

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 032015-012      Project Number: 2014-06-004  
Installation Number: 510-2560

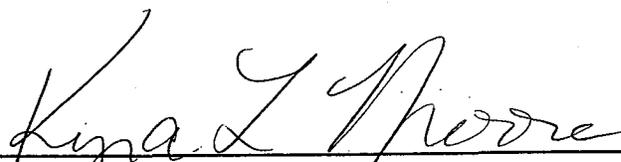
Parent Company: GP Recycling, LLC  
Parent Company Address: 101 Ferry St., St. Louis, MO 63147  
Installation Name: GP Recycling, LLC  
Installation Address: 101 Ferry St., St. Louis, MO 63147  
Location Information: St. Louis City County, Land Grant 01342/02041

Application for Authority to Construct was made for:  
The addition of a few small pieces of equipment, change of maximum hourly design rate of some equipment and reestablishment of a limit on facility emissions. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- 
- Standard Conditions (on reverse) are applicable to this permit.
  - Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAR 10 2015

EFFECTIVE DATE

  
\_\_\_\_\_  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources' regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

GP Recycling, LLC  
 St. Louis City County, Land Grant 01342/02041

1. **Superseding Condition**  
 The conditions of this permit supersede all special conditions found in the previously issued construction permits 082012-013 and 012014-011.
2. **Installation Emission Units**  
 GP Recycling, LLC entire installation consists of the emission units listed in Table 1:

Table 1: Installation Emission Units

Emission Point	Description
Screening Plant	
EP-S0	Front-End Loader to Batch Feeder 1
EP-S1	Batch Feeder 1 to Conveyor 2
EP-S2	Conveyor 2 to Oversize Trommel 4
EP-S4.1	Oversize Trommel 4
EP-S4.2	Oversize Trommel 4 to Picking Conveyor 5
EP-S4.3	Oversize Trommel 4 to Conveyor 6
EP-S5	Picking Conveyor 5 to Bunker 5
EP-S6	Conveyor 6 to Feeder Pan 7
EP-S7	Feeder Pan 7 to BBOX 8
EP-S8.1	BBOX 8 to Bunker 5
EP-S8.2	BBOX 8 to Fines Trommel 11
EP-S11.1	Fines Trommel 11
EP-S11.2	Fines Trommel 11 to Bunker 8
EP-S11.3	Fines Trommel 11 to Conveyor 12
EP-S12	Conveyor 12 to bivi-TEC 13
EP-S13.1	bivi-TEC Screen 13

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### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

Emission Point	Description
EP-S13.2	bivi-TEC Screen 13 to Bunker 6
EP-S13.3	bivi-TEC Screen 13 to Bunker 7
EP-S14	Bunkers to truck
EP-H1	Haul Road
Quad Plant	
EP-Q0	Front-End Loader to Batch Feeder 1
EP-Q1	Batch Feeder 1 to Conveyor 2
EP-Q2	Conveyor 2 to Feeder Pan 3
EP-Q3	Feeder Pan 3 to BBOX 4
EP-Q4.1	BBOX 4 to Bunker 5
EP-Q4.2	BBOX 4 to Longi Magnet 7
EP-Q7.1	Longi Magnet 7 to Conveyor 8
EP-Q8	Conveyor 8 to BBOX 9
EP-Q9.1	BBOX 9 to Bunker 5
EP-Q9.2	BBOX 9 to Oscillator 12
EP-Q12.1	Oscillator 12
EP-Q12.2	Oscillator 12 to Picking Conveyor 14
EP-Q14	Picking Conveyor 14 to Bunker 13
EP-Q7.2	Longi Magnet 7 to Eddy Current System 15
EP-Q15	Eddy Current System 15 to Feeder Pans 16, 17
EP-Q16 EP-Q17	Feeder Pans 16, 17 to Quad Sensors 18, 19
EP-Q18.1 EP-Q19.1	Quad Sensors 18, 19 to Conveyor 20
EP-Q20	Conveyor 20 to Picking Conveyor 21
EP-Q21	Picking Conveyor 21 to Bunker 11
EP-Q18.2 EP-Q19.2	Quad Sensors 18, 19 to Conveyors 22, 23
EP-Q22 EP-Q23	Conveyors 22, 23 to Conveyor 24
EP-Q24	Conveyor 24 to Conveyor 25
EP-Q25	Conveyor 25 to BBOX 26
EP-Q26	BBOX 26 to Bunker 11

