



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2822A
Plant ID No.: 069-00071
Applicant: American Disposal Services of West Virginia, Inc. dba Short Creek Landfill
Facility Name: Short Creek
Location: Ohio County
SIC Code: 1422 (Crushed and Broken Limestone)
NAICS Code: 212312
Application Type: Modification
Received Date: September 29, 2014
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$1,000
Date Received: October 01, 2014
Complete Date: October 22, 2014
Applicant Ad Date: October 01, 2014
Newspaper: *Intelligencer*
UTM's: Easting: 530.57 km Northing: 4444.10 km Zone: 17
Description: This permitting action is for the installation and operation of a portable stone crushing and sizing facility to be located at the Short Creek Landfill. The applicant is replacing their existing unit with a similar rental unit.

DESCRIPTION OF PROCESS

American Disposal Services of West Virginia proposes to replace a portable stone crushing and sizing unit at the Short Creek Landfill with a similar rental unit. This unit will support landfill operations at the facility.

A front-end loader will feed raw stone into the crusher feed hopper (HOP1) that feeds directly to the crusher (CR1). Once the stone is crushed, it drops onto a double deck screen (SC1). This screening unit will separate the stone into two difference sizes. From there, the sized stone or material is discharged onto belt conveyors (BC1 or BC2) that transfers the material

to open stockpiles (SP1 or SP2, respectively). Short Creek Landfill will not be trucking any raw stone to the site to be processed or any sized stone from the site. From the stockpile, the sized stone is consumed at the facility to support operating the landfill.

A small generator set will provide electric power to the rock crusher/screening unit and associated conveyor belts. The rental unit will utilize a Caterpillar C-9, Serial No. JSC24838, Tier III Certified, to power the crusher, screen and conveyors. The engine (DG) is a 2010 Model Year, utilizing compression ignition and No. 2 Diesel as fuel.

The facility shall be constructed and operated in accordance with the following equipment and control device information taken from permit applications R13-2822A and R13-2822:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity		Control Device ¹
				TPH	TPY	
HOP1	RC-E	Feed Hopper	2014	125	1,095,000	N
CR1	RC-E	Jaw Crusher	2014	125	1,095,000	N
SC1	RC-E	Double Deck Vibrating Screen	2014	125	1,095,000	N
BC1		Belt Conveyor from SC1 to SP1	2014	125	1,095,000	MDH
SP1		Open Stockpile 1,800 sq ft. base, 20 ft. high	2010	----	1,095,000	WS
BC2		Belt Conveyor from SC1 to SP2	2014	125	1,095,000	MDH
SP2		Open Stockpile 1,800 sq ft. base, 20 ft. high	2010	----	1,095,000	WS
DG	DG-E	Generator Set 2010 Model, 300 hp (224 kw)@2200 RPM, Diesel, Tier III Certification CPX-NRCI-10-22	2014	NA	NA	N

¹ WS - Water Spray; NA - Not Applicable; MDH - Minimized Drop Height; N - None

SITE INSPECTION

The Short Creek Landfill is an existing Title V facility, which is routinely inspected. Mr. Al Carducci, a member of the Northern Panhandle Regional Office, conducted the most recent inspection of the facility on August 14, 2014. The result of this full on site inspection found the landfill to be in compliance. In addition, Mr. Carducci has reviewed numerous semi-annual and annual compliance status reports of the landfill, which have indicated that the landfill is being

operated in compliance with its Title V Operating Permit. Therefore, this writer deems that a site inspection of the Short Creek Landfill was not necessary for this permitting action.

Directions (from Charleston): Take I-77 North to Vienna, WV; take Exit 179 and proceed on SR 2 North past Wheeling, WV to Short Creek, WV; turn right onto CR 2 (Girty's Run and Short Creek Road) and proceed 2.6 miles; bear left onto CR 1 (Short Creek Road main stem) and proceed 1.6 miles; turn left onto CR 9 (North Fork of Short Creek Road) and proceed approximately 0.1 miles and the Short Creek Landfill will be on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Sources of emissions at eligible nonmetallic mineral processing plants include crushers, screens, transfer points (loading, unloading, etc.), open storage piles, bins, haulroads, reciprocating internal combustion engine power units and tanks. Fugitive emission calculations for operations, transfer points, crushing and screening, storage piles, and paved and unpaved haulroads are based on AP-42 Fifth Edition, "Compilation of Air Pollution Emission Factors".

Because AP-42 does not publish a specific factor for primary crushing of stone, the estimate provided in the application did not account for any PM/PM₁₀ from the crusher. As a conservative estimate of emissions, the applicant assumed that no controls are used during the screening and transfer operations. The estimated emission calculations were performed by the applicant's consultant and were checked for accuracy and completeness by the writer.

