



# GUAM ENVIRONMENTAL PROTECTION AGENCY



## AHENSIAN PRUTEKSION LINA'LA GUAHAN

P.O. Box 22439 GMF BARRIGADA, GUAM USA 96921 • 17-3304 Mariner Avenue Tiyan, Guam USA 96913

### **SOLID WASTE MANAGEMENT FACILITY PERMIT APPLICATION LANDFILL**

#### I. Authority

Pursuant to Public Law 23-64(codified as 10 GCA Section 51104(a)) it states, "The Administrator is authorized and directed to issue permits for all collectors, operators and solid waste management facilities, their design, operation, maintenance, substantial alteration, modification or enlargement." Section 51102(45) defines solid waste management facilities as "any facility, or any machinery, equipment, vehicles, structures or any part of accessories thereof installed or acquired for the primary purpose of: collection, transportation, storage, processing or the ultimate disposal of solid waste."

II. This permit application is for those facilities that operate a sanitary landfill. Section 51102(40) defines sanitary landfill as "an approved site where solid waste and ash are disposed using modern sanitary landfilling techniques in accordance with Federal and local regulations."

#### III. Instructions

##### A. Section 1 – General Information

1. Type or print responses neatly in the appropriate boxes.
2. If the Land Owner (line 5a) is the same as the applicant, write "SAME" in the appropriate boxes. Document of Proof of Ownership must be submitted.
3. If the Land Owner (line 5a) is different from the applicant or Facility Operator, a copy of the Lease Agreement or other applicable document must be submitted.
4. The Facility Operator (line 6a) is the person responsible for the daily operation of the management facility. If the Facility Operator is the same as the applicant, write "SAME" in the appropriate boxes.
5. If the Facility Operator (line 6a) is different from the applicant, Land Owner, or the Facility Owner, a copy of the Contract Agreement or other applicable document must be submitted.

##### B. Section 2 - Specific Information

1. Information required in Section 2 shall be typed or neatly printed on a separate page.

C. The applicant shall make two (2) additional copies of the completed application and shall submit the original and one copy to:

Guam Environmental Protection Agency  
Attention: Solid Waste Management Program  
15-6101 Mariner Avenue, Tiyan, Barrigada



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GMF, Barrigada, Guam 96921

The applicant shall retain the other copy for his/her files.

- D. Once the application is completed and signed, the owner or the operator of the facility must take the application to the Department of Land Management Planning Division for clearance at One Stop in Anigua.
- E. If there are any questions about the permit application, please contact the Solid Waste Management Program at 475-1658/9.

#### IV. Fee

All new permit applications or renewal permit applications for a **Solid Waste Landfill Facility** shall be accompanied by a **nonrefundable fee of \$10,000.00**. All fees shall be in the form of a certified check or money order payable to the **Treasurer of Guam c/o Guam EPA**. No cash please.

#### V. Public Notice

Pursuant to Public Law 23-64 (codified as 10 GCA Section 51104 (d)), it states "Before issuing a solid waste management permit to any person with respect to any facility for the incineration, recycling, or disposal of solid waste, the Administrator shall:

- (1) Cause to be published in a major local newspaper or newspaper of general circulation, and broadcast over a local radio station or stations, notice of the Agency's intention to issue such a permit.
- (2) If, within forty-five (45) days after publication and broadcast, the Agency receives written notice of opposition to the Agency's intention to issue permit and a request for a hearing is made, the Agency shall provide for a hearing in accordance with the Administrative Adjudication Law, if requested by a substantially affected party or an informal public meeting if requested by any other person."

#### F. Availability of Information to the Public and Confidential Treatment of Information

Pursuant to the "Sunshine Reform Act of 1999" (5 GCA Chapter 10), it states information contained in the permit application will, upon request, be made available to the public for inspection and copying. If the applicant wish to request confidential treatment for business information, such information shall be submitted separately to Guam EPA, and marked on every page "Confidential Business Information".



