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Solid Waste Section
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SECTION 5.0

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Division of Waste Management
Solid Waste Section

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OPERATION PLAN

OVERVIEW

The Iredell County Solid Waste Facility located at 354 Twin Oaks Road consists of an administration/scale house office, tipping floor with baling area, public access and recycling area, maintenance shop, white goods area, swap shop, tire collection area, C&D Landfill, chipping and grinding area, and a MSW landfill. A leachate collection lagoon and gas flare is also located on site. Materials delivered to this site originate from within Iredell County and may be delivered by the public, private haulers, contractors, municipalities or by the county.

All commercial waste is weighed at the scale as it enters the facility. Trucks may be issued ID numbers that allow them to bypass weighing out empty. Those without numbers must return to the scale after unloading. Non chargeable materials delivered to the public access area are not weighed when delivered but are loaded on county trucks and weighed before disposal. Haulers are directed to the proper disposal area by the weigh master. The equipment operators and traffic controllers verify that the loads are in the correct areas. Commercial MSW and C&D materials are sent to their respective disposal sites on the landfill to unload. The waste is compacted by Rex 370 and 390-C compactors. Several other pieces of heavy equipment is available to be used in these areas, including dozers, loaders, scraper pans, articulating trucks and a track hoe.

Waste material from the public access area is dumped by means of gates and chutes onto the tipping floor and is loaded into 40 yard roll off boxes using a rubber tired loader. Small loads of demolition materials are dumped in a separate area on the tipping floor and are loaded likewise to be hauled to the C&D landfill. This is primarily done as a safety issue to avoid having small trucks and trailers in the landfill where they are more at risk of an accident. It is done during periods of extended bad weather to avoid having vehicles stuck in the landfill. Recyclable materials are stored in bunkers along the tipping floor walls. The loader operator moves them to the conveyor belts where they are processed by balers into shippable bales. The bales are stacked for storage in the lower level of the facility until shipping to market is arranged. There is a loading dock located on the back of this building to allow recyclable bales to be loaded into trucks. All materials in this area except aluminum cans are baled for marketing. The aluminum cans are processed via a separator and crusher and then blown into a trailer.

Brush and clean pallets are routed to a separate processing area where they are stockpiled until sufficient quantities are accumulated to warrant the contracted grinding service visiting to process on site. Brush is ground into landscape mulch and removed by the contractor. Pallets are ground and may be left on site to be used as wet weather turn around or in landfill road bases. Leaves are collected in this area but are not processed. They are allowed to compost by the layer method and are eventually used as a soil amendment on landfill slopes.

5.1 Introduction

Iredell County Landfill will only accept Municipal Solid Wastes (MSW) from Iredell County. Iredell County will construct an approximately 12 acre Municipal Solid Waste Landfill (Phase 4) according to Subtitle D requirements. The facility will be constructed with 24 inches of cohesive soil (permeability of 1.0×10^{-7} cm/sec), 60 mil High Density Polyethylene liner (HDPE), 36 inches of protective cover over the liner and a leachate collection system which flows to the existing leachate lagoon.

The perimeter of the lined area will be marked off by 3 inch PVC pipe at 100' intervals that will be placed in the anchor trenches. Solid waste will not be placed within four (4) feet of this boundary to assure that it is being placed directly above the liner system so that no leachate can flow outside of this area.

All stormwater that comes in contact with solid waste will be handled as leachate. The leachate is gravity fed from the landfill, through a dual containment sewer line and HDPE manholes, tying in to the existing sewer line located on the property. Leachate from Phase 4 will be pumped from the collection field into the sewer system.

Leachate will be treated at the City of Statesville Waste Water Treatment Plant. The leachate will have to be tested according to the pretreatment conditions outlined in the pre-treatment agreement

Leachate will be recirculated. (See Appendix IV)

The leachate lagoon will be inspected on a monthly basis and a report generated and placed in the landfill records. The report will include the date the liner was inspected, the inspector, general observations since the last inspection, visible abrasions, possible stress cracks, or obvious punctures. Stress cracks can occur in wrinkles that are generated from heat expansion or contraction due to freezing. Also, the HDPE liner may deteriorate due to ultra violet light and this can appear as an abrasion where material can be scraped away with a hard object. If any damage or possible weak spots due to ultra violet exposure has been detected, a qualified HDPE installation company shall be notified immediately so that a repair patch can be installed. The leachate level shall not be allowed to exceed the depth of the damaged liner until it has been repaired and tested by the liner installation company. Once this has been accomplished all testing documentation shall be placed in the operating records.

There are several means of daily cover available to the County. A traditional soil cover from on site stockpile may be utilized or a combination of soil and auto shredder residue (ASR) can be applied. Posi-Shell is an approved alternative daily cover which is applied by spray application. The following procedures are utilized in its application.

1. Posi-Shell mixture is loaded into applicator tank approximately 30 minutes before application is expected to begin; this is normally 30 to 45 minutes before the last load is

expected. This combination includes 1200 gal of water, Posi-Pak fiber and dry mix of Portland cement and fly ash.

2. The final MSW load is normally received at 3:30 p.m.
3. The applicator is towed to the working face by means of a loader or all-wheel drive truck.
4. Application is done by two employees and is completed in two passes from opposite directions to avoid shadowing effect.
5. Equipment is cleaned out and returned to the staging area.
6. Posi-Shell cover may be left undisturbed up to 14 days at which time it must be covered by more waste or soil.

Daily cover may also be the traditional 6 inches of soil or a combination of soil and Auto Shredder Residue(ASR) instead of the utilization of soil alone. Operational plan is as follows:

1. The ASR will be delivered to the working area as directed by the County Personnel.
2. At the end of each working day the ASR will be distributed over the daily working area with a front end loader and spread out with a dozer to a minimum depth of three inches.
3. Once the ASR is spread, the soil can then be placed over it at a minimum depth of 3 inches. This can be done by several methods such as, but limited to, a pan spreading the soil out over the entire area or just dropping its load and the soil being pushed out by a dozer. During wet weather conditions, the soil could be stockpiled and sprinkled over the ASR with a front end loader. Whichever method is used, a minimum of three inches of soil will be used. If there is more ASR delivered to the site than can be used for that day's cover, the remaining stockpile will be covered with a tarp or similar synthetic cover until it is used for daily cover. It may also be sprayed with Posi-Shell and allowed to remain in place up to 14 days.
4. Areas which will not have additional waste placed on them for twelve months or more, but where final termination of disposal operations has not occurred, will be covered with a minimum of one foot of intermediate cover.

The County has implemented a program at the landfill for detecting and preventing the disposal of hazardous and liquid wastes. The program consists of random inspection of incoming loads at a minimum of 1% of the weekly traffic. Landfill personnel have been trained to recognize hazardous and liquid wastes. Records will be kept on the training and the inspections. (See Section 5.3-Appendix I)

The County also receives very little asbestos; however, the asbestos is buried in marked areas that not contiguous with other disposal areas. Delivery of friable asbestos requires a mandatory 24 hour prior notice. The County receives no type of sludges at this time. If the County were to accept Statesville's waste water treatment plant sludge, it would be co-disposed in the MSW landfill. Asbestos and animal carcasses are considered to be waste that requires special handling and as such are charged increased rates.

The county receives a small amount of animal carcasses, mainly small animals. A policy to regulate the safe handling of animal remains has been developed and is included in this document. (see 5.7 Appendix IV)

The County of Iredell will monitor for explosive gases at landfill structures and the perimeter of the landfill. The concentration of methane gases generated by the landfill cannot exceed 25 percent of the lower explosive limit for methane in the structures, and it cannot exceed 100 percent of the lower explosive limit for methane of the landfill property boundary. (See Section 5.5-Appendix III)

Methane detection alarms have been installed in all buildings located on landfill property. If an alarm sounds or during monitoring methane gas is found to exceed the acceptable limits at either the property boundary or landfill structures, it is the County's responsibility to do the following:

1. Immediately take all necessary steps to ensure protection of human health, i.e. no smoking, temporarily abandon the structure and notify the Division of Solid Waste Management.
2. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
3. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division of Solid Waste management that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.

Off and on site erosion will be controlled through erosion control structures and devices. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.

