with teflon wire
- Submersible pump
- Centrifugal Diaphragm pump
- Bladder pump

Some evacuation equipment can be used for sampling also but must be dedicated to each well or have tubing dedicated for use in only one well.

Equipment for sample collection are included in the following list:

- *Teflon bottom fill bailer with teflon wire
- *Stainless steel bottom fill bailer with teflon wire
- Peristaltic pump
- Syringe sampler
- Bladder pump

NOTE: *most often used for sampling

In addition to evacuation and sampling equipment, other equipment is also necessary for a groundwater sampling project:

- Water level indicator (Electric depth meter)
- Sample containers with blank samples
- Preservatives as needed
- Ice and/or ice packs
- Field instrumentation (photovac tip, OVA, NHa, etc.)
- Field and trip blanks
- Field notebook
- Chain of custodies/field sheets
- Custody seals
- Sample labels
- Tool box
- Keys to wells
- Appropriate personal safety attire and equipment

8. Sample Preservation and Chain of Custody

To ensure sample integrity during transportation from the facility to the laboratory, the guidelines for preservatives containers and maximum holding times are shown in Table 2 and will be observed:

The information below will be included on the chain of custody report which accompanies all samples:

- Project name
- Sample locations
- Number and type of containers

-Name of person(s) maintaining custody

-Dates of possession

B. Routine and Baseline Analysis Table

The field and laboratory parameters for routine and baseline analyses are listed in Table 3.

NOTES:

1. Any floaters or sinkers found will be analyzed separately for baseline parameters.
 2. Surface water only.
 3. Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging or sampling will be reported.
 4. All samples for metals will be taken in duplicate. One analysis will be filtered in the field prior to preservation; the other will be whole and unfiltered. No other samples (organics or inorganic) will be filtered.
- * The New York State Department of Environmental Conservation may waive the requirements to analyze Hexvalent Chromium provided that Total and Hexvalent and Trivalent Chromium values do not exceed 0.05 mg/l.

C. Data Reporting

The results of site monitoring will consist of the field data sheets, chain of custody forms and the laboratory analysis results. Results will be sent to the Regional Office of the New York State Department of Environmental

Conservation (NYSDEC) within thirty (30) days of receipt of lab report or sixty (60) days within the sampling date.

An annual report will be prepared that will analyze the results, compare background and well sampling data and discuss which parameters are contravening water quality standards and their significance. This annual report shall be sent to both the NYSDEC Division of Solid Waste Region 3 and the Ulster County Health Department.

D. Explosive Gas Monitoring

Combustible gas monitoring will begin at the Hurley Landfill one month after the Closure Certification Report is submitted to the NYSDEC. Monitoring will be conducted monthly for the first year following closure. After one year, the data will be reviewed to determine if a revision to the schedule is warranted.

Monitoring will consist of five continuous sensor points in the Highway Garage and twenty dedicated soil probes along the perimeter of the Landfill and Highway Complex.

1. Dedicated Soil Probes

The approximate locations of the dedicated soil probes are shown on Figure 1 & 2 and are located where high gas concentration readings were reported in the Closure Investigation Report (dated June 1991) and the Response to Comments (dated November 1992). The probes located within the Highway Complex are positioned to alert the highway personnel of any gas migration from the landfill.

The dedicated soil probes will consist of a hollow tube with a perforated section at the bottom and will be installed to a satisfactory depth (i.e., at least 1.5 ft. deep if bedrock is not encountered and does not penetrate the water table). Soil gas samples will be extracted using a vacuum pump. Gas concentrations and LEL of the samples will be measured monthly using a portable combustible gas indicator.

2. Continuous combustible gas monitoring

Continuous methane gas monitoring will occur in the highway garage building as shown on Figure 2. The sensors are positioned at locations where possible gas migration could occur (i.e., near drain inlets and toilets). The system is equipped with alarm horns and lights which signal when the gas concentration reaches 10% of the LEL. Additionally, a light will be placed on the exterior wall of the building near the personnel entrance. The Town of Hurley will record the calibration and alarm events including information regarding the date, time, recorder's initials, LEL level, reason for incident, solution, and miscellaneous comments.

