DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION ACTIVITY REPORT: Scheduled Inspection

3701339597		
FACILITY: Huron Casting, Inc (E	lue Diamond Steel Casting)	SRN / ID: B7013
LOCATION: 7050 HARTLEY ST	. & 125 STURM RD, PIGEON	DISTRICT: Saginaw Bay
CITY: PIGEON		COUNTY: HURON
CONTACT: Mike Peterson , Plan	it Engineer	ACTIVITY DATE: 04/26/2017
STAFF: Sydney Bruestle	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Onsite inspection to	verify compliance with PTI 115-16 and all other applicable	e state and federal air quality regulations.
RESOLVED COMPLAINTS:		

On April 26, 2017 I (Sydney Bruestle) conducted and onsite inspection of Huron Casting Inc./Blue Diamond Steel Casting Inc. located at 7050 Hartley Street Pigeon, Michigan. While onsite I met with Mike Peterson (Environmental Engineer), Tom Voss (Facility Engineer). Mike Peterson was able to provide me with an tou of both facilities and the required records.

Facility Description:

The facility consists of two steel foundries, Blue Diamond Steel Casting (BD) and Huron Casting (HC) that are under common ownership and are located across the street from each other. The facility is considered one Major Stationary Source. Major production operations include raw metal handling, mold and core production, metal melting, pouring and cooling and casting finishing.

Regulatory Overview

The has recently started operating under a new PSD permit, PTI 115-16, issued March 30, 2017. The facility is major for CO and a synthetic minor source for HAPs and PM. The facility is subject to 40 CFR Part 63 Subpart ZZZZZ. The facility signed a consent order April 2017. The PSD permit will be rolled into an ROP within the year.

Huron Casting

Under 40 CFR Part 63 Subpart ZZZZZ Huron Casting is considered an existing large foundry. Below I will cover the processes at Huron Casting and the associated permit requirements, material limits, and emission limits.

The Emission Units inspected for Huron Casting are summarized below:

<u>EU-01:</u>

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Design/Equipment Parameters	Monitoring/Record Keeping
EU-01	A-line east pouring line, Mag drum and shot air wash	Baghouse 774	PM10 0.02 pph PM2.5 0.004 pph	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis
Records Reviewed		2.0 in WC			k detection system operating properly
Compliance Status			Comp	liance	

<u>EU-02</u>

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Design/Equipment Parameters	Monitoring/Record Keeping		
EU-02	Vibramill, A-line Shake out sand elevator and conveyor, A-line shot leg	Baghouse 788	PM10 0.09 pph(24 hour average) PM2.5 0.018 pph (24 hour ave)	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis		
Records Reviewed	4	1.5 in WC			k detection system operating properly		
Compliance Status	Compliance						
EU-TORCHES	1-18						

Emission Unit	Emission Unit Description	Control Device	Emission Limits			
EU- TORCHES1- 18	Cutting Torches #1-18	None	PM10 0.22 pph (24 hour average) PM2.5 0.044 pph (24 hour average)			
Records Reviewed	Yes					
Compliance Status	Compliance					

<u>EU-05</u>

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Design/Equipment Parameters	Monitoring/Record Keeping		
EU-05	Vibramill, shot air wash, B-le east end pouring line	Baghouse 791	PM10 0.73 pph(24 hour average) PM2.5 0.146 pph (24 hour ave)	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis		
Records Reviewed		4.1 in WC			k detection system operating properly		
Compliance Status		Compliance					

<u>EU-06</u>

EMISSION Unit	Emission Unit Description	Dovico	Emission Limits	Material Limits	Process/Operational Restrictions	Design/ Equipment Parameters	Monitoring and record keeping
				Shall not			_

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Records Reviewed Compliance Status		2.9 in WC	a video r	through shakeout Yes	Have not operated this Calciner in 5 years Compliance	It appeared the detection syste installed and op properly	m was
EU-06	Sand coating/ handling and reclaim operations	Baghouse 787	(24 nour average) PM 2.5 0.012 pph	weight for the resin coated sand in the mold/core making process from pouring	of the calcining furnace is maintained Written operation and maintenance plan for the	Leak Detection System installed/operating properly	Continuous monitor pressure drop across the baghouse and record on a daily basis

