

Filename: S:\Word\PERMITS\TSDs\Apache Junction Landfill\V20691.tsd
From: Anu Jain
Date: August 3, 2021

**Technical Support Document
Apache Junction Landfill Corporation
Permit# V20691.000**

1. BACKGROUND	2
1.1 APPLICANT	2
1.2 ATTAINMENT CLASSIFICATION	2
1.3 PERMITTING HISTORY	2
1.4 COMPLIANCE/ENFORCEMENT HISTORY	2
2. PROCESS DESCRIPTION	3
2.1 GENERAL PROCESS	3
2.2 PROCESS CHANGES	4
3. EMISSIONS	4
3.1 LANDFILL GAS (LFG) GENERATION	5
3.2 FLARE	5
3.3 FUGITIVE LFG	5
3.4 FUGITIVE DUST	5
3.5 PETROLEUM CONTAMINATED SOIL OPERATIONS	5
4. REGULATORY REQUIREMENTS AND MONITORING	5
4.1 PSD REVIEW	5
4.2 PERMIT REVISION TYPE	6
4.3 NSPS / EMISSION GUIDELINES	6
4.3.1 <i>GCCS Design Plan</i>	6
4.4 COMPLIANCE ASSURANCE MONITORING (CAM)	7
4.5 OTHER REGULATORY EMISSIONS LIMITATIONS	7
4.5.1 <i>Opacity and Reasonable Precautions</i>	7
5. LIST OF ABBREVIATIONS	7

1. BACKGROUND

1.1 Applicant

This application has been submitted by Apache Junction Landfill Corporation, 4050 South Tomahawk Road, Apache Junction, Arizona, Apache Junction Landfill is a Delaware Corporation.

1.2 Attainment Classification

The Apache Junction Landfill is located in a non-attainment area for the 8-hour ozone standard, and in a serious PM10 non-attainment area.

1.3 Permitting History

The facility began operation during the 1960's is currently owned and operated by Apache Junction Landfill Corporation, a wholly owned subsidiary of Allied Waste Companies (Arizona) Inc., which is a wholly owned subsidiary of Allied Waste Industries, Inc. The landfill was acquired from Pinal County in October 1993. Pinal County owned and operated the facility, formerly known as Tomahawk Landfill, from approximately 1971 through October 1993.

Permit #	Date Issued	Description
	1999	21.6 acre expansion approved
V20614.000	10/16/01	Initial TV
V20614.R01	8/26/03	Incorporates Asbestos NESHAP
V20629.000	12/14/06	Renewal TV
V20629.R01	11/24/08	17.5 acre/13,031,809 yd ³ expansion
V20650.000	11/16/11	Renewal TV
V20650.R01	9/13/13	Revision to upgrade flare and change daily cover options
V20670.000	12/5/16	Renewal TV
V20670.R01	5/17/17	Minor revision to replace flare
V20691.000	8/3/21	Renewal

1.4 Compliance/Enforcement History

There is no history of Notices of Violation or enforcement actions against this facility. It was last inspected in September of 2019 and found to be in compliance.

The NMOC report received by the County in July of 2011 indicated that a possible exceedance of the collection/control requirement trigger of 50 Mg/yr of NMOCs could occur in 2012. The NMOC report received in January 2012 predicted 2012-2016 would be above the collection/control requirement trigger of 50 Mg/yr.

The NMOC report received in July 2012 decreased the reported NMOC rate for 2011 from 47.16 Mg/yr to 35.85 Mg/yr and predicted 2012-2015 to be below the 50 Mg/yr collection/control requirement trigger. The change was attributed to removal of two composite samples (10 individual locations) from the calculations that contained refuse less than two years old. NSPS Subpart XXX ~~WWW~~, 40 CFR 60.764.(a).(3) states sample probes shall be installed in areas that have retained waste for two years. The Revised Tier 2 Sampling and Analysis Report received in June 2012 provided additional details and demonstrated that even with the 10 individual sample locations removed the minimum number of samples was still attained.