The County of Iredell will record and retain at the landfill an operating record of the following information:

- (1) Inspection records, waste determination records, and training procedures;
- (2) Amounts by weight of solid waste received at the landfill;
- (3) Waste determination, Leachate sampling data, leachate levels, and meteorological data;
- (4) Gas monitoring results and any remediation plans;
- (5) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;
- (6) Any monitoring, testing or analytical data required for closure or post-closure;
- (7) Any cost estimates and financial assurance documentation.

All information contained in the operating record will be furnished upon request to the Division of Solid Waste Management or be made available at all reasonable times for inspection by the Division.

Ground and surface water will be sampled and analyzed according to Subtitle D Appendix I detection monitoring requirements. The monitoring frequency for all Appendix I(Section 5.3) detection monitoring constituents will be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) will be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) will be collected and analyzed during subsequent semiannual sampling events.

If the County of Iredell determines that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I at any monitoring well at the relevant point of compliance, the County will, within 14 days of the finding, report to the Division of Solid Waste and place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels. The County will establish an assessment monitoring program within 90 days. The County may demonstrate that a source other than the landfill caused the contamination or that the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting these demonstrations will be certified by a Licensed Geologist or Professional Engineer and approved by the Division of Solid Waste. A copy of this report will be placed in the operating record. If a successful demonstration is made, documented, and approved by the

Division, the County may continue detection monitoring. If after 90 days, a successful demonstration is not made, the County will initiate an assessment monitoring program.

5.2 Operational Requirements

1. Waste Acceptance and Disposal Requirements
 - a. The Municipal Solid Waste Landfill (MSWLF) will only accept those solid wastes which it is permitted to receive. Iredell County will notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive. Signs are placed at the entrance to the Landfill stating that Hazardous and Liquid wastes are not accepted and that random waste screening is performed.
 - b. The following wastes are prohibited from disposal at the MSWLF:
 - i. Hazardous waste as defined within 15A NCAC 13A, to also include hazardous waste from conditionally exempt small quantity generators.
 - ii. Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761.
 - iii. Bulk or non-containerized liquid waste will not be placed in the landfill unless:
 - (i) The waste is household waste other than septic waste and waste oil,
 - (ii) The waste is leachate or gas condensate derived from the landfill.
 - iv. White Goods, Yard Waste, Tires.
 - v. Containers holding liquid wastes will not be placed in the landfill unless:
 - (i) The container is a small container similar in size to that normally found in household waste;
 - (ii) The container is designed to hold liquids for use other than storage; or
 - (iii) The waste is household waste.
 - vi. For the purpose of this paragraph, "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S. W. 846.
 - c. Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site will be covered immediately. A one hour prior notice of delivery is requested. Carcasses can only be accepted at the landfill between the hours of 8:00 a.m. and 2:00 p.m. Monday –Friday and 8:00 a.m. and 12:00 p.m. on Saturday. (Section 5.7, Appendix V)
 - d. Asbestos waste will be accepted. The waste will be put in a hole dug out of the existing waste and buried immediately. A 24 hour notice will be given to the Landfill before any asbestos arrives, records will be kept as to whom and type of asbestos buried.
 - e. Wastewater treatment sludges may be accepted either as a soil conditioner incorporated into or applied onto vegetative growth layer but in no case greater

than six inches in depth. Or wastewater treatment sludges may be co-disposed in the lined area.

- f. Iredell County will continue a program at the Landfill for detecting and preventing the disposal of hazardous and liquid wastes. (Section 5.3-Appendix I) This program will include, at a minimum:
 - i. Random inspections of incoming loads or other comparable procedures;
 - ii. Records of any inspections;
 - iii. Training of facility personnel to recognize hazardous and liquid wastes.
 - iv. Development of a contingency plan to properly manage any identified hazardous and liquid wastes. The plan must address identification, removal, storage and final deposition of the waste.
 - g. Waste placement will be within the area limits of the base liner system and in a manner consistent with the effective permit.
2. Cover material requirements.
- a. Except as in Part (b), Iredell County must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors blowing litter, and scavenging.
 - b. Alternative materials such as synthetic cover may be used as daily cover on the working face or until it is necessary to cover with earthen material. The alternative material must be approved by the Division of Solid Waste and applied according to manufacturers recommendations. At a minimum soil cover will be used once a week. (Section 5.4-Appendix II)
 - c. Areas which will not have additional wastes placed on them for 12 months or more, but where final termination of disposal operations has not occurred, will be covered with a minimum of one foot of intermediate cover.
3. Disease vector control
- a. Iredell County will prevent or control on-site populations of disease vectors using techniques appropriate for protection of human health and the environment. At the end of every day, waste will be covered either by synthetic cover or 6" of soil cover. At a minimum soil will be used once a week. Any waste that requires immediate cover will be covered immediately with soil.
 - b. "Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

4. Explosive gases control

- a. Iredell County must ensure that:
 - i. The concentration of methane gas generated by the landfill does not exceed 25 percent of the lower explosive limit for methane in landfill structures (excluding gas control or recovery system components); and
 - ii. The concentration of methane gas does not exceed 100 percent of the lower explosive limit for methane at the landfill property boundary.
- b. Iredell County will implement a routine methane monitoring program to ensure that the standards of 4 (a) are met. (Section 5.5-Appendix III)
 - i. The type and frequency of monitoring must be determined based on the following factors:
 - I. Soil conditions;
 - II. The hydrogeologic conditions surrounding the facility;
 - III. The hydraulic conditions surrounding the facility;
 - IV. The location of facility structures and property boundaries.
 - ii. The minimum frequency of monitoring will be quarterly.
- c. If methane gas levels exceeding the limits specified in 4 (a) are detected, the owner or operator will:
 - i. Immediately take all necessary steps to ensure protection of human health, i.e. no smoking, temporarily abandon the structure and notify the Division of Solid Waste Management.
 - ii. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
 - iii. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division of Solid Waste Management that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.
- d. "Lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25° C and atmospheric pressure.

5. Air Criteria

- a. Iredell County will ensure that the landfill does not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or

promulgated by the US. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.

- b. Open burning of solid waste, except for the infrequent burning of land clearing debris generated on site or debris from emergency clean-up operations, is prohibited. Any such infrequent burning will be approved by the Division of Solid Waste Management. Ashes resulting from the burning of solid waste or solid fuels are not accepted for disposal.
- c. Earth moving equipment will be provided to control accidental fires and leachate tank trucks used for water or leachate that would be recirculated can also be used. Arrangements have been made with the local fire department, Wayside to provide actual fire protection.

Wayside Fire Department has access at all times to the landfill to provide fire fighting services when needed. Key personnel with the Wayside Department have conducted walk through exercises to familiarize firefighters with the location of various materials and areas of the landfill. Landfill personnel can use soil to isolate the fire so it will not spread any further but actual fighting of the fire should be the responsibility of the trained fire department.

- 1. Employees of the department are trained yearly in fire prevention and the proper use of extinguishers. All trucks and equipment have been equipped with extinguishers. A tanker truck equipped with fire hose and a water cannon is on site and maintained on "ready status" at all times.
 - 2. All trucks and equipment are equipped with portable extinguishers which are inspected regularly.
 - 3. The 390-C compactors have factory installed fire control systems.
 - 4. Fires that occur at the landfill will be reported to the Division of Solid Waste Management within 24 hours and written notification will be submitted within 15 days.
6. Access and safety requirements
- a. The landfill will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division of Solid Waste Management to prevent unauthorized entry.
 - b. The site will be staffed at all times while it is open for public use to ensure compliance with operational requirements. Minimum staffing requires a scale house operator, facility traffic controller and equipment operator be present.
 - c. The access road to the site will be of all-weather construction and maintained in good condition.
 - d. Dust control measures will be implemented when necessary. If dust problems should arise, the county will use any reasonable means necessary to reduce it. At a minimum the county will spray water on necessary areas.
 - e. Signs providing information on tipping or disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information will be posted at the site entrance.