<u>EU-07</u>

Emission Unit	Emission Unit Description	Davias	Emission Limits	Material Limits	Process/Operational Restrictions	Design/ Equipment Parameters	Monitoring and record keeping
EU-07	and	Baghouse 484 Baghouse	average) PM 2.5 0.012 pph (24 hour	weight for the resin coated	Minimum temperature of 1,200 degrees F of the calcining furnace is maintained Written operation and maintenance plan for the furnace	Leak Detection System installed/operating properly	Continuous monitor pressure drop across the baghouse and record on a daily basis
Records Reviewed		Baghouse 484: 2.5 in WC Baghouse 1001: 1 in WC		Yes	1353 Degrees F	It appeared th detection syste installed and op properly	em was perating
Compliance Status	2				Compliance		

<u>EU-08</u>

Emission Unit	Emission Unit Description	Dovico	Emission Limits	Process/Operational Restrictions	Design/ Equipment Parameters	Monitoring and record keeping
EU-08	Cut off Saws #1- 9, Grinders #1-13, 7 to 12 hand grinders, 7 welders	Baghouse 616	PM10 0.5 pph (Test Protocol) PM2.5 0.5 pph (test protocol)	must be installed and operated in a satisfactory	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis
Records Reviewed	2.3 in WC			It appeared the leak detection system was installed and operating properly		
Compliance Status				Compliance		

<u>EU-09</u>

Emission	Emission Unit Description	Dovico	Emission Limits	Process/Operational Restrictions	Design/ Equipment Parameters	Monitoring and record keeping
EU-09	Shot Blast equipment	Baghouse 618	PM10 0.5 pph (24 hour Ave) PM2.5 0.01 pph (24 hour ave)	Bagnouse must be installed and	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis
Records Reviewed		2.3 in WC			ak detection system d operating properl	
Compliance Status				Compliance		

EU-10A

Emission	Emission Unit Description	Dovico	Emission Limits	Process/Operational Restrictions	Design/ Equipment Parameters	Monitoring and record keeping
	shot legs,	Baghouse 864 Baghouse 776	Ave)	must be installed and operated in a	Leak Detection System installed/operating properly	Continuously monitor pressure drop across the baghouse and record on a daily basis
Records Reviewed		e 864: 5.9 se 776: 5 i		It appeared the leak detection system was installed and operating properly		
Compliance Status						

The Flexible groups for Huron Casting are summarized below:

<u>FG-POUR</u>

Flexible Group	FG Description	Pollution Control	Emission Limits	Process/Operational Restrictions	Design/Equipment Parameters	Monitoring/Record Keeping	
FG-POUR	Baghouse 790 EUPOURLINEB: 3 induction		PM10 0.5 pph PM 0.5	Baghouses must be installed and operated in a satisfactory manner	Leak Detection System installed/operating properly on each baghouse	Continuously monitor pressure drop across each baghouse and record on a daily basis	
Records Reviewed	554:	4.5 in WC 2.6 in WC 4.0 in WC		It appeared the leak detection system was installed and operating properly			
Compliance Status				Compliance			

FG-MOLDLINE

Flexible Group	FG Description	Pollution Control	Emission Limits	Material Limits	Process/ Operational Restrictions	Design/ Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping
FG- MOLDLINE	Molding Machines 1-26 and cutting torches 19-22 No control. A line west end pouring line A- line cooling room: BH 789 West end pouring line B, B-line cooling room: BH 792 All equipment exhausts through SV-03	Baghouse 789 Baghouse 792	PM 0.008 ib/1000 lbs exhaust gas (test) PM10 4.6 pph (24 hour ave) PM2.5 0.922 pph (24 hour ave) Phenol 1.95 pph (test protocol)	month rolling	Maintain and operate both baghouses with a leak detection system installed	Shall not operate EU-03A or EU-03B unless the associated baghouse is installed, maintained and operated in a satisfactory manner.	Verification of PM10 and PM2.5 and or phenol emission rates from SV-03 by testing may be required.	Woritving the actual

						spent mold/core sand. Results of the testing shall be submitted to AQD prior to June 30.	
Records Reviewed	789: 4 in WC 792: 2 in WC	12 month rolling sum in March 2017: 476 tpy	It appeared the	leak detection sy pro	rstem was ins perly	alled and operating	
Compliance Status		Compliance					