The facility's NMOC emissions were first reported to exceed the collection/controls-required threshold of 50 Mg per year via a semi-annual report covering the January 2015 to July 2015 time period. Therefore the permittee submitted a Gas Collection and Control System (GCCS) design plan in January 2016 and installed an NSPS compliant GCCS as required by 40 CFR Part 60 Subpart XXX July 30, 2017.

2. PROCESS DESCRIPTION

2.1 General Process

The Apache Junction Landfill (AJL) is a regional municipal solid waste treatment and disposal facility. It presently incorporates a state-of-the-art landfill that serves the communities of Phoenix, Mesa, Gilbert, Queen Creek, Chandler, Apache Junction, and Superior. Acceptable wastes may also be received from locations outside these communities. No hazardous or infectious medical wastes are accepted for disposal. Incineration of wastes is not performed.

AJL is located at 4050 South Tomahawk Road, Apache Junction, Arizona. The site is located in the southeast quarter of Section 4, Township 1 South, Range 8 East, Gila and Salt River base and meridian, Pinal County, Arizona.

AJL consists of approximately 128.9 acres of land of which 96.3 acres are permitted as landfill area. The remainder consists of ancillary facilities, storm water management structures, container storage, and fire breaks and buffer zones around the perimeter of the facility.

AJL accepts residential wastes, commercial wastes, construction debris, industrial special wastes and other acceptable non-hazardous wastes from the areas it serves. Wastes acceptable for landfilling at AJL include:

- o Municipal refuse (garbage, paper products), pesticide containers (clean, rinsed, and punctured), and other wastes from households or commercial facilities;
- o Construction debris (wood, concrete, dirt, rocks, and gypsum);
- o Demolition material;
- o Dead animals;
- o Regulated Asbestos Containing Materials (RACM);
- o Shredder residue;
- o Incinerator ash;
- o Non-infectious medical wastes;

- o Water and wastewater treatment sludges which pass the pain filter test;
- o Industrial waste; and,
- o Other non-hazardous special wastes (i.e. petroleum contaminated soils) as approved by the Arizona Department of Environmental Quality.

2.2 Process Changes

Permit Revision V20670.R01 involved replacing the 19.5 MMBtu/hr. flare with a 46.4 MMBtu/hr. capacity flare.

The facility’s LFG generation and recovery model results determined that the current flare was undersized when forecasting the LFG until the landfill expected closure date. The only change proposed by permit revision V20650.R01 was for installation of a replacement flare and the associated compressor. With the installation of the replacement flare, the compressor and associated equipment were replaced with a system designed specifically for the flare and sized properly for the amount of LFG currently being collected and into the future. The current flare was taken out of service as soon as the new flare was operable. The proposed flare is located at the existing flare station just east of the current flare.

3. EMISSIONS

Actual Emissions (tpy) based on year 2019	VOC	CO	NOx	SO2	PM10	PM2.5	HAP
	9.87	14.11	4.36	11.51	8.17	3.68	4.45

CONTROLLED POTENTIAL EMISSIONS (TPY)								
	VOC	NMOC	PM10	PM2.5	NOx	CO	SO₂	HAPs
New Flare¹	4.8	4.8	3.8	3.8	12.19	40.65	37.19	1.85
Landfill Gas Surface Emission¹	4.17	10.70	-	-	-	-	-	1.67
Landfill Equipment²	-	-	7.38	2.21	-	-	-	-
Paved Roadways⁴	-	-	0.22	0.16	-	-	-	-
Unpaved Roadways⁴	-	-	0.41	0.12	-	-	-	-
Cover Operations³	-	-	2.86	1.43	-	-	-	-
IC Engines⁴	1.48	-	1.32	1.32	18.53	3.99	1.23	

¹ 46.4 mmBTU/hr, 1700 scfm, John Zink Company

² Based on VMT that is about 39% greater than the 2015 actuals for landfill equipment and 16% greater than the 2015 actuals for paved and unpaved roads

³ Based on a disposal rate of 210,845 tpy, which is greater than the 2016-2020 projected tpy rates

⁴ Emissions calculated at 8760 hours/yr allowable for each engine.