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

Emission Point	Description
EP-Q27	Bunkers 5, 13, 11, 10 to Truck
Fines Plant	
EP-F0	Front-End Loader to Batch Feeder 1
EP-F1	Batch Feeder 1 to Conveyor 2
EP-F2	Conveyor 2 to Trommel
EP-F2.2	Trommel
EP-F2.3	Conveyor
EP-F2.4	Dryer (25 MMBtu/hr)
EP-F2.5	Conveyor
EP-F2.6	Dryer baghouse duct burners (2 x 1 MMBtu/hr)
EP-F3	Conveyor 3 to Feeder Pan 4
EP-F4.0	Feeder Pan 4 to BBOX 5
EP-F5.1	BBOX 5 to Bunker 5
EP-F5.2	BBOX 5 to Y-Chute
EP-F8.0	Y-Chute to P10 Screens 9
EP-F9.1	P10 Screen 9
EP-F9.2	(2) P10 Screens 9 to Bunkers 4, 5
EP-F10	Bunkers to Truck
EP-F11	Feeder Pan 13 to Longi Magnet 14
EP-F12.1	Longi Magnet 14
EP-F12.2	Longi Magnet 14 to Bunkers 3,5
EP-F13.1	Eddy Current 15
EP-F13.2	Eddy Current 15 to Bunkers 1, 2
EP-F14	Conveyor
EP-F15.1	SWECO Screen
EP-F15.2	SWECO Screen to Bunker 4, 5

3. Particulate Matter Emission Limitation
  - A. GP Recycling, LLC shall emit less than 15.0 tons of particulate matter less than 10 microns in diameter (PM<sub>10</sub>) in any consecutive 12-month period from the entire installation as defined in Special Condition 2.
  - B. GP Recycling, LLC shall use the composite emission factors listed in Table 2 for determining compliance with Special Condition 3.A.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

**Table 2. Plant Area Composite Emission Factors**

Plant Area	Composite Emission Factor (lb/ton)
Screening Plant	0.0325
Quad Plant	0.0126
Fines Plant	0.0534

- C. GP Recycling, LLC shall weigh all material fed into the Screening, Quad, and Fines plants. GP Recycling, LLC shall keep all records of all materials weighed for each plant as supporting documentation.
  - D. GP Recycling, LLC shall use the weighed amount records on a monthly basis for determining compliance with Special Condition 3.A.
  - E. GP Recycling, LLC shall use Attachment A, or equivalent forms such as electronic forms approved by the Air Pollution Control Program, to demonstrate compliance with Special Condition 3.A, no later than ten days after the end of the month to be included in the report.
4. Control Device Requirement-Baghouse
- A. GP Recycling, LLC shall control emissions from the rotary dryer, ASTEC CORETEM dryer (emission unit EP-F2.4) using a baghouse.
  - B. GP Recycling, LLC shall develop and maintain operating procedures for this baghouse within three (3) months of the issuance of this permit. These procedures will establish:
    - 1) a pressure drop range;
    - 2) baghouse inspection procedures, to include an inspection schedule; and,
    - 3) routine maintenance activities, to include a schedule of maintenance or the event triggers for maintenance.
  - C. GP Recycling, LLC shall operate and maintain the baghouse in accordance with the operating procedures required in 4.B. above.
  - D. GP Recycling, LLC shall equip the baghouse with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- E. GP Recycling, LLC shall keep replacement filters for the baghouse on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - F. GP Recycling, LLC shall monitor and record the operating pressure drop across the baghouse at least once every 24 hours, when the rotary dryer (EP-F2.4) is operating. The operating pressure drop shall be maintained within the range specified by the operating procedures of 4.B. above.
  - G. GP Recycling, LLC shall maintain a copy of the operating procedures required by 4.B. above on-site.
  - H. GP Recycling, LLC shall maintain an operating and maintenance log for the baghouse which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Record Keeping and Reporting Requirements
- A. GP Recycling, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
  - B. GP Recycling, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2014-06-004  
Installation ID Number: 510-2560  
Permit Number:

GP Recycling, LLC  
101 Ferry St.  
St. Louis, MO 63147

Complete: June 2, 2014

Parent Company:  
GP Recycling, LLC  
101 Ferry St.  
St. Louis, MO 63147

REVIEW SUMMARY

- GP Recycling, LLC has applied for authority for: The addition of a few small pieces of equipment, change of maximum hourly design rate of some equipment and reestablishment of a limit on facility emissions.
- HAP emissions are not expected from the proposed equipment.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Air pollution control equipment is being used in association with some of the equipment. However, only the baghouse control device is federally enforceable and therefore was considered for the purpose of estimating emissions.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Absent special conditions, the potential to emit of particulate matter less than 10 microns in diameter (PM<sub>10</sub>) are above de minimis levels.
- This installation is located in St. Louis City, a nonattainment area for the 8-hour ozone standard and the PM-2.5 standard and an attainment area for all other criteria pollutants. The installation's major source level is 100 tons per year for nonattainment pollutants and 250 tons per year for all other pollutants. Fugitive emissions are not counted toward major source applicability.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2.
- Ambient air quality modeling was not performed since potential emissions of the application, after the special conditions are applied, are below de minimis levels.

- Emissions testing is not required for the equipment.
- No operating permit is required for this installation, per U.S. EPA's October 16, 1995 memo *Definition of Regulated Pollutant for Particulate Matter for Purpose of Title V*, operating permit applicability is based on PM<sub>10</sub> emissions. With the permit special conditions, the entire installation is below the de minimis operating permit threshold.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

GP Recycling LLC is a new automotive scrap residue (ASR) recycling installation located at 101 Ferry Street in St. Louis, Missouri. The facility continues to be limited to less than the de minimis levels, and thus does not require an operating permit. The permitting authority issued permit number 082012-013 dated August 29, 2012. A January 28, 2014 permit allowed modification of the facility by adding a dryer and associated equipment to the Fines portion of the facility, permit number 012014-011. Figure 1 is an aerial map showing the general facility layout.

The recycling facility is divided into three plants: the screening plant, the quad plant, and the fines plant. The screening plant removes large debris and classifies ASR into three sizes for further processing. The quad plant processes large (plus 25-mm) and medium (plus 15-mm) sized ASR from the screening plant in separate batches to remove metal from the ASR. The fines plant removes metal from the small (minus 15-mm) sized ASR from the screening plant and further classifies the ASR for shipment off-site. The plants' equipment only classifies and transfers ASR; none of the equipment physically reduces (e.g. shreds) the ASR.

Trucks deliver ASR to the recycling facility pre-shredded from automotive shredding facilities. After the plants process the ASR, the recovered metals and waste ASR are loaded onto trucks for shipment off-site for recycling and disposal, respectively.

All three plants employ Newell Recycling's proprietary BBOX technology. The BBOXs use a closed-loop cyclone system to remove lightweight material from the ASR. Lightweight materials flow to a bunker for disposal, while heavier materials drop out of the airstream for further processing. Air locks transfer material into and out of the circulating air stream, which does not exhaust. The following paragraphs provide a detailed description of the plants.

The screening plant classifies ASR into different sizes for further processing. Trucks deliver unclassified ASR to the facility, and the unclassified ASR is loaded into the screening plant's batch feeder. A drum magnet and oversized trammel remove some metal and large debris, which are stored in bunkers and shipped off-site for recycling and disposal, respectively. After the large trammel, a BBOX removes lightweight ASR, which is stored in a bunker and shipped off-site for disposal. Removing the lightweight ASR reduces the particulate matter generated from handling the ASR. After the BBOX, a series of screens divides the ASR into three streams, which are stored in separate

bunkers for further processing in the quad and fines plants.

The quad plant processes the plus 25-mm ASR and the plus 15-mm ASR from the screening plant in separate batches. At the heart of the quad plant, two quad sensors use optical detectors and pulses of high-pressure air to separate wire from the ASR. Before the ASR reaches the quad sensors, a magnet removes ferrous metals, and an eddy current system removes zorba, which is a mixture of non-ferrous metals like aluminum and copper, using a specialized rotor. BBOXs before the magnet and after the quad sensors remove residual lightweight ASR from the streams. Bunkers store metals and non-metal ASR for shipment off-site and recycling and disposal, respectively.