Blue Diamond Steel Casting

Under 40 CFR Part 63 Subpart ZZZZ Blue Diamond Steel Casting is considered an new large foundry. Below I will cover the processes at Blue Diamond Casting and the associated permit requirements, materia limits, and emission limits

The Emission Units inspected for Blue Diamond Casting are summarized below:

EU-NBFURNACE

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Design/ Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping
EU-	Three electric induction furnaces: two 8-ton capacity melf furnaces, one electric arc ladle reheat	BH-01	PM 0.005 grains/dscf (test) PM10 2.14	Shall equip and maintain BH-01	180 days after trial operation- electric arc ladle reheat station- shall verify PM and PM10 emission rates from EU- NBFURNACE by testing Within 60 days of permit issuance or 60 days after the installation of the electric arc ladle reheat station, shall provide the hood capture system design specs,	Monthly Records o tons of steel melted for EU- NBFURNACE

NBFURNACE	station, and a vacuum degassing unit for an expected melting capacity of 200 tons per day.		pph (test) PM2.5 0.5 pph (test)	with a bag leak detection system.	operating procedures, and signed certified package from qualified contractor, certifying no less than 90% capture efficiency 180 days after commencement of trial operation of the arc ladle reheat station, shall conduct iniital smoke test to verify capture efficiency.	Shall monitor and record negative
Records Reviewed	3 in WC			Yes, leak detection system was in place and appeared to be operating properly	Testing was done February 28, 2017. Results have not been submitted to AQD	Yes the pressure drop for BH-01 was 3 inches WC
Compliance Status				Compliance		

EU-NBMOLD

Emission Unit	Emission Unit Description	Control Device	Material Limits	Monitoring/Record Keeping
EU-NBMOLD	The mold making process that blends the sand and binder, preps and cures the molds, and sets the molds out into the casting lines	None	Shall not process more than 1,550 tons of binder per year in EU-NBMOLD based on a 12 month rolling time period, determined at the end of each calendar month	Shall record monthly and yearly binder usage rate for EU-NBMOLD
Records Reviewed	Yes		59.1 tons of binder (Through March 2017)	Yes
Compliance Status		Comp	liance	B

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Design/Equipment Parameters	Monitoring/Record Keeping	
EU- SHELLFURNACE	Shell furnace line consists of three 8-ton capacity electric induction furnaces (expected melting capacity 200 tons/day)	BH-06	PM 0.005 grains/dscf PM10 2.14 pph PM2.5 0.5 pph	Leak Detection System installed/operating properly on each baghouse	Monthly records of tons of steel melted for EU-SHELLFURNACE	
Records Reviewed		Yes			5-8 tons per month. 12 month rolling sum of 19.8 tons per year (March 2017)	
Compliance Status	Compliance					

EU-NBTORCHES

Emission Unit	Emission Unit Description
EU-NBTORCHES	No-bake cutting Torches with the exhaust emitted into the cutting area
Records Reviewed	Yes
Compliance Status	Compliance

EU-SHELLTORCHES

Emission Unit	Emission Unit Description
EU- SHELLTORCHES	Shell cutting Torches with the exhaust emitted into the cutting area
Records Reviewed	Yes
Compliance Status	Compliance

