STATE OF ARIZONA
AQUIFER PROTECTION PERMIT No. 01062022; LTF No. 92666; Place ID No. 20757
CACTUS LANDFILL

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3; Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2; A A.C. Title 18, Chapter 11, Article 4; and amendments thereto; and the conditions set forth in this permit, Cactus Waste Systems, L.L.C.., is hereby authorized to operate two surface impoundments for the disposal and evaporation of landfill leachate at the Cactus Landfill, a municipal solid waste landfill, located at 22481 East Deep Well Ranch Road, Florence, Arizona, which is 15 miles south of town of Florence and approximately 8 miles west of State Route 79, and lies within the west half of Section 28, and the west half of Section 33 of Township 7 South, Range 10 East, and the northwest quarter of Section 4 of Township 8 South, Range 10 East of the Gila and Salt River Baseline and Meridian.

This permit becomes effective on the date of the Waste Program Division Director's signature and shall be valid for the life of the facility (operational, closure and post-closure care periods), unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate, and maintain the permitted facility:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below, or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant, and as determined at the applicable POC, occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

Facility Name:	Cactus Landfill
Facility Address:	22481 East Deep Well Ranch Road, Florence, Arizona 85232
Facility Contact:	Republic Services, Inc. 1855 East Deer Valley Road Phoenix, Arizona 85024
Permittee as Owner/Operator:	Cactus Waste Systems, L.L.C. c/o CT Corporation System 2394 East Camelback Road Phoenix, Arizona 85016

Latitude: 32° 46′ 23″ North **Longitude:** 111° 19′ 41″ West

1.2 AUTHORIZING SIGNATURE

_____

Laura L. Malone, Director
Waste Programs Division
Arizona Department of Environmental Quality

Signed this _____ day of _____, 2022

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(A)(4), 49-241(A)]

The Cactus Landfill (CLF) is an approved Subtitle D regulated municipal solid waste landfill authorized to operate under *Municipal Solid Waste Landfill Master Facility Plan Approval No. 50550900.06.* The permitted waste footprint of CLF occupies approximately 503 acres of the entire 805-acre facility.

Cactus Waste Systems, L.L.C. is authorized by the Aquifer Protection Permit (APP) No. 01062022 to construct and operate two surface impoundments for the disposal and evaporation of landfill leachate and condensate at the CLF as set forth in the document Aquifer Protection Permit Application Cactus Landfill (APPACLF), date January 6, 2022, revised April 1, 2022, and prepared by Brown and Caldwell. The two (2) surface impoundments shall accept only landfill leachates and condensate from both the CLF and the Apache Junction Landfill.

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The site includes the following permitted discharging facility:

Table 2-1 Estimated Location of Evaporation Ponds

Facility	Township/Range/ Section	¼, ¼, ¼	Latitude	Longitude
Leachate Collection Evaporation Ponds 1 and 2	T7S R10E Sec 33	NW, SW, NW	32° 46’ 23” N	111° 19’ 41” W

2.1.1 Annual Registration and Disposal Fees [A.R.S. §§ 49-836 and A.A.C. R18-14-104]

The annual registration fees for this permit is established by A.R.S. § 49-242 and is payable to ADEQ each year. The permittee has estimated an average daily influent to Evaporation Pond 1 and pond 2 of 1,468 gallons. This is presumed to be the daily influent for the purposes of determining the annual registration fee for each pond unless an alternative daily influent rate is determined and approved by ADEQ for use under this permit. The annual registration fees will be based on the total daily influent as prescribed by A.R.S. § 49-242(E).

2.1.2 Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee must demonstrate financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility including closure and post-closure care of the facility. The estimated closure and post-closure cost as of January 6, 2022, is $367,000 ($165,000 for closure and $202,000 for post-closure costs) per leachate evaporation pond.

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

The permittee is authorized to construct two (2) lined leachate evaporation ponds with an LCRS sump for leachate collection as shown on the *Drawings* provided in the APPACLF, and referenced in Section 5.0 of this permit.

2.2.1 Engineering Design – Leachate Ponds 1 and 2:

1. The ponds will each cover an area of approximately 238 feet by 123 feet, including the anchor trench and will have a maximum depth of 8 feet. Each pond has a working capacity of 536,000 gallons plus sufficient storage capacity for direct precipitation from a rainfall event equal to a 100-year, 24-hour storm event and maintaining two (2) feet of freeboard. The total capacity of each pond is 977,000 gallons.

2. The excavated side slopes shall be constructed at a maximum of three horizontal to one vertical (3H:1V). The base of the pond is sloped toward the LCRS sump.