- f. Signs will be posted stating that no hazardous or liquid waste can be received.
 - g. Traffic signs or markers will be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
 - h. The removal of solid waste from the landfill will be prohibited unless the County approves and the removal is not performed on the working face.
 - i. Barrels and drums will not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein, except fiber drums containing asbestos.
7. Erosion and Sedimentation Control Requirements
- a. Adequate sediment control measures (structures or devices); will be utilized to prevent silt from leaving the landfill.
 - b. Adequate sediment control measures (structures or devices); will be utilized to prevent excessive on-site erosion.
 - c. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within **30 working days** or **120 calendar days** upon completion of any phase of landfill development.
8. Drainage Control and Water Protection Requirements
- a. Surface water will be diverted from the operational area.
 - b. Solid waste will not be disposed of in water.
 - c. Leachate will be contained on site and properly treated prior to discharge.
 - d. The landfill will not:
 - (i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements pursuant to Section 402.
 - (ii) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.
9. Liquids Restriction
- a. Bulk or non-containerized liquid waste will not be placed in the landfill unless:
 - (i) The waste is household waste other than septic waste and waste oil,
 - (ii) The waste is leachate or gas condensate derived from the landfill.

- b. Containers holding liquid wastes will not be placed in the landfill unless:
 - (i) The container is a small container similar in size to that normally found in household waste;
 - (ii) The container is designed to hold liquids for use other than storage; or
 - (iii) The waste is household waste.

c. For the purpose of this paragraph:

- (i) Liquid waste means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S. W. 846.

d. Test for free liquids:

Sludges or other wastes may be tested for free liquids after previous screening tests have shown that the waster is not hazardous and does not contain PCB's. The specified test to determine whether or not a material is considered to be a liquid is the Paint Filter Test method 9095. The procedure for conducting this test is as follows:

- (i) Obtain standard 400- micron paint filter;
- (ii) Place a properly-sized, clean, dry funnel in a ring stand or similar device;
- (iii) Fold the filter and line the funnel with it;
- (iv) Place a 100 ml sample of waste into the funnel;
- (v) Place a clean, dry container under the funnel; and,
- (vi) Check in exactly 5 minutes to see if any liquid is in the container.
- (vii) If any liquid passes through the filter in 5 minutes or less, the waste is considered to be a liquid. The filtrate can be water, oil or any combination of any non-hazardous liquids.

10. Record keeping Requirements

- a. Iredell County MSWLF will record and retain at the facility, or an alternative location near the facility approved by the Division of Solid Waste Management, in an operating record the following information as it becomes available.
 - (i) Inspection records, waste determination records, and training procedures;
 - (ii) Amounts by weight of solid waste received at the landfill to include source of generation.
 - (iii) Waste determination, Leachate sampling data, leachate levels, meteorological data;
 - (iv) Gas monitoring results and any remediation plans;

- (v) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;
 - (vi) Any monitoring, testing or analytical data required for closure or post-closure; and,
 - (vii) Any cost estimates and financial assurance documentation.
- b. All information contained in the operating record will be furnished upon request to the Division of Solid Waste Management or be made available at all reasonable times for inspection by the Division.
 - c. Iredell County will maintain a copy of the operation plan at the landfill.

11. Spreading and Compacting Requirements

- a. The initial lift of solid waste will be placed over the entire phase. This lift will be covered with six (6) inches of daily cover. This lift will absorb the rain water and allow some of it to evaporate prior to reaching the leachate collection system. When a heavy rain does occur, the impact on the leachate collection system will not be immediate. Prior to placement of solid waste over any leachate pipe, the geotextile fabric that is covering the stone will be folded back so that solid waste will be in direct contact with the stone. This method will not allow biological growth to develop on the geotextile which could eventually clog the system.
- b. The initial placement of waste will fill the bottom of the phase that is segregated for leachate. This initial lift will be 3 to 4 feet thick. As this lift is being placed, a spotter should be placed in the landfill to assure that the equipment does not drive any long, sharp objects through the protective cover into the liner system. If an object were to penetrate the liner system, the protective cover must be removed and the penetration repaired.
- c. The landfill will restrict solid waste into the smallest area feasible, typically 60' x 75' area. Lifts of waste will be placed in a fashion to allow for a minimum of 25% and a maximum of 33% slopes.
- d. Solid waste will be compacted as densely as practical into cells. The compactor should run over an area of solid waste a minimum of 6 times.
- e. Appropriate methods such as fencing and diking will be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation will be collected and returned to the area.

12. Leachate Management Plan

- a. Iredell County will periodically maintain the leachate collection system.
- b. The lagoon liner will be inspected visually each month. Fencing and locks around lagoon are maintained.

- c. Iredell County will quality sample their leachate bi-annually for Appendix I (Section 5.3) constituents, pH, BOD, COD, TDS, phosphate, nitrate, and sulfate. The sample will be obtained from the lagoon and sampled the same time as the monitoring wells.
- d. The leachate is being treated by the City of Statesville Waste Water Treatment Plant.
- e. Under extreme operational conditions Iredell has the option of shutting down the flow of leachate to the lagoon by use of a shut off valve. The leachate will be temporarily stored within the MSWLF units until such a time the flow of leachate can continue to the lagoon. If any rain or other event requires storage of leachate or storm water in the cell, the Division of Solid Waste will be notified immediately followed by written communication.
- f. Pump activity shall be monitored at least once a week and the date, hours of operation, and flow shall be recorded. The log shall be kept on site for review.
- g. The leachate lines shall be flushed at least once per year. This can be done by using a tanker full of either leachate or plain water. The liquid can either be pumped or gravity flow into the clean outs provided at the ends of the lines. Once the liquid is placed in the lines, the leachate depth shall be monitored at the pump station to assure that the liquid level is rising as time passes due to the liquid placed in the lines.
- h. The pumps are to be operated manually to assure that they are operating properly.
- i. Observing the depth monitoring device as the water is reaching it will assure that it is also working properly.
- j. The cleaning of the lines, manually operating the pumps and the observation of the depth monitor shall be recorded and become part of the landfill operating record.

5.3 Appendix I

A. INTRODUCTION

The municipal solid waste stream is made up of wastes from all sectors of society. The waste is often categorized by its source or its characteristics. Terms used include commercial, industrial, residential, biomedical, hazardous, household, solid, liquid, demolition/construction, sludge, etc. Regardless of how one classifies wastes, the bottom line is that wastes are delivered to the landfill and a management decision must be made to either reject or accept them. This responsibility rests with the manager of the landfill. Wastes which are not authorized to be accepted at the landfill create a number of potential problems including: (1) liability due to future releases of contaminants; (2) bad publicity if media learns of unacceptable waste entering the landfill; (3) potential for worker injury; (4) exposure to civil or criminal penalties; (5) damage to landfill environmental control systems.

B. HAZARDOUS WASTE REGULATIONS AND MANAGEMENT

In the United States, hazardous waste is regulated under RCRA, Subtitle C. A waste is hazardous if it is listed as a hazardous waste by the Administrator of the Environmental Protection Agency (EPA) in the Code of Federal Regulations, Title 40, Part 261, or if it meets one or more of the hazardous waste criteria as defined by EPA. These criteria are:

1. Ignitability

Ignitable waste is a waste that burns readily, causes a fire by friction under normal circumstances, or is an oxidizer. Any waste having a flash point of <140F falls in this category. Flash point is that temperature at which a liquid gives off vapors that will ignite when an open flame is applied. Under Department of Transportation (DOT) definitions, a flammable liquid has a flash point of >100 F. A combustible liquid has a flash point between 100 and 200 F. Therefore, a flammable liquid is always hazardous while a combustible liquid may or may not be hazardous depending upon its flash point.

2. Corrosivity

A corrosive waste is one having a very high or a very low pH. The pH of a liquid is a measure of how acidic or basic (alkaline) the material is. The pH scale ranges from 0 to 14. High numbers are basic and low numbers are acidic. A substance having a pH ≤ 2.0 or ≥ 12.5 is defined as hazardous under RCRA.

3. Reactivity

A waste is reactive if it is normally unstable: reacts violently with water; forms an explosive mixture with water; contains quantities of cyanide or sulfur that could be released to the air; or can easily be detonated or exploded. These wastes may fall into any one of several DOT categories.

4. Toxicity Characteristic Leaching Procedure (TCLP)

A waste is TCLP toxic if the concentration of any constituent in Table 1 exceeds the standard assigned to that substance. The TCLP is a methodology which attempts to simulate the conditions within a landfill. An acidic solution is passed through a sample of waste and the resultant "leachate" is analyzed for contaminants. The TCLP is designed to detect heavy metals, pesticides and a few other organic and inorganic compounds. The purpose of the test is to prevent groundwater contamination by highly toxic materials. TCLP tests the mobility of 40 different elements and compounds.