EU-FINISHING

Emission Unit	Emission Unit Description	Control Device	Emission Limits	Process/ Operational Restrictions	Design/ Equipment Parameters	Monitoring/ Record Keeping
EU-FINISHING	Finishing process consists of grinders, shot blast, cut off saws, wheelabrators, and welders.	BH-10	PM 0.004 lb/1000 lbs of exhaust gases PM10 0.5 pph PM2.5 0.5 pph	BH installed, maintained and operated in accordance with the manufacturers	Shall maintain BH-10 with a bag leak detection system. Shall not operate BH- 10 unless leak detection system is installed and	Continuously monitor pressure drop across each baghouse and record on a daily

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	Compliance Status	Compliance	

The Flexible groups for Blue Diamond Steel Casting are summarized below:

FG-BDSV01

Flexible Group	FG Description	Pollution Control	Emission Limits	Design/Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping
FG-BDSV01	Emission Units exhausted through stack SV-01. EU- NBPOURANDCOOL, the no-bake pouring and cooling room consists of a pouring hood and enclosed cooling room which is controlled by a 40,000 cfm baghouse (BH-02) and EU- SHELLCOOL the shell cooling room encloses cast molds on a conveyor and is controlled by a 40,000 cfm baghouse (BH-07)	BH-02	pph (24 hour ave) PM2.5 0.052 pph (24 hour ave)	BH-7 is installed, maintained, and	Verification of PM, PM10 and PM2.5 emission rates from FG-BDSV01 by testing may be required.	Records shall be maintained on file for a
Records Reviewed	BH2: 3 in WC BH7: 3.9 in WC			Yes, leak detection system was in place and appeared to be operating properly		
Compliance Status	Compliance					

FG-BDSV02

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Flexible Group	FG Description	Pollution Control	Emission Limits	Material Limits	Process/ Operational Restrictions	Design/ Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping
	Emission units							

Compliance Status				Compliance			
Records Reviewed	3.1 in WC		161.58 tpy in March 2017	1292 Degrees F	Yes, leak detection appeared to l		
FG- BDSV02	material in the mold facing and core sand from the shell line by heating it to 1200 Degree F before the sand is returned the the shell sand system for recycling. The calciner is controlled by a binder, prepares and cures the molds, and sets the molds out on the casting lines. The emissions from this process are captured with a hood with a flow rate of 71,000 cfm. includes 25 to 30 core machines which emit to the in-plant environment.	PM- 0.005 grain/dsc PM10 1.650 ppł (24 hour ave) PM2.5 0.330 ppł (24 hour ave)	Shail not process more than 840 tons of binder per year in EU- SHELLMOLD portion of FG-BDSV02. Based on o	portion of FG- BDSV-02 unless a minimum temperature of 1200 Degrees F of the calcining furnace is maintained. Shall not operate EU- SHELLCALCINER unless a written Operation and Maintenance plan for the furnace has been submitted to the AQD District Supervisor within 180 days of permit issuance.	satisfactory manner Shall equip and maintain BH-09 with a bag leak detection system	Verification of PM, PM10 and PM2.5 emission rates from FG- BDSV02 by testing may be required	Shall keep temperature records Shall keep records of monthly and

FG-BDSV03

Flexible Group	FG Description	Pollution Control	Emission Limits	Material Limits	Process/ Operational Restrictions	Design/ Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping
	Emission Units exhausted through SV- 03. EU- NBCALCINER: the calciner is used to destroy the binder material in the mold facing and core sand from the no- bake line by heating to 1200F before the sand is returned to the no-bake sand system	BH-04		Snail not process more than 1550 tons of binder per year in FG- BDSV03 based	F of the calcining furnace is maintained	maintained and operated according to manufacturer recommendations Shall install, calibrate, maintain, and oeprate in a satisfactory manner a device to monitor and	Verification of PM,	Shail Keep temp records Shail keep records of monthly and yearly binder usage rate

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	for recycling. The calciner is controlled by a shakeout, cooling conveyor, sand tanks, and elevators. The sand system is controlled by a 40,000 cfm baghouse (BH-04)			on a 12 month rolling time period.	the AQD district supervisor within 180	enclosure and BH-04 are installed , maintained and operated according to manufacturer recommendations Shall equip and maintain both baghouse (BH-03) and baghouse (BH-4) with a bag leak detection system.	•	for FG- BDSV03.
Records Reviewed	3	in WC	l	in	Not operating Calciner records were available	placeand appe		
Compliance Status					Compliance			