The fines plant processes the minus 15-mm ASR from the screening plant, using a BBOX, screens, a magnet, and an eddy current system. The plant removes ferrous and non-ferrous metals from the ASR and classifies the remaining non-metal ASR into minus 6-mm ASR and plus 6-mm ASR. Bunkers store the fines plant's product streams for shipment off-site and recycling.

The permitting authority has processed the following projects for GP Recycling, LLC:

Table 1: Project History

Project ID	Permit Number	Complete Date	Description
AP201205077	082012-013	08-29-12	Metal Recycling
AP201311050	012014-011	01-28-14	Add drying equipment

#### PROJECT DESCRIPTION

GP Recycling LLC has requested following items be approved through a construction permit:

- The present fines plant was permitted on the basis of 20 tons per hour raw material input. GP Recycling requests that the fines plant raw material input be increased to 40 tons per hour;
- Several changes have been made to the Fines plant, GP Recycling LLC requests this changes be incorporated into the equipment lists;
- GP Recycling LLC requests that the previously issued construction permits be superseded by a single construction permit; and,
- GP Recycling requests that the emissions be limited such that the facility is classified as a De Minimis source.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

PM<sub>10</sub> is being used as the composite emission factor rather than PM<sub>2.5</sub>, because it is the stricter of the composite emission factors.

The following table provides an emissions summary for this project. Existing potential emissions were taken from the previous construction permit, 012014-011. Existing actual emissions were not available. Potential emissions of the application represent the potential of the new Fines plant minus the original Fines plant configuration.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions <sup>1</sup>	Existing Actual Emissions (2013 EIQ) <sup>2</sup>	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	59.64	N/A	17	41 <sup>3</sup>
PM <sub>10</sub>	15.0	21.95	N/A	8	15
PM <sub>2.5</sub>	10.0	8.12	N/A	5	5
SO <sub>x</sub>	40.0	0.06	N/A	0 <sup>4</sup>	0
NO <sub>x</sub>	40.0	10.74	N/A	0 <sup>5</sup>	11
VOC	40.0	0.59	N/A	0 <sup>6</sup>	1
CO	100.0	9.02	N/A	0 <sup>7</sup>	9
GHG (CO <sub>2</sub> e)	N/A	12,961	N/A	N/D	N/D
GHG (mass)	0.0 / 100.0 / 250.0	12,883	N/A	N/D	N/D
HAPs	10.0/25.0	0.20	N/A	N/D	0

N/A = Not Applicable; N/D = Not Determined

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of particulate matter less than 10 microns in diameter (PM<sub>10</sub>) are conditioned below de minimis levels.

<sup>1</sup> Existing potential emissions are copied from the previous construction permit, 012014-011, and have not been recalculated. However, the new installation conditioned potential to emit has been recalculated, and is not based on the sum of this project and existing potential to emit.

<sup>2</sup> Since only a partial year of operation was available for 2013, 2014 will be the first year that an EIQ is required.

<sup>3</sup> A ratio of PM<sub>10</sub> limited to total was applied to PM and PM<sub>2.5</sub> in order to provide an estimate of the effect the PM<sub>10</sub> limit may have on potential to emit.

<sup>4</sup> These values are less than 0.5 tons per year.

<sup>5</sup> These values are less than 0.5 tons per year.

<sup>6</sup> These values are less than 0.5 tons per year.

<sup>7</sup> These values are less than 0.5 tons per year.

## APPLICABLE REQUIREMENTS

GP Recycling, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-6.165*

### SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400*

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Randy Raymond  
New Source Review Unit

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 28, 2014, received June 2, 2014. The application was revised through email received November 12, 2014.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A - PM<sub>10</sub> Compliance Worksheet

GP Recycling, LLC  
 St. Louis City, Land Grant 01342/02041  
 Project Number: 2014-06-004  
 Installation ID Number: 510-2560  
 Permit Number: \_\_\_\_\_

This sheet covers the period from \_\_\_\_\_ to \_\_\_\_\_.  
 (month, year) (month, year)