Leachate Collection⁵	0.0014	-	-	-	-	-	-	0.0014
Petroleum Contaminated Soils⁶	0.0028	-	-	-	-	-	-	0.0028
Total Controlled PTE	10.45	15.5	15.99	9.04	30.72	44.64	38.42	3.52

3.1 Landfill Gas (LFG) Generation

The generation of LFG was calculated using EPA's Landfill Gas Emissions Model (LandGEM) version 3.02 and using the parameters recommended in AP-42 Section 2.4 for landfills located in dry climates. The design capacity of the landfill is 12,945,594 m³ as amended in 2018..

3.2 Flare

The combustion emissions (CO, NOX, SO2, PM10/PM2.5) emissions from the flare were calculated using AP-42 emission factors from section 2.4. VOC and NMOC emissions were calculated assuming the NSPS control requirement of 98% and using the maximum predicted LFG recovery rate. HAP emissions were estimated using values reported in the Waste Industry Air Coalition (WIAC) study of constituents of LFG. For those HAPs not listed in the WIAC study, AP-42 factors from Table 2.4-1 were used.

3.3 Fugitive LFG

Fugitive VOC, HAPs and NMOC were calculated using the assumed non-collectable portion of the LFG generated, which is 25% of the total LFG emissions.

3.4 Fugitive Dust

For vehicle traffic emissions, the applicant used the equations from AP-42 Section 13.2.1 and 13.2.2, and for the cover operations AP-42 equation 1 in section 13.2.4.3.

USEPA's Factor Information and Retrieval System (FIRE) Database emission factors were used for calculating wind erosion of stockpiles.

3.5 Petroleum Contaminated Soil Operations

VOC emissions were estimated assuming an average VOC/HAP concentration of 40 ppm by weight (0.08 lb/ton) and that all VOCs/HAPs are emitted.

3.6 Changes in Emissions

In relation to the flare replacement all emission changes were less than the corresponding significance level. See Section 4.2 for additional discussion.

4. REGULATORY REQUIREMENTS AND MONITORING

4.1 PSD Review

⁵ Based on 2015 leachate collection (equals 2015 actuals)

⁶ Based on 70 tons of PCS accepted per year (equals 2015 actuals)

The potential emissions of any criteria pollutant are below thresholds required for a PSD review.

4.2 Permit Renewal

Permit V20670.R01 requires a permit renewal per PCAQCD Code §3-1-050.C.2.

4.3 NSPS / Emission Guidelines

This Renewal V20691.000 adds the requirements of Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014, Subpart XXX.

According to PCAQCD Rule §5-34-2050.C, MSW landfills may meet the requirements of Subpart Cf (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) by complying with Subpart XXX. However, the primary change 40 CFR Part 60, Subpart XXX and Cf could implement is reducing the collection/control requirement trigger from 50 Mg/yr to 34 Mg/yr of NMOCs. Since the facility is already above the 50 Mg/yr trigger the collection/control requirements have already been incorporated into the permit.

A gas management system was installed in 2010 to control migration of landfill gas. The wells in this system are routed to a common header that conveys the gas to a flare. The previous gas management system and flare was retrofitted to comply with the requirements of 40 CFR Part 60 Subpart WWW.

The facility's NMOC emissions were first reported to exceed the collection/controls-required threshold of 50 Mg per year via a semi-annual report covering the January 2015 to July 2015 time period. Therefore the permittee submitted a Gas Collection and Control System (GCCS) design plan in January 2016 and installed an NSPS compliant GCCS as required by 40 CFR Part 60 Subpart WWW by July 30, 2017.