Except in certain specified circumstances, regulated quantities of hazardous waste must be disposed of at a permitted hazardous waste disposal facility. In accordance with 40 CFR Part 261.3, **any material contaminated by a hazardous waste is also deemed to be a hazardous waste and must be managed as such.** Hazardous waste from conditionally exempt small quantity generators are to be disposed of in a Hazardous waste disposal facility. RCRA permits are also required to store, transport, and treat hazardous waste.

C. POLYCHLORINATED BIPHENYL'S (PCBs)

1. Introduction

PCBs are nonflammable and conduct heat without conducting electricity. These compounds were most frequently used as an additive to oil or other liquids in situations where heat was involved. The PCBs enhance the heat conducting properties of the liquid and thereby increase the heat dissipation or cooling effect obtained. They have also been used in lubricants and paint. In the United States one of the most common applications was in electric transformers. The only effective method for destroying PCBs is high Temperature incineration which is relatively expensive due to a shortage of PCB incineration capacity.

TABLE 1

T.C.L.P. CONSTITUENTS & REGULATORY LEVELS (mg/L)			
CONSTITUENT	REG LEVEL	CONSTITUENT	REG LEVEL
Arsenic	5.0	Hexachlorobenzene	0.13
Barium	100	Hexachloro-1,3-butadiene	0.5
Benzene	0.5	Hexachloroethane	3.0
Cadmium	1.0	Lead	5.0
Carbon Tetrachloride	0.5	Lindane	0.4
Chlordane	0.03	Mercury	0.2
Chlorobenzene	100	Methoxychlor	10.0
Chloroform	6.0	Methyl ethyl ketone	200
Chromium	5.0	Nitrobenzene	2.0
m-Cresol	200	Pentachlorophenol	100
o-Cresol	200	Pyridine	5.0
p-Cresol	200	Selenium	1.0
Cresol	200	Silver	5.0
1,4-Dichlorobenzene	10.0	Tetrachloroethylene	0.7
1,2-Dichloroethane	0.7	Toxaphene	0.5
1,1-Dichloroethylene	0.5	Trichloroethylene	0.5
2,4-Dichlorophenoxyacetic acid	0.7	2,4,5-Trichlorophenol	400
2,4-Dinitrotoluene	0.13	2,4,6-Trichlorophenol	2.0
Endrin	0.02	2,4,5-TP (Silvex)	1.0
Heptachlor (and its hydroxide)	0.008	Vinyl Chloride	0.2

By law PCB's are no longer used as dielectrics in transformers and capacitors manufactured after 1979. There are many millions of pounds of PCBs still in use or in storage. One example is the ballasts used in fluorescent light fixtures. It has been estimated that there are between 0.5 million and 1.5 billion ballasts currently in use in this country. Due to the long life of these units, about half of these may be of pre-1979 manufacture and contain PCBs. Since each ballast contains about one ounce of nearly pure PCB fluid, there are about **20 to 30 million pounds** of PCBs in existing lighting fixtures. These items are not the subject to RCRA Subtitle D Waste Screening.

Commercial or industrial sources of PCB wastes that should be addressed by the program include:

- Mineral oil and dielectric fluids containing PCBs;
- Contaminated soil, dredged material, sewage sludge, rags, and other debris from a release of PCBs;

- Transformers and other electrical equipment containing dielectric fluids; and
- Hydraulic machines.

2. PCB Regulatory Requirements

As contrasted to hazardous wastes, the Toxic Substance Control Act regulates PCBs based on the concentration of PCBs in the waste rather than the source or characteristic of the waste. The regulations concerning PCB disposal are spelled out in 40 CFR Part 761. Subtitle D of RCRA merely requires that PCB waste not be disposed in a MSW landfill. PCB management requirements include:

Waste containing more than 500 ppm of PCBs must be incinerated. Waste containing from 50 to 500 ppm must be disposed of by incineration, approved burning, or in chemical waste landfill permitted to receive such wastes. The regulations are silent concerning wastes containing less than 50 ppm of PCBs; however, the regulations cannot be circumvented by diluting stronger wastes.

D. FUNDAMENTALS OF WASTE SCREENING

1. Know Your Generators and Haulers

Since the level of sophistication of your waste screening program will be a reflection of the likelihood of hazardous waste and PCB waste being in your incoming waste, **knowledge of the commercial industrial base of your service area is critical.** Some examples are the automotive industry, which generates solvents, paint wastes, lead acid batteries, grease and oil; the dry cleaning industry, which may generate filters containing dry cleaning solvents; metal platers which generate heavy metal wastes; and other industries which generate a variety of undesirable wastes; e.g. chemical and related products, petroleum refining, primary metals, electrical and electronic machinery, etc.

Landfill managers should also know the haulers and trucks serving the businesses in their community which are likely to carry unacceptable wastes.

Some local governments and solid waste management agencies have enacted legislation requiring haulers to provide a manifest showing the customers whose wastes make up that particular load. Such a manifest is an extremely useful tool when a load is found to contain prohibited wastes. It is unwise to accept wastes from unknown, unlicensed, or otherwise questionable haulers.

2. Inspections

An inspection is typically a visual observation of the incoming waste loads by an individual who is trained to identify regulated hazardous or PCB wastes that would not be acceptable for disposal at the MSWLF unit. The training of landfill personnel will be conducted by a local EMS official or a SWANA certification. An inspection is considered satisfactory if the inspector knows the nature of all materials received in the load and is able to discern whether the materials are potentially regulated hazardous wastes or PCB wastes.

Ideally, all loads should be screened; however, it is generally not practical to inspect in detail all incoming loads. Random inspections, therefore, can be used to provide a reasonable means to adequately control the receipt of inappropriate wastes. Random inspections are simply inspections made on less than every load. At a minimum the inspection frequency will not be less than one percent of the waste stream.

The frequency of random inspections may be based on the type and quantity of wastes received daily, and the accuracy and confidence desired in conclusions drawn from inspection observations. Because statistical parameters are not provided in the regulation, a reasoned, knowledge-based approach may be taken. A random inspection program may take many forms such as inspecting every incoming load one day out of every month or inspecting one or more loads from transporters of wastes of unidentifiable nature each day. If these inspections indicate that unauthorized wastes are being brought to the MSWLF site, the random inspection program should be modified to increase the frequency of inspections.

Inspection priority also can be given to haulers with unknown service areas, to loads brought to the facility in vehicles not typically used for disposal of municipal solid waste, and to loads transported by previous would-be offenders. For wastes of unidentifiable nature received from sources other than households (e.g., industrial or commercial establishments), the inspector should question the transporter about the source/composition of the materials.

Loads will be inspected on the tipping floor at the baler facility prior to actual disposal of the waste at the working face of the landfill unit to provide the County the opportunity to refuse or accept the wastes. C&D loads will be inspected near or on the working face.

An inspection flow chart to identify, accept, or refuse solid waste is provided as Figure 1.

Inspections of materials may be accomplished by discharging the vehicle load in an area designed to contain potentially hazardous wastes that may arrive at the facility. The waste should be carefully spread for observation using a front end loader or other piece of equipment. The Division of Solid Waste recommends that waste should be hand raked to spread the load. Personnel should be trained to identify suspicious wastes. Some indications of suspicious wastes are:

- Hazardous placards or markings;
- Liquids;
- Powders or dusts;
- Sludges;
- Bright or unusual colors;
- Drums or commercial size containers; or
- Chemical odors.

Iredell County will follow these procedures when suspicious wastes are discovered.

- Segregate the wastes;
- Question the driver;
- Review the manifest (if applicable);
- Contact possible source;
- Call the State Solid Waste Management Department;
- Use appropriate protective equipment;
- Contact laboratory support if required; and
- Notify the local Hazardous Material Response Team.

Containers with contents that are not easily identifiable, such as unmarked 55-gallon drums, should be opened only by properly trained personnel. Because these drums could contain hazardous waste, they should be refused whenever possible. Upon verifying that the solid waste is acceptable, it may then be transferred to the working face for disposal.

Testing typically would include the Toxicity Characteristic Leaching Procedure (TCLP) and other tests for characteristics of hazardous wastes including corrosivity, ignitability, and reactivity. Wastes that are suspected of being hazardous should be handled and stored as a hazardous waste until a determination is made.

If the wastes temporarily stored at the site are determined to be hazardous, Iredell County is responsible for the management of the waste. If the wastes are to be transported from the facility, the waste must be: (1) stored at the MSWLF facility in accordance with requirements of a hazardous waste generator, (2) manifested, (3) transported by a licensed Treatment, Storage, or Disposal (TSD) facility for disposal.