3. The evaporation ponds are designed with a double-liner system composed of the following layers from bottom to top:

    a. A Six (6) inch compacted soil layer (foundation layer) with a maximum permeability of $1x10^{-6}$ cm/sec
    b. 60-mil high-density polyethylene (HDPE) textured membrane.
    c. Geonet drainage layer, min. 200 mil
    d. 60-mil HDPE textured membrane

4. The ponds are designed with a 12-foot by 12-foot LCRS sump which consists of a six (6) inch diameter HDPE pipe placed over the base, embedded in a wash rock layer, and underlying the primary liner as shown on the *Design Drawings for Proposed Evaporation Ponds* provided in the APPACLF.

2.2.2 Site-Specific Characteristics

Not applicable.

2.2.3 Pre-Operational Requirements

The permittee shall submit the construction certification, as described in Section 2.2.5 of this permit, for the new evaporation pond prior to the beginning of operation.

2.2.4 Operational Requirements

The facility shall be constructed, operated, and maintained in a manner that will protect public health, safety, and the environment as set forth in the APPACLF as referenced in Section 5.0 of this permit. This includes

1. maintenance of the structures, equipment, training employees, controlling facility access, posting appropriate signage, implementing health and safety programs, regular updates of the safety programs, groundwater monitoring, and recordkeeping. If any damage is identified during an inspection that could cause or contribute to a discharge, proper repairs shall be performed immediately as referenced in Section 4.2.

2. The evaporation ponds shall only accept leachate and condensate from the Cactus and Apache Junction Landfills. The majority of the liquid will be leachate with only a small fraction, less than 5%, being condensate.

3. A freeboard height of two (2) feet shall be maintained to manage the 100-year, 24-hour storm event under normal operation conditions.

4. If sludge and/or sediments begin to accumulate in the pond and affect operations, liquids will be directed to the other pond or other alternatives until excess liquid in the pond evaporates. Once all of the liquid has been removed or evaporated, the sludge/sediment will be sampled and a waste determination performed. The sludge/sediment will then be removed for proper disposal. Light equipment will be used to remove the sludge/sediments to prevent damage to the liner.

5. Regular maintenance of the berms will be conducted to correct any soil erosion from storm water.

6. The permittee shall provide and maintain financial assurance for the costs associated with construction, operation, closure, post-closure monitoring, maintenance and any necessary corrective action in accordance with Section 2.1.2 of this permit.

2.2.5 Construction Requirements

A third-party Arizona registered professional engineer (QAE) shall be responsible for construction quality assurance (CQA) and construction quality control (CQC) procedures for any construction. The QAE shall be responsible for inspecting, collecting, interpreting and reporting field and laboratory results.

The QAE shall certify that all construction, including excavation, soil segregation, subgrade preparation, final cover layer construction, and any other construction or installation work, is performed according to the APPACLF, the manufacturer's specifications, engineering testing standards and/or the federal, state or local regulations that may apply to the work. The exact geographic coordinates for the location of the new pond shall be provided.

The permittee shall submit the construction certification to and receive approval from the ADEQ Solid Waste Unit prior to beginning of operation of the pond.

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243, and A.A.C. R18-9-A205(B)]

Discharges shall be controlled by the double liner system and LCRS sump. No discharge limits are set in this permit.

2.4 Point of Compliance (POC) [A.R.S. § 49-244]

The Points of Compliance are established by the following monitoring location:

POC Location	Latitude	Longitude
MW-4	32º 46’ 22.60” N	111º 19’ 42.87” W

Semiannual groundwater monitoring events were previously approved for CLF facility and are specified in the current MFPA No. 50550900.06.

In the event that the action leakage rate is exceeded in the pond’s LCRS sump, the liquid will be sampled and analyzed for all constituents with a numeric AWQS, except asbestos, as listed in TABLE 4.2.2. If the analytical results indicate that a constituent(s) is present in concentrations that exceed an AWQS, within 90 - 180 days from the initial detection, the POC well will be sampled for the constituents listed in TABLE 4.1.2 and for constituents which exceeded the AWQS listed in TABLES 4.1.3, 4.1.4, 4.1.5 and 4.1.6.

The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

2.5 Monitoring Requirements [A.R.S. § 49-243(K)(1) and (K)(6), A.A.C. R18-9-A206 and R18-9-A209(C)]

The permittee shall continue all monitoring required in this permit for the duration of the permit, regardless of the status of the facility. All sampling, preservation, and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained; and chain of custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and Title 40 of the Code of Federal Regulations (40 CFR) Part 136 for guidance in this regard. Copies of laboratory analyses and chain of custody forms shall be maintained at the permitted facility. Upon request, these documents shall be made immediately available for review by ADEQ personnel.