Should the explosive gas level exceed 25% of the LEL in the highway garage or 100% of the LEL at the property line, then remedial measures (possibly extension of the perimeter gas venting system) will be developed.

IV. EXPLOSIVE GAS CONTINGENCY PLAN

On-site combustible gas sensors will be installed in the Town Highway Garage in order to detect a build-up of methane gas in the building. A contingency plan has been developed in the event that the probes detect explosive gases exceeding 25 percent of the LEL inside the garage. Should the gas sensor alarms sound in the garage, all people will evacuate immediately. The employees will stand across Dug Hill Road or by the recycling center area in order to maintain a safe distance from the garage. All doors and windows should be left open. The Town Highway Superintendent will immediately contact the West Hurley Fire Department.

Below is a list of emergency response personnel who should be contacted in the event of an emergency at the Landfill.

- Hurley Fire and Rescue 914-338-8260
- West Hurley Fire Department 914-331-2522
- Ulster County Sheriff Department 914-338-3640
- New York State Police Hurley 914-338-1702

The Town will designate an emergency response personnel Team Leader. The Team Leader will assume the responsibility for the decision-making in case of an emergency associated with the explosive gas levels or any other emergency activities during the closure and post-closure of the Landfill.

All personnel at the site will be briefed on basic emergency procedures, such as communications, evacuation routes and safety. However, no employee should

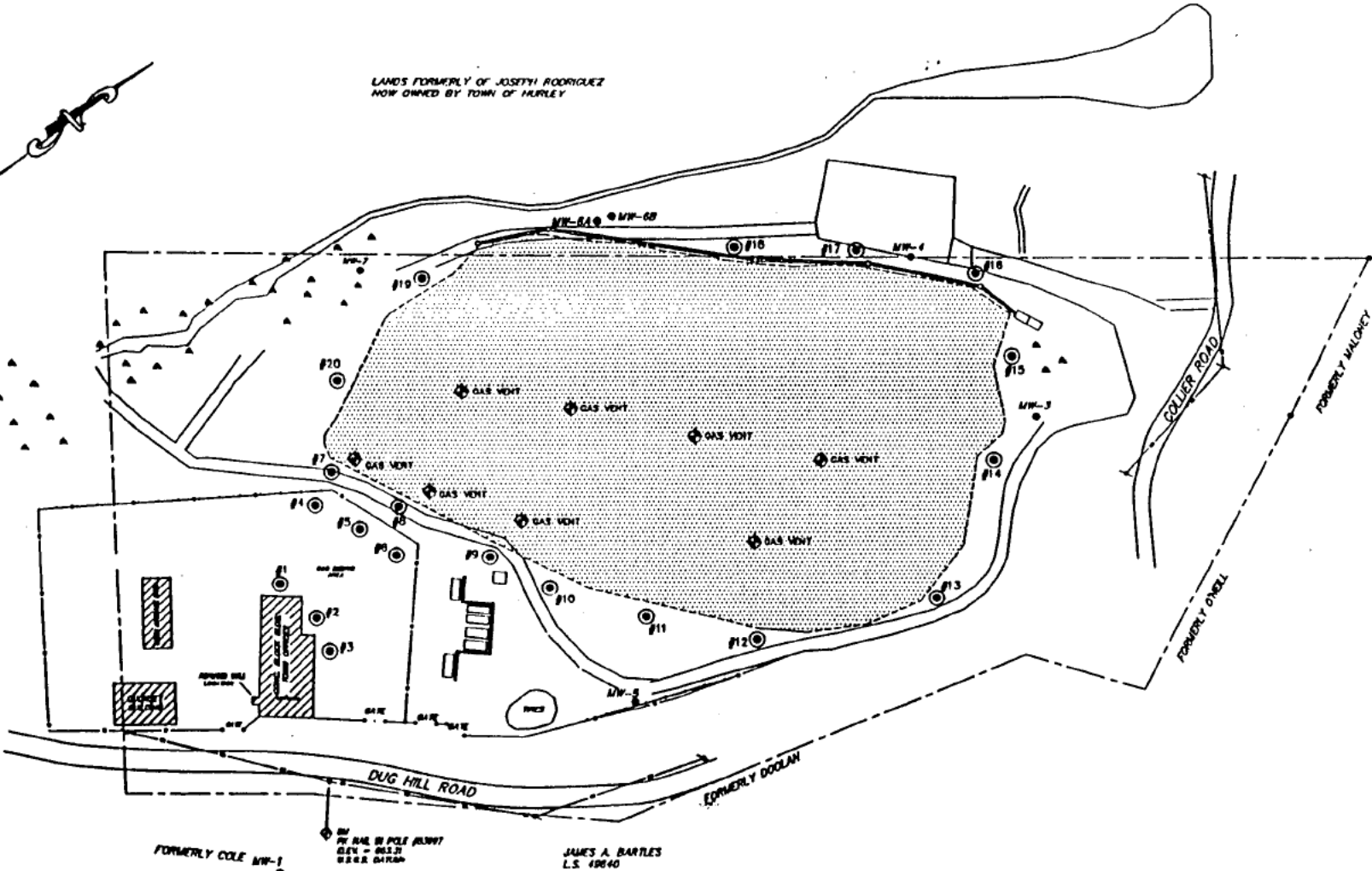
attempt emergency response or rescue until backup personnel and evacuation routes have been identified. No Town employee should re-enter the garage once the alarm system has sounded. If anyone needs to enter an emergency area, the buddy system should be enforced. Once the employees are out of the garage and safe, no personnel will engage in smoking or handling matches or lighters in the vicinity of the garage.

