APPENDIX A.1: PROJECTION OF PERCENT WASTE PRODUCED AT BROOKLYN MRF

Projection on Percent Waste Produced at Brooklyn MRF

Material	% Per DSNY Comp Study (1)	Capture Rate Used for Brooklyn MRF (2)	Assumed Brooklyn Materials for EAS by % (3)	% Per Current Sims Operations (4)	Difference Between Current Ops & EAS Assumption (5)
PET Plastic	6.46%	95%	6.14%	5.38%	0.76%
HDPE Natural Plastic	3.15%	95%	2.99%	2.44%	0.55%
HDPE Color Plastic	3.27%	95%	3.11%	2.73%	0.38%
Mixed Plastic	6.66%	95%	6.33%	4.93%	1.40%
Film Plastic	4.03%	95%	3.83%	0.25%	3.58%
Non-ferrous Metal	1.98%	99%	1.96%	1.53%	0.43%
Ferrous Metal	30.56%	100%	30.56%	28.94%	1.62%
Aseptic Beverage Cartons	1.95%	95%	1.85%	0.00%	1.85%
Other Recyclable Paper	2.45%	95%	2.33%	0.00%	2.33%
Clear Glass	8.15%	97%	7.91%	0.00%	7.91%
Green Glass	4.13%	97%	4.01%	0.00%	4.01%
Amber Glass	1.98%	97%	1.92%	0.00%	1.92%
Mixed-Color Glass	18.66%	97%	18.10%	41.14%	-23.04%
Sub-total Recyclables	**93.43%**		**91.02%**	**87.34%**	**3.68%**
Non-Recyclables (waste)	**6.57%**		**8.98%**	**12.66%**	
Total	100.00%		100.00%	100.00%	

NOTES:

(1) Composition Study is DSNY 2004/05 Comprehensive Citywide Compostion Study.

(2) Capture rate is based on the fact that, with the exception of steel, 100% of each material type is not recovered.
The percentage that is not recovered, along with contaminants, make up the residue, i.e., the waste.
The assumption is that all glass is recovered as mixed-color (not color-sorted).

(3) Percentages of recovered materials used for the EAS are derived from DSNY composition data multiplied by Capture Rate.
The EAS assumed 9.47% waste due to the removal of some bulky metal at other Sims facilities prior to shipment of MGP to Brooklyn.

(4) Sims current operations based on processing approximately 50% of DSNY MGP through the Company's Jersey City MRF.
This information is provided as a check against Brooklyn EAS assumptions.
Lines highlighted in blue are due to lack of processing capacity at the current MRF; the Brooklyn MRF will have capacity for these materials.

(5) Difference reflects discrepancy between current actual operations and assumed recovery percentages used in the EAS.

APPENDIX B.1: 24-HOUR TRIP GENERATION TABLE

Sims Hugo Neu
Hourly Trip Generation (Number of Vehicles)
Based on Average Peak Day (Friday) May 2029

			Day Shift								4 PM - 12 AM Shift								12 AM - 8 AM Shift							
Type of Trip	**Vehicle Capacity**	**Daily Number of Vehicles by Category**	**8 AM - 9 AM**	**9 AM - 10 AM**	**10 AM - 11 AM**	**11 AM - 12 PM**	**12 PM - 1 PM**	**1 PM - 2 PM**	**2 PM - 3 PM**	**3 PM - 4 PM**	**4 PM - 5 PM**	**5 PM - 6 PM**	**6 PM - 7 PM**	**7 PM - 8 PM**	**8 PM - 9 PM**	**9 PM - 10 PM**	**10 PM - 11 PM**	**11 PM - 12 AM**	**12 AM - 1 AM**	**1 AM - 2 AM**	**2 AM - 3 AM**	**3 AM - 4 AM**	**4 AM - 5 AM**	**5 AM - 6 AM**	**6 AM - 7 AM**	**7 AM - 8 AM**
DSNY	25 cubic yds.	106	0	0	19	30	19	0	0	0	0	4	4	4	4	3	0	0	0	3	4	4	4	4	0	0
Hugo Neu	42,000 lbs	39	0	0	0	3	6	9	7	0	0	0	0	2	3	6	2	1	0	0	0	0	0	0	0	0
Large Scrap	varies	23	4	1	1	1	2	2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Small Scrap	varies	127	21	7	7	7	11	11	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Truck Total		**295**	**25**	**8**	**27**	**41**	**38**	**22**	**32**	**25**	**0**	**4**	**4**	**6**	**7**	**9**	**2**	**1**	**0**	**3**	**4**	**4**	**4**	**4**	**0**	**25**
Employees	na	96	5	0	0	0	0	0	0	20	23	0	0	0	0	0	0	5	20	0	0	0	0	0	0	23
Grand Total		**391**	**30**	**8**	**27**	**41**	**38**	**22**	**32**	**45**	**23**	**4**	**4**	**6**	**7**	**9**	**2**	**6**	**20**	**3**	**4**	**4**	**4**	**4**	**0**	**48**

Sims Hugo Neu
Hourly Trip Generation (Number of Trips In and Out)
Based on Average Peak Day (Friday) May 2029

			Day Shift								4 PM - 12 AM Shift								12 AM - 8 AM Shift							
Type of Trip	**Vehicle Capacity**	**Daily Number of Vehicles by Category**	**8 AM - 9 AM**	**9 AM - 10 AM**	**10 AM - 11 AM**	**11 AM - 12 PM**	**12 PM - 1 PM**	**1 PM - 2 PM**	**2 PM - 3 PM**	**3 PM - 4 PM**	**4 PM - 5 PM**	**5 PM - 6 PM**	**6 PM - 7 PM**	**7 PM - 8 PM**	**8 PM - 9 PM**	**9 PM - 10 PM**	**10 PM - 11 PM**	**11 PM - 12 AM**	**12 AM - 1 AM**	**1 AM - 2 AM**	**2 AM - 3 AM**	**3 AM - 4 AM**	**4 AM - 5 AM**	**5 AM - 6 AM**	**6 AM - 7 AM**	**7 AM - 8 AM**
DSNY	25 cubic yds.	212	0	0	38	60	38	0	0	0	0	8	8	8	8	6	0	0	0	6	8	8	8	8	0	0
Hugo Neu	42,000 lbs	78	0	0	0	6	12	18	14	0	0	0	0	4	6	12	4	2	0	0	0	0	0	0	0	0
Large Scrap	varies	46	8	2	2	2	4	4	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Small Scrap	varies	254	42	14	14	14	22	22	42	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
Truck Total		**590**	**50**	**16**	**54**	**82**	**76**	**44**	**64**	**50**	**0**	**8**	**8**	**12**	**14**	**18**	**4**	**2**	**0**	**6**	**8**	**8**	**8**	**8**	**0**	**50**
Employees	na	96	5	0	0	0	0	0	0	20	23	0	0	0	0	0	0	5	20	0	0	0	0	0	0	23
Grand Total		**686**	**55**	**16**	**54**	**82**	**76**	**44**	**64**	**70**	**23**	**8**	**8**	**12**	**14**	**18**	**4**	**7**	**20**	**6**	**8**	**8**	**8**	**8**	**0**	**73**

APPENDIX C.1: MOBILE SOURCE SCREENING

As indicated by the New York City Department of Sanitation (DSNY), by the end of 2009, 70 percent of all dual-bin trucks and 45 percent of single-bin trucks are expected to be either retrofit with diesel particle filter (DPF) or of model year 2007 or later (which are manufactured with DPF controls by federal regulation). It was calculated that at the intersection with the highest predicted volume of truck trips, the intersection of Second Avenue, 29th Street, and the BQE ramp, there would be 11 single-bin, 26 dual-bin, and 6 general fleet trucks (Sims trucks, which are assumed to have the same breakdown as the general truck fleet)—a total of 43 trucks.

The level of retrofit required by local law 39 of 2005, along with the levels expected by DSNY, are presented in Table C.1-1. For years later than 2009, since the DSNY data indicates that the 2010 requirement will be exceeded in 2009, it can be assumed that the 2010 emission levels will be lower than the 2009 levels, but it is not known by how much. Since the 2011 requirement exceeds the expected 2009 levels of retrofit, it is conservatively assumed that DSNY will meet the legal requirement as a minimum in 2011 and 2012.

Table C.1-1
Fraction of Trucks with DPF

Year	all City trucks (by local law)	DSNY Single-Bin	DSNY Dual-Bin
2009	≥ 30%	45%	70%
2010	≥ 50%	> 45%	> 70%
2011	≥ 70%	≥ 70%	> 70%
2012+	≥ 100%	100%	100%

The DEP truck screening level for the previous $PM_{2.5}$ threshold was 21 trucks at peak hour, based on PART5 emission factors for 2002 fleet-average heavy duty diesel trucks of 0.611 g/VMT, which results in a total of 12.8 g/mile. Multiplying that screening level by 2:5 to account for the change in the 24-hour average $PM_{2.5}$ threshold from 5 $\mu g/m^3$ to 2 $\mu g/m^3$, results in a new screening level of 5.1 g/mile.

All heavy trucks in the Sims screening analysis were assumed to be of the heaviest category HDDV8b. The MOBILE6.2 emission factors for these trucks are presented in Table C.1-2, as calculated for the three truck types outlined above: (1) the emission factors for Sims trucks are the factors calculated for the general fleet mix for any given year for that size truck; (2) the emission factor for DSNY trucks without DPF are the 2006 year factors—the year prior to the introduction of DPFs in trucks by federal regulation; (3) the emission factor for DSNY trucks with DPF are calculated as 10 percent of the uncontrolled truck emissions, since DPFs reduce particulate matter emissions from truck engines by approximately 90 percent.

Table C.1-2
MOBILE6.2 Emissions Factors for HDDV8b Trucks

Year	Fleet-Wide Mix HDDV8b		HDDV8b w' DPF		HDDV8b w/o DPF (2006 and older)		Total Emission Rate at Intersection ($g\ PM_{2.5}$/mi)	Pass/Fail
	Cruise EF ($g\ PM_{2.5}$/mi)	# of Trucks at Intersection	Cruise EF ($g\ PM_{2.5}$/mi)	# of Trucks at Intersection	Cruise EF ($g\ PM_{2.5}$/mi)	# of Trucks at Intersection		
2009	0.2113	6	0.02986	23	0.2986	14	6.1	Fail
2010	0.1730	6		unknown breakdown		unknown breakdown	<6.1	Fail?
2011	0.1333	6		26		11	4.9	Pass
2012+	0.0963	6		37		0	1.7	Pass

The total emission rate at the intersection for any given year is calculated by summing the product of the emission factor and number of trucks for the three truck types. As presented in Table C.1-2, the total rate in 2009 would be 6.1 grams of $PM_{2.5}$ per mile, which exceeds the 5.1 g/mile screening level by 18 percent. Since the expected number of controlled trucks for 2010 is not known, it is possible that the screening level would be exceeded for 2010 as well. If the levels remain unchanged in 2010 the result would be identical to that predicted for 2009; if two more trucks would be retrofit, it would pass. By 2011, even if DSNY only meets the legal requirement, the emission rate for the intersection would be lower than the screening level.