The following information associated with each sample, inspection or measurement should be included in the monitoring records:

1. Name of each individual who performed the sampling, inspection or measurement;
2. Date, time, and exact location of sampling, inspection, or measurement;
3. Date on which the sampling analysis was completed;
4. Name of each individual and laboratory who performed the analysis;

5. Analytical techniques or methods used to perform the sampling and analysis; laboratory detection limit for each test method performed, and analytical variance for each parameter analyzed;
6. Chain of custody records; and
7. Any field notes relating to information described in items 1 through 6, above.

2.5.1 Discharge Monitoring

Not applicable.

2.5.2 Facility / Operational Monitoring

1. Operational

   a. The evaporation ponds with the LCRS sump shall be inspected maintained and monitored as necessary, as referenced in Tables 4.2.1, 4.2.2 and 4.2.3.

   b. The permittee shall operate, inspect, and maintain the evaporation ponds, the associated components, and the drainage structures, such as a pipe or berm to ensure there is no discharge of pollutants.

   c. A freeboard height of two (2) feet shall be maintained to manage the 100-year, 24-hour storm event under normal operation conditions.

   d. The permittee shall inspect the geomembrane in the evaporation ponds on a monthly basis and after every wind or rain event during the operational lifetime of the CLF.

   e. If sludge and/or sediment accumulates to three (3) feet in depth in the pond, the leachate and the sludge/sediment shall be managed in accordance with Section 2.2.4.4 of this permit.

   f. The CLF perimeter fence shall be repaired and replaced as necessary. Gate shall remain locked during non-business hours. All signage shall be maintained.

2. LCRS Sumps

   Monitoring the evaporation pond LCRS sumps shall be performed on a weekly basis. Any fluid detected shall be pumped out, quantified and field-pH tested in accordance with Table 4.2.1. This action shall be initiated within twenty-four (24) hours of detecting fluid in the sump.

   The action leakage rate is 2 gallons per pond per day.

3. Closure/Post-Closure

In accordance with A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3), a permit amendment for the closure/post-closure plan shall be submitted to ADEQ within 90 days following notification of intent to cease pond operations. The permit amendment must be approved by the ADEQ Plan Review Unit prior to any closure activities.

Post-closure monitoring and maintenance will not be necessary if ADEQ Solid Waste Plan Review Unit determines that the proposed closure activities are adequate and subsequent sampling results meet the criteria for clean closure approval. If clean closure is not approved, post-closure monitoring may be required and will consist of periodic inspection and maintenance of any closure caps or other structures as set forth in Sections 2.9 and 2.10.

2.5.3 Groundwater Monitoring and Sampling Protocols

Static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three (3) borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80% of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as "dry" for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the monitoring report.

As an alternative method for sampling, the permittee may conduct the sampling using the low-flow purging method described in the Arizona Water Resources Center March 1995 *Field Manual for Water Quality Sampling.* The well must be purged until at least two indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature and conductivity.

2.5.3.1 POC Well Replacement

In the event that the designated POC well should become unusable or inaccessible due to damage, a decrease in water levels for more than two (2) sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty (50) feet or less from the original well, the ALs and/or AQLs calculated for the designated POC well shall apply to the replacement well. Otherwise, the ALs and/or AQLs shall be recalculated and set following standard protocols.

2.5.4 Surface Water Monitoring and Sampling Protocols

Not applicable.

2.5.5 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Avenue
Phoenix, Arizona 85007
Phone: (602) 364-0720

2.5.6 Installation and Maintenance of Monitoring Equipment

If necessary, monitoring equipment required by this permit shall be installed and maintained so that representative groundwater samples can be collected. If new groundwater monitoring wells are determined to be necessary, the construction details shall be submitted to the ADEQ Solid Waste Plan Review Unit for approval prior to installation and the permit shall be amended to include any new points.

2.6 Contingency Plan Requirements [A.R.S. § 49-243(K)(3), (K)(7), and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1 General Contingency Plan Considerations

At least one copy of the approved contingency and emergency response plan(s) submitted in the application APPACLF shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans. Potential situations that may occur that would trigger contingency plan actions include overtopping of the pond, accidental discharge, liquid seepage from the pond, pipe blockages, pond berm or liner system failures or an LCRS sump action leakage rate exceedance.

In the event that a discharge results in a violation of a permit condition or an exceedance of an AWQS or AL, the *Contingency Plan* of the APPACLF shall be initiated. The response actions, reporting requirements and documentation submittals required are listed in TABLE 4.3.1 of this permit.

2.6.2 Verification Sampling

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that

previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL.