FG-BDSV04

Flexible Group	FG Description	Pollution Control	Emission Limits	Materiai Limits	Design/Equipment Parameters	Testing/Sampling	Monitoring/Record Keeping
	Emission units exhausted through Stack SV-04 EU- SHELLSAND: the shell sand system includes the	BH-08	PM: 0.005 grains/dscf	1 840 tons	maintained and	Verification of PM, PM10, and PM2.5	Shall record monthly and

FG-BDSV04	mechanical reclaim, dumper, shakeout conveyor, shot sand screen,vibramill, bucket elevators, and sand tanks.	and BH- 05	PM10: 1.430 pph PM2.5: 0.286 pph	rolling time	enclosure and BH-08 are installed, maintained and operated according to manufacturer recommendations Shall equip and maintain both baghouses with a bag leak detection sysyem while operating.	emission rates by testing may be required.	yearly binder usage rates.
Records Reviewed		l.5 in WC 3 in WC		March 17 687 tpy	Yes, leak detection to b	system was in place operating properly	and appeared
Compliance Status				Co	ompliance		

FG-BDSV05

Flexible Group	FG Description	Pollution Control	Emission Limits	Materia) Limits	Design/Equipment Parameters	Testing/Sampling	Monitoring/Record Keeping
	Emission units exhausted through stack SV-05. EU- SHELL2POUR: This unit includes the pourline, shot separator, and shot cooler. All activities are controlled by a 50,000 cfm baghouse (BH-18). EU-			Shall not	Shall not operate unless BH-17, BH-18 and BH-19 are installed, maintained and		

FG-BDSV05	SHELL2COOL: The shell cooling room encloses cast molds on a conveyor and is controlled by baghouses BH-19A and BH-19B, EU- SHELL2SAND: the shell sand system includes the mechanical reclaim, dumper, shakeout conveyor, shot sand screen, vibramill, bucket elevators, torch stations, and sand tanks. The sand system is controlled by a 40,000 cfm baghouse (BH-17).	BH-18 BH-19 BH-17	PM: 0.005 grains/dscf PM10: 1.68 pph PM2.5: 0.336 pph	more than 840 tons of binder per year in FG- BDSV05 based on a 12 month	operated according to manufacturer recommendations Shall equip and maintain each baghouse with a leak detection system. Shall not operate baghouses with out leak detection systems operating properly.	Verification of PM, PM10, and PM2.5 emission rates by testing may be required.	Shall record monthly and yearly binder usage rates.
Records Reviewed	BH18 BH19A: BH19B: BH17: 2	3 in WC 3 in WC		March 2017 697 tpy		n system was in places be operating properly	and appeared
Compliance Status	BH17: 2				mpliance		

Facility Wide (Both Huron Casting Inc and Blue Diamond Steel Casting Inc)

Applicable permit requirements and emission limits for both facilities are summarized below.

FG-MACTZZZZZ

Flexible Group	FG Description	Emission Limits	Material Limits	Process/ Operational Restrictions	Design/ Equipment Parameters	Testing/ Sampling	Monitoring/ Record Keeping	Reporting
		PM: 0.8 Ib/ton of metal charged (Any metal melting furnace at				compliance date specified in 40 CFR 63.10881, the	63.10895. Shall maintain a	