It should be noted that the screening level is determined based on the highest peak-hour traffic increment, which in this case is 43 trucks. However, if detailed modeling were to be performed, the significance determination is based on a 24-hour average concentration increment. The 24-hour average truck increment is 6.3 trucks—15 percent of the peak. Therefore, it is not expected that the 18 percent exceedance of the threshold level would lead to a predicted exceedance of the 24-hour average $PM_{2.5}$ incremental threshold level even for these interim years of 2009-2010. Since meteorological condition would also change by the hour in a detailed analysis, this screening is quite conservative. Thus, detailed dispersion modeling of particulate matter at an intersection is not necessary in order to demonstrate that no significant adverse impacts would be expected from mobile sources even during the interim period of 2009-2010. ✶

APPENDIX C.2: MODEL INPUT PARAMETERS

Sims Hugo Neu
South Brooklyn Marine Terminal (SBMT) Material Recycling Facility (MRF)

On-Site Air $PM_{2.5}$ Emissions

Processes Sources																						
			Operation (hours/shift)					Usage (%)*			$PM_{2.5}$ Emissions						$PM_{2.5}$ Emissions					
											Rate (g/s)						Total Rate (g/s) from each rooftop vent			No. of vents (#) or area of open space	Model Source	
Source Location	Type	Power Rating (hp)	Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	Saturday (8a-12a)	Fuel	Idle	Up	Factor (g/hp-hr)	Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	Saturday (8a-12a)	Notes	Ventilation Zone	Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	(m^2)	#	name
MGP Tipping Building	Wheel Loader	196	4	4	4	8	ULSD	20%	80%	0.063	1.70E-03	1.70E-03	1.70E-03	3.41E-03		Tipping	6.34E-04	6.34E-04	3.79E-04	9	20	TVENT#
Ferrous Shed/Glass	Wheel Loader	196	8	1	none	7	ULSD	20%	80%	0.063	3.41E-03	4.26E-04	0.00E+00	2.98E-03		Bales	4.89E-04	4.89E-04	4.05E-04	5		BVENT#
Paper Building	Wheel Loader	196	4	4	4	16	ULSD	20%	80%	0.063	1.70E-03	1.70E-03	1.70E-03	6.82E-03		Process	1.71E-04	1.00E-04	8.98E-05	21		PVENT#
MGP Unloading Dock	Material Handler (Crane)	190	8	8	none	none	ULSD	20%	80%	0.044	2.30E-03	2.30E-03	0.00E+00	0.00E+00		MGP Unloading Dock	2.30E-03	2.30E-03	0	out-door point	17	MGPHNDLR
MGP Tipping Building	Material Handler (Crane)	190	8	8	none	8	ULSD	20%	80%	0.044	2.30E-03	2.30E-03	0.00E+00	2.30E-03		Entire Pier	**9.51E-08**	9.51E-08	6.495E-09	33,108.8 m^2	1	PIER
FE Shed and Dock	Material Handler (Crane)	190	4	4	none	none	ULSD	20%	80%	0.044	1.15E-03	1.15E-03	0.00E+00	0.00E+00		Metal Shed	1.21E-06	5.77E-07	0	2,362.2 m^2	19	SHED
Bale Storage Building	Forklift	65	8	8	none	none	CNG	20%	80%	0.015	2.79E-04	2.79E-04	0.00E+00	0.00E+00								
Bale Storage Building	Forklift	65	8	8	4	16	CNG	20%	80%	0.015	2.79E-04	2.79E-04	1.40E-04	5.59E-04								
MGP Process Building and Bale Area	Skid Steer Loader	80	8	8	8	16	ULSD	20%	80%	0.170	3.77E-03	3.77E-03	3.77E-03	7.55E-03	like small FEL							
Entire Pier	Tractor (Yard Dog) Truck*		4	4	4	8	ULSD	0%	100%	1.032	1.43E-04	1.43E-04	1.43E-04	2.87E-04	Tractor Trailer Truck							
Entire Pier	Roll-off Truck*		4	4	2	8	ULSD	0%	100%	1.032	1.43E-04	1.43E-04	7.17E-05	2.87E-04	Tractor Trailer Truck							
Entire Pier	Sweeper	99	5	5	none	16	ULSD	0%	100%	0.167	2.86E-03	2.86E-03	0.00E+00	9.16E-03								

NOTES:
* Since the NONROAD model produces average emission factors (not idle and runing separetly), usage factor for non-road engies was not applied. The average emission factor was applied for the full duration of operation.
All engines are assumed to be new, 2009 model year.
All stationary proccess engines would be electric and would not have any associated air emissions.
The indoor process sources were consolidated by ventilation zone and divided equaly among the vents in each zone. Outdoor mobile sources were consolidated to a single area source. MGP material handler was assumed to be stationary and modeled as a point source.

Trucks																			
			Average Trips (trips/hour)							Shift Hours				Unitary $PM_{2.5}$ Emissions				Model Source	
Source Location	Vehicle Type	Tailpipe Controls	Shift 1	Shift 2	Shift 3	Saturday	Fuel	Idle Time (s/trip)	Distance (m/trip)	Shift 1	Shift 2	Shift 3	Saturday	Factor (g/hr-vh) or (g/vh-mi)	Rate (g/s-vh)	Area of Area Source (m^2)	Unitary Area Source Emission Rate (g/s-vh-m^2)	name	#
Scale In DSNY	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD	55		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1032	**4.38E-07**			DSCALEI	6
Scale In Bales	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	55		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.0322	**4.38E-06**			BSCALEI	7
Scale Out DSNY	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD	72		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1032	**5.73E-07**			DSCALEO	8
Scale Out Bales	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	72		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.0322	**5.73E-06**			BSCALEO	9
Dual-Bin Scale	HDDT8	DPF	**6.7**	**1.0**	**0.4**	2.1	ULSD	55		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1032	**4.38E-07**			DBSCALE	10
FE Scale (in+out)	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	ULSD	220		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0115	**1.95E-07**			FESCALEL	12
FE Scale (in+out)	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD	220		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.6711	**1.14E-05**			FESCALEH	11
Paper / MGP Tipping (DSNY)	HDDT8	none	**29.3**	**4.8**	**4.2**	10.2	ULSD	450		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1032	3.58E-06	394.3	**9.09E-09**	TIPING	15
Bale Loading Dock	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	60		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.0322	4.78E-06	135.9	**3.52E-08**	BALEDK	16
FE Unloading Docks	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	Gasoline	60		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0115	5.32E-08	291.9	**1.82E-10**	FEDOCKL	13
FE Unloading Docks	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD	60		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.6711	3.11E-06	291.9	**1.06E-08**	FEDOCKH	14
Paper/MGP/Dual (DSNY) In and Out	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD		679.7	**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.0340	**3.99E-06**			DSNY1	2
Bales In and Out	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD		652.7	**11a-3p**	**7p-12a**	**none**	same as wkdy	0.2113	**2.38E-05**			BALETRCK	4
Dual to Scale return	HDDT8	DPF	**6.7**	**1.0**	**0.4**	2.1	ULSD		257.4	**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.0340	**1.51E-06**			DSNYDUAL	3
FE In and Out	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	Gasoline		347.6	**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0124	**7.43E-07**			METALL	5
FE In and Out	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD		347.6	**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.2113	**1.27E-05**			METALH	18

NOTES:
Assumes no idle time at security booth at entrance, and 1 minute idle for vehicles at bale and FE docks.
Unitary emission rate is used (per 1 truck) and an hourly factor equal to the number of trucks per hour was applied for each hour in the model.
Scales were modeled as point sources. Truck docks were modeled as area sources. Truck routes were modeled as line sources, represented as volume sources according to the EPA procedure and implemented using the Lakes interface based on the overall line-source emission rate in g/s-vh.

On-Site Air $PM_{2.5}$ Emissions (Continued)

Towboats

Source Location	Description	Total Power Rating Main (hp)	Total Power Rating Aux Gen (kw)	Trips per Peak Day	Docking Time (min/trip)	Hours	Fuel	$PM_{2.5}$ Docking Emissions Factor (g/trip)	$PM_{2.5}$ Docking Emissions Rate (g/s)	$PM_{2.5}$ Docking Emissions (per 1,000') Factor (g/trip)	$PM_{2.5}$ Docking Emissions (per 1,000') Rate (g/s)	Model Source name	Model Source #
	Outbound Bulk and Non-Bulk (combined private and public)												
Ferrous Loading Dock	Outbound Glass	2400	65	2	30	**8am-12am**	LSD	304	1.06E-02	15.7	5.43E-04		
Glass Loading Dock	Inbound MGP	2400	65	1	30	**8am-12am**	LSD	304	5.28E-03	15.7	2.72E-04		
MGP Unloading and Paper Loading Dock		2400	65	4	30	**8am-12am**	LSD	304	2.11E-02	15.7	1.09E-03		
Total Worst-Case Peak Day									3.70E-02		**1.90E-03**	TOWINOUT	24
Total Average Day (for annual analysis)	All	2400	65	3.855	30	**8am-12am**	LSD	304	2.04E-02	15.7	**1.05E-03**		

Area of Docking Area Source (m^2)	Area Source Emission Rate (g/s-vh-m^2)	Model Source name	Model Source #
6501.4	**5.69E-06**	TOWBOATS	23
6501.4	**3.13E-06**		

Notes:

All towboat emissions were based on the 'Sea Bull' engines, which was the larges of the 3 potential towboats.

Marine diesel will be LSD <500 ppm sulfur content according to federal regulations by June 2007. Since the available emission factors are based on marine diesel and do not take this regulatory reduction into account, the emissions presented here are conservatively high. Marine diesel may contain 4 to 10 times more sulfur, leading to much higher particulate matter and SO2 emissions.

Since bulk and non-bulk are separate, it is assumed that a worst-case day would include one trip of each.

These numbers represent a worst-case day assumption. Long term averages would be lower.

Time per trip includes arrival, placement of a barge, and tying up a new one. Since this analysis conservatively assumed that towboats would each have 1 trip per load (not combined drop-off and pick-up), that is conservatively high.

Time for barge in/out was calculated for a distnace of 1,000' at 6.4 knots (based on upland barge data)

* Since towboats are the only source that had different peak and average day operations, the annual emissions are calculated separetly based on average day activity.

On-Road Truck Emissions (out of facility for 1,000 feet from intersection)

Total Distance (m): 463.3

Emission Factor by hour	g/s	Factor for 1-e5
1	**0.00E+00**	0.00
2	**8.16E-06**	0.82
3	**1.09E-05**	1.09
4	**1.09E-05**	1.09
5	**1.09E-05**	1.09
6	**1.09E-05**	1.09
7	**0.00E+00**	0.00
8	**8.44E-05**	8.44
9	**8.44E-05**	8.44
10	**2.80E-05**	2.80
11	**7.97E-05**	7.97
12	**1.60E-04**	16.03
13	**1.95E-04**	19.52
14	**1.94E-04**	19.43
15	**2.03E-04**	20.27
16	**8.44E-05**	8.44
17	**0.00E+00**	0.00
18	**1.09E-05**	1.09
19	**1.09E-05**	1.09
20	**4.47E-05**	4.47
21	**6.16E-05**	6.16
22	**1.10E-04**	10.95
23	**3.38E-05**	3.38
24	**1.69E-05**	1.69

Source Name	#
ROAD	25

$PM_{2.5}$ Runs Results and CO and NO_x Estimated Results

CO and NO_x concentrations are conservatively estimated based on the highest emissions ratios.

Pollutant	Highest				Prison				Ratio
	Annual	24-hour	8-hour	1-hour	Annual	24-hour	8-hour	1-hour	
$PM_{2.5}$ ($\mu g/m^3$)	0.112	2.07	4.4	11.2	0.060	0.74	1.8	7.2	1
CO (ppm)			0.10	0.25			0.04	0.16	26.4
NO_x ($\mu g/m^3$)	3.0				1.6				26.9

$PM_{2.5}$ Annual Neighborhood-Scale Average: 0.07 $\mu g/m^3$

Annual numbers are conservatively high since peak daily activity was modeled.