	(a)	(b)	
Plant Area	Amount Processed (tons)	Composite Emission Factor (lb/ton)	Monthly PM <sub>10</sub> Emissions, in lbs [col. (a) * col. (b)]
Screening Plant		0.0325	
Quad Plant		0.0126	
Fines Plant		0.0534	
Total Monthly PM <sub>10</sub> Emissions, in pounds (sum of Screening, Quad & Fines)			
Total Monthly PM <sub>10</sub> Emissions, in tons (Total in pounds / 2000)			
Sum of the Monthly PM <sub>10</sub> Emissions from Previous 11 months in tons			
Current 12-Month PM <sub>10</sub> Emissions in tons, must be less than 15 (Total Monthly + Sum of Previous 11 months)			

Attachment B – Emissions Summary

Screening Plant Calculations

<b>Emission Point ID</b>	<b>Source</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-S0	Front-End Loader to Batch Feeder 1	0%	0.2700	0.0990	0.0280
EP-S1	Batch Feeder 1 to Conveyor 2	0%	0.2700	0.0990	0.0280
EP-S2	Conveyor 2 to Oversize Trommel 4	0%	0.2670	0.0979	0.0277
EP-S4.1	Oversize Trommel 4	0%	2.2250	0.7743	0.0523
EP-S4.2	Oversize Trommel 4 to Picking Conveyor 5	0%	0.0120	0.0044	0.0012
EP-S4.3	Oversize Trommel 4 to Conveyor 6	0%	0.2550	0.0935	0.0264
EP-S5	Picking Conveyor 5 to Bunker 5	0%	0.0105	0.0039	0.0011
EP-S6	Conveyor 6 to Feeder Pan 7	0%	0.2550	0.0935	0.0264
EP-S7	Feeder Pan 7 to BBOX 8	0%	0.2550	0.0935	0.0264
EP-S8.1	BBOX 8 to Bunker 5	0%	0.0600	0.0220	0.0062
EP-S8.2	BBOX 8 to Fines Trommel 11	0%	0.1950	0.0715	0.0202
EP-S11.1	Fines Trommel 11	0%	1.6250	0.5655	0.0382
EP-S11.2	Fines Trommel 11 to Bunker 8	0%	0.0750	0.0275	0.0078
EP-S11.3	Fines Trommel 11 to Conveyor 12	0%	0.1200	0.0440	0.0124
EP-S12	Conveyor 12 to bivi-TEC 13	0%	0.1200	0.0440	0.0124

<b>Emission Point ID</b>	<b>Source</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-S13.1	bivi-TEC Screen 13	0%	1.0000	0.3480	0.0235
EP-S13.2	bivi-TEC Screen 13 to Bunker 6	0%	0.0600	0.0220	0.0062
EP-S13.3	bivi-TEC Screen 13 to Bunker 7	0%	0.0600	0.0220	0.0062
EP-S14	Bunkers to truck	0%	0.0750	0.0275	0.0078
EP-H1	Haul Road	Paved	1.8566	0.3713	0.0911

<b>Total (lb/hr)</b>	<b>9.07</b>	<b>2.92</b>	<b>0.45</b>
<b>Total (tons/year)</b>	<b>39.71</b>	<b>12.81</b>	<b>1.97</b>
<b>Composite EF (lb/ton)</b>	<b>0.1007</b>	<b>0.0325</b>	<b>0.0050</b>

Attachment B – Emissions Summary (continued)