E. RECORD KEEPING AND NOTIFICATION REQUIREMENTS

Records must be kept pursuant to an incident where regulated hazardous waste or prohibited waste is found at the landfill. It is also recommended that records be kept of all screening activities and incidents, whether or not, regulated or prohibited wastes are found. This will help prove that the landfill owner/operator has acted in a prudent and reasonable manner.

The best way to prove compliance with this requirement is to document each inspection including:

- Date and time of waste detection
- Hauler name (company and driver)
- Waste(s) detected
- Waste generator(s) if able to identify
- Action(s) taken to manage or return material(s)
- Efforts taken if extreme toxicity or hazard was discovered
- Landfill employee in responsible charge

40 CFR Part 258 requires that records should be maintained at or near the landfill site during its active life and as long after as may be required by the appropriate state or local regulations.

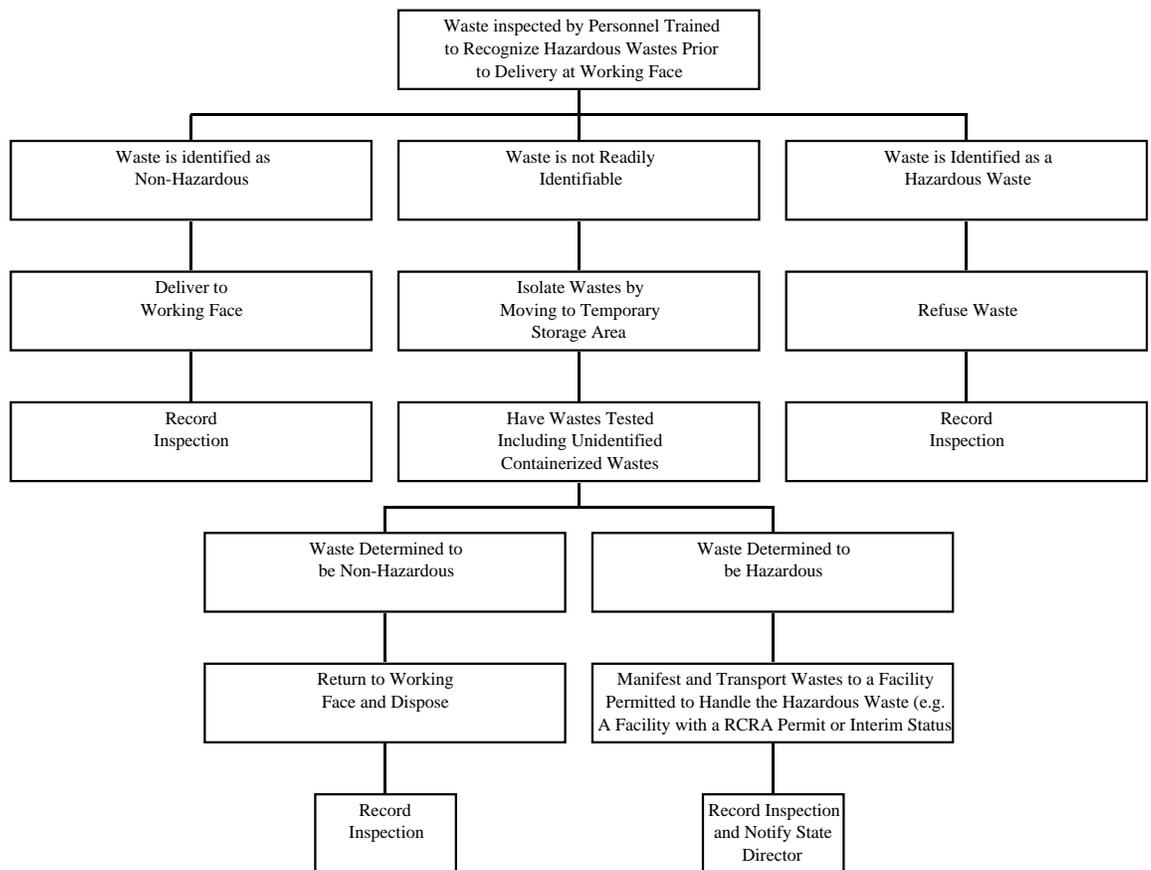


FIGURE 1
Hazardous Waste Inspection Decision Tree
Inspection Prior to Working Face

WASTE SCREENING CHECK LIST		
	YES	NO
CONTAINERS		
FULL.....	_____	_____
PARTIALLY FULL.....	_____	_____
EMPTY.....	_____	_____
CRUSHED.....	_____	_____
PUNCTURED.....	_____	_____
POWDERS/DUSTS		
IDENTIFIED.....	_____	_____
UNKNOWN.....	_____	_____
SATURATION.....	_____	_____
LABEL/HAZARDOUS.....	_____	_____
ODOR/FUMES		
STRONG.....	_____	_____
FAINT.....	_____	_____
HEAT.....	_____	_____
ITEMS FOUND		
BATTERIES.....	_____	_____
OIL.....	_____	_____
BIOMEDICAL.....	_____	_____

RADIOACTIVE.....	_____	_____
ASHES/RESIDUE.....	_____	_____
SOD/SOIL.....	_____	_____
LIQUID.....	_____	_____
HAZARDOUS.....	_____	_____
PCB'S.....	_____	_____

CHECK ALL THAT APPLY

Detailed Screening Report

Waste Source: _____

Address: _____

Probable
 Suspected
 Confirmed

Location:
 C&D
 MSW
 BALER

Waste Hauler: _____

Address: _____

Drivers Name: _____

Detail: _____

WEIGHT **TICKET #**

Notified: _____

Waste Source	<input type="checkbox"/>	Hauling Management	<input type="checkbox"/>
Site Management	<input type="checkbox"/>		
State	<input type="checkbox"/>	Federal	<input type="checkbox"/>

Name: _____

Witness (if any): _____

Date: _____ **AM** **PM**

Action Required

5.4 Appendix II

DAILY COVER PLAN FOR IREDELL COUNTY

POSI-SHELL APPLICATION PROCEDURE

Iredell County has been granted permission by NCDENR to use Posi-Shell as an alternative daily cover. Posi-Shell is a cement/fly ash based spray application material that uses a fiber binder.

STORAGE, EQUIPMENT REQUIREMENTS

Posi-shell is delivered bulk by tractor trailer and blown into a silo leased by the county. The county also leases a modified hydro-seeder from the same company who supplies the Posi-Shell mix. A dozer, rubber-tired loader or all-wheel drive 6 ton truck may be used to pull the applicator.

APPLICATION

1. At approximately 2:30 to 3:00 p.m. employees begin the mixing operation by adding 1000 to 1200 gallons of water to the appropriate amount of dry material and fiber to achieve a slurry-like consistency
2. The final loads of commercial MSW are received at 3:30 p.m. allowing workers to begin performing final compaction of the days waste.
3. The applicator is towed to the landfill and application begins from the lower side of the working face or with favorable direction of the wind. A final pass is made from the opposite direction to avoid a "shadowing" effect.
4. The applicator is rinsed out and returned to the silo area.
5. The following day no means other than normal traffic is required to break up the shell formed by the dry material.

Posi-Shell is not applied during periods of heavy rainfall or if such weather is expected before the material has sufficient drying time. (usually about 30 minutes) In those events one of the other

methods of daily cover is used. Posi-Shell may be allowed to remain in place up to 14 days before re-application or waste is placed over top.

Daily cover may also be the traditional 6 inches of soil or a combination of soil and Auto Shredder Residue(ASR) instead of the utilization of soil alone. Operational plan is as follows:

1. The ASR will be delivered to the working area as directed by the County Personnel.
2. At the end of each working day the ASR will be distributed over the daily working area with a front end loader and spread out with a dozer to a minimum depth of three inches.
3. Once the ASR is spread, the soil can then be placed over it at a minimum depth of 3 inches. This can be done by several methods such as, but limited to, a pan spreading the soil out over the entire area or just dropping its load and the soil being pushed out by a dozer. During wet weather conditions, the soil could be stockpiled and sprinkled over the ASR with a front end loader. Whichever method is used, a minimum of three inches of soil will be used. If there is more ASR delivered to the site than can be used for that day's cover, the remaining stockpile will be covered with a tarp or similar synthetic cover until it is used for daily cover. It may also be sprayed with PosiShell and allowed to remain in place up to 14 days.
4. Areas which will not have additional waste placed on them for twelve months or more, but where final termination of disposal operations has not occurred, will be covered with a minimum of one foot of intermediate cover.