On-Site Air PM_{10} Emissions

Processes Sources

Source Location	Type	Power Rating (hp)	Operation (hours/shift) Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	Saturday (8a-12a)	Fuel	Usage (%)* Idle	Up	PM_{10} Emissions Factor (g/hp-hr)	Rate (g/s) Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	Saturday (8a-12a)	Notes
MGP Tipping Building	Wheel Loader (39,000 lb)	196	4	4	4	8	ULSD	20%	80%	0.006	1.76E-04	1.76E-04	1.76E-04	3.51E-04	
Ferrous Shed/Glass	Wheel Loader	196	8	1	none	7	ULSD	20%	80%	0.006	3.51E-04	4.39E-05	0.00E+00	3.08E-04	
Paper Building	Wheel Loader	196	4	4	4	16	ULSD	20%	80%	0.006	1.76E-04	1.76E-04	1.76E-04	7.03E-04	
MGP Unloading Dock	Material Handler (Crane)	190	8	8	none	none	ULSD	20%	80%	0.004	2.37E-04	2.37E-04	0.00E+00	0.00E+00	
MGP Tipping Building	Material Handler (Crane)	190	8	8	none	8	ULSD	20%	80%	0.004	2.37E-04	2.37E-04	0.00E+00	2.37E-04	
FE Shed and Dock	Material Handler (Crane)	190	4	4	none	none	ULSD	20%	80%	0.004	1.19E-04	1.19E-04	0.00E+00	0.00E+00	
Bale Storage Building	Forklift	65	8	8	none	none	CNG	20%	80%	0.015	2.79E-04	2.79E-04	0.00E+00	0.00E+00	
Bale Storage Building	Forklift	65	8	8	4	16	CNG	20%	80%	0.015	2.79E-04	2.79E-04	1.40E-04	5.59E-04	
MGP Process Building and Bale Area	Skid Steer Loader (8,000 lb)	80	8	8	8	16	ULSD	20%	80%	0.018	3.89E-04	3.89E-04	3.89E-04	7.78E-04	like small FEL
Entire Pier	Tractor (Yard Dog) Truck**		4	4	4	8	ULSD	0%	100%	0.112**	1.56E-05	1.56E-05	1.56E-05	0.00E+00	Tractor Trailer Truck
Entire Pier	Roll-off Truck**		4	4	2	8	ULSD	0%	100%	0.112**	1.56E-05	1.56E-05	7.79E-06	0.00E+00	Tractor Trailer Truck
Entire Pier	Sweeper	99	5	5	none	16	ULSD	0%	100%	0.017	2.95E-04	2.95E-04	0.00E+00	9.45E-04	

Ventilation Zone	PM_{10} Emissions Total Rate (g/s) from each rooftop vent Shift 1 (8a-4p)	Shift 2 (4p-12a)	Shift 3 (12a-8a)	No. of vents (#) or area of open space (m^2)	Model Source #	name
Tipping	**6.54E-05**	**6.54E-05**	**3.90E-05**	9	20	TVENT#
Bales	**1.51E-04**	**1.51E-04**	**6.68E-05**	5		BVENT#
Process	**1.76E-05**	**1.03E-05**	**9.26E-06**	21		PVENT#
MGP Unloading Dock	**2.37E-04**	2.37E-04	0	out-door point	17	MGPHNDLR
Entire Pier (g/s-m^2)	**9.86E-09**	**9.86E-09**	**7.06E-10**	33,108.8 m^2	1	PIER
Metal Shed (g/s-m^2)	**1.25E-07**	**5.95E-08**	**0**	2,362.2 m^2	19	SHED
Dust from Non-Road (g/s-m^2):	**7.59E-08**	**7.01E-08**	**4.36E-08**			

	Average mph	Avg. Weight All (lb)
Loaders:	0.75	20,620
Forklifts and skid Steer:	1.5	
Tractor/truck:	2.5	

NOTES:

* Since the NONROAD model produces average emission factors (not idle and runing separetly), usage factor for non-road engies was not applied. The average emission factor was applied for the full duration of operation.

** These sources are highway engines, estimated using MOBILE6 which does not use hp, so emission factor is in g/hr.

All engines are assumed to be new, 2009 model year.

All stationary proccess engines would be electric and would not have any associated air emissions.

The indoor process sources were consolidated by ventilation zone and divided equaly among the vents in each zone. Outdoor mobile sources were consolidated to a single area source. MGP material handler was assumed to be stationary and modeled as a point source.

Trucks

Source Location	Vehicle Type	Tailpipe Controls	Average Trips (trips/hour) Shift 1	Shift 2	Shift 3	Saturday	Fuel	Idle Time (s/trip)	Distance (m/trip)	Shift Hours Shift 1	Shift 2	Shift 3	Saturday	Unitary PM_{10} Emissions Factor (g/hr-vh) or (g/vh-mi)	Rate (g/s-vh)	Area of Area Source (m^2)	Unitary Area Source Emission Rate (g/s-vh-m^2)	Model Source name	#
Scale In DSNY	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD	55		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1122	**4.76E-07**			DSCALEI	6
Scale In Bales	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	55		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.1220	**4.76E-06**			BSCALEI	7
Scale Out DSNY	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD	72		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1122	**6.23E-07**			DSCALEO	8
Scale Out Bales	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	72		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.1220	**6.23E-06**			BSCALEO	9
Dual-Bin Scale	HDDT8	DPF	**6.7**	**1.0**	**0.4**	2.1	ULSD	55		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1122	**4.76E-07**			DBSCALE	10
FE Scale (in+out)	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	ULSD	220		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0123	**2.09E-07**			FESCALEL	12
FE Scale (in+out)	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD	220		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.7350	**1.25E-05**			FESCALEH	11
Paper / MGP Tipping (DSNY)	HDDT8	none	**29.3**	**4.8**	**4.2**	10.2	ULSD	450		**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	0.1122	3.90E-06	394.3	**9.88E-09**	TIPING	15
Bale Loading Dock	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD	60		**11a-3p**	**7p-12a**	**none**	same as wkdy	1.1220	5.19E-06	135.9	**3.82E-08**	BALEDK	16
FE Unloading Docks	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	Gasoline	60		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0123	5.70E-08	291.9	**1.95E-10**	FEDOCKL	13
FE Unloading Docks	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD	60		**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.7350	3.40E-06	291.9	**1.17E-08**	FEDOCKH	14
Paper/MGP/Dual (DSNY) In and Out	HDDT8	DPF	**22.7**	**3.8**	**3.8**	8.2	ULSD		679.7	**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	9.8614	**1.16E-03**			DSNY1	2
Bales In and Out	HDDT8	none	**6.3**	**2.8**	**none**	4.3	ULSD		652.7	**11a-3p**	**7p-12a**	**none**	same as wkdy	2.3873	**2.69E-04**			BALETRCK	4
Dual to Scale return	HDDT8	DPF	**6.7**	**1.0**	**0.4**	2.1	ULSD		257.4	**10a-1p**	**5p-10p**	**1a-6a**	same as wkdy	9.8614	**4.38E-04**			DSNYDUAL	3
FE In and Out	LDGT	none	**21.3**	**7.1**	**10.6**	127.5	Gasoline		347.6	**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	0.0260	**1.56E-06**			METALL	5
FE In and Out	HDT	none	**3.8**	**1.3**	**1.9**	22.5	ULSD		347.6	**9a-12p**	**12p-2p**	**2p-4p; 7a-9a**	9a-2p	2.9612	**1.78E-04**			METALH	18

NOTES:

Assumes no idle time at security booth at entrance, and 1 minute idle for vehicles at bale and FE docks.

Unitary emission rate is used (per 1 truck) and an hourly factor equal to the number of trucks per hour was applied for each hour in the model.

Scales were modeled as point sources. Truck docks were modeled as area sources. Truck routes were modeled as line sources, represented as volume sources according to the EPA procedure and implemented using the Lakes interface based on the overall line-source emission rate in g/s-vh.

On-Site Air PM10 Emissions (Continued)

Towboats

Source Location	Description	Total Power Rating Main (hp)	Aux Gen (kw)	Trips per Peak Day	Docking Time (min/trip)	Hours	Fuel	$PM_{2.5}$ Docking Emissions Factor (g/trip)	$PM_{2.5}$ Docking Emissions Rate (g/s)	$PM_{2.5}$ Docking Emissions (per 1,000') Factor (g/trip)	$PM_{2.5}$ Docking Emissions (per 1,000') Rate (g/s)	Model Source name	Model Source #	Area of Docking Area Source (m^2)	Area Source Emission Rate (g/s-vh-m^2)	Model Source name	Model Source #
	Outbound Bulk and Non-Bulk (combined private and public)																
Ferrous Loading Dock		2400	65	2	30	**8am-12am**	LSD	304	1.06E-02	15.7	5.43E-04						
Glass Loading Dock	Outbound Glass	2400	65	1	30	**8am-12am**	LSD	304	5.28E-03	15.7	2.72E-04						
MGP Unloading and Paper Loading Dock	Inbound MGP	2400	65	4	30	**8am-12am**	LSD	304	2.11E-02	15.7	1.09E-03						
Total Worst-Case Peak Day									3.70E-02		**1.90E-03**	TOWINOUT	24	6501.4	**5.69E-06**	TOWBOATS	23
Total Average Day (for annual analysis)	All	2400	65	3.855	30	**8am-12am**	LSD	304	2.04E-02	15.7	**1.05E-03**			6501.4	**3.13E-06**		

Notes:

All towboat emissions were based on the 'Sea Bull' engines, which was the larges of the 3 potential towboats.

Marine diesel will be LSD <500 ppm sulfur content according to federal regulations by June 2007. Since the available emission factors are based on marine diesel and do not take this regulatory reduction into account, the emissions presented here are conservatively high. Marine diesel may contain 4 to 10 times more sulfur, leading to much higher particulate matter and SO2 emissions.

Since bulk and non-bulk are separate, it is assumed that a worst-case day would include one trip of each.

These numbers represent a worst-case day assumption. Long term averages would be lower.

Time per trip includes arrival, placement of a barge, and tying up a new one. Since this analysis conservatively assumed that towboats would each have 1 trip per load (not combined drop-off and pick-up), that is conservatively high.

Time for barge in/out was calculated for a distnace of 1,000' at 6.4 knots (based on upland barge data)

* Since towboats are the only source that had different peak and average day operations, the annual emissions are calculated separetly based on average day activity.