AJL submitted the initial design capacity and NMOC emission rate reports to PCAQCD under Code of Regulations (COR), Chapter 5, Article 34: Standards of Performance for Existing Municipal Solid Waste Landfills – 5-34-2050. AJL will begin operating its GCCS under this regulation within 30 months of July 17, 2020, and until that time will continue to comply with 40 CFR 60, Subpart WWW until the NESHAP AAAA compliance date of September 27th 2021.

4.3.1 GCCS Design Plan

PCAQCD reviewed the GCCS Design Plan (January 2016) and approved the approaches set forth in the document with the following exceptions:

Section 4.9, Compliance with §60.759.A.3, states “no areas within the approved landfill footprint have received asbestos”. The current permit allows for the receipt of Regulated Asbestos Containing Material (RACM). The facility has historically accepted RACM and deposited the material at the active face of the landfill. PCAQCD has previously and will continue to require that well boring overburden material be treated as RACM unless the facility can produce records to demonstrate that RACM has not been deposited in the area or cell being drilled.

Section 4.11.1, Landfill Gas Conveyance, discusses the possibility of upgrading the Landfill Gas (LFG) blower/flare facility in the future. PCAQCD concurs that this type of

upgrade does not necessitate a revision to the GCCS Design Plan and the equipment change is covered by this minor revision application.

Section 5.1.3, Establish Higher Temperature Value (HOV), discusses why an HOV may be established but does not discuss in sufficient detail how the operational change will be documented to demonstrate the need for a HOV. While PCAQCD concurs that establishing a HOV is allowable under NSPS WWW it will be incumbent on the permittee to document why the higher temperature is necessary and how the higher temperature will not be detrimental to the operation.

Section 5.1.9, Monitoring of Leachate Clean-out Risers, states the GCCS has been designed to meet the required level of LFG control without connecting the leachate collection system to the GCCS and requests that NSPS WWW requirements not be applied the possible voluntarily added gas collectors within the leachate collection system. PCAQCD concurs with this request as long as the leachate collection system collectors are not needed for compliance with NSPS WWW. A revision to the design plan will be necessary if the leachate collection system collectors are used for compliance with NSPS WWW.

Section 5.3.1 1-hour and 5-day Standards, proposes an alternative definition of the NSPS WWW, 40 CFR 60.755(e) startup, shutdown or malfunction timelines. The design plan does not offer any references to the authority to grant such a request, does not refer to any USEPA guidance on the topic, and does not offer any examples of where a jurisdiction has approved such a request. PCAQCD does not concur with the proposed alternative definition of the 1-hour and 5-day standards. The permittee may submit additional documentation for review as to why this position should be reconsidered.

4.4 COMPLIANCE ASSURANCE MONITORING (CAM)

The requirements of 40 CFR 64 do not apply to this facility, since no single emission unit satisfies the criterion of §64.2(a)(3). No single unit has pre-control device emissions of 100 tpy or more.

4.5 Other Regulatory Emissions Limitations

4.5.1 Opacity and Reasonable Precautions

Since this facility is located in a PM10 nonattainment area the West Pinal Fugitive Dust Rule, PCAQCD Code Chapter 4, Article 1, surface stabilization requirements have been included in the permit renewal.

5. LIST OF ABBREVIATIONS

AJL.....	Apache Junction Landfill
AP-42	“Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources”, 5th Edition
CAA	Clean Air Act
CAM.....	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
GHG	Greenhouse Gas
hr	Hour
lb.....	Pound

MACT	Maximum Achievable Control Technology
Mg	Megagrams
MMBTU	Million British Thermal Units
NOX	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
PCAQCD	Pinal County Air Quality Control District
PGCAQCD	Pinal-Gila Counties Air Quality Control District
PM10	Particulate Matter nominally less than 10 Micrometers
PM2.5	Particulate Matter nominally less than 2.5 Micrometers
PSD	Prevention of Significant Deterioration
SIC	Standard Industrial Code
SOX	Sulfur Dioxide
tpy	tons per year
TSD	Technical Support Document
VOC	Volatile Organic Compound
yr	year