5.5 Appendix III

EXPLOSIVE GAS CONTROL PLAN FOR IREDELL COUNTY

Quarterly the Iredell County landfill will monitor the explosive gas at the landfill structures and at or near the landfill boundary. The permanent probes will consist of a plastic stand pipe similar to a piezometer used for groundwater detection. A typical permanent methane probe is detailed in the operation drawings. The permanent probe will be constructed at a depth of six (6) feet. A 6" diameter hole will contain a one (1) inch slotted PVC pipe. The bottom two (2) feet will be backfilled with non-carbonate pea gravel with a bentonite seal one (1) foot thick above it. The remaining three (3) feet will be backfilled with *in situ* soils. The one (1) inch PVC pipe will be approximately three (3) feet above the existing grade. The PVC pipe will be capped with a one (1) inch PVC cap, one quarter (1/4) inch NPT hose barb, and 1" tubing, plugged or capped.

The location and spacing of the methane monitoring probes is somewhat arbitrary. The locations were determined by the relationship of solid waste with property lines and landfill structures. The spacing of the monitoring probes is between 200 and 400 feet. The migration of methane gas is induced by pressure gradients. The methane will move from areas of high pressure to those of low pressure following the path of least resistance. The methane will migrate vertically until it reaches the landfill cap, where it will begin to flow horizontally. This occurs until it finds a pathway out, either by the installed methane collection trenches or migration through the permeable *in situ* soils. Since methane is lighter than air, it wants to escape into the atmosphere. It has been our experience that whenever gas is migrating no matter what the spacing or depth of the monitoring probes, the gas will fill the void created by the monitoring point and an explosive meter will monitor the level. The six foot depth of the monitoring probes is to ensure a stable monitoring

point. The only time a shallow monitoring point has not worked is in a very heavy, impermeable clay layer that acts as a seal to the migration of the gas. If a clay layer is encountered during the construction of the monitoring points, it will either be moved beyond the clay or excavated to a depth that is in the conductive zone below the clay.

The permanent probes will surround Phase 4. Iredell County's landfill is designed with a base liner system and cap system, there should be no migration of methane in the permeable *in situ* soils.

The gas can be detected by use of an instrument that reports the percent of lower explosive limit. The instrument being used is the Gas Tech GP 204.

Quarterly, a County employee will visit each monitoring point either the temporary or permanent. The monitoring points consist of all methane probes and leachate collection system cleanouts. Using the detection instrument, he will determine if methane gas has filled the probes. If the probe is near the property line and methane gas is detected at or beyond the lower explosive limit (100% LEL), it must then be determined if the gas is migrating across the landfill boundary. If the probe is on the boundary or methane gas has migrated beyond the boundary, a remediation plan must be completed by Iredell County.

Other points of monitoring will be the landfill structures. Each structure will be monitored for methane using the following methods:

1. All crawl spaces will be monitored;
2. All corners in the structure will be monitored;
3. Any holes, cracks and pipes through the foundation will be monitored

If methane gas is detected beyond 25% of its lower explosive limit in any structure, check the calibration of the monitor and resample. If the reading is still above 25%, evacuate the building and try to find the source of gas. If the source is found try to remove the source. If this fails a remediation plan is stated in the operational requirements.

5.6 Appendix IV

RECIRCULATION PLAN FOR IREDELL COUNTY

Iredell County does intend to utilize recirculation as a means of disposal of their leachate. The intention is to utilize recirculation as a method by which some relief can be given to the pumping. This relief will come in the form of evaporation and retention of water within the solid waste. The remaining leachate will be hauled to the City of Statesville Wastewater Treatment Plant for disposal. Iredell County must obtain a permit from the Division of Solid Waste before leachate recirculation can begin.

No water that comes in contact with the present surface of solid waste runs off any where other than the leachate collection system.

The County will spread the leachate over the surface of the solid waste, that is at a minimum five feet (5') deep, within the landfill. The spreading will be accomplished by one of two methods.

The first method is by simply backing their leachate hauling truck into the landfill. A spreader hose will then be attached to the leachate tank and County personnel will manually discharge the leachate over the solid waste. The second method will utilize the tank truck except the leachate will be used to wet down solid waste that is piled up from being dumped from a truck or trucks. Once this pile is wet, it will be spread around the working face by the trash compactor.

At a later date, a pump system may be incorporated into the system. The pump system will pump directly from the leachate lagoon and the leachate spread in a manner as it was from the tank truck.

Monthly monitoring will be performed to measure the leachate head at the leachate head detection well and analyze the leachate for BOD, COD, temperature and pH.

The following conditions will be met by Statesville:

- A rain gauge and thermometer will be placed on site
- A base line sampling of leachate has been performed (See Attachment 1)
- A brief description of the equipment and its associated specifications is submitted (see Attachment 2)
- Weekly record of leachate head measurements (see Attachment 3)
- Weekly record of leachate recirculated and leachate disposed (see Attachment 4)
- Weekly record of visual monitoring log (see Attachment 5)
- Weekly record of rainfall and lagoon depth (see Attachment 6)
- Records will be kept on a weekly basis
- No leachate will be applied on less than one lift (8 feet) of waste
- No leachate will be recirculated when it is raining, or when the waste is too wet
- No run off or side seepage will be allowed
- Odors will be controlled
- Leachate depth will be monitored in the leachate head detection well to ensure that the head on the liner does not exceed one foot for more than 24 hours.
- The application system will be properly maintained and documented
- Leachate will be tested every 30 days and a progress report will be submitted annually

5.7 Appendix V

AVIAN FLU AND NATURAL DISASTER ANIMAL CARCASS DISPOSAL PLAN FOR IREDELL COUNTY

Handling of Dead Animals from a Natural Disaster and/or Disease

The landfill should not accept any dead animals without knowing the cause of death. Those killed by natural disaster could be accepted at the landfill but those that die because of any type of disease transmissible to humans cannot be accepted. This is in accordance with Iredell County Code, specifically Sections 12-2 and 12-16. It is strongly recommended by the United States and North Carolina Department of Agriculture that all dead animals that result from either a disaster and/or disease are disposed on the site where they are being raised. It is better not to transport for the safety of public's health and the safety of landfill operations. The producers are required by law to report any diseases to NCSDA&CS, Animal Health Programs at (919) 733-7601, also Veterinary Public Health Office at (919) 707-5900. The West Nile Virus is also to be reported to the Public Health Pest Management Section at (877) 790-1747.

If carcasses are accepted by Iredell County the following protocols should be followed;

1. The landfill should be notified at least one hour prior to delivery.
2. The cause of death should be noted if it was possible to make determination.
3. Carcasses may only be accepted between the hours of 8:00 a.m. and 2:00 p.m.
4. Carcasses must be covered by at least 3 feet of soil or waste or any combination of the two.
5. Equipment used in disposal should be washed and disinfected prior to maintenance activities.

The following is a brief summary of poultry mortality disposal methods in North Carolina. All disposals must occur within 24 hours. (This is a copy of the NC Department of Agriculture and Consumer Services requirements from their website.)

1. Burial: Not closer than 300 feet to a flowing stream or public body of water. Should be at least three (3) feet above water table and covered with three (3) feet of soil. Can be used anywhere soil conditions allow, primarily for emergency situations. Not recommended for disposal of normal daily mortality.
2. Incineration: Any commercial unit that will completely incinerate the birds. Should be sure they meet local and state air quality requirements. Good procedure anywhere in the state.
3. Rendering: Must be done by a licensed renderer or collector. Care must be taken not to spread disease from farm to farm. Freezing mortality prior to rendering is allowed.
4. Disposal Pit: The bottom of the pit should be at least three (3) feet above the water table. Not a satisfactory procedure in most of Eastern North Carolina and other locations with a high water table.
5. Composter: Requires a permit from the North Carolina Department of Agriculture and Consumer Services. Good procedure in any part of the state.
6. Digestion: Requires a permit from the North Carolina Department of Agriculture and Consumer Services. Permits are limited to one (1) year but can be extended. Generally less satisfactory than other methods of disposal. Can be used anywhere in the state.