On-Road Truck Emissions (out of facility for 1,000 feet from intersection)

Total Distance (m): 463.3

Emission Factor by hour	g/s	Factor for 1-e4
1	**0.00E+00**	0.00
2	**1.83E-04**	1.83
3	**2.45E-04**	2.45
4	**2.45E-04**	2.45
5	**2.45E-04**	2.45
6	**2.45E-04**	2.45
7	**0.00E+00**	0.00
8	**1.51E-03**	15.12
9	**1.51E-03**	15.12
10	**5.02E-04**	5.02
11	**1.66E-03**	16.64
12	**2.62E-03**	26.17
13	**2.48E-03**	24.79
14	**1.60E-03**	15.97
15	**2.17E-03**	21.66
16	**1.51E-03**	15.12
17	**0.00E+00**	0.00
18	**2.45E-04**	2.45
19	**2.45E-04**	2.45
20	**4.32E-04**	4.32
21	**5.25E-04**	5.25
22	**7.44E-04**	7.44
23	**1.87E-04**	1.87
24	**9.35E-05**	0.93

Source Name	#
ROAD	25

MOBILE6 PARTICULATE MATTER EMISSION FACTORS Last updated: 17-Nov-06
2009

PM2.5

Pol Name	LDGV	LDGT1	LDGT2	LDGT3	LDGT4	HDGV2B	HDGV3	HDGV4	HDGV5	HDGV6	HDGV7	HDGV8A	HDGV8B	LDDV	LDDT12	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7	HDDV8A	HDDV8B	MC	GAS BUS	URB BUS	COM BUS	LDDT34
	1							2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DOT VMT	0.6240	0.0622	0.2083	0.0385	0.0164	0.0048	0.0014	0.0009	0.0008	0.0007	0.0006	0.0007	0.0000	0.0015	0.0020	0.0007	0.0008	0.0013	0.0014	0.0015	0.0022	0.0032	0.0078	0.0030	0.0011	0.0017	0.0094	0.0031
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	NA	NA	NA
GASPM	0.0037	0.0037	0.0037	0.0036	0.0036	0.0381	0.0437	0.0418	0.0507	0.0869	0.072	0.1025	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0142	0.0581	NA	NA	NA
ECARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.094	0.0257	0.0335	0.0338	0.032	0.0322	0.0906	0.0815	0.138	0.1489	NA	NA	0.7031	0.1871	0.0208
OCARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0265	0.0369	0.0349	0.0352	0.0333	0.0335	0.0712	0.064	0.1085	0.047	NA	NA	0.5524	0.147	0.0299
SO4	0.0005	0.0006	0.0006	0.0006	0.0006	0.0012	0.0011	0.0009	0.0008	0.0005	0.0006	0.0004	0	0.0002	0.0002	0.0005	0.0006	0.0007	0.0007	0.0008	0.0009	0.001	0.0011	0.0002	0.0007	0.0016	0.0011	0.0003
Brake	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.009	0	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.009	0.009	0.001	0.003	0.003	0.003	0.002
SO2	0.0067	0.0087	0.0087	0.0115	0.0115	0.0161	0.0175	0.0177	0.0208	0.0217	0.0229	0.0251	0	0.003	0.0043	0.0073	0.0082	0.0093	0.0096	0.0109	0.0126	0.0145	0.0151	0.0033	0.0258	0.0227	0.0153	0.0056
NH3	0.1017	0.1014	0.1014	0.1014	0.1014	0.0451	0.0451	0.0451	0.0451	0.0451	0.0451	0.0451	0	0.0068	0.0068	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0113	0.0451	0.027	0.027	0.0068
PM Idle	0.0105	0.01075	0.01075	0.0105	0.0105	0.09825	0.112	0.10675	0.12875	0.2185	0.1815	0.25725	0	0.30175	0.157	0.985	0.9706	0.9506	0.9988	1.0332	1.0053	1.1327	1.0322	0.036	0.147	2.4919	1.0868	0.1275
Weighted VMT:	0.9976	0.1882	0.6303	0.1165	0.0496	0.4848	0.1414	0.0909	0.0808	0.0707	0.0606	0.0707	0.0000	0.0024	0.0061	0.0370	0.0423	0.0688	0.0741	0.0794	0.1164	0.1693	0.4127					0.0094
	1.0000	1.0000				1.0000										1.0000												
Total PM:	**0.0115**	**0.0116**	**0.0116**	**0.0115**	**0.0115**	**0.0466**	**0.0531**	**0.051**	**0.0598**	**0.0957**	**0.0809**	**0.1172**	**0**	**0.128**	**0.0701**	**0.0762**	**0.0779**	**0.0743**	**0.0747**	**0.1709**	**0.1547**	**0.2618**	**0.2113**		**0.01418**	**0.13401**		**0.0583**

PM10

Pol Name	LDGV	LDGT1	LDGT2	LDGT3	LDGT4	HDGV2B	HDGV3	HDGV4	HDGV5	HDGV6	HDGV7	HDGV8A	HDGV8B	LDDV	LDDT12	HDDV2B	HDDV3	HDDV4	HDDV5	HDDV6	HDDV7	HDDV8A	HDDV8B	MC	GAS BUS	URB BUS	COM BUS	LDDT34
DOT VMT	0.6240	0.0622	0.2083	0.0385	0.0164	0.0048	0.0014	0.0009	0.0008	0.0007	0.0006	0.0007	0.0000	0.0015	0.0020	0.0007	0.0008	0.0013	0.0014	0.0015	0.0022	0.0032	0.0078	0.0030	0.0011	0.0017	0.0094	0.0031
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	NA	NA	NA
GASPM	0.004	0.004	0.004	0.0039	0.0039	0.043	0.051	0.0503	0.0652	0.1193	0.0958	0.1432	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0205	0.0753	NA	NA	NA
ECARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1021	0.0279	0.0364	0.0368	0.0348	0.035	0.0985	0.0886	0.15	0.1619	NA	NA	0.7642	0.2034	0.0226
OCARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0288	0.0401	0.0379	0.0383	0.0362	0.0364	0.0774	0.0696	0.1179	0.0511	NA	NA	0.6005	0.1598	0.0325
SO4	0.0005	0.0006	0.0006	0.0006	0.0006	0.0012	0.0011	0.0009	0.0008	0.0005	0.0006	0.0004	0	0.0002	0.0002	0.0005	0.0006	0.0007	0.0007	0.0008	0.0009	0.001	0.0011	0.0002	0.0007	0.0016	0.0011	0.0003
Brake	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire	0.008	0.008	0.008	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.036	0	0.008	0.008	0.008	0.012	0.012	0.012	0.012	0.012	0.036	0.036	0.004	0.012	0.012	0.012	0.008
SO2	0.0067	0.0087	0.0087	0.0115	0.0115	0.0161	0.0175	0.0177	0.0208	0.0217	0.0229	0.0251	0	0.003	0.0043	0.0073	0.0082	0.0093	0.0096	0.0109	0.0126	0.0145	0.0151	0.0033	0.0258	0.0227	0.0153	0.0056
NH3	0.1017	0.1014	0.1014	0.1014	0.1014	0.0451	0.0451	0.0451	0.0451	0.0451	0.0451	0.0451	0	0.0068	0.0068	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0113	0.0451	0.027	0.027	0.0068
PM Idle	0.01125	0.0115	0.0115	0.01125	0.01125	0.1105	0.13025	0.128	0.165	0.2995	0.241	0.359	0	0.32775	0.1705	1.0706	1.055	1.0332	1.0857	1.123	1.0927	1.2312	1.122	0.05175	0.19	2.7086	1.1813	0.1385
Weighted VMT:	0.9976	0.1882	0.6303	0.1165	0.0496	0.4848	0.1414	0.0909	0.0808	0.0707	0.0606	0.0707	0.0000	0.002398	0.0061	0.0370	0.0423	0.0688	0.0741	0.0794	0.1164	0.1693	0.4127					0.0093
	1.0000	1.0000				1.0000										1.0000												
Total PM:	**0.025**	**0.0251**	**0.0251**	**0.025**	**0.025**	**0.0647**	**0.0766**	**0.0757**	**0.0905**	**0.1443**	**0.1209**	**0.1921**	**0**	**0.1516**	**0.0887**	**0.0953**	**0.1002**	**0.0962**	**0.0966**	**0.2012**	**0.1836**	**0.3174**	**0.2626**		**0.0321**	**0.16113**		**0.0759**

Pollutant	Speeds	PM Emission Factors							
		LDV	LDT	HDGT	HDDT	BUSES	HDDT8b	DSNY	HDT (Gasoline and Diesel)
$PM_{2.5}$	Cruise (g/vmt)	0.0118	0.0124	0.0595	0.1799	0.13401	0.2113	0.034	0.1316
	Idle (g/vh-hr)	0.0112	0.0115	0.0806	1.0337	0.24919	1.0322	0.10322	0.6711
PM_{10}	Cruise (g/vmt)	0.0253	0.0259	0.0875	0.2210	0.16113	0.2626	0.06991	0.1664
	Idle (g/vh-hr)	0.0112	0.0123	0.1046	1.1236	0.27086	1.1220	0.1122	0.7350

90% Engine Emission Reduction

CO/PM2.5 ratio = 26.4
Based on 10 mph average speed

MOBILE6 CO EMISSION FACTORS BY SPEED
Kings County Mobile 6.2

2009 MOBILE 6.2 Emission Factors (g/vmt)

<MPH>	<TXs>	<TBUS>	<HDBB>	<LDGT>	<HDGT>	<HDDT>	<Dept>	<Arrv>	<AUTO>
Idle (g/hr)	45.63	88.40	25.63	63.40	170.55	21.05	84.13	66.70	66.70
10.0	6.94	19.91	5.77	13.27	36.26	4.74	20.04	13.07	13.07
15.0	5.87	14.36	4.16	12.17	25.49	3.42	18.88	11.91	11.91
20.0	5.34	10.85	3.14	11.61	18.93	2.58	18.29	11.33	11.33
25.0	5.04	8.57	2.48	11.32	14.85	2.04	17.98	11.02	11.02
30.0	4.94	7.09	2.06	11.22	12.32	1.69	17.87	10.91	10.91
35.0	4.98	6.14	1.78	11.28	10.79	1.46	17.95	10.98	10.98
40.0	5.30	5.56	1.61	11.63	9.98	1.32	18.31	11.34	11.34

NOTE:
*To calculate LDGT we took weighted average of LDGT1, LDGT2, LDGT3 and LDGT4
**To calculate HDGV we took weighted average of HDGV2b, HDGV3, HDGV4, HDGV5, HDGV6, HDGV7, HDGV8a, HDGV8b and HDGB
***To calculate HDDV we took weighted average of HDDV2b, HDDV3, HDDV4, HDDV5, HDDV6, HDDV7, HDDV8a, HDDV8b, HDDBS and HDDBT

NONROAD Model Emission Factors
Model year 2009 emissions in 2009.

Equipment Type	tech type	Emission Factor (g/hp-hr)							CO/$PM_{2.5}$	NO_x/$PM_{2.5}$
		THC	CO	NO_X	CO_2	SO_2	PM_{10}	$PM_{2.5}$		
forklift (65 hp)	LGT252	0.032	1.227	0.260	165.412	0.003	0.015	0.015	79.3	16.8
	CNG	0.507	1.227	0.272	143.917	0.003	0.015	0.015	79.3	17.6
material handler (190 hp, diesel)	T3	0.078	0.327	1.076	228.105	0.002	0.045	0.044	7.5	24.7
wheel loader (196 hp, diesel)	T3	0.088	0.406	0.637	131.295	0.001	0.065	0.063	6.5	10.2
skid steer loader (80 hp, diesel)	T1	0.252	1.282	1.299	145.357	0.001	0.175	0.170	7.5	7.7
	T3B	0.088	1.284	0.765	145.881	0.001	0.148	0.144	8.9	5.3
sweeper (99 hp, diesel)	T1	0.225	1.031	2.415	253.147	0.002	0.172	0.167	6.2	14.5
	T3B	0.078	1.036	1.291	253.615	0.002	0.130	0.126	8.2	10.3

Towboat Emission Factors

From *The New York, Northern New Jersey, Long Island Nonattainment Area Commercial Marine Vessel Emissions Inventory*, Table 6.1, **PANYNJ,** April 2003.

Pollutant	Emission Rate (g/kW-hr)	
	Full Power	Average
NO_x	13.32	9.16
VOC	0.61	0.419
CO	1.69	1.16
PM_{10}	0.51	0.351
SO_2	3.92	2.70

The average rate is based on IMO E-3 test cycle 68.75% average power load. This may be conservative for local use in docking, when much of the time may be spent in idle and very low speed.

