west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2857D
Plant ID No.:	053-00004
Applicant:	Felman Production, Inc.
Facility Name:	Letart Facility
Location:	Mason County
NAICS Code:	324199, 331112
Application Type:	Class II Administrative Update
Received Date:	July 18, 2014
Engineer Assigned:	Steven R. Pursley, PE
Fee Amount:	$2,800.00
Date Received:	July 23, 2014
Complete Date:	August 25, 2014
Due Date:	October 24, 2014
Applicant Ad Date:	July 30, 2014
Newspaper:	*Point Pleasant Register*
UTM's:	Easting: 419.054 km Northing: 4,312.02 km Zone: 17
Description:	Replacement of a crusher (CC2) with a larger unit, replacement of a crusher (CC1) and screen (CS1) with identical units and the relocation of two screens (CS2 (from another part of the plant) & CS3 (from its old location in the same sizing line)).

DESCRIPTION OF PROCESS

End loaders will bring silicomanganese up the ramp and dump into a new replacement hopper, which will be hooded. Product will be sized by a screen (CS1), 3" and below will be dropped to a dump bin below the screener. Products greater than 3" will be fed into the Gator 20x30 crusher (CC1), conveyed (BC1) to the horizontal screener (CS2) and again sized by screening. 3" and below will be dumped via a clam gate into dump bins. Product above 3" will be fed onto the existing 60" conveyor beltway (BC2) where it will be crushed in a Gator 10x30 crusher (CC2) and screened (CS3) in an existing loop of 3 belt conveyors and a vertical Terex Screener (CS3) until all product is 3" or below.

SITE INSPECTION

No site inspection of the facility was deemed necessary as the source is well known to WV DAQ and the writer has performed site inspections of the facility in the past.

The facility was inspected by James Robertson of DAQs enforcement section on May 1, 2014. He reported that the facility is currently shut down but maintenance staff were on site and the facility was hoping to reopen.

The facility is located in New Haven, West Virginia, in an area that is a mix of residential, commercial and industrial. To get to the facility from Charleston take I-77 north to Ripley (exit 138). At the stop light at the bottom of the off ramp turn left on State Route 62 (old Route 33) and proceed approximately 8.8 miles to the intersection of State Route 2. Then, turn left and proceed on State Route 2/62 approximately 3.1 miles. At the top of the hill veer right on State Route 62. Proceed approximately 9.6 miles and the facility is on the left (offices and parking on the right)

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

All emissions are based on AP-42. Crushing and screening emissions are based on Table 11.24-2 (emission factors for metallic minerals processing) since no emission factors for crushing and screening are given in the ferroalloy section (12.4). Hourly emissions are based on maximum design throughput. Annual emissions are based on the throughput at which the operation will be limited in the permit. It should be noted that the applicant used the crushing emission factor from Table 11.24-2 for both the crusher and screen (since no factor for screening exists in that section) individually. However, according to that section "*The emission factors in Tables 11.24-1 and 11.24-2 are for the process operations as a whole. At most metallic mineral processing plants, each process operation requires several types of equipment. A single crushing operation likely includes a hopper or ore dump, screen(s), crusher, surge bin, apron feeder, and conveyor belt transfer points.*" Therefore, ultimately, the calculations as performed by the applicant should be overly conservative. The emissions reflect a 89.1% control efficiency (90% capture, 99% removal) for all crushers and screens based on hoods venting to a baghouse.

The emissions due to this project will be as follows:

	PM		PM_{10}		$PM_{2.5}$	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Screens	17.99	8.29	8.51	3.92	0.22	0.10
Crushers	9.81	3.49	4.64	1.65	0.12	0.04
Transfer Points	23.24	10.03	10.99	4.74	3.45	1.49
Total	**51.04**	**21.81**	**24.14**	**10.31**	**3.79**	**1.63**

Emissions from the existing process (taken directly from permit R13-2857C) are as follows.