The proposed modification will result in an estimated potential to discharge controlled emissions of 37.48 TPY of PM (particulate matter), 16.71 TPY of PM₁₀ (particulate matter less than 10 microns in diameter), 14.75 TPY of NO_x (Nitrogen Oxides), 3.18 TPY of CO (Carbon Monoxide), 1.20 TPY of VOC (Volatile Organic Compounds) and 0.97 TPY of SO₂ (Sulfur Dioxides). Refer to the following tables for a complete summary of the proposed modified facility' emissions:

Emission Type	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)	Change in Annual Emissions (tons/yr)
Total Particulate Matter	8.56	37.48	0.71
Fugitive (Material Handling & Wind Erosion)	4.68	20.51	0.00
PM ₁₀	3.81	16.71	0.71
Fugitive (Material Handling & Wind Erosion)	2.21	9.70	0.00
VOC	0.27	1.20	0.98
SO ₂	0.22	0.97	-3.45
NO _x	3.37	14.75	6.15
CO	0.73	3.18	-1.02

The potential emissions produced from the 300 hp (0.7635 MMBTU/hr) Caterpillar C-9 Diesel engine are listed below:

Engine Emissions		
Engine	Caterpillar C-9	
Power Rating (hp)	300hp	
Pollutant	lb/hr	TPY
PM/PM ₁₀ /PM _{2.5}	0.24	1.04
Sulfur Dioxide	0.22	0.97
Nitrogen Oxide	3.37	14.75
Carbon Monoxide	0.73	3.18
Hydrocarbons (VOCs)	0.27	1.20

Emission factors were obtained from AP-42 5th Edition - Section 3.3 Gasoline and Diesel Industrial Engines (10/96). Annual emissions from the crushing/screening of stone and the engine are based on maximum operating schedule of 8,760 hours per year.

REGULATORY APPLICABILITY

The proposed modification is subject to the following state and federal rules:

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

The purpose of this rule is to prevent and control particulate matter air pollution from manufacturing processes and associated operations. The affected process in question will be sizing of stone/rock. Therefore, the sizing unit is classified as a manufacturing process and subject to the particulate matter limitation under this rule.

According to Table 45-7A, for a type ‘a’ source with a maximum process weight rate of 125 tons per hour (250,000 lb/hr), this operation would have an allowable particulate matter rate of 35 pounds per hour, which is significantly less than the proposed rate after controls of 3.88 lb/hr of particulate matter according to calculated emissions in permit application R13-2822A.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source

and to relocate non-major stationary sources within the state of West Virginia. The applicant published a Class I legal advertisement in the *Intelligencer* on October 04, 2014 and submitted an application fee of \$1,000.00.

45CSR30 Requirements for Operation Permits

The Short Creek Landfill is currently required to operate within its Title V Operating Permit. The issuance of this modification permit, R13-2822A, will not affect the Title V status of this facility. The applicant has the duty to update the facility's Title V (45CSR30) permit application to reflect the changes permitted herein.

45CFR60 Subpart III—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Short Creek Landfill is subject to this subpart because the engine was manufactured after April 1, 2006. The engine emissions for [DG] is EPA Tier III Certified, Certificate Number: CPX-NRCI-10-22.

40 CFR 60 Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed rock crushing and sizing plant is not subject to this subpart. Although, the construction of emission sources will occur after August 1, 1985, it is a portable plant that processes a maximum of 125 tons of rock per hour. That is less than the trigger level of 150 tons per hour (40CFR§60.670(c)(2)). Therefore, the proposed emission sources are not subject to this subpart.

40CFR63 Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Short Creek Landfill is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because [DG] is considered a new area source of HAPs since it will be constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart III.

AIR QUALITY IMPACTS ANALYSIS

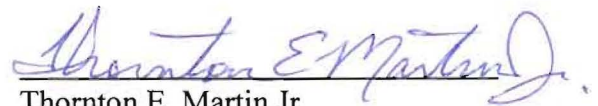
The writer deemed that an air dispersion modeling study or analysis was not necessary, because the proposed modification does not meet the definition of a major source or major modification as defined in 45CSR14.

MONITORING OF OPERATIONS

Monitoring of the screening plant shall rely on the applicant conducting visual emission observations and material processing rates to show compliance with Rule 7 emission limits. The processing rate corresponds to the predicted emissions. In addition, the hours of operation will be tracked by using the hour meters on the internal combustion engine.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that American Disposal Services of West Virginia's proposed stone crushing/screening unit will meet all the requirements of the applicable rules when operated according to the permit application. Therefore, this writer recommends granting American Disposal Services of West Virginia a Rule 13 modification permit for their stone crushing/screening unit to be located at the Short Creek Landfill.



Thornton E. Martin Jr.
Permit Engineer

October 22, 2014

Date