Reflects year 2000 emissions levels.

$CO/PM_{2.5}$	3.42	3.42
$NO_x/PM_{2.5}$	26.93	26.93

Resuspended Paved Road Dust

Factors:

k10 =	7.3	g/VMT
k2.5 =	1.1	g/VMT
a =	0.65	
b =	1.5	
C_{10} =	0.2119	g/VMT

Vehicle Type	Avg. Vehicle Weight tons	Silt Loading g/m^2	Emission Factor (g/VMT) 24-hr w' Control (no precipitation) PM_{10}
DSNY	36.0	0.030	9.8
Product Trucks	16.8	0.030	2.1
Large Metal	20.0	0.030	2.8
Small Metal	1.8	0.030	0.0
Public Road	2.5	0.120	0.69
Non-Road	10.3	0.600	7.4

NOTE:
1. According to AP-42 13.2.1.4, the application of controls can be done by substituting controlled silt loading factor. It was assumed that due to the twice daily wet cleaning, silt loading would be similar to a clean highway with 0.03 g/m^2. For the indoor, nonroad areas, a high silt factor of 0.6 g/m^2 was assumed.
2. 50% Credit used for speed < 5 mph.
3. No controls were assumed for public streets.

Vehicle Type	Vehicle
DSNY	36.0
Product Trucks	16.8
Large Metal	20.0
Small Metal	1.8

APPENDIX D: NOISE

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hugo New		Date 10/25/06
Location	Bronx		Receptor #
Equipment			Observer: MA BS
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

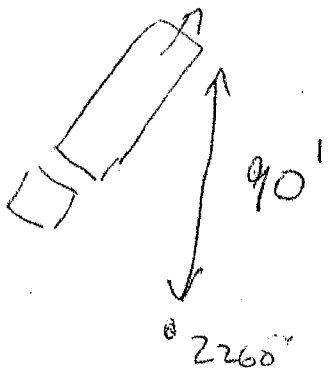
Plan View

11:20 TIPPING OPERATION
50' from Back of Truck
FILE 2
Dumps a large bolus of cable + rebar

N
W E
S

F.E.L. working metal scrap pile
75' from F.E.L.
FILE 3

LARGE TRAILER TIPPING
FILE 4



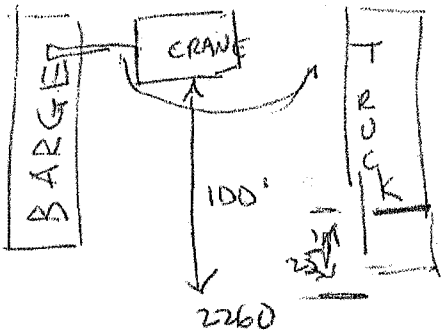
Note:

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	HUGO NEV		Date	10/25/06
Location	NJ		Receptor #	
Equipment			Observer:	
Tem:	Wind: 4-10mph	Humidity:		
Start Time: 4:32	Ending Time:	Meas. File #:		

Plan View

LOADING TRUCK from BARGE (PLASTIC)



MINIMAL NOISE TRANSPORTATION (L1 representsby 4 lanes)

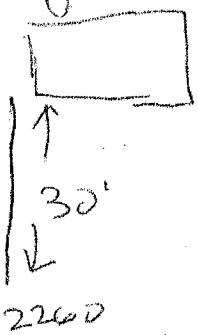
Leq is probably 3dB lower than measured due to contrib. of other sources

FILE8

TRUCK IS IDLING ADDING TO TOTAL

TIPPING IN STEEL ← BACKHOE

FILE9



ASSUME LEVEL IS CONSTANT ACROSS OPENING

DOOR IS 55' WIDE/N 30' HIGH

Note:

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name			Date 10/25/06
Location			Receptor #
Equipment			Observer:
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

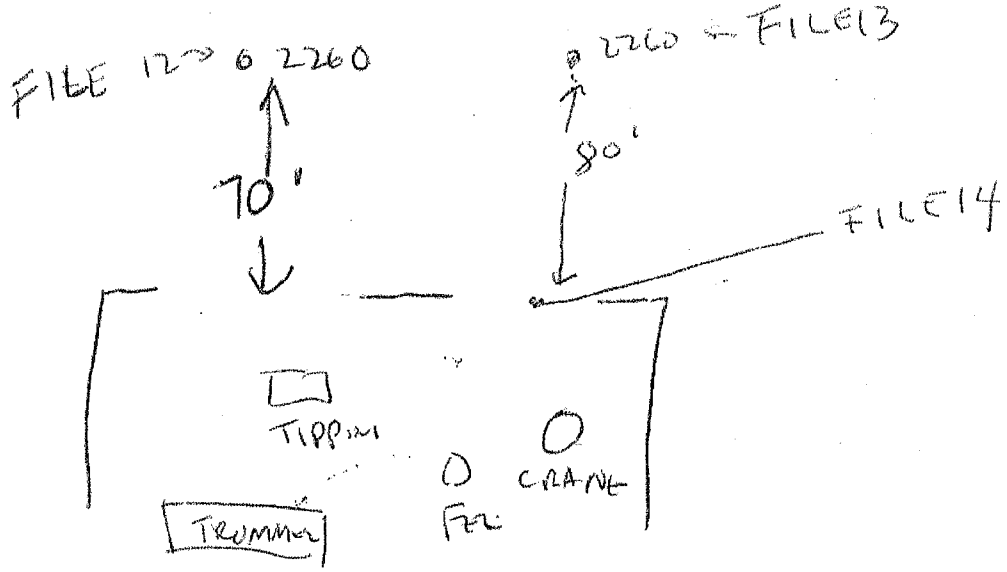
Plan View

OFF ROAD TRUCK TIPPING FILE 10

SANITATION TRUCK TIPPING AT 25' (FEL IN BACKGROUND & CRANE

FILE 11

TIPPING, CRANE, FEL, TRUMMER ALL OPERATING

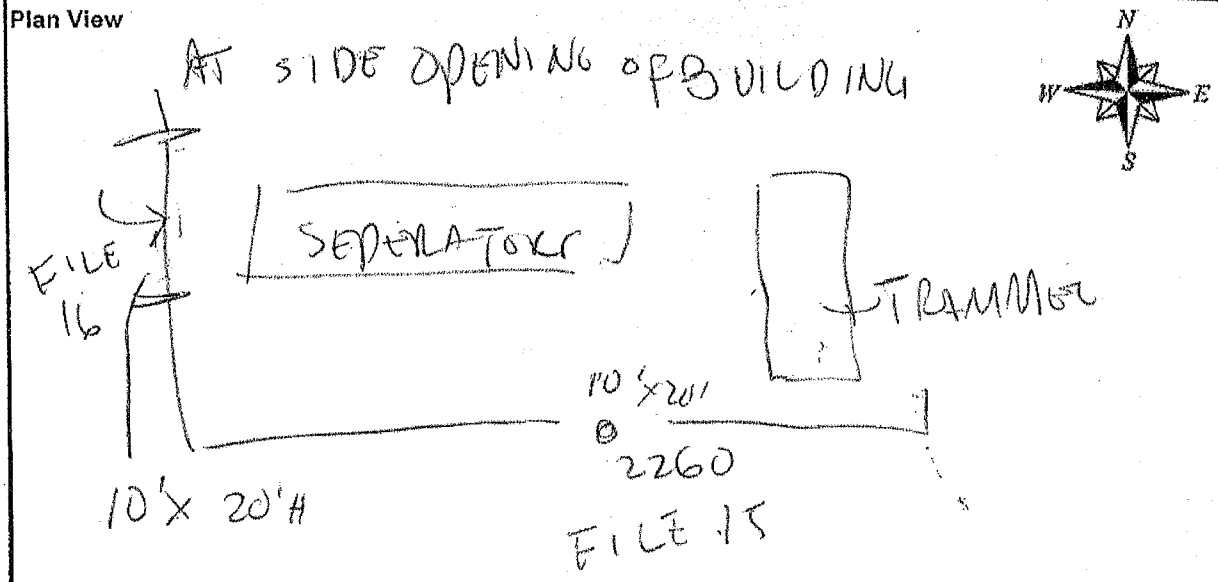


Note:

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name			Date	
Location			Receptor #	
Equipment			Observer:	
Tem:	Wind:	Humidity:		
Start Time:	Ending Time:	Meas. File #:		

Plan View



Note:

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name			Date 10/27/06
Location			Receptor # 1
Equipment			Observer:
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View

Across Port Liberte in dock

Most noise is from Tpke.

Plant is only marginally audible

barge + tugs raise level from 56 → 60+

Wind noise dominating low freq

File 17

Note:

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hugo New	Date	5/10/06
Location	(1) Loading Light Iron Into Barge	Receptor #	
Equipment	Bar 2260	Observer:	Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

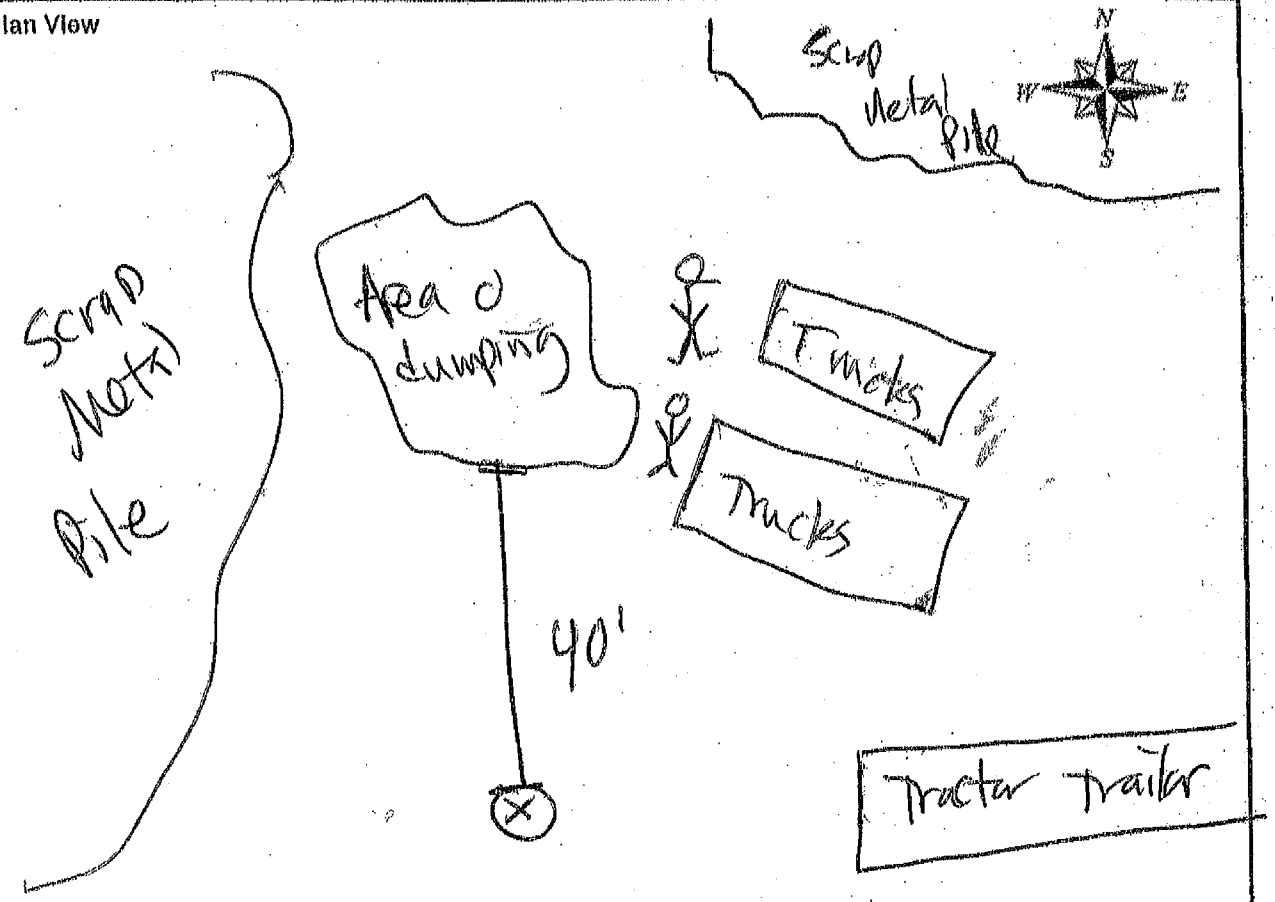
Plan View

Note:
Files: 001, 002, 003

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hugo Neu	Date	5/10/07
Location	(2) dumping light iron on ground	Receptor #	
Equipment		Observer:	Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View