The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as verification sampling has been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of an AQL, or any other permit condition.

2.6.3 Exceeding of Alert Levels

Any alert level (AL) that is exceeded or any violation of an aquifer quality limit (AQL) or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

2.6.3.1 Exceeding of Alert Levels Set for Operational Conditions

In the event the action leakage rate is exceeded, the liquid will be sampled and analyzed for constituents listed in TABLE 4.2.2. The permittee shall also take the following actions:

a. Notify the ADEQ Plan Review Unit as specified in Section 2.7.5.

b. If the analytical results indicate that a constituent(s) is present in concentrations exceeding an AWQS, the POC wells shall be sampled between 90 and 180 days for the constituent(s) that exceeded the AWQS in the pond LCRS sump. The samples collected from the POC wells shall be analyzed for the parameters specified in TABLES 4.1.2, 4.1.3, and 4.1.4.

c. Within thirty (30) days of the action leakage rate being exceeded in the LCRS sump, submit a Response Action Plan to the ADEQ Solid Waste Plan Review Unit for approval that includes, at a minimum:

    1. A characterization of the reason for the action leakage rate exceedance in the LCRS sump.
    2. An assessment of the condition of the liner system including a determination to the extent practicable of the location, size and cause of any leaks.
    3. An assessment to determine if migration of fluids from the LCRS sump has occurred.
    4. A review of potential release responses and their effectiveness. The review must include a determination of whether receipt of the liquids should be curtailed;

whether liquid should be removed for liner inspection, repairs or controls; and whether or not alternative disposal methods are required.

5. Recommendations for long-term and short-term responses.

2.6.3.2 Exceeding of Alert Levels Set for Discharge Monitoring

Not applicable.

2.6.3.3 Exceeding of Alert Levels in Groundwater Monitoring

2.6.3.3.1 Alert Levels for Indicator Parameters

Not applicable.

2.6.3.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in TABLES 4.1.3, or 4.1.4 has been exceeded; the permittee may conduct verification sampling within five (5) days of becoming aware of an AL being exceeded. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

2. If verification sampling confirms the AL being exceeded or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to a monthly basis. In addition, the permittee, shall immediately initiate an investigation of the cause of the AL being exceeded, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL being exceeded. To implement any other corrective action the permittee shall obtain prior approval from the ADEQ Solid Waste Plan Review Unit according to Section 2.6.7.

Alternatively, the permittee may submit a technical demonstration, subject to written approval by the ADEQ Solid Waste Plan Review Unit, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the ADEQ Solid Waste Plan Review Unit.

4. Within thirty (30) days after confirmation of an AL being exceeded, the permittee shall submit the laboratory results to the ADEQ Solid Waste Plan Review Unit, along with a summary of the findings of the investigation, the cause of the AL being exceeded, and actions taken to resolve the problem.

5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.

6. The increased monitoring required as a result of ALs being exceeded may be reduced to semiannual monitoring frequency, if the results of four (4) sequential sampling events demonstrate that no parameters exceed the AL.

7. If the increased monitoring required as a result of an AL exceedance continues for more than six (6) sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within thirty (30) days of the receipt of laboratory results of the sixth sampling event.

2.6.3.3.3 Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not applicable.

2.6.4 Discharge Limitations (DL) Violations

Not applicable.

2.6.5 Aquifer Quality Limit (AQL) Violation

1. If an AQL listed in TABLES 4.1.3, or 4.1.4 has been exceeded; the permittee may conduct verification sampling within five (5) days of

becoming aware of an AQL being exceeded. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

2. If verification sampling confirms that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to monthly. In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.

   The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within thirty (30) days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.

4. If the violation continues for one hundred and twenty (120) days, the permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.

2.6.6 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. § 49-201(12) and pursuant to A.R.S. § 49-241

2.6.6.1 Duty to Respond

The permittee shall act immediately to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.6.2 Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances [A.R.S. § 49-201(18)] or toxic pollutants [A.R.S § 49-243(I)] on the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged

material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the ADEQ Emergency Response Unit at (602) 771-2300 and the ADEQ Solid Waste Inspections and Compliance Unit within twenty-four (24) hours upon discovering the discharge of hazardous material that: (a) has the potential to cause an AWQS or AQL exceedance; or (b) could pose an endangerment to public health or the environment.

2.6.6.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the ADEQ Solid Waste Inspections and Compliance Unit within twenty-four (24) hours upon discovering the discharge of non-hazardous material that: (a) has the potential to cause an AQL exceedance; or (b) could pose an endangerment to public health or the environment.