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### SECTION 2 - SPECIFIC INFORMATION

**The applicant shall submit detailed plans and specifications for the facility. Plans for the design, construction, and operation of solid waste management sites or modifications to existing sites shall be prepared or approved by a professional engineer registered for practice in Guam.**

#### **I. Site Development Plans**

A. The applicant shall submit a map, delineating the general location of the proposed facility. A near- vicinity map shall be prepared. The vicinity map shall have a minimum scale of one (1) inch equals two hundred (200) feet (1"=200'). The vicinity map shall depict the following:

1. The landfill boundaries (and alternate boundaries if these are to be used) and the initial and proposed final topographies at contour intervals of 10 feet or less;
2. All homes, buildings or structures including the layout of the buildings which will comprise the proposed facility;
3. The limits of the actual disposal operations within the boundaries of the proposed facility, if applicable;
4. Lots and blocks taken from the tax map for the site of the proposed facility and all contiguous properties;
5. Land use and zoning within one-quarter (1/4) mile of the site including location of all residences, buildings, wells, water courses, historical sites, recreational areas, parks, wetland areas, monument areas, cemeteries, roads, all airports within two (2) miles and all utilities within five hundred (500) feet of the site;
6. The location of sanitary facilities for employees and facilities for equipment maintenance.

B. If an alternate boundary is proposed to be used, the applicant shall submit a summary of analysis of the following:

1. The hydrogeologic characteristics of the facility and surrounding land within one-quarter (1/4) mile;
2. The volume and physical characteristics of the leachate from the facility;
3. The quantity and direction of flow of the groundwater;
4. The proximity and withdrawal rates of groundwater users;
5. The availability of alternate drinking water supplies;



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6. The existing quality of the groundwater including other sources of contamination and their cumulative impact; and

7. The effects of the alternate boundary use on public health, safety and welfare.

C. The site investigation for a proposed landfill facility shall provide sufficient information regarding the geotechnical and hydrogeologic conditions at the site to allow a reasonable determination of usefulness of the site for development as a landfill.

1. The geotechnical interpretations and report shall provide information regarding the availability and suitability of onsite soils for use in the various construction phases of the landfill including liner, cover, drainage material, and cap.

a. Soil unit descriptions shall include estimates of soil unit thickness, continuity across the site, and genesis. Laboratory determinations of the soil unit's physical properties shall be discussed.

b. Soil units that are proposed for use as a drainage layer, impermeable cap or impermeable liner material shall be supported by laboratory determinations of the remolded permeability.

c. The geotechnical report shall provide an estimate of the available volume of materials suitable for use as liner, cap, and drainage layer. It should also discuss the anticipated uses of the on-site materials, if known.

2. The hydrogeologic information shall be sufficient to determine the characteristics of the uppermost aquifer underlying the facility.

a. The report shall include water table elevations, direction and calculated rate of groundwater flow and similar information on the hydrogeology of the site. All raw data shall be submitted with calculations.

b. The report shall contain a discussion of field test procedures and results, laboratory determinations made on undisturbed samples, recharge areas, discharge areas, adjacent or areal usage, and typical radii of influence of pumping wells.

c. The report shall also contain a discussion of the regional geologic setting, the site geology and a cataloging and description of the uppermost aquifer from the site investigation and from referenced literature. The geologic description shall include a discussion of the prevalence and orientation of fractures, faults, and other structural discontinuities, and presence of any other significant geologic features. The aquifer description should address homogeneity, horizontal and vertical extent, isotropy, the



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potential for groundwater remediation, if required, and the factors influencing the proper placement of a groundwater monitoring network.

d. The report shall include a geologic map of the site prepared from one of the following sources as available, in order of preference:

- (1) site specific mapping prepared from data collected during the site investigation;
- (2) published geologic mapping at a scale of 1:24,000 or larger;
- (3) published regional geologic mapping at a scale of 1:250,000 or larger; or
- (4) other published mapping.