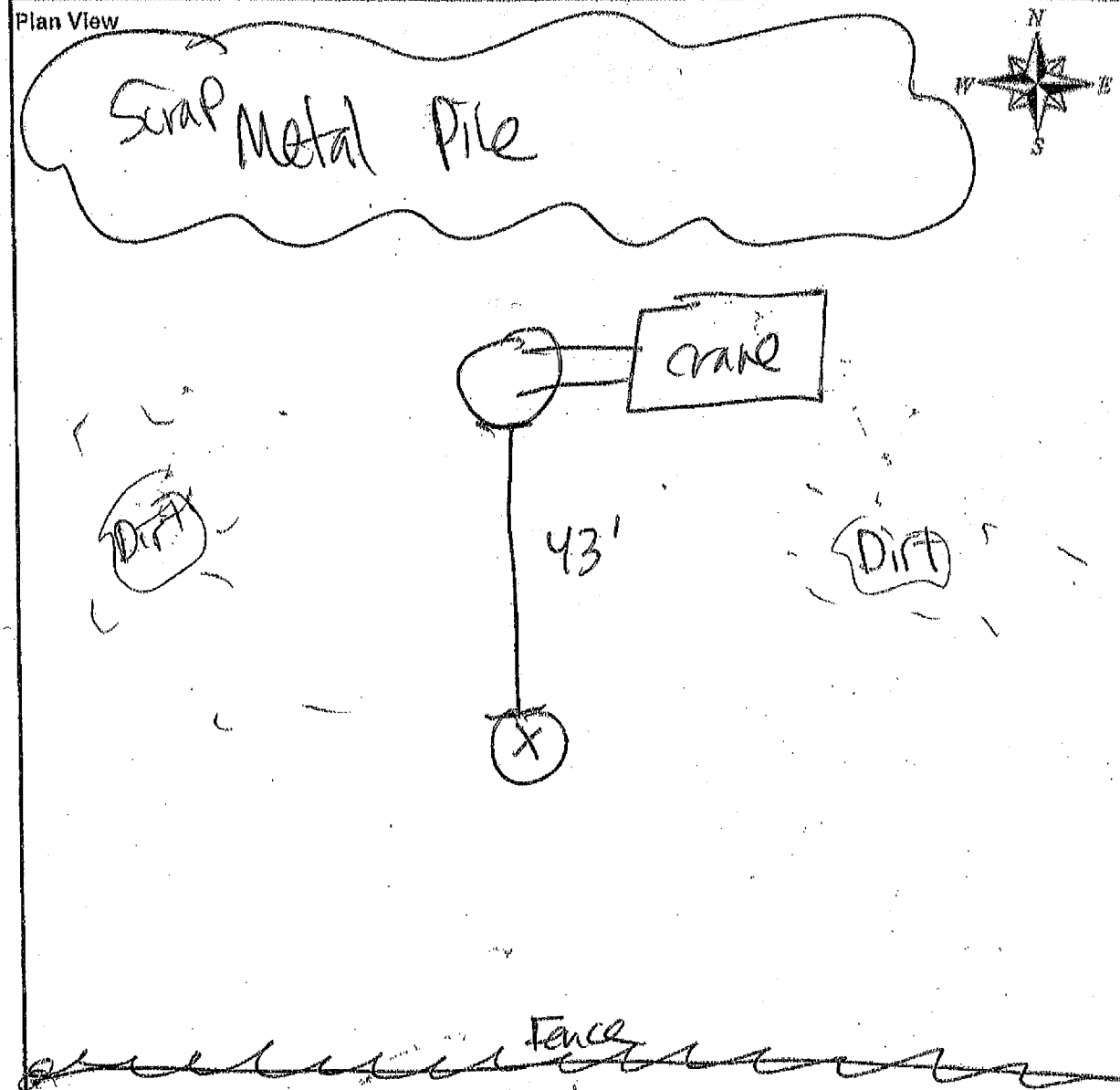
Note:
File: 004, 005, 006

Low Background Noise From Edgewater Road

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hunts Point		Date: 5/10/07
Location	(3) Magnetic Crane Working		Receptor #:
Equipment	85K 2260	Scrap Metal	Observer: Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View



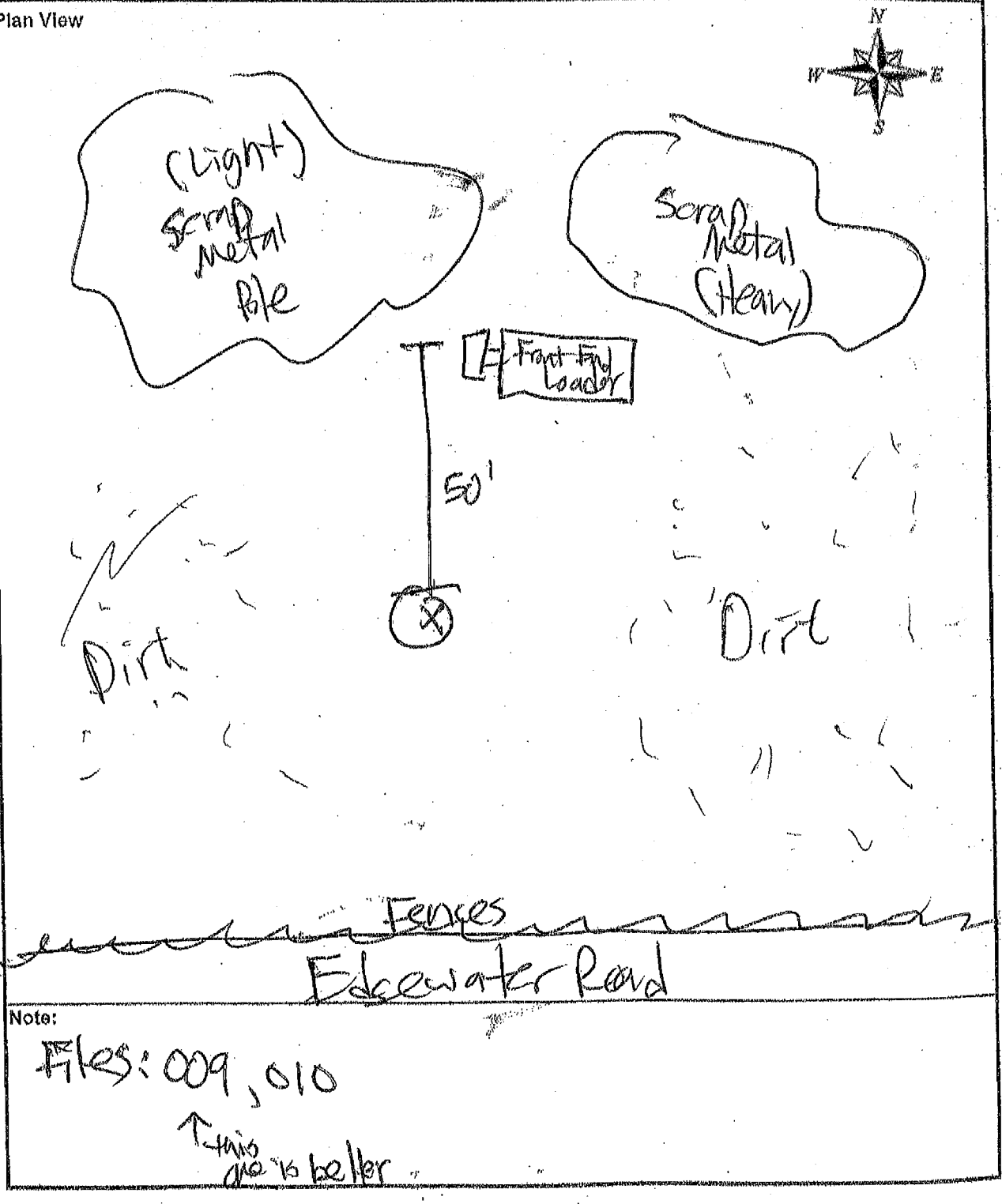
Note:

Files: 007, 008

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hanso New		Date 5/10/07
Location	(3) Front End Loader Working		Receptor #
Equipment	D8K2220 Scrap Metal Pile		Observer: Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View



Note:

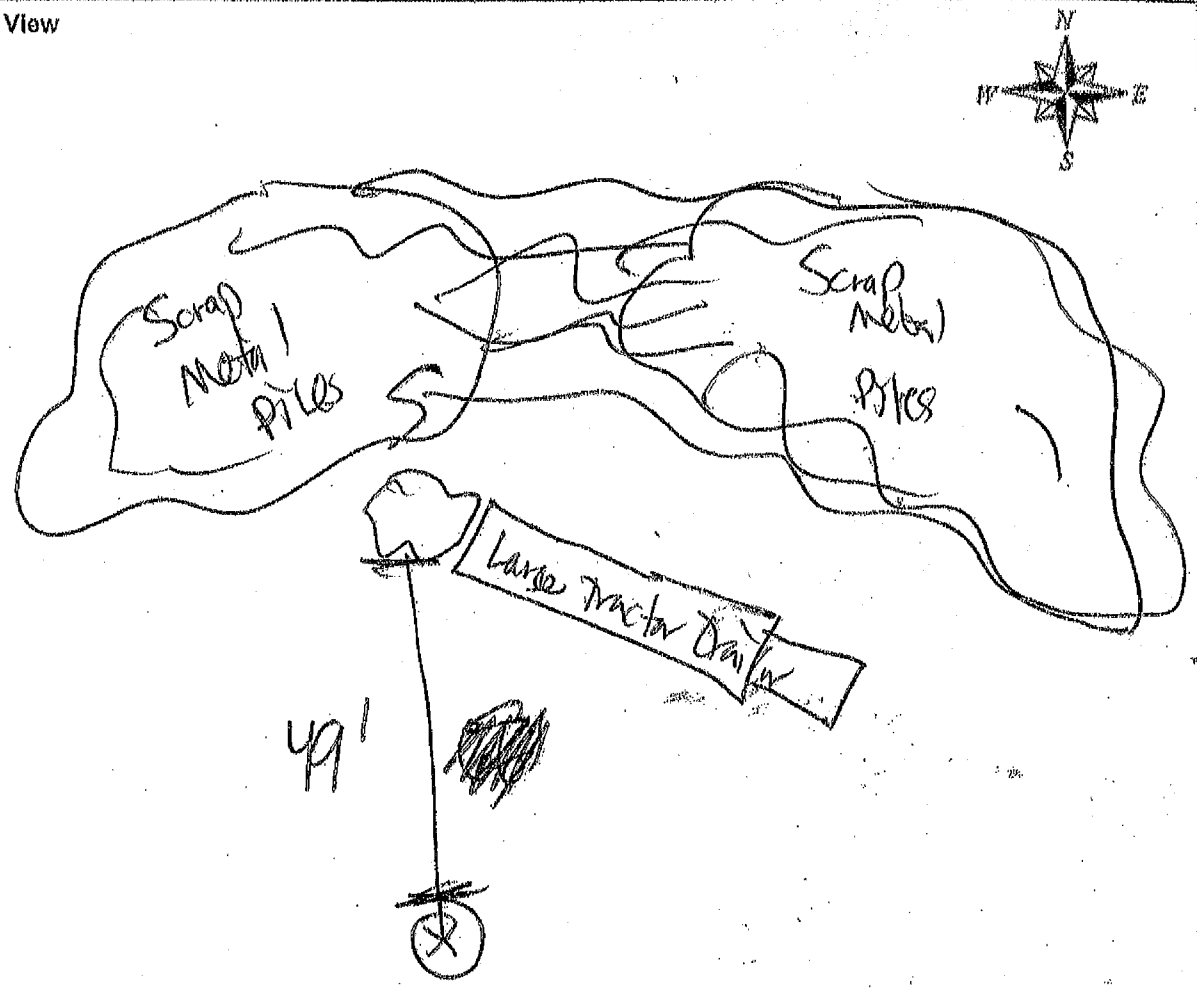
Files: 009, 010

↑ this one is better

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hugo Neu		Date 5/10/17
Location	(3) Large Tractor Trailer Tipping Scrap		Receptor #
Equipment			Observer: Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View



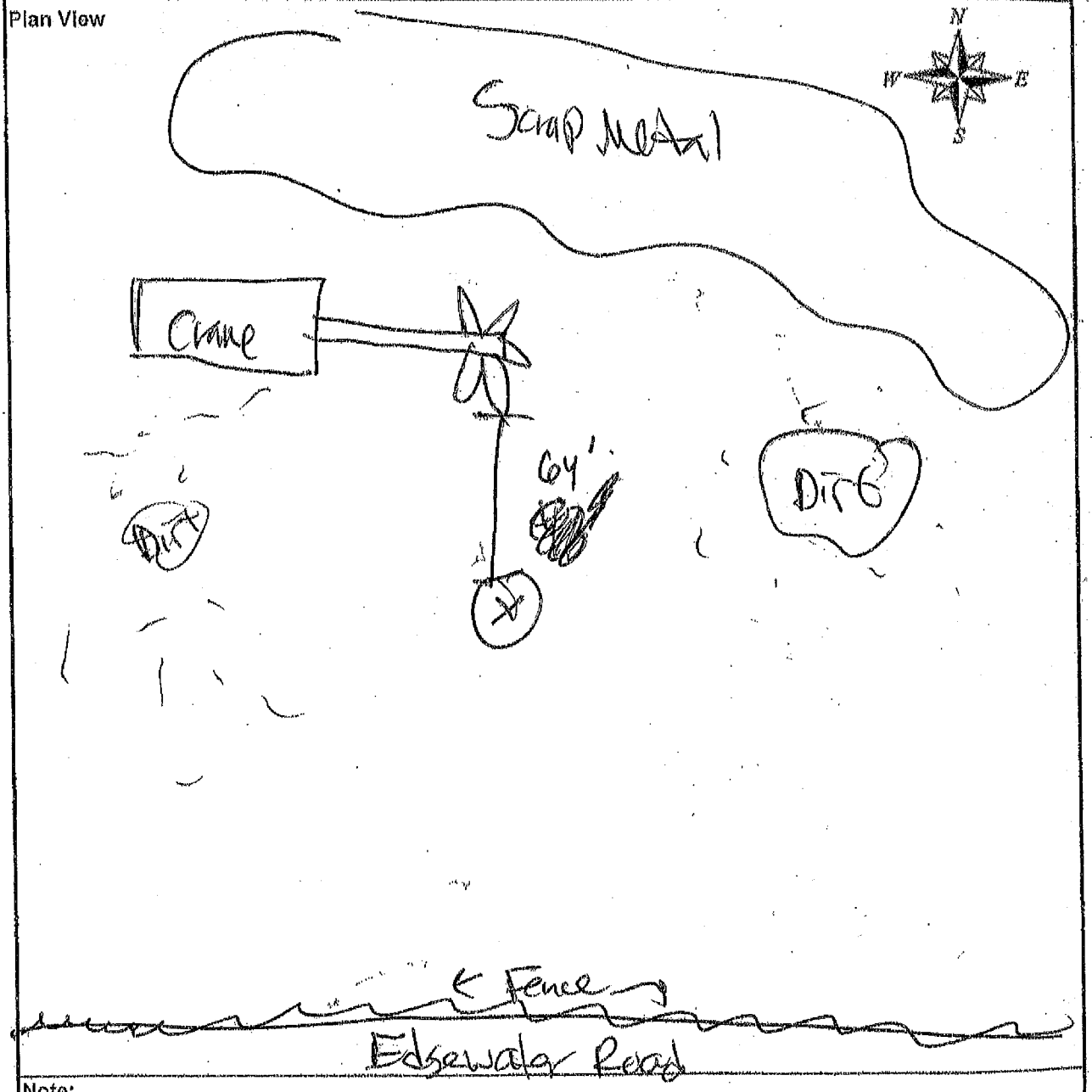
Note:

Files: 011

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Project Name	Hugo Neu		Date 5/10/07
Location	(3) Crane working Scrap Metal		Receptor #
Equipment	B&K 2260 D10		Observer: Benjamin
Tem:	Wind:	Humidity:	
Start Time:	Ending Time:	Meas. File #:	

Plan View



Note:

Files: 012, 013

Location: Bronx Scrap Yard
Description of Event: Truck Tipping Operation
Start Time: 11:23:56 AM
Elapsed Time: 0:00:52
Distance: 50 Feet from Back of Truck
File # 2

L_{eq}	84.6	dBA
L_{max}	96.5	dBA
L_{min}	69.3	dBA

L_1	95.7	dBA
L_5	90.8	dBA
L_{10}	89.9	dBA
L_{50}	74.0	dBA
L_{90}	71.9	dBA
L_{95}	71.6	dBA
L_{99}	70.7	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	77.6	86.5	62.3	86.0	82.2
16	73.4	80.2	67.3	79.0	75.7
31.5	82.0	88.8	73.3	88.4	85.9
63	82.5	88.6	75.2	87.7	84.6
125	79.2	88.4	71.6	87.6	83.5
250	79.5	89.4	67.3	88.7	84.2
500	79.5	91.2	65.9	90.5	84.6
1000	79.4	91.5	65.0	90.7	84.4
2000	78.8	91.0	60.6	90.0	83.9
4000	75.1	87.0	56.8	86.0	80.6
8000	66.5	77.2	45.1	76.2	72.6
16000	54.0	63.7	---	62.9	60.1
A	84.6	96.5	69.3	95.7	89.9
L	89.6	98.8	81.3	---	---

Location: Bronx Scrap Yard
Description of Event: Large Trailer Tipping Scrap Metal
Start Time: 11:35:48 AM
Elapsed Time: 0:02:09
Distance: 90 Feet From Back of Trailer
File # 4

L_{eq}	77.2	dBA
L_{max}	90.9	dBA
L_{min}	66.5	dBA

L_{1}	89.8	dBA
L_{5}	82.2	dBA
L_{10}	80.2	dBA
L_{50}	71.6	dBA
L_{90}	67.5	dBA
L_{95}	67.1	dBA
L_{99}	66.7	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_{1} (dB)	L_{10} (dB)
8	79.1	90.4	62.5	88.0	83.3
16	76.3	86.6	64.9	84.2	80.6
31.5	78.1	86.5	68.8	85.2	81.0
63	81.3	87.1	75.8	86.7	84.0
125	77.1	91.8	67.5	90.0	78.9
250	74.3	89.6	63.3	87.8	76.0
500	73.8	87.7	63.6	86.3	76.5
1000	71.6	85.3	61.4	84.1	73.8
2000	70.7	84.0	57.3	83.1	74.2
4000	66.4	79.7	51.3	78.5	70.5
8000	58.9	71.0	---	69.8	64.1
16000	47.2	57.6	---	56.8	52.6
A	77.2	90.9	66.5	89.8	80.2
L	87.1	96.6	81.2	---	---

Location: Bronx Scrap Yard
Description of Event: Truck Tipping and Crane Operations
Start Time: 11:49:51 AM
Elapsed Time: 0:03:21
Distance: 125 Feet
File # 6

L_{eq}	75.9	dBA
L_{max}	85.4	dBA
L_{min}	64.6	dBA

L_1	84.3	dBA
L_5	82.0	dBA
L_{10}	79.6	dBA
L_{50}	73.3	dBA
L_{90}	66.8	dBA
L_{95}	66.0	dBA
L_{99}	65.1	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	84.1	97.6	65.1	95.3	87.1
16	80.4	93.3	65.4	91.6	83.6
31.5	77.1	89.7	67.0	88.5	79.4
63	77.5	85.6	67.6	83.9	81.3
125	75.8	84.0	66.9	81.7	79.0
250	72.3	80.7	65.1	79.1	75.4
500	70.2	82.1	61.4	78.3	73.6
1000	71.6	84.6	58.0	83.1	74.8
2000	68.7	80.5	54.7	77.7	72.5
4000	66.5	77.0	50.5	75.2	70.6
8000	59.6	73.0	41.2	68.8	63.3
16000	50.7	70.5	---	64.5	50.3
A	75.9	85.4	64.6	84.3	79.6
L	88.1	99.9	76.0	---	---

Location: Claremont Recylcing Facility
Description of Event: Crane Loading Plastic Into A Truck From A Barge
Start Time: 4:37:13 PM
Elapsed Time: 0:06:36
Distance: 100 Feet From Crane
File # 8

L_{eq}	70.1	dBA
L_{max}	83.0	dBA
L_{min}	66.1	dBA

L_1	76.0	dBA
L_5	72.5	dBA
L_{10}	71.6	dBA
L_{50}	69.3	dBA
L_{90}	67.9	dBA
L_{95}	67.5	dBA
L_{99}	66.8	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	86.8	102.5	71.2	97.9	89.5
16	82.2	97.7	70.5	94.0	84.6
31.5	78.4	93.5	72.4	87.8	79.8
63	73.4	84.2	68.6	80.5	75.4
125	75.4	81.5	69.2	80.8	79.1
250	70.7	80.0	66.9	77.5	71.9
500	67.7	80.1	63.1	73.8	69.2
1000	64.2	77.8	59.8	72.1	66.3
2000	61.5	76.7	56.4	69.8	63.2
4000	55.1	69.9	50.4	62.3	56.7
8000	48.0	59.9	42.5	56.8	50.2
16000	---	51.1	---	47.6	42.6
A	70.1	83.0	66.1	76.0	71.6
L	89.7	104.3	80.4	---	---

Location: Claremont Recylcing Facility
Description of Event: Tipping of Material in Shed
Start Time: 4:55:03 PM
Elapsed Time: 0:03:12
Distance: 30 Feet From Truck
File # 9