	PM		PM_{10}		$PM_{2.5}$	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Screens	6.75	3.60	3.22	1.71	0.48	0.26
Crushers	18.00	6.40	8.57	3.05	1.29	0.46
Transfer Points	23.17	10.22	11.03	4.87	1.66	0.73
Total	**47.92**	**20.22**	**22.82**	**9.63**	**3.43**	**1.45**

As can be seen from the above tables, the increase in emissions associated with this modification will be as follows:

PM		PM_{10}		$PM_{2.5}$	
lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
3.12	1.59	1.32	0.68	0.36	0.18

REGULATORY APPLICABILITY

The following state and federal regulations apply to the facility:

STATE RULES

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

The main requirement of 45CSR7 is the process weight rate based PM stack emission rate in section 4 of the rule. As can be see in the table below the sources meet this requirement.

	Permit Limit (lb/hr)	Rule 7 Limit (lb/hr)
Screens	6.75	33.8
Crushers	18.00	33.8

The facility is also subject to a twenty (20) percent opacity limit on all process source operations and must have a plan to minimize fugitive emissions. Felman proposes to meet these requirements through the use of baghouses and enclosures.

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).

Because uncontrolled PM emissions from the modification exceed 6 pounds per hour and 10 tons per year of PM the facility is required to submit a modification permit under 45CSR13. Addtionally, the facility was required to submit a permit modification application because the modification is subject to substantive federal rules (see below). Therefore, the applicant was required to place a class I legal ad per 45CSR§13-8.3. The affidavit of publication for said ad was received on August 8, 2014.

Since controlled PM emissions will increase by less than 6 pounds per hour and less than 10 tons per year, the application is eligible for a Class II Administrative Update.

45CSR30 Requirements for Operating Permits

The facility is an existing major source under 45CSR30 with an existing Title V permit. Changes authorized by the permit must also be incorporated into the facility's Title V operating permit.

FEDERAL RULES

40 CFR 63 Subpart XXX National Emission Standards for Hazardous Air Pollutants for Ferroalloys Production: Ferromanganese and Silicomanganese

The crushing and screening equipment and associated fugitive dust sources are subject to 40 CFR 63 Subpart XXX. The crushers and screens are subject to a limitation of 0.022 gr/dscf. In order to determine compliance with the particulate matter concentration limit, the permittee must perform testing, as outlined in §63.1656.

NON-APPLICABILITY DETERMINATIONS

These particular screens/crushers/conveyors are not subject to 40 CFR 60 Subpart OOO because they do not process any "nonmetallic mineral" as defined in §60.671. Similarly, they are not subject to 40 CFR 60 Subpart Y because they do not process any coal.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The main pollutant covered by this permit is particulate matter. However, some portion of that particulate matter may consist of manganese compounds. Since the facility is already a major source of HAPs subject to 40 CFR 63 Subpart XXX requirements are already in place (as can be seen under the "Regulatory Applicability" section of this document) to limit emissions of these compounds.

AIR QUALITY IMPACT ANALYSIS

Because this is a minor modification, as defined in 45CSR14 no modeling was performed.

MONITORING OF OPERATIONS

Since this modification only changes equipment in a sizing system but doesn't significantly alter the process flow, the existing monitoring requirements (updated to reflect capacities of the new/modified equipment) are sufficient to ensure compliance with the emission limits in the permit.

CHANGES TO PERMIT R13-2857C

The following changes were made to permit R13-2857C:

* Table 1.0 was updated to add the new/modified equipment.

* Condition 4.1.29 was changed to update the emission limits.

* Condition 4.1.31 through 4.1.33 were changed and combined to reflect the updated way Felman calculated emissions vis a vis baghouse control requirements.

* Old conditions 4.1.34 through 4.1.38 were renumbered.

* Condition 4.3.17 was changed to accommodate old condition 4.1.34 (new condition 4.1.32) being renumbered.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2857D for a ferro alloy facility near Letart, Mason County, be granted to Felman Production, Inc.

Steven R. Pursley, PE
Engineer

October 16, 2014