2.6.6.4 Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.6.2 and 2.6.6.3 to the ADEQ Solid Waste Inspection and Compliance Unit within thirty (30) days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in that notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6.5 Liquid Waste Discharge Notification Requirements

The following notifications are required if there is an unauthorized discharge of liquid waste from the ponds, related drainage structures or LCRS sumps:

1. Within five (5) business days of unauthorized liquid waste discharge from the ponds, related drainage structures or LCRS sumps, the permittee shall notify ADEQ Solid Waste Plan Review Unit.

2. Within seven (7) days of detection, the permittee shall place in the operating record a description of the steps taken to protect human health. A copy of this description shall be submitted to the ADEQ Solid Waste Plan Review Unit.

3. The permittee shall submit reports including any analytical results, leak detection investigation activities, an explanation of the conditions responsible for the liquid discharge, and repair and/or operational changes designed to prevent future failures within the time frame indicated in the *Contingency Plan* outlined in the *APPACLF* to the ADEQ Solid Waste Plan Review Unit.

2.6.7 Corrective Actions

Specific contingency measures identified in Section 2.6 of this permit and actions identified in the contingency plan referenced in the approved *APPACLF* have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.6, the permittee shall obtain written approval from the ADEQ Solid Waste Plan Review Unit prior to implementing a corrective action to accomplish any of the following goals in response to exceeding an AL or violation of an AQL or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer; or
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within thirty (30) days of completion of any corrective action, the permittee shall submit to the ADEQ Solid Waste Plan Review Unit a written report describing the causes, impacts and actions taken to resolve the problem.

2.7 Reporting and Recordkeeping Requirements [A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]

2.7.1 Self-Monitoring Report Forms (SMRF)

Not applicable.

2.7.2 Operation Inspection / Operating Record

A signed copy of this permit shall be maintained at all times at the location where decisions regarding the operation of the facility are made. An operating record (paper copies, forms or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where decisions are made regarding the operation of the facility. Facility inspections shall be conducted in accordance with TABLE 4.2.3. The operating record shall be retained for ten (10) years from the date of each inspection and, upon request, the permit and the operating record shall be made immediately available for review by ADEQ personnel. The information in the operating record shall include, but not be limited to, the following information as applicable:

1. Name of inspector;
2. Date and time inspection was conducted;
3. Condition of applicable facility components;
4. Any damage or malfunction, and the date and time any repairs were performed; including all repair procedures and materials used;
5. Documentation of date and time for any sampling;
6. Any other information required by this permit to be entered in the operating record; and
7. Monitoring records for samples shall comply with R18-9-A206(B)(2) and R18-9-A209(C).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the ADEQ Solid Waste Plan Review Unit in writing within five (5) business days (except as provided in Section 2.6.6) of becoming aware of a violation of any permit condition or of an AL exceedance.

2. The permittee shall submit a written report to the ADEQ Solid Waste Plan Review Unit within thirty (30) days of becoming aware of the violation of any permit condition unless otherwise specified under the time frames listed in TABLE 4.3.1 of this permit. The report shall document all of the following:

   a. Identification and description of the permit condition for which there has been a violation and a description of its cause;
   b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
   c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;
   d. Any monitoring activity or other information that indicates that any pollutants would be reasonably expected to cause a violation of an AWQS if a discharge occurred;
   e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and
   f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other, or Miscellaneous Reporting

2.7.4.1 Closure/Post-Closure Monitoring and Reporting

1. Until clean closure is achieved, the ponds shall be inspected at least quarterly, and after every significant rain and wind event. All damage to groundwater monitoring and piezometer wells and fencing shall be recorded so that it can be repaired promptly and by the next inspection date. Facility inspection reports covering events shall be kept in a facility file.

2. Post-closure monitoring and maintenance will not be necessary if ADEQ Solid Waste Plan Review Unit determines that the proposed closure activities are adequate and subsequent sampling results meet the criteria for clean closure approval. If clean closure is not approved, post-closure monitoring will be required and will consist of periodic inspection and maintenance of any remaining structures.

2.7.5 Reporting Location

All documents required by this permit to be submitted to the ADEQ Solid Waste Plan Review Unit shall be directed to:

Arizona Department of Environmental Quality
Solid Waste Plan Review Unit
Waste Programs Division
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4110

2.7.6 Reporting Deadline

2.7.6.1 Groundwater Monitoring

1. Semiannual report due dates for groundwater monitoring events conducted during the operational period were previously approved for the CML facility and shall be submitted as specified in *MFPA 14003400.16* and any subsequently approved plan amendments.

2.7.6.2 Repairs

Reports on any repairs shall be submitted annually and shall be received by January 31 of each year reporting on repair events of the prior year.

