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From: Kale Walch
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**Technical Support Document
Apache Junction Landfill
Permit# V20670.000**

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Technical Support Document
Title V Permit Renewal
Apache Junction Landfill
Permit# V20670.000

1. BACKGROUND

1.1 Applicant

This revision application has been submitted by Apache Junction Landfill Corporation, 4050 S. Tomahawk Road, Apache Junction, Arizona 85119. 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 moderate 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 |

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 2015 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 WWW, 40 CFR 60.754.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 will have to install a GCCS as required by 40 CFR Part 60 Subpart WWW by July 30, 2017. See Section 4.2.1 for comments on the GCCS design plan.

2. PROCESS DESCRIPTION

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 S. 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.

3. EMISSIONS

| ACTUAL EMISSIONS (tpy) based on year 2015 | VOC | CO | NO_x | SO₂ | PM₁₀ | PM_{2.5} | HAP |
|--|------------|-----------|-----------------------|-----------------------|------------------------|-------------------------|------------|
| | 9.87 | 16.12 | 3.74 | 0.80 | 7.49 | 3.30 | 2.99 |

| CONTROLLED POTENTIAL EMISSIONS (TPY) | | | | | | | | |
|--|------------|-------------|------------------------|-------------------------|-----------------------|-----------|-----------------------|-------------|
| | VOC | NMOC | PM₁₀ | PM_{2.5} | NO_x | CO | SO₂ | HAPs |
| Flare¹ | 0.25 | 0.64 | 2.36 | 2.36 | 9.59 | 52.15 | 22.78 | 1.19 |
| Landfill Gas Surface Emission¹ | 4.17 | 10.70 | - | - | - | - | - | 1.67 |
| Landfill Equipment² | - | - | 7.38 | 2.21 | - | - | - | - |
| Paved Roadways² | - | - | 0.22 | 0.16 | - | - | - | - |
| Unpaved Roadways² | - | - | 0.41 | 0.12 | - | - | - | - |
| Cover Operations³ | - | - | 2.86 | 1.43 | - | - | - | - |
| IC Engines⁴ | 1.48 | - | 1.32 | 1.32 | 18.53 | 3.99 | 1.23 | |
| Leachate Collection⁵ | 0.0014 | - | - | - | - | - | - | 0.0014 |

¹ Based on LandGEM maximum LFG generation of 1413 scfm, which is about 28% greater than the 2015 actual. 2015 actuals sent 38% of the LFG to the flare and the renewal application sends 75% of the LFG to the flare, thus the LFG surface emissions in this table are lower than the 2015 actuals.

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.

⁵ Based on 2015 leachate collection (equals 2015 actuals)

| | | | | | | | | |
|---|-------------|--------------|--------------|------------|--------------|--------------|--------------|-------------|
| Petroleum Contaminated Soils⁶ | 0.0028 | - | - | - | - | - | - | 0.0028 |
| | | | | | | | | |
| TOTAL | 5.90 | 11.34 | 14.55 | 7.6 | 28.12 | 56.14 | 24.01 | 2.86 |

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 10,839,549 m3 as amended in 2011.

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.

4. REGULATORY REQUIREMENTS AND MONITORING

4.1 PSD Review

The potential emissions of any criteria pollutant are below that which would require a PSD review.

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

4.2 NSPS/Other Regulatory Emission

The USEPA is currently reviewing the Standards of Performance for Municipal Solid Waste Landfills. Currently the proposed updates to Emission Guidelines under 40 CFR Part 60, Subpart Cf and the creation of a new NSPS, 40 CFR Part 60, Subpart XXX have not been finalized. Once these items are finalized this permit may need to be reopened to address the updated requirements.

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 current gas management system and flare will be retrofitted to comply with the requirements of 40 CFR Part 60 Subpart WWW.

The NMOC report received by the County in July of 2011 indicated 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 rates would be above the collection/control requirement trigger of 50 Mg/yr.

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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 will have to install a GCCS as required by 40 CFR Part 60 Subpart WWW by July 30, 2017.

4.2.1 GCCS Design Plan

PCAQCD has reviewed the GCCS Design Plan (January 2016) and approves the approaches set forth in the document with the following exceptions and caveats.

Section 4.9, Compliance with §60.759.A.3, page 24, 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, page 28, discusses the possibility of upgrading the Landfill Gas (LFG) blower/flare facility in the future. While PCAQCD concurs that this type of upgrade will not necessitate a revision to the

GCCS Design Plan it should be noted that such a revision may necessitate a permit revision prior to installation of the equipment. Further consultation with PCAQCD is recommended prior to replacing any of the control equipment.

Section 5.1.3, Establish Higher Temperature Value (HOV), page 30, 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, page 34, 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, page 36, 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.

4.3 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.

4.4 Other Regulatory Emissions Limitations

4.4.1 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.

4.4.2 Soil Moisture Content

Since the soil moisture content used for emissions calculations is from AP-42 and not site specific, PCAQCD required that a sampling program be conducted when the tipping rate exceeded 750 tons per day. The soil moisture content obtained will be used for determining the emissions under AP-42 Section 13.2.4-6.

Soil moisture testing was conducted at AJL in December 2013, and the results show a moisture content of 7.2%

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 _{2e} | 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 |
| PM ₁₀ | Particulate Matter nominally less than 10 Micrometers |
| PM _{2.5} | 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 |