Other disposal methods require a special permit from the State Veterinarian's office.

The following methods may be used to protect workers from being exposed to avian influenza virus during disposal of poultry carcasses that have died or been destroyed as a result of this disease.

The influenza virus is extremely sensitive to almost any disinfectant. However, it is very difficult to inactivate the virus if it is in organic material, such as feces.

Disinfectants that will kill avian influenza virus

1. One-Stroke Environ^R
2. Any detergent
3. Formaldehyde
4. Bleach
5. Ammonia
6. Acids
7. Heating to 90°F for 3 hours, 100°F for 30 min.
8. Drying
9. Iodine containing solutions

Equipment and Personal Protective Equipment

1. Portable high-pressure sprayers can be useful in washing and disinfecting equipment and poultry houses.
2. Hand-held sprayers are helpful for spraying disinfectants on the floor mats of cars, disinfecting wheel wells, etc. In addition, the same type of sprayer can be used to distribute insecticides in a vector control program.
3. Disposable coveralls, boots, and caps should be worn by all workers involved in the disposal or disinfection of equipment.
4. Signs, gates, pylons, and other indications of barriers can be important in preventing unwanted human traffic.

<http://www.ncagr.com/vet/> (Source of information and contact)

Emergency Burial Guidelines

Introduction Hurricane Floyd on September 15, 1999 combined with the weather conditions before and immediately after this hurricane resulted in the most severe flooding and devastation in North Carolina history. The flooding caused an estimated \$813 million in agricultural losses affecting 32,000 farmers. In addition to crop loss, there was significant loss of livestock including 2,860,827 poultry, 28,000 swine, and 619 cattle. Disposal of dead animals was a significant problem. Proper burial and disposal will prevent potential public health problems resulting from large numbers of dead and decaying animals including the spread of harmful pathogens, ground and surface water contamination, and pest control. In certain situations, burial of dead animals may be the best alternative for immediate disposal. These guidelines are designed to insure burial is done in a safe and effective manner.

Legal Authority North Carolina General Statute 106-403 (NCGS) Disposition of dead domesticated animals states that it is the responsibility of the owner or person in charge of his domesticated animals to bury dead animals appropriately within 24 hours after knowledge of the death. It is the responsibility of the municipal or county government to designate appropriate persons to dispose of any domestic dead animals whose owner cannot be identified. (See NCGS 106-403 and companion opinion from the Attorney General's Office dated June 8, 1984.)

The NC Department of Agriculture - Veterinary Division is the lead state agency to oversee animal disposal as regulated under existing Administrative Rules, specifically, **Subchapter 52C** -

Control of Livestock Diseases: Miscellaneous Provisions, Section .0100 - Diseased and Dead Animals (See Attached)

The State Health Director and by extension the Local Health Director in each county is charged with preventing health risks and disease and promoting a safe and healthful environment according to **NCGS 130A, Articles 1-20**. To the extent that dead animals become a threat to human health, the State and Local Health Director has broad authority to investigate and act on matters to protect health.

The Environmental Management Commission protects the groundwater quality in the State of North Carolina through rules established in **15A NCAC Subchapter 2L - "Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina."** These rules establish groundwater quality standards that may not be exceeded without a permit issued under the authority of the Commission. The Groundwater Section of the Division of Water Quality is responsible for the administration and enforcement of these rules. Any surface or subsurface activity that has the potential to cause groundwater standards to be exceeded is subject to the regulatory authority of the Commission.

Scope While it is recognized that there are multiple types and degrees of emergencies that could create the need for dead animal burial, these guidelines focus on the most common cause and the most recent experience, flooding and electrical outages. For example, guidelines for managing dead animals during a foreign animal disease emergency may differ and would be managed through the State Veterinarian. These guidelines are intended to address dead animal disposal during a declared emergency and therefore do not take the place of the dead animal disposal that occurs under the normal permitted operation of a farm. The Governor can declare a state of emergency in North Carolina with or without a federal declaration of the same.

Emergency Planning Each farm operation shall make specific plans for animal disposal in the event of an emergency. When burial is determined to be the disposal method of choice, an attempt should be made first to bury the dead animals on the farm according to these guidelines. If proper burial is not possible on the farm then plans should be made for alternative sites.

Burial Standards

1. The bottom of the hole where dead animals are to be buried should be 3 feet above the seasonal high water table wherever possible and at least 12 inches above the seasonal high water table. (Farm owners may contact the local NRCS agency or the local health department for assistance in determining the seasonal high water table.)
2. Standing water in the hole does not preclude animal burial as long as the bottom of the hole is at least 12 inches above the seasonal high water table, not in an area of standing water, and the other conditions for proper burial are met.
3. There must be at least 3 feet of soil covering any buried animal. This can be interpreted to mean soil mounded over the animals above the adjacent ground level.
4. The burial site must be at least 300 feet from any existing stream or public body of water.
5. The burial site must be at least 300 feet from any existing public water supply well.
6. The burial site must be at least 100 feet from any other type of existing well.
7. The burial site cannot include any portion of a waste lagoon or lagoon wall.
8. In the case where the burial site is in a waste disposal spray field, the burial site is not available for subsequent waste spraying until a new viable crop is established on the site.
9. The burial site shall be located so as to minimize the effect of storm water runoff.
10. Burial is not permitted in the tiled area of an under drained field.

11. A record of the location of the approved site (GPS latitude and longitude coordinates if available), the burial history of each burial site to include the date, species, head count and age must be kept by the owner and reported to the Local Health Director who will in turn report this information to the appropriate State agency - DENR Division of Water Quality, Groundwater Section.
12. Farm owners and operators are encouraged to consider measures that could be taken prior to an imminent emergency that could reduce the impact on the farm and the environment.

Collective Burial Site A collective burial site may be designated to serve one or more counties in the event of a large-scale emergency whereby individual farm sites are not available. The responsibility for disposal of dead animals remains with the owner, lessee, or person in charge of any land upon which any domesticated animals die. The county or municipality should identify an appropriate burial site(s) with the capacity to bury up to 5% of the steady state live weight of livestock in that jurisdiction. The use of an existing county or municipal landfill as a dead animal burial site is legal and preferred.

Burial Site Location Best farm practices suggest that burial sites with the capacity to handle the type and number of animals most likely to be needed during an emergency for each farm operation be identified prior to the emergency. It is recommended that the emergency burial plan be incorporated into the farm's existing conservation plan.

Contact Information

- N.C. Department of Environment and Natural Resources
Division of Water Quality/Groundwater Section
Arthur Mulberry - Section Chief
1636 Mail Service Center
Raleigh, NC 27699-1636
(919)733-3221
- N.C. Department of Health and Human Services
Division of Public Health/Epidemiology and Communicable Disease Section
Dr. Steve Cline - Section Chief
1902 Mail Service Center
Raleigh, NC 27699-1902
(919)733-3421
- <http://www.ncagr.com/vet/burialregs.htm> (source of information)

[SART](#) (State Animal Response Team)

5.8 Appendix VI

IREDELL COUNTY'S WHITE GOODS OPERATION PLAN

The collection site for white goods is located on the Solid Waste Facility Site at 354 Twin Oaks Site, Statesville, NC. The hours of operation are Monday – Friday 7:30 a.m. – 4:00 p.m. and Saturdays 8:00 a.m. -12:00 noon. In addition white goods are accepted at one transfer station and three convenience sites in roll off boxes and are transported to this site. These sites have more extended hours of operation. Staff is available at all sites to assist with unloading. The public is informed about free disposal of appliances through media, pamphlets and educational recycling programs.

White goods are first weighed at the entrance scale house and directed to the site. After unloading, a return to the scale is required to record weight and number of white goods collected. Computerized records are on file in Iredell County.

The collection site is accessible to the public by paved road. The area for collection is a concrete pad and allows for easy access. There is a block building approximately, 70' x 40'. The building has multi purposes. It is the inside work place and is also the equipment and tool storage area for the white goods program. The other third of the building is a reuse swap shop and paint swap shop. This program has a separate entrance. The white goods section is accessible by two doorways and the automated garage door is used for ventilation. The building is heated and cooled. There is a concrete pad approximately, 140' x 64' feet on three sides of the building. The outside area to the right of the white goods area is for collection and workspace. This area has access to below-grade roll off storage with two slots designated for white goods boxes for transporting to market. The area is equipped with a bobcat for moving appliances, Freon removal machinery, and a variety of tanks, filters and additional tools are available. All safety work gear and other set equipment are stored in this area. The removal procedures and work area have been reviewed by OSHA and found to be compliant.