2.7.7 Changes to Facility Information in Section 1.0

The ADEQ Solid Waste Plan Review Unit shall be notified within ten (10) days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person or Emergency Telephone Number.

2.8 Temporary Cessation [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the ADEQ Solid Waste Plan Review Unit before ceasing operation of the facility for a period of sixty (60) days or greater.

At the time of notification, the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following ADEQ's approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to

incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the ADEQ Solid Waste Plan Review Unit of the operational status of the facility every three (3) years. When the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9 Closure [A.R.S. §§ 49-243(K)(6), 49-252, and A.A.C. R18-9-A209(B)]

The permittee shall give written notice of closure to the ADEQ Solid Waste Plan Review Unit of the permittee's intent to cease operation without resuming activity for which the facility was designed or operated.

2.9.1 Closure Plan

Within ninety (90) days following notification of closure, the permittee shall submit for approval to the ADEQ Solid Waste Plan Review Unit, a revised Closure Plan, stating any changes to the *APPACLF* which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3)(a).

2.9.2 Closure/Post-Closure Requirements

The closure process for the ponds shall be as outlined in the approved *APPACLF*. The pond closure activities shall consist of, but not limited to the following activities:

1. Removal of any liquid remaining in a pond through evaporation.
2. Removal of any sludge residue remaining in a pond and dispose of the material in the CML.
3. Removal of all liners and disposal of the liners in the CML.
4. Sampling and analysis of the soil below the pond to determine if a release has occurred.
5. Corrective action shall be implemented as necessary.
6. Filling the area with native soil, compacting and grading to provide surface drainage and to minimize surface ponding.

2.9.3 Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the ADEQ Solid Waste Plan Review Unit indicating that the approved Closure Plan has been implemented fully and providing supporting documentation to demonstrate that closure has been achieved (soil sample results, verification sampling results, groundwater data, as applicable). The permittee shall submit a CQA/CQC report, signed by an independent Arizona registered professional engineer, verifying that closure has been completed in accordance with the *APPACLF* and any updates required under Section 2.9.1. If clean closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If clean closure has not been achieved, the permittee shall follow the terms of post-closure stated in this permit.

2.10 Post-Closure [A.R.S. §§ 49-243(K)(6), 49-252, and A.A.C. R18-9-A209(C)]

2.10.1 Post-Closure Plan

The permittee shall maintain the facility in a manner that will protect public health, safety, and the environment. If clean closure has not been achieved, a Post-Closure Plan shall be required. The Post-Closure Plan shall include all monitoring and maintenance activities as outlined in A.A.C. R18-9-A209(C)(1) and the approved *APPACLF* and shall ensure that any reasonable probability both of future discharge from the facility and of exceeding AWQSs at the applicable point of compliance are eliminated to the greatest extent practicable.

An approved post-closure care program shall be provided for thirty (30) years from the date of final closure acknowledgment by ADEQ, and shall consist of:

1. Maintaining the integrity and effectiveness of any remaining pond structures.
2. Maintaining and operating groundwater monitoring wells.
3. Controlling public access by maintaining signs and fences to the closed ponds.
4. Complying with the recordkeeping requirements specified in the Section 2.7 of this permit.
5. Providing and maintaining financial assurance for the costs associated with post-closure maintenance and any necessary corrective action as a result of known releases from the ponds in accordance with Section 6.5 of this permit.

2.10.2 Post-Closure Completion

The permittee shall notify ADEQ in writing within thirty (30) calendar days of completion of all post-closure care activities. The written notice shall include a certification, signed by an independent Arizona registered professional engineer hired by the permittee, verifying that post-closure care has been completed in accordance with the approved post-closure care plan.

3.0 COMPLIANCE SCHEDULE [A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

Not applicable.

4.0 TABLES OF MONITORING REQUIREMENTS

4.1 GROUNDWATER MONITORING

TABLE 4.1.1 SAMPLING LOCATIONS

Well Number	Latitude	Longitude
MW-4	32º 46’ 22.60” N	111º 19’ 42.87” W

TABLE 4.1.2 GENERAL PARAMETERS

Parameter	Aquifer Quality Limit [1] (mg/L)	Alert Level [2] (mg/L)	Analytical Method [3]
pH	N/E	N/A	Field Measurement
Specific Conductance	N/E	N/A	Field Measurement
Temperature	N/E	N/A	Field Measurement

[1] N/E – Not established in rule.

[2] N/A – Not applicable.

[3] The permittee shall use only EPA approved methods unless ADEQ authorizes the use of another method. The permittee may substitute any EPA approved method for any other, if the substituted method provides detection limits that are equal to or lower than the limits of the originally approved method. All laboratory analyses shall have detection limits that are adequate for detection of the regulatory limits of the parameter in question. ADEQ reserves the right to determine the adequacy of the laboratory results based on the detection limits used.