Any person re-entering the garage area must be adequately trained or certified for emergency response and/or trained for safety in potentially explosive hazardous situations.

H:\WORK\H0169.003\POST.RPT

OTHER LANDS OF THE TOWN OF HURLEY
 MW-2
 MW-3

LANDS FORMERLY OF JOSEPH RODRIGUEZ
 NOW OWNED BY TOWN OF HURLEY



FORMERLY COLE MW-1
 BY PW RAIL IN POLE (RW-1)
 G.E.V. = 883.20
 G.S.E. DATUM
 -ELEV. = 640
 ASSUMED DATUM AS
 PER BROWNE MAP

JAMES A. BARTLES
 L.S. 49840

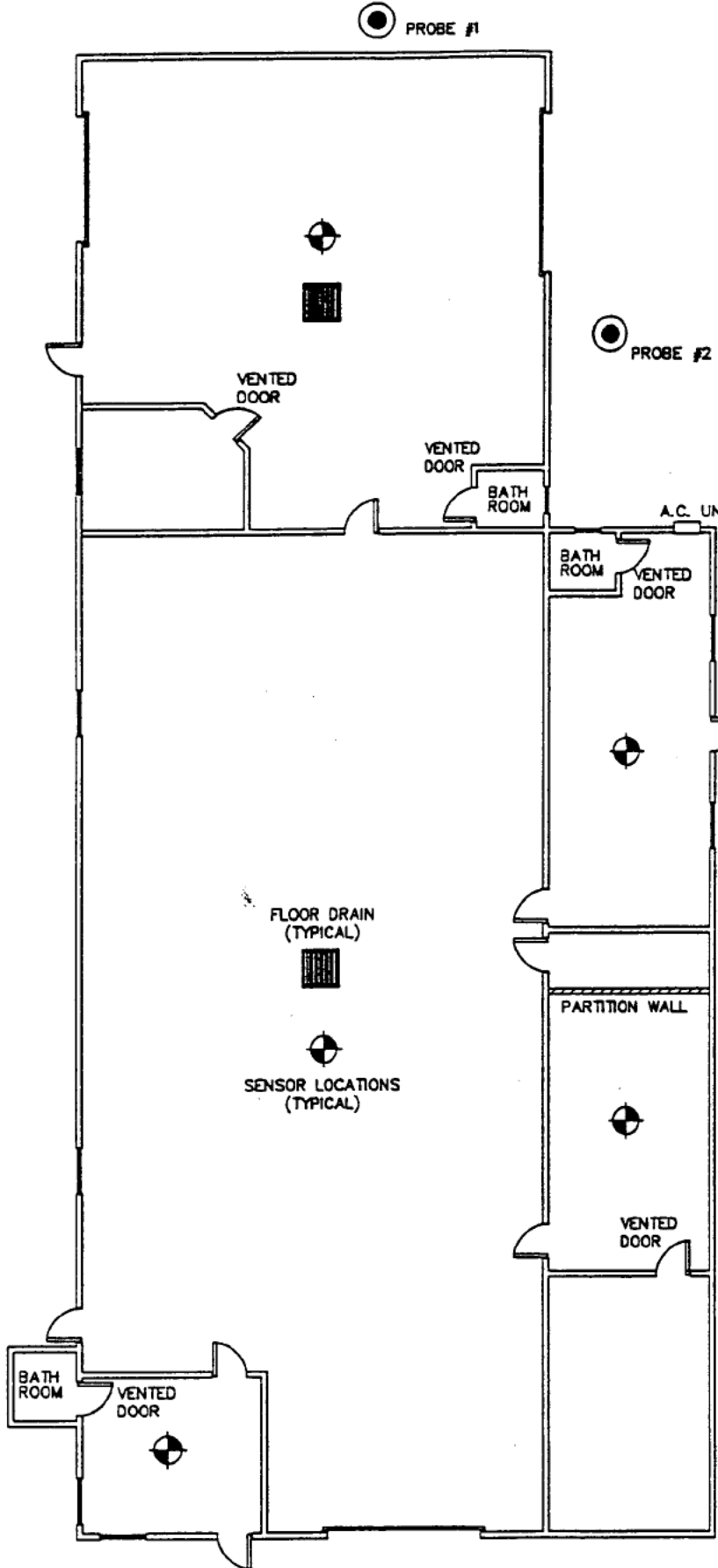
LEGEND:

- ◆ GAS VENT
- ⊙ SOIL PROBE LOCATION




HURLEY LANDFILL CLOSURE	
GAS DETECTION SYSTEM DEDICATED SOIL PROBE LOCATIONS	
CRAWFORD & ASSOCIATES <small>ENGINEERING CONSULTANTS 405 East 46th Street, New York, New York 10017</small>	