Two (2) employees are trained and licensed to remove Freon. They are certified under North Carolina law.

The CFC's are removed along with capacitors. Motor oil is removed through the Freon extraction process and compressors are destroyed.

Freon tanks are taken to CC Dixon locally. The County pays the company for accepting the material. Generally all the Freon is contaminated and not acceptable for sale. There are approximately two small tanks of R-12, 20 tanks of R-22, one tank of R134 and one tank of Ammonia per year extracted. All Freon-containing devices have been evacuated in accordance with Section 604 of the Clean Air Act of the Environmental Protection Agency.

The white goods are sold as scrap metal to a local dealer, L Gordon Iron and Metal Recyclers.

5.9 Appendix VII

IREDELL COUNTY'S TIRE COLLECTION OPERATION PLAN

Tires are collected at all sites including the landfill. They are placed in roll off boxes at each site except the landfill.

ACCEPTANCE

- Homeowners are allowed to bring five (5) per year without charge or question. Additional amounts may be accepted free of charge with information supplied regarding the source and proper identification of responsible party.
- Commercial tires are accepted free of charge if required hauler and generator forms are properly completed with all required information. All other tires will be assessed current tire disposal rates.
- Tires must cross scale and be weighed before being sent to the collection site.

FACILITY

- Collection operation is located on a ¼ acre compacted stone base lot. The lower grade areas are surrounded by concrete barriers. A dense vegetative buffer is maintained around the perimeter.
- Location is at least 500 feet from any property lines.
- Loading dock is a flatbed trailer parked lengthwise.
- Three (3) box trailers are continually on site for storage and are replaced as filled.
- Fire prevention capabilities are supplied by the use of Solid Waste Department Tanker Truck and a non-potable well head located on the White Goods site. Fire prevention training is given yearly to all employees including proper use of extinguishers. Wayside

Fire Department is located within five minutes' response time and has been provided with a site plan and access keys.

PHYSICAL OPERATIONS

- US Tire operates the collection facility by agreement with Iredell County.
- A US Tire employee is on site Monday through Friday from 8:00 a.m. until 3:00 p.m. to accept tires and load them into the waiting trailers.
- Homeowner tires can be accepted anytime the landfill is open but commercial tires may only be accepted when the US Tire employee is present.
- Tires are not stockpiled or stored on the ground or in the open.

FINANCE AND RECORDKEEPING

- Iredell County maintains records from all generators and haulers.
- Generators are periodically visited by solid waste personnel to ensure storage requirements are being met.
- Iredell County Enforcement investigates illegal tire dumping complaints, issues fines as needed, and forces cleanup of sites.
- Iredell County applies for all applicable state reimbursements for tire grants and cleanups and has a good success rate in receiving monies requested.

5.10 Appendix VIII

IREDELL COUNTY'S MULCHING/GRINDING OPERATION PLAN

MATERIALS ACCEPTED

- Yard waste (brush, leaves and grass clippings) is accepted at all sites including the landfill.
- Materials may be delivered to the grinding area by the public, commercial haulers, municipalities or county trucks.
- All materials will be weighed at the scale with records maintained before being sent to the grinding area.
- Pallets that are free of paint, large metal pieces, or other waste are accepted but stockpiled separately from yard waste. Clean non-stained, non-treated lumber is also acceptable.

FACILITY

- The area is approximately two (2) acres in size. It consists of a compacted stone base for road and drop off pad.
- It is situated between two soil stockpiles making natural buffers.
- Run-on and run-off of storm water is controlled by ditching and vegetative cover.

- Stockpiles are approximately 150 feet from property lines with the actual grinding and unloading areas being approximately 300 feet from property lines.

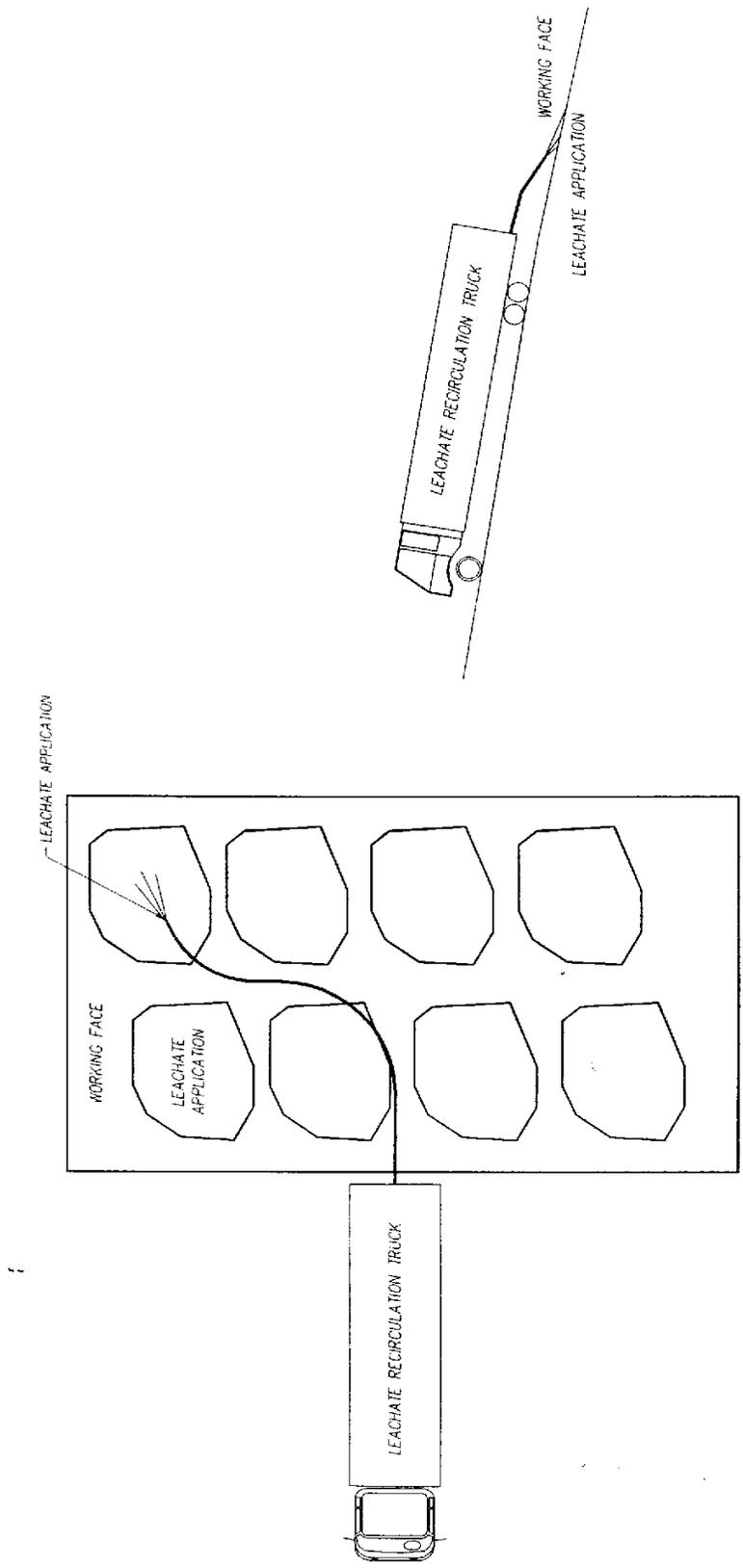
OPERATIONS

- Iredell County contracts with professional grinding services on a yearly basis for the operation of this area.
- The contractor comes periodically or on an “as-needed” basis to grind materials.
- All mulched or ground materials become property of the contractor for disposal of his choice.
- The contractor is paid on a per-ton basis determined by records of tons received between visits.
- Iredell County employees maintain the area when the grinder is not present.
- Fire prevention is achieved by means of the Solid Waste Department Tanker Truck which is maintained in a state of readiness at all times. Wayside Fire Department is located within a five-minute response time and has full access to the site at all times. The firefighters have had a site tour and have also been provided a site plan.

ATTACHMENT 1

BASELINE DATA

TO BE ADDED IN THE FUTURE



ATTACHMENT 2