Quad Plant Calculations

<b>Emission Point ID</b>	<b>Source</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-Q0	Front-End Loader to Batch Feeder 1	0%	0.0900	0.0330	0.0093
EP-Q1	Batch Feeder 1 to Conveyor 2	0%	0.0900	0.0330	0.0093
EP-Q2	Conveyor 2 to Feeder Pan 3	0%	0.0900	0.0330	0.0093
EP-Q3	Feeder Pan 3 to BBOX 4	0%	0.0900	0.0330	0.0093
EP-Q4.1	BBOX 4 to Bunker 5	0%	0.0180	0.0066	0.0019
EP-Q4.2	BBOX 4 to Longi Magnet 7	0%	0.0720	0.0264	0.0075
EP-Q7.1	Longi Magnet 7 to Conveyor 8	0%	0.0270	0.0099	0.0028
EP-Q8	Conveyor 8 to BBOX 9	0%	0.0270	0.0099	0.0028
EP-Q9.1	BBOX 9 to Bunker 5	0%	0.0090	0.0033	0.0009
EP-Q9.2	BBOX 9 to Oscillator 12	0%	0.0180	0.0066	0.0019
EP-Q12.1	Oscillator 12	0%	0.1500	0.0522	0.0035
EP-Q12.2	Oscillator 12 to Picking Conveyor 14	0%	0.0165	0.0061	0.0017
EP-Q14	Picking Conveyor 14 to Bunker 13	0%	0.0158	0.0058	0.0016
EP-Q7.2	Longi Magnet 7 to Eddy Current System 15	0%	0.0450	0.0165	0.0047
EP-Q15	Eddy Current System 15 to Feeder Pans 16, 17	0%	0.0360	0.0132	0.0037
EP-Q16 EP-Q17	Feeder Pans 16, 17 to Quad Sensors 18, 19	0%	0.0360	0.0132	0.0037
EP-Q18.1 EP-Q19.1	Quad Sensors 18, 19 to Conveyor 20	0%	0.0300	0.0110	0.0031
EP-Q20	Conveyor 20 to Picking Conveyor 21	0%	0.0300	0.0110	0.0031
EP-Q21	Picking Conveyor 21 to Bunker 11	0%	0.0300	0.0110	0.0031

<b>Emission Point ID</b>	<b>Source</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-Q18.2 EP-Q19.2	Quad Sensors 18, 19 to Conveyors 22, 23	0%	0.0060	0.0022	0.0006
EP-Q22 EP-Q23	Conveyors 22, 23 to Conveyor 24	0%	0.0060	0.0022	0.0006
EP-Q24	Conveyor 24 to Conveyor 25	0%	0.0060	0.0022	0.0006
EP-Q25	Conveyor 25 to BBOX 26	0%	0.0060	0.0022	0.0006
EP-Q26	BBOX 26 to Bunker 11	0%	0.0012	0.0004	0.0001
EP-Q27	Bunkers 5, 13, 11, 10 to Truck	0%	0.0900	0.0330	0.0093

<b>Total (lb/hr)</b>	<b>1.04</b>	<b>0.38</b>	<b>0.10</b>
<b>Total (tons/year)</b>	<b>4.54</b>	<b>1.65</b>	<b>0.42</b>
<b>Composite EF (lb/ton)</b>	<b>0.0345</b>	<b>0.0126</b>	<b>0.0032</b>

Attachment B – Emissions Summary (continued)

Fines Plant Calculations

<b>Emission Point ID</b>	<b>Source Description</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-F0	Front-End Loader to Batch Feeder 1	0%	0.1200	0.0440	0.0124
EP-F1	Batch Feeder 1 to Conveyor 2	0%	0.1200	0.0440	0.0124
EP-F2	Conveyor 2 to Trommel	0%	0.1200	0.0440	0.0124
EP-F2.2	Trommel	0%	1.0000	0.3480	0.0236
EP-F2.3	Conveyor	0%	0.1200	0.0440	0.0124
EP-F2.4	Dryer	0%	1.3200	0.9200	0.9200
EP-F2.5	Conveyor	0%	0.1200	0.0440	0.0124
EP-F2.6	Dryer baghouse duct burners	0%	0.0140	0.0140	0.0140
EP-F3	Conveyor 3 to Feeder Pan 4	0%	0.1200	0.0440	0.0124
EP-F4.0	Feeder Pan 4 to BBOX 5	0%	0.1200	0.0440	0.0124
EP-F5.1	BBOX 5 to Bunker 5	0%	0.1200	0.0440	0.0124
EP-F5.2	BBOX 5 to Y-Chute	0%	0.0960	0.0352	0.0099
EP-F8.0	Y-Chute to P10 Screens 9	0%	0.0960	0.0352	0.0099
EP-F9.1	(2) P10 Screens 9	0%	0.8000	0.2784	0.0189
EP-F9.2	P10 Screens 9 to Bunkers 4, 5	0%	0.0630	0.0231	0.0065
EP-F10	Bunkers to Truck	0%	0.1200	0.0440	0.0124
EP-F11	Feeder Pan 13 to Longi Magnet 14	0%	0.0360	0.0132	0.0037
EP-F12.1	Longi Magnet 14	0%	0.0360	0.0132	0.0037
EP-F12.2	Longi Magnet 14 to Conveyor (EP-F14)	0%	0.0105	0.0039	0.0011
EP-F13.1	Eddy Current 15	0%	0.0255	0.0094	0.0026
EP-F13.2	Eddy Current 15 to Bunkers 1, 2	0%	0.0255	0.0094	0.0026