TABLE 4.1.3 VOLATILE ORGANICS

Parameter	Aquifer Quality Limit [1] (mg/L)	Alert Level[2,4] (mg/L)	Analytical Method [3]
Benzene	0.005	> PQL	EPA 8260
Bromodichloromethane, Dichlorobromomethane (Trihalomethane)	N/E	0.01	EPA 8260
Bromoform; Tribromomethane(Trihalomethane)	N/E	0.01	EPA 8260
Carbon tetrachloride	0.005	> PQL	EPA 8260
Chlorobenzene	0.1	> PQL	EPA 8260
Chloroform; Trichloromethane (Trihalomethane)	N/E	0.01	EPA 8260
Dibromochloromethane; Chlorodibromomethane (Trihalomethane)	N/E	0.01	EPA 8260
o-Dichlorobenzene; 1,2-Dichlorobenzene	0.6	> PQL	EPA 8260
p-Dichlorobenzene; 1,4-Dichlorobenzene	0.075	> PQL	EPA 8260
1,2-Dichloroethane; Ethylene dichloride	0.005	> PQL	EPA 8260
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	0.007	> PQL	EPA 8260
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	0.07	> PQL	EPA 8260
trans-1,2-Dichloroethylene	0.1	> PQL	EPA 8260
1,2-Dichloropropane; Propylene dichloride	0.005	> PQL	EPA 8260
Dichloromethane; Methylene chloride	0.005	> PQL	EPA 8260
Ethylbenzene	0.7	> PQL	EPA 8260
Styrene	0.1	> PQL	EPA 8260
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	0.005	> PQL	EPA 8260
1,1,1-Trichloroethane;Methylchloroform	0.20	> PQL	EPA 8260
1,1,2-Trichloroethane	0.005	> PQL	EPA 8260
Toluene	N/E	1.0	EPA 8260
Trichloroethylene; Trichloroethene	0.005	> PQL	EPA 8260
Vinyl chloride	0.002	> PQL	EPA 8260
Xylenes (Total)	10	> PQL	EPA 8260

[4]PQL – practical quantitation limit

TABLE 4.1.4 INORGANICS

Parameter	Aquifer Quality Limit [1] (mg/L)	Alert Level [2] (mg/L)	Analytical Method [3]
Antimony	0.006	0.0048	EPA 6010/6020
Arsenic	0.05	0.04	EPA 6010/6020
Barium	2.0	1.6	EPA 6010/6020
Beryllium	0.004	0.0032	EPA 6010/6020
Cadmium	0.005	0.004	EPA 6010/6020
Chromium	0.1	0.08	EPA 6010/6020
Fluoride	4.0	3.2	EPA 300.0
Lead	0.05	0.04	EPA 6010/6020
Mercury	0.002	0.0016	EPA 7470
Nickel	0.1	0.08	EPA 6010/6020
Nitrate (as N)	10	8	EPA 300.0
Nitrite (as N)	1	0.8	EPA 300.0
Selenium	0.05	0.04	EPA 6010/6020
Thallium	0.002	0.0016	EPA 6010/6020

4.2 COMPLIANCE MONITORING

TABLE 4.2.1 LCRS SUMP MONITORING

Parameter	Alert Level[2]	Method[3]	Monitoring Frequency
Fluid Level - Pond 1 and 2	Action leakage rate of 2 gpd	Field Observation	Weekly
Volume Pumped	N/A	Flow Rate Meter	As Pumped
pH	<3 or >11	EPA 9040	As Pumped

TABLE 4.2.2 LCRS SUMP MONITORING PARAMETERS

Parameter	Alert Level (mg/L)[2]	Method[3]
Specific Conductance	N/A	Field Measurement
Temperature	N/A	Field Measurement
Volatile Organics	As listed in TABLE 4.1.3	
Inorganics	As listed in TABLE 4.1.4	

TABLE 4.2.3 FACILITY INSPECTIONS – OPERATIONAL

Parameter	Performance Levels	Inspection Frequency
Berm Integrity	No visible structural damage, reach, or erosion	Monthly and after every significant rain and wind event
Pond levels	2 or more feet freeboard	Daily

