

Attachment 1 - Plan of Operations

Oasis Landfill Permit Renewal Application

1.1.5. Area Served By the Facility Including Population

Only solid waste generated on the UTTR is disposed of in the Oasis landfill. This area services between 50-75 full time employees.

1.1.6. A Demonstration That the Landfill Is Not a Commercial Facility

The landfill is secured behind the fence surrounding the landfill and also is completely contained within the secure fence surrounding the UTTR. Access to this area is restricted and only waste generated at the UTTR can be deposited at the landfill.

1.1.7. Waste Type and Anticipated Daily Volume

The solid waste generated from the daily operations at UTTR and received at the Oasis Landfill can generally be categorized as municipal/commercial waste. This waste includes inert bombs and munitions, target debris, paper products from administrative operations, garbage from food preparation, packaging materials from the dormitory and work areas, unusable shop scraps, non-reactive Thermal Treatment Unit (TTU) waste, and small amounts of used asphalt and construction debris. According to the last two annual reports, submitted in March 2018 and 2019, the landfill received an average of about 0.25 tons of municipal solid waste per day and about 2.8 tons of construction and demolition debris per day. The total of 3.05 tons of waste per day is significantly below the state regulatory limit of 20 tons per day for Class II landfills.

1.2. Plan of Operations

The Oasis Landfill will continue to receive municipal solid waste and construction waste as explained in the following sections.

1.2.1. Description of Onsite Handling Procedures

The procedures for handling waste at the Oasis Landfill are divided into three sections: conventional solid waste, asbestos, and non-hazardous Class II waste generated from the cleanup of CERCLA and RCRA solid waste sites at UTTR and TTU.

1.2.2. Procedures for Handling Conventional Solid Waste

The landfill operator inspects all wastes disposed at the Oasis Landfill prior to placement in the landfill. This inspection includes filling out the operating log (section 1.2.4) that documents the type and weight or volume of the waste.

Wastes from Oasis are collected and deposited weekly on the working face or in excavated trenches.

The utilized portion of the working face is backfilled with at least six inches of cover material after each day that non-construction debris is placed into the landfill. If non-blowing debris such as wooden and concrete construction materials are placed on the working face, the utilized portion of the working face will be backfilled as needed. The cover material is the soil that was previously excavated and consists primarily of low permeability clay loams. Alternately, trenches may be used. Trenches will be operated using one of two excavation approaches:

1. A backhoe excavates a trench approximately 10 feet deep and 4 feet wide. Trenches are spaced approximately 10 feet apart and range from 30 to 50 feet in length. The backhoe's bucket is used to compact the waste prior to placing the daily cover. The

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trenches are backfilled to surface level, which provides a minimum of two feet of cover for the wastes.

2. 2. A bulldozer is used on the working face to compact class II materials and push soil used for the daily cover.

Vehicles within the landfill area are directed to use the same road and are directed to dump their loads in the same location. This minimizes generation of fugitive dust at the working face of the landfill. Five vehicles are available for excavation and compaction: a backhoe or excavator, front-end loader, scraper, water truck, and bulldozer.

1.2.3. Form Used to Record Weights or Volumes

Class II Landfill Operating Log UTTR Site								
Description of Waste	Acceptable in Class II Landfill (Y or N)	Delivery Covered (Y or N)	Weight or Volume	Number of Vehicles	Date Delivered	Delivered By	Waste Accepted by: (Print Name)	Initials

1.2.4. Schedule for Inspections and Monitoring

The Oasis Landfill is inspected quarterly by UTTR Civil Engineering. The inspections are designed to observe, note, and correct any operations that are in violation of the Utah Solid Waste Laws R315-302 and R315-310.

Quarterly Inspection Form Class II Landfill UTTR Site				
Date & Time of Inspection	Printed Name	Signature	Observations ^a	Date and Description of Repairs or Corrective Action

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a. Observations include noting all activities that are not in compliance with applicable Utah Solid Waste Rules R315-302 and R315-310				

1.2.5. Fire Contingency Plan

The UTTR-North fire protection unit is based in the Oasis compound, only half a mile from the disposal area. The equipment and manpower of this unit are available for any emergency fire situation.