<b>Emission Point ID</b>	<b>Source Description</b>	<b>Overall Control Efficiency</b>	<b>PM Potential to Emit (lb/hr)</b>	<b>PM<sub>10</sub> Potential to Emit (lb/hr)</b>	<b>PM<sub>2.5</sub> Potential to Emit (lb/hr)</b>
EP-F14	Conveyor	0%	0.0105	0.0039	0.0011
EP-F15.1	SWECO Screen	0%	0.0875	0.0305	0.0021
EP-F15.2	SWECO Screen to Bunker 4, 5	0%	0.0105	0.0039	0.0011

<b>Total (lb/hr)</b>	<b>4.71</b>	<b>2.14</b>	<b>1.13</b>
<b>Total (tons/year)</b>	<b>20.63</b>	<b>9.36</b>	<b>4.96</b>
<b>Composite EF, based on 40 tons per hour (lb/ton)</b>	<b>0.1178</b>	<b>0.0534</b>	<b>0.0283</b>

Attachment C – Aerial View of Facility



## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> ..... percent	<b>m/s</b> ..... meters per second
<b>°F</b> ..... degrees Fahrenheit	<b>Mgal</b> ..... 1,000 gallons
<b>acfm</b> ..... actual cubic feet per minute	<b>MW</b> ..... megawatt
<b>BACT</b> ..... Best Available Control Technology	<b>MHDR</b> ..... maximum hourly design rate
<b>BMPs</b> ..... Best Management Practices	<b>MMBtu</b> .... Million British thermal units
<b>Btu</b> ..... British thermal unit	<b>MMCF</b> ..... million cubic feet
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>MSDS</b> ..... Material Safety Data Sheet
<b>CAS</b> ..... Chemical Abstracts Service	<b>NAAQS</b> ... National Ambient Air Quality Standards
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>NESHAPs</b> National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> ..... Code of Federal Regulations	<b>NO<sub>x</sub></b> ..... nitrogen oxides
<b>CO</b> ..... carbon monoxide	<b>NSPS</b> ..... New Source Performance Standards
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>NSR</b> ..... New Source Review
<b>CO<sub>2e</sub></b> ..... carbon dioxide equivalent	<b>PM</b> ..... particulate matter
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> ..... Code of State Regulations	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> ..... dry standard cubic feet	<b>ppm</b> ..... parts per million
<b>EQ</b> ..... Emission Inventory Questionnaire	<b>PSD</b> ..... Prevention of Significant Deterioration
<b>EP</b> ..... Emission Point	<b>PTE</b> ..... potential to emit
<b>EPA</b> ..... Environmental Protection Agency	<b>RACT</b> ..... Reasonable Available Control Technology
<b>EU</b> ..... Emission Unit	<b>RAL</b> ..... Risk Assessment Level
<b>fps</b> ..... feet per second	<b>SCC</b> ..... Source Classification Code
<b>ft</b> ..... feet	<b>scfm</b> ..... standard cubic feet per minute
<b>GACT</b> ..... Generally Available Control Technology	<b>SDS</b> ..... Safety Data Sheet
<b>GHG</b> ..... Greenhouse Gas	<b>SIC</b> ..... Standard Industrial Classification
<b>gpm</b> ..... gallons per minute	<b>SIP</b> ..... State Implementation Plan
<b>gr</b> ..... grains	<b>SMAL</b> ..... Screening Model Action Levels
<b>GWP</b> ..... Global Warming Potential	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>HAP</b> ..... Hazardous Air Pollutant	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>hr</b> ..... hour	<b>tph</b> ..... tons per hour
<b>hp</b> ..... horsepower	<b>tpy</b> ..... tons per year
<b>lb</b> ..... pound	<b>VMT</b> ..... vehicle miles traveled
<b>lbs/hr</b> ..... pounds per hour	<b>VOC</b> ..... Volatile Organic Compound
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> ..... micrograms per cubic meter	