SCALE: N.T.S.

FIGURE 1




LEGEND

-  FLOOR DRAIN
-  SENSOR
-  PROBE

NOTES:

1. BUILDING LAYOUT IS NOT TO SCALE AND SHOWS APPROXIMATE ROOM, WALL AND DOOR LOCATIONS.
2. PLACEMENT OF SENSORS DOES NOT TAKE EQUIPMENT LOCATION INTO CONSIDERATION.
3. SENSORS SHALL BE MOUNTED ON WALL 1 FT. BELOW CEILING.
4. SYSTEM PROVIDES FOR DETECTION OF GAS (METHANE) ONLY. INTERLOCKING OF ELECTRIC SERVICE AND/OR PURGING OF FACILITY IN ACCORDANCE WITH APPLICABLE SECTION OF THE N.E.C. HAVE NOT BEEN PROVIDED.

DUG HILL ROAD

HURLEY LANDFILL CLOSURE HIGHWAY GARAGE	
GAS DETECTION SYSTEM CONTINUOUS COMBUSTIBLE GAS SENSOR LOCATIONS	
 CRAWFORD & ASSOCIATES <small>ENGINEERING CONSULTANTS 405 East 42nd Street, New York, N.Y. 10017</small>	
SCALE: N.T.S.	FIGURE 2