	The affected source is a new or existing iron and steel foundry, that is an area source of hazardou air pollutants (HAP) emissions. Huron Casting Inc. is an existing large foundry as defined by 40 CFR Part 63 Subpart ZZZZ. Blue Diamond Steel Casting is a new large foundry as defined by 40 CFR Part 63 Subpart ZZZZZ.	melting furnace at Huron Casting, Inc.) PM: 0.1 Ib/ton of metal charged (Any Metal Melting furnace at Blue Diamond Steei Casting) Total Metal HAP: 0.008 Ib/ton of metal charged (Any metal melting furnace at Blue Diamond Steei Casting)	for a warm box mold or core making line.	to address the pollution prevention management practices for metallic scrap and mercury switched by the applicable compliance date specified in 40 CFR 63.10881 Plan should include the following: a. Metallic Scrap Management program b. Mercury Requirements	iron and steel foundry unless a capture and collection system is installed, maintained, and operated in accordance with the American conference of Governmental Industrial Hygienist standards or equivalent unless the furnace is specifically uncontrolled as part of an emissions averaging group	melting furnace. The permitee shall conduct subsequent tests to demonstrate compliance with all applicable PM or total HAP emission limits no less than every 5 years. The permittee shall conduct each opacity test for fugitive emissions according to the requirements in 63.6(h)(5) and Table 1 of 40 CFR Part 63 Subpart ZZZZ The permitee shall coduct subsequesnt performance tests every 6 months or less.	Within 60 days after the applicable compliance date, the permittee shall conduct an initial inspection of each PM control device for each metal melting furnace. Shall install a bag leak detection system Shall prepare a site specific monitoring plan for each bag leak detection system Monthly inspections of equipment that is important to the performance of the total capture system. Monthly records Notice of Compliance	Submit semiannuai compliance reports
Records Reviewed	**The facility 0.24 lb/to	n metal cha	rged which e	exceeds the lim	2017. The test res it of 0.1 lb/ton m VN was not sen	etal charged. Th	VI emissions of le facility is	Yes
Compliance Status				Co	mpliance			

FG-Facility

Flexible Group	FG Description	Emission Limits	Material Limits	Process/Operational Restrictions	Monitoring/Record Keeping
FG- FACILITY	Casting and Blue Diamond Steel Casting Facilities.	VOC: 50 lb/ton Binder VOC: 98 tpy Individual HAPs: 8.9 tpy Aggregate HAPs: 22.4 tpy	Casting Inc portion of FG-FACILITY Shall not melt more than 72,000 tons per year in the Blue Diamond Steel Casting portion of FG- FACILITY Shall not use more	Shall not operate any of the 29 baghouses at the facility unless a malfunction abatement	12 month rolling time period and monthly emission rates for PM, PM10 and PM2.5, VOCs, HAPS, and CO for FG- FACILITY monthly and 12 month rolling time period operating hour records for each emission unit

	melt CO: 345.6 tpy	FG-FACILITY Shall not Process a combined total of more than 3,870 tons of binder per year in FG- MOLDLINE, FG- BDSV03, FG-BDSV05 based on a 12 month roiling time period	submitted to the AQD district supervisor within 180 days of permit issuance.	FACILITY Monthly and 12 month rolling time period records of natural gas usage rates monthly and 12 month rolling time period records of binder usage rates
Records Reviewed	**12 month rolling time period Through March 2017 PM: 31.4 tpy VOC: 11.9 tpy Individual HAP: highest: 6.8 tpy Aggregate HAP: 17 tpy CO: 87.2 tpy (Spread sheet attached)	*12 month rolling time period through March 2017: Facility Total: 64423 tons metal Huron metal melted: 28088 tons metal Blue Diamond: 36335 tons metal Natural Gas Usage: 240,028 mCF Binder: 687 tons/year	Hours March 2017: 6008 hours/year	Not yet received
Compliance Status		Complia	ance	

Compliance Determination:

On February 28, 2017 the facility failed a PM emissions test of EU-NBFURNACE. As a result, the facility is not in compliance with PTI 115-16 or 40 CFR Part 63 Subpart ZZZZZ. The Facility has plans to retest the emission unit ASAP to determine if the failure was due to testing error. or is a true emission limit Exceedance. Until the retest the facility is not in compliance with PTI 115-16 or 40 CFR Part 63 Subpart <u>77777.</u>

NAME SUPPERTY

DATE 05/04/17 SUPERVISOR C- Marce