D. The applicant shall submit a certification of compliance with zoning requirements and copies of all necessary permits and licenses required for facility operation.

For zoning requirements, the certification is to take the form of a letter to the Administrator describing the exact location of the facility, the lot number, land-use zone, and a statement indicating compliance to be signed by a representative of the Department of Land Management.

## II. Design Plans

Design plans shall consist of, at least, the following:

- A. A title sheet indicating the project title, who prepared the plans, the person for whom the plans were prepared, a table of contents, and a location map showing the location of the site and the area to be served.
- B. An existing site conditions plans sheet indicating site conditions prior to development.
- C. A base grade plan sheet indicating site base grades or the appearance of the site if it were excavated in its entirety to the base elevation, before installation of any engineering modifications or the beginning of any filling.
- D. An engineering modification plan sheet indicating the appearance of the site after installation of engineering modifications. More than one plan sheet may be required for complicated sites. This plan is required only for those sites with engineering modifications.
- E. A final site topography plan sheet indicating the appearance of the site, and final contours of the site at closing including the details necessary to prepare the site for long-term care.



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F. A series of phasing plan sheets showing the progression of site development through time. At a minimum, a separate plan shall be provided for initial site preparations and for each subsequent major phase or new area where substantial site preparation must be performed. Each such plan shall include a list of construction items and quantities necessary to prepare the phase indicated.

G. A site monitoring plan sheet showing the location of all devices for the monitoring of leachate production, groundwater quality and gas production, groundwater quality and gas production and venting. This plan shall include a table indicating the parameters to be monitored for the frequency of monitoring before and during site development.

H. A series of site cross-sections shall be drawn perpendicular and parallel to the site base line at a maximum distance of 500 feet between cross-sections and at points of grade break and important construction features. The location of the cross-sections shall be shown on the appropriate plan sheet(s) and the section labeled using the site grid system. Where applicable, each cross-section shall show existing, proposed base and final grades; soil borings and monitoring wells which the section passes through or is adjacent to; soil types, bedrock and water table; leachate control, collection; and monitoring systems; limits of filling for each major waste type; drainage control structures; access roads and ramps on the site parameter and within the active fill area; the filling sequence or phases; and other appropriate site features.

I. Detailed drawings and typical sections for, as appropriate, drainage control structures, access roads, fencing, leachate and gas control systems and monitoring devices, buildings, signs, and other construction details.

J. Plan sheet(s) shall include:

1. Survey grid with base lines and bench marks to be used for field control.
2. Limits of filling for each major waste type or fill area.
3. All drainage patterns and surface water drainage control structures both within the actual fill area and at the site parameter. Such structures may include berms, ditches, sedimentation basins, pumps, sumps, culverts, pipes, inlets, velocity breaks, sodding, erosion matting, or other methods of erosion control.
4. The direction and sequence of filling within each phase.
5. Ground surface contours at the time represented by the drawing. Spot elevations should be indicated for key features.
6. Areas to be cleared and grubbed and stripped of topsoil.



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7. Borrow areas for liner materials, gas venting materials, berms, roadway construction, daily cover and final cover.
8. All soil stockpiles including daily cover and final cover, topsoil, liner materials, gas venting materials and other excavation.
9. Access roads and traffic flow patterns to and within the active fill area.
10. All temporary and permanent fencing.
11. The methods of screening such as berms, vegetation or special fencing.
12. The leachate collection, control, storage, and treatment systems which may include pipes, manholes, trenches, berms, collection sumps, storage units, pumps, risers, liners, and liner splices.
13. Gas, leachate and groundwater monitoring devices and systems.
14. Severe weather disposal areas.
15. Support buildings, scale, utilities, gates, and signs.
16. Special waste handling areas.
17. Construction notes and references to details.
18. Other appropriate site features.