1.2.6. Corrective Action in the Event of Groundwater Contamination

The Oasis Landfill is located in an area where groundwater contamination from the landfill contents is unlikely. UAC Rule 315-302-1(e)(vi) allows exemptions to groundwater rules where there is an extreme depth to groundwater or where there is a natural impermeable barrier above groundwater. The monitoring wells outside the current landfill area show a typical depth to groundwater of at least 170 feet (USGS, 2003) and the landfill has been exempted from requirements regarding groundwater monitoring, landfill lining, or treatment of run-off water in previously issued permits. There have been no changes to the groundwater situation since the last renewal and it is anticipated the exemption will still apply.

1.2.7. Contingency Plan for Other Releases

The Oasis Landfill is currently exempt from landfill gas monitoring. Therefore, regulatory requirements for contingency plans for the release of explosive gases do not apply. The landfill operator will monitor run-on/run-off control systems within a week following a storm event. In the event of a run-on/run-off control system failure, the operator will notify UTTR Civil Engineering and take corrective action to remedy the failure. Run-on and run-off control systems at the Oasis Landfill consist of diversion ditches and berms. The earth-moving equipment at the landfill can be used to repair failures in the control system. The run-on/run-off control systems will be checked quarterly as part of regular inspections. Any failure and subsequent corrective actions related to the run-on/run-off systems will be noted in the annual report submitted in March.

1.2.8. Fugitive Dust Control Plan

Vehicles within the landfill area are directed to use the same road and are directed to dump their loads in the same location. A water truck is also available on-site if dust generation requires abatement.

1.2.9. Litter Control and Collection

UTTR Civil Engineering personnel will practice proper landfill maintenance by spreading daily cover to limit wind-blown litter. Any debris scattered to where it shouldn't be will be collected and properly disposed of and secured.

1.2.10. Maintenance of Installed Equipment

Due to the exemptions regarding landfill gas, leachate collection, and run-off treatment systems, no installed equipment is present at the Oasis Landfill.

1.2.11. Procedures for Exclusion of Prohibited Waste

The landfill operator is responsible for inspecting incoming loads of waste to ensure that prohibited items are not placed in the landfill. Prohibited waste items include:

- Paint cans that do not meet the definition of "RCRA empty"
- Explosives, including live, small arms munitions
- Medical wastes, including bandages or sharp wastes
- Hazardous materials (as defined by OSHA), including:
 - Oxidizers (reactive materials)
 - Poisons (toxic materials)
 - Flammables (ignitable materials)
 - Corrosives
- Polychlorinated biphenyls (PCBs)
- Radioactive materials
- Solvents
- Universal Wastes such as batteries and fluorescent tubes
- Wastes with free liquids
- Hazardous materials containers that do not meet the "RCRA empty" rule
- Any item prohibited by the permit

The Hill AFB Environmental Management Directorate will be responsible for calling the local health department and UDWMRC if unauthorized waste is discovered at the Oasis Landfill. Any toxic or hazardous wastes generated at UTTR will be disposed at permitted off-site facilities. Personnel responsible for hazardous waste collection and transport are trained and certified in the aforementioned areas.

All materials at UTTR that are known to contain PCBs (such as transformers) have been inventoried, with the exception of light ballasts. Because the use of PCBs in the manufacture of light ballasts ceased in 1980, UTTR policy treats light ballasts manufactured prior to 1980 as containing PCBs and disposes of the old light ballasts as hazardous wastes.

1.2.12. Procedures for Controlling Disease Vectors

The landfill operator is responsible for using measures to prevent the harboring of rats and other disease vectors, such as insects, birds, and burrowing animals. Proper soil cover over wastes is the most effective method of controlling these disease vectors.

1.2.13. Plan for Alternative Waste Handling

In the event that the Oasis Landfill becomes inoperable, the following measures would be implemented to handle the solid waste generated at UTTR:

- Disposal: Hill AFB personnel or a licensed contractor would transport the waste to the nearest Class II or Class IV landfill, depending on the type of waste.
- Storage: Roll-offs would be rented to store small volumes of waste, as needed.

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UTTR Civil Engineering, in coordination with the Hill AFB Solid Waste Program Manager and UDWMRC, would oversee all of the actions involved in the implementation of the alternative waste storage, handling, and disposal plan.