LCRS sump	Less than 2 gpd	Weekly
Leachate collection and removal system visible portions	No obstructions or clogging.	Monthly and after every significant rain and wind event
Liquid waste material in ponds	No fumes, oxidation or unexpected odors that indicate a reaction is occurring	Weekly
Sludge/Sediment accumulation in ponds	3 feet maximum	As needed basis
HDPE upper/primary liner	No damage, environmental stress cracking, minor divots, cuts and/or wrinkles with a height to width ratio greater than 1.5	Monthly and after every significant rain and wind event
Evaporation ponds	No stains or signs of a spill	Monthly and after every significant rain and wind event
Groundwater monitoring and piezometer wells integrity and operability	No visible evidence of damage or loss of operability.	Semiannually
Public Access Control	Repair and replacement, as necessary, of fence and maintenance of no trespassing signs. Locked gate during non-business hours. Maintenance of all signage.	Quarterly and as needed basis

4.3 CONTINGENCY MONITORING

TABLE 4.3.1 CONTINGENCY ACTIONS FOR PONDS AND LCRS

Contingency Event	Contingency Action	Reporting [5,6]
Action leakage rate exceeds in the pond's LCRS sump – 2gpd per pond	Within 7 days of discovery, sample the sump liquids for the parameters listed in TABLES 4.2.1 and 4.2.2. Evacuate water from the pond and sump as needed to inspect the liner(s). Repair the liner(s) as needed.	30 days
Analytical results of the LCRS sump sample indicates an AWQS exceedance.	Between 90 and 180 days, sample POC wells for the constituents in TABLE 4.1.2 and the constituents that exceeded the AWQS listed in TABLES 4.1.3, 4.1.4, 4.1.5 and 4.1.6.	30 days from sample receipt
Exceedance of an AWQS in POC well.	Develop a corrective action plan.	As required by ADEQ
Exceedance of a discharge limit or prohibited liquid released into the pond.	Obtain sample of prohibited liquid for analysis. Correct the violation and/or develop plan to mitigate the effects of the exceedance or violation.	30 days
Accidental discharge from the pond.	Correct any operational or design failure of the pond. Sample the liquid for the parameters listed in TABLE 4.2.2.	30 days
Pond overtopping.	Cease disposal of liquids into the pond.	30 days

	Remove liquid as necessary to obtain 2-foot minimum freeboard. Remove impacted soils to the landfill. Sample the liquid for the parameters listed in TABLE 4.2.2. Make needed repairs/adjustments.	
Pond berm or liner system failure.	Cease disposal of liquids into the pond; if possible create a temporary containment structure. If necessary, remove all liquid from the pond. Remove impacted soils to the landfill. Make needed repairs/adjustments. Sample the liquid for the parameters listed in TABLE 4.2.2.	30 days
Aquifer Protection Permit violation.	Correct the violation and/or develop plan to mitigate the effects of the exceedance or violation.	30 days

[5] The permittee shall notify the ADEQ Solid Waste Plan Review Unit in writing within five (5) business days of becoming aware of a violation.

[6] The permittee shall provide documentation as specified in the *Contingency Plan* of the *APPACLF* to the ADEQ Solid Waste Plan Review Unit within the specified timeframe.

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

1. *Aquifer Protection Permit Application*, Cactus Landfill Inc., Florence. Pinal County, Arizona, by Brown and Caldwell, dated January 6, 2022; revised April 1, 2022.

6.0 GENERAL CONDITIONS AND RESPONSIBILITIES

6.1 Annual Registration Fees [A.R.S. §§ 49-747(c)(7), 49-836]

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ as referenced in Section 2.1.1 of this permit.

6.2 Duty to Comply [A.R.S. §§ 49-221 through 49-263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2, and 3 of the Arizona Revised Statutes and Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.3 Duty to Provide Information [A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information that the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this

permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.4 Compliance with Aquifer Water Quality Standards [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an aquifer water quality standard at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an aquifer water quality standard for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.5 Technical and Financial Capability [A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application pursuant to A.A.C. R18-9-A203(D) shall remain in effect for the duration of the permit.

6.6 Reporting of Bankruptcy or Environmental Enforcement [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. The filing of bankruptcy by the permittee.
2. The entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.7 Monitoring and Records [A.R.S. §§ 49-243(K)(8) and A.A.C. R18-9-A206 and A209(C)]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit and with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8 Inspection and Entry [A.R.S. §§ 49-1009, 49-203(B), and 49-243(K)(8)]

In accordance with A.R.S. **§§** 41-1009 and 49-203(B), the permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.9 Duty to Modify [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices specified by this permit.

6.10 Permit Action: Amendment, Transfer, Suspension and Revocation. [A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, renewed or revoked for cause, under the rules of the Department.

The permittee shall notify the ADEQ Solid Waste Plan Review Unit in writing within fifteen (15) days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1 Other Information [A.R.S. § 49-243(K)(8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2 Severability [A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3 Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer will be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212(B) and (C).

END OF AQUIFER PROTECTION PERMIT No. 01062022

****