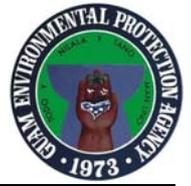
### III. Site Operating Plans

A. An operations manual shall be prepared and included on how the design and construction plans will be implemented with the initial phase of operation until closure. The manual for a landfill operation shall consist of at least the following information:

1. The population and area to be served by the landfill; waste types, characteristics, quantities, and source of wastes to be disposed; and any special handling required and procedures for any special handling.
2. Specific wastes to be excluded from the landfill and a plan for detecting and preventing the disposal of regulated hazardous wastes as defined in Guam's Hazardous Waste Management Regulations and polychlorinated biphenyl (PCB) wastes as defined in 40 CFR Part 761.



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3. Detailed instructions to the site operator for all aspects of site operation. The specifications shall include, at a minimum, the following information:

- a. Initial site preparations including specifications for clearing and grubbing, topsoil stripping, other excavations, berm construction, drainage control structures, leachate collection system, access roads and entrance, screening, fencing, groundwater monitoring and other special design features.
- b. The initial site preparation including a discussion of the field measurements, photographs to be taken, sampling and testing procedures to be utilized to verify that the in-field conditions encountered were the same as those defined in the plans and design report, and to document that the site was constructed according to the engineering plans and specifications submitted for Agency approval.
- c. Daily operations including a discussion of the timetable for development, waste types accepted or excluded, typical waste handling techniques, hours of operation, traffic routing, drainage and erosion control, windy, wet and cold weather operations, fire protection equipment, manpower, methods for handling of any unusual waste types, methods for vector, dust and odor control, daily cleanup, direction of filling, salvaging, record keeping, parking for visitors and employees, monitoring, closure of filled areas, gas and leachate control and monitoring methods, number and responsibilities of site personnel, number and type of equipment to be used, backup equipment with names and telephone numbers where equipment may be obtained, and other special design features.
- d. Development of subsequent phases.
- e. Site closing information consisting of a discussion of the anticipated sequence of events for site closing and discussion of those actions necessary to prepare the site for long-term care and final use in the implementation of the closure plan.
- f. An inspection plan, which shall include a schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of the Solid Waste Disposal Rules and Regulations (SWDRR). The plan shall include a schedule for inspecting monitoring, safety, and emergency equipment, security devices and process operating and structural equipment. The plan shall identify the types of problems which are to be looked for during the inspection and the frequency of inspection.
- g. A post-closure care plan containing long-term care information including a discussion of the procedures to be utilized for the inspection and maintenance of run-off control structures, settlement, erosion damage, gas and leachate control facilities, monitoring for gas; leachate and groundwater, and other long-term care needs.



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- h. A safety plan which shall include a description of the proposed measures to protect the facility and other personnel from injury during operation.
- i. The control methods to be used by the operator to prevent unauthorized disposal of hazardous wastes, bulk liquids, or other wastes not authorized for disposal in the facility.
- j. A landscaping plan delineating the existing site vegetation to be retained, and discussing the methods to be employed in order to ensure protection during the clearing, grading, and construction phases of the project and the supplemental vegetation to be planted. Information relating to vegetation type, location and purpose, such as for buffer, screening or aesthetics, and schedules for planting, shall accompany the plan.
- k. An emergency contingency plan which delineates procedures for responding to fire, explosions or any unplanned sudden or non-sudden releases of harmful constituents to the air, soil, or surface water. This emergency plan will be submitted to the local police and fire department, and to the nearby health care facilities when the permit will be issued. The emergency plan shall contain:
  - (1) A description of the actions facility personnel shall take in the event of various emergency situations;
  - (2) A description of arrangements made with the local police and fire departments which allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of personnel responding to an emergency situation; and
  - (3) A list of names, addresses and phone numbers (office and home) of all persons qualified to act as emergency coordinator for the facility. This list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and the other shall be listed in the order in which they will assume responsibility as alternates.