1.2.14. Training/Safety Program for Operators

Landfill operators are trained to prevent unauthorized dumping and operate a safe and efficient landfill. Specific elements of the training include:

- General landfill practices
- Inspection of loads for unauthorized waste
- Controlling disease vectors
- Equipment operation (bulldozers, backhoes, etc.)
- Personal protective equipment
- General site safety practices

1.2.15. Recycling Program

Materials that, when feasible, may be recycled through the Hill AFB Qualified Recycling Program (QRP) and could be diverted from the landfill include:

- Any variety of eligible scrap metal
- Electrical motors
- Electrical, communications, and cable wire
- Paint cans with more than one inch of paint remaining
- Motor oil (used or unopened containers)
- Vehicle batteries

1.2.16. Closure and Post-Closure Care Plan

The closure plan is unchanged from the current permit that is set to expire in June 2020. The following is from the previous permit renewal:

1. A compacted 18 inch thick final cover will permanently cap the landfill. This cover will consist of compacted soil with a permeability of less than 1×10^{-5} cm/sec or the permeability of the lower lining soil, whichever is less. Native soils at the site were determined to have a permeability greater than 1×10^{-5} cm/sec. Nearby native silt soil was compacted and used as cover material. The cover material tested had a permeability less than 1×10^{-5} cm/sec. Native soils consisting of at least 50 percent clay/silt and at most 50 percent sand, will be used as cover material. Testing of soils at the site have indicated that native soils with this fraction, compacted properly, will have a permeability less than 1×10^{-5} cm/sec. A particle size analysis, using ASTM Method D421, will be performed on a sample of native soil intended for use as cover material prior to placement. The moisture content of the soil will also be performed on the samples using ASTM Method D 2216 to determine if moisture needs to be added to the soil prior to compaction. Placement surfaces will be free of water, debris, and foreign material during placement and compaction of cover material. The cover will be placed in 6 inch lifts of uniform thickness measured perpendicular to placement surface. Cover material must not be placed when frozen or when the placement surface is frozen. Compaction will consist of no less than six complete passes of the compaction equipment. Compaction equipment

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will consist of a dozer or a sheep's foot compactor. The intent of the compaction method specification is to provide at least 95 percent relative compaction with a permeability less than 1×10^{-5} cm/sec. Prior to permanently closing a trench and following cover placement, a single ring infiltrometer test using ASTM Method D5126 will be performed on the compacted 18 inch cover to verify that the permeability is less than 1×10^{-5} cm/sec.

2. Within six months of final placement of the 18 inch cap material, the cover will be topped with at least 18 inches of topsoil. The frost and root penetration depth is reportedly less than 18 inches in this area. The cap material will be covered with at least six inches of un-compacted native soil to allow for seeding.
3. Any contouring required to provide optimum drainage will be completed. The contouring will be complete when the surface slopes are less than 2% and the side slopes are less than 33%. As part of the design of the cover for the Pre-1994 waste at the south end of the landfill, an ultimate grading plan was developed for the entire landfill that complements the closure of the Pre-1994 waste area.
4. The landfill area will be seeded with shallow rooting native grass, shrub and plant species of the area.
5. The landfill area will be landscaped to blend with the surrounding natural environment.

1.2.17. Procedure for Handling Special Wastes

Special waste will be managed in accordance with R315-315. A small amount of asbestos waste may also be disposed at the landfill, but most years no asbestos will be placed in the landfill. Asbestos waste is managed according to R315-315-2 as follows:

1. Wastes potentially containing asbestos will be handled, transported, and disposed of in a manner that prevents the release of asbestos fibers into the air.
2. Friable asbestos waste will not be accepted unless the waste has been wetted and containerized to prevent fiber release.

Ash and sludge is disposed of at the Oasis landfill, and is properly handled by covering with dirt. Bulky waste is crushed before disposing. Dead animals are covered with two feet of dirt to limit odors and propagation of insects, rodents, and scavenging animals. PCB containing materials are not disposed of at the Oasis landfill. Methods for handling PCB containing materials are described in section 1.2.11. Petroleum contaminated soils may be deposited in the landfill but is a rare occurrence. Waste asphalt is recycled when possible but may be deposited at the landfill.

1.2.18. Plans and Operation Procedures to Minimize Liquids

Landfill operators prohibit the disposal of containerized liquids larger than household size, non-containerized liquids, sludge containing free liquids, or any waste containing free liquids in containers larger than household size.

1.2.19. Plans and Procedures to address the requirements of R315-303-3(7)(c) through (i) and R315-303-4

All requirements listed in R315-303-3(7)(c) through (i) and R315-303-4 are addressed throughout this document.