### B. Cover material (SWDRR, §23304)

The applicant shall submit plans to including the following:

1. Cover material sources and soil classification;
2. Surface grades and side slope;
3. Procedures to promote vegetative regrowth; and
4. Procedures to maintain cover material integrity.



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If an alternative cover material is proposed to be used, the applicant shall submit the information in 3 A through D for the alternative cover material.

### C. Disease vector control (SWDRR, §23305)

The applicant shall submit plans to include prevention and control mechanisms for disease vectors for the protection of human health and the environment.

### D. Explosive gases control (SWDRR, §23306)

The applicant shall submit a routine methane monitoring plan. The plan shall contain a discussion of the following:

1. Soil conditions;
2. The hydrogeologic conditions surrounding the facility;
3. The hydraulic conditions surrounding the facility;
4. The location of facility structures and property boundaries; and
5. The procedures to take if the methane gas levels exceed the limits specified in §23306 Subsection (a) are detected.

### E. Water Quality

The plans for the landfill shall include:

1. Current and projected use of water resources in the potential zone of influences of the land disposal site;
2. Groundwater elevation, movement and proposed separation between the lowest point of the lowest cell and the predicted maximum water table elevation;
3. Potential interrelationship of the land disposal site, local aquifers and surface waters;
4. Background or initial quality of water resources in the potential zone of influence of the land disposal site;
5. Proposed location of monitoring wells, sampling stations and planned testing program;
6. Description of soil and other geological material to a depth adequate to allow evaluation of the water quality protection provided by the soil or material;
7. Provisions for surface water run-off control to minimize infiltration and erosion of cover material;



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8. Potential of leachate generation and proposed control system where necessary for protection of ground and surface water resources;
9. Groundwater monitoring program;
10. Detection monitoring program; and
11. Assessment monitoring program.

### M. Run-on/run-off control systems (SWDRR, §23309)

The plans shall discuss the following:

1. A run-on control system to prevent flow onto the active portion of the landfill during peak discharge from a Twenty-five (25) year storm; and
2. A run-off control system from the active portion of the landfill to collect and control at least the water volume from a Twenty-hour (24) hour, Twenty-five (25) year storm.

### N. Recordkeeping (SWDRR, §23312)

The applicant shall describe methods to be used in maintaining records and monitoring the environmental impact of the land disposal site.

### O. Aesthetics

The plans shall include a litter control program.

### P. Air quality

The plans shall include a dust control program.



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### IV. Closure Plans

The applicant shall prepare and submit a written closure plan that describes the steps necessary to close the landfill facility. The plan shall be prepared in two parts, one reflecting those measures to be accomplished at the midpoint of the permit period, and the other when the useful life of the landfill is reached. The plan shall show how the facility will be closed to meet the requirements of §23601 of the Solid Waste Disposal Rules and Regulations. The closure plan, at a minimum, must include the following information:

- A. A description of the final cover, designed in accordance with §23601 Subsection (a) and the methods and procedures to be used to install the cover;
- B. An estimate of the largest area of the landfill unit requiring a final cover as required under §23601 Subsection (a) at any time during the active life;
- C. An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and
- D. A schedule for completing all activities necessary to satisfy the closure criteria in §23601

### V. Post-Closure Plans

The applicant shall prepare and submit a written post-closure plan that shows how the facility will conduct post-closure care to meet the requirements of §23602 of the Solid Waste Disposal Rules and Regulations. The post-closure plan, at a minimum, must include the following information:

- A. A description of the monitoring and maintenance activities required in §23602 Subsection (a), and the frequency at which these activities will be performed;
- B. Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and
- C. A description of the planned uses of the property during the post-closure period.

### VI. Financial Assurance

The applicant shall provide the completed documentation to demonstrate compliance with Article 7 of the Solid Waste Disposal Rules and Regulations.