L_{eq}	84.0	dBA
L_{max}	93.6	dBA
L_{min}	76.8	dBA

L_1	91.3	dBA
L_5	88.6	dBA
L_{10}	87.1	dBA
L_{50}	82.5	dBA
L_{90}	78.9	dBA
L_{95}	77.9	dBA
L_{99}	77.0	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	76.1	79.7	72.0	78.8	77.5
16	75.9	86.0	72.0	83.3	77.0
31.5	80.8	89.0	75.4	88.4	84.3
63	85.1	92.2	76.5	90.5	87.0
125	80.8	90.7	72.1	87.8	84.1
250	78.5	90.9	68.8	87.7	82.1
500	78.2	89.8	70.3	86.9	81.1
1000	81.2	89.4	71.8	87.9	84.8
2000	75.7	86.9	67.1	84.2	78.9
4000	71.9	81.4	61.2	79.0	76.0
8000	67.1	79.3	53.1	77.6	70.6
16000	62.5	77.2	41.6	75.1	65.5
A	84.0	93.6	76.8	91.3	87.1
L	89.8	97.2	85.7	---	---

Location: Claremont Recylcing Facility
Description of Event: Sanitation Truck Tipping
Start Time: 5:06:10 PM
Elapsed Time: 0:02:43
Distance: 25 Feet from Truck
File # 11

L_{eq}	86.1	dBA
L_{max}	97.4	dBA
L_{min}	77.0	dBA

L_1	94.0	dBA
L_5	90.7	dBA
L_{10}	88.5	dBA
L_{50}	84.4	dBA
L_{90}	81.9	dBA
L_{95}	80.3	dBA
L_{99}	77.4	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	78.6	83.3	73.0	81.4	79.9
16	80.6	97.7	73.6	94.1	78.9
31.5	83.7	96.2	77.8	93.8	85.9
63	82.4	96.5	75.0	94.0	83.3
125	83.8	97.6	76.3	95.5	83.9
250	80.4	92.3	73.8	90.3	82.3
500	81.2	89.4	75.2	87.8	82.9
1000	80.2	88.3	72.4	86.0	82.6
2000	79.5	92.9	67.6	88.9	81.9
4000	77.7	90.8	60.9	87.2	81.5
8000	74.0	86.2	50.8	83.5	78.3
16000	70.6	81.9	41.5	79.8	75.9
A	86.1	97.4	77.0	94.0	88.5
L	91.3	103.7	85.7	---	---

Location: Claremont Recycling Facility
Description of Event: Tipping, Crane, Front End Loader, Trommel Operations
Start Time: 5:11:36 PM
Elapsed Time: 0:05:04
Distance: 70 Feet From Truck Tipping
File # 12

L_{eq}	79.5	dBA
L_{max}	84.5	dBA
L_{min}	74.2	dBA

L_{1}	84.0	dBA
L_{5}	82.9	dBA
L_{10}	81.7	dBA
L_{50}	79.0	dBA
L_{90}	76.0	dBA
L_{95}	75.6	dBA
L_{99}	74.6	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_{1} (dB)	L_{10} (dB)
8	79.4	87.5	73.4	85.3	81.8
16	74.9	84.5	69.9	81.1	77.5
31.5	81.1	87.7	75.8	87.2	83.5
63	82.1	95.4	74.0	93.3	83.9
125	81.2	91.1	74.4	89.2	84.7
250	77.2	89.2	69.9	86.2	80.5
500	74.7	86.6	70.7	80.6	77.2
1000	75.5	81.0	69.6	80.2	77.9
2000	72.1	78.0	66.5	76.8	74.6
4000	66.2	76.3	59.6	73.8	68.7
8000	59.3	75.2	47.1	72.1	60.1
16000	51.4	70.6	---	64.9	51.9
A	79.5	84.5	74.2	84.0	81.7
L	88.3	96.6	83.9	---	---

Location: Claremont Recylcing Facility
Description of Event: Tipping, Crane, Front End Loader, Trommel Operations
Start Time: 5:18:53 PM
Elapsed Time: 0:01:30
Distance: 80 Feet From Crane
File # 13

L_{eq}	74.8	dBA
L_{max}	79.6	dBA
L_{min}	71.8	dBA

L_{1}	78.6	dBA
L_{5}	77.7	dBA
L_{10}	77.4	dBA
L_{50}	73.5	dBA
L_{90}	72.4	dBA
L_{95}	72.2	dBA
L_{99}	71.9	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_{1} (dB)	L_{10} (dB)
8	79.6	82.7	75.8	82.7	81.2
16	73.9	77.9	70.3	77.4	75.6
31.5	78.4	81.1	76.0	80.8	79.8
63	77.5	83.3	74.4	82.7	80.1
125	77.3	86.3	72.8	85.9	79.6
250	72.6	76.9	69.0	76.9	76.0
500	70.8	74.7	67.7	74.8	73.2
1000	70.6	77.1	67.0	75.9	73.0
2000	67.7	72.9	64.7	71.8	69.9
4000	60.5	67.3	57.3	65.3	62.6
8000	50.7	58.7	46.2	57.8	53.3
16000	---	50.3	---	49.5	---
A	74.8	79.6	71.8	78.6	77.4
L	85.3	89.2	83.0	---	---

Location: Claremont Recycling Facility
Description of Event: Tipping, Crane, Front End Loader, Trommel Operations
Start Time: 5:22:29 PM
Elapsed Time: 0:03:02
Distance: At Entrance to Front End Loader and Crane
File # 14

L_{eq}	80.3	dBA
L_{max}	86.6	dBA
L_{min}	77.9	dBA

L_1	85.2	dBA
L_5	83.8	dBA
L_{10}	82.1	dBA
L_{50}	79.6	dBA
L_{90}	78.5	dBA
L_{95}	78.3	dBA
L_{99}	78.1	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	78.1	81.5	74.7	80.5	79.3
16	75.6	87.1	71.9	82.9	76.6
31.5	77.1	82.3	73.3	81.6	79.3
63	78.1	91.0	74.4	86.4	80.6
125	78.2	89.4	73.2	87.1	80.6
250	76.6	86.0	72.9	85.0	76.9
500	76.4	83.4	73.8	81.4	77.9
1000	76.3	82.8	73.5	81.7	78.2
2000	73.2	79.5	70.7	78.2	74.9
4000	67.3	74.5	63.9	73.4	69.5
8000	56.7	68.4	52.2	64.2	58.7
16000	---	56.1	---	52.2	42.6
A	80.3	86.6	77.9	85.2	82.1
L	86.3	94.2	84.1	---	---

Location: Claremont Recylcing Facility
Description of Event: Trummel at Side Opening of Building
Start Time: 5:28:52 AM
Elapsed Time: 0:03:03
Distance: At Side Entrance Opening
File # 15

L_{eq}	85.5	dBA
L_{max}	87.2	dBA
L_{min}	84.0	dBA

L_1	86.9	dBA
L_5	86.4	dBA
L_{10}	86.2	dBA
L_{50}	85.4	dBA
L_{90}	84.7	dBA
L_{95}	84.5	dBA
L_{99}	84.3	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	86.1	94.1	76.5	92.8	89.9
16	84.0	89.9	80.0	88.8	86.9
31.5	92.8	94.5	91.0	94.8	93.8
63	81.6	85.1	79.6	84.0	82.7
125	84.2	86.8	81.8	86.1	85.3
250	81.3	83.5	79.6	83.0	82.1
500	82.9	84.6	81.5	84.0	83.7
1000	81.2	84.9	79.5	83.7	82.4
2000	78.1	81.1	76.5	80.6	78.9
4000	72.4	76.8	70.5	75.9	73.5
8000	62.9	66.3	61.2	65.5	63.9
16000	50.5	55.6	48.1	53.9	52.3
A	85.5	87.2	84.0	86.9	86.2
L	95.6	98.7	94.2	---	---

Location: Claremont Recylcing Facility
Description of Event: Separators and Balers at Side Opening of Building
Start Time: 5:33:26 PM
Elapsed Time: 0:03:03
Distance: At Side Entrance Opening
File # 16

L_{eq}	81.3	dBA
L_{max}	84.0	dBA
L_{min}	78.5	dBA

L_1	83.4	dBA
L_5	82.8	dBA
L_{10}	82.5	dBA
L_{50}	81.5	dBA
L_{90}	79.2	dBA
L_{95}	78.9	dBA
L_{99}	78.6	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	82.6	91.8	74.2	89.8	85.9
16	80.5	87.2	71.6	85.0	82.8
31.5	79.6	89.5	74.3	85.8	81.7
63	83.3	94.5	74.3	92.1	87.3
125	77.8	86.4	72.1	84.9	80.8
250	75.3	79.0	71.7	78.5	76.9
500	77.6	80.2	74.5	79.9	78.9
1000	77.0	82.6	74.2	81.5	78.0
2000	74.2	77.0	71.3	76.5	75.6
4000	69.9	72.9	65.5	72.6	71.5
8000	64.9	68.7	58.2	67.8	66.7
16000	56.9	62.4	48.9	59.9	58.8
A	81.3	84.0	78.5	83.4	82.5
L	89.6	96.2	85.7	---	---

Location: Claremont Recylcing Facility
Description of Event: Total Plant Noise
Start Time: 6:08:27 PM
Elapsed Time: 0:10:12
Distance: At Port Liberte Across Water From Recylcling Plant
File # 17

L_{eq}	56.8	dBA
L_{max}	64.7	dBA
L_{min}	53.7	dBA

L_1	62.1	dBA
L_5	59.9	dBA
L_{10}	58.4	dBA
L_{50}	55.9	dBA
L_{90}	54.7	dBA
L_{95}	54.5	dBA
L_{99}	54.2	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	88.3	97.4	70.8	95.9	92.7
16	83.7	95.2	66.3	92.3	88.1
31.5	77.7	92.1	63.1	87.4	81.8
63	70.8	86.4	61.6	79.7	74.2
125	63.6	77.1	58.0	72.6	66.1
250	56.2	65.8	51.6	62.8	58.1
500	54.1	63.7	50.7	62.1	55.5
1000	52.5	56.9	49.9	55.8	53.9
2000	45.3	56.1	41.7	50.6	47.3
4000	38.0	54.1	29.8	47.4	40.8
8000	29.4	45.4	---	40.3	32.8
16000	---	39.2	---	29.6	22.0
A	56.8	64.7	53.7	62.1	58.4
L	91.1	99.9	75.1	---	---

Location:	Bronx Scrap Yard
Description of Event:	Loading Light Iron Into Barge
Start Time:	10:36:19 AM
Elapsed Time:	0:03:23
Distance:	93 Feet
File #	1

L_{eq}	72.2	dBA
L_{max}	78.9	dBA
L_{min}	64.5	dBA

L_{1}	77.5	dBA
L_{5}	76.3	dBA
L_{10}	75.2	dBA
L_{50}	71.3	dBA
L_{90}	67.2	dBA
L_{95}	66.4	dBA
L_{99}	64.9	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_{1} (dB)	L_{10} (dB)
8	65.2	71.8	60.1	69.6	67.3
16	68.4	73.7	63.5	72.0	70.2
31.5	70.8	76.0	66.8	75.6	72.4
63	73.1	78.9	66.7	78.1	76.0
125	74.7	78.8	70.6	78.7	76.7
250	73.6	79.2	65.3	78.3	76.0
500	67.8	74.1	57.3	73.6	71.0
1000	66.2	73.5	57.3	72.3	69.3
2000	64.5	72.9	54.7	70.7	67.9
4000	60.7	71.4	47.3	68.6	64.9
8000	55.5	64.8	---	63.8	60.1
16000	46.3	56.2	---	55.4	51.3
A	72.2	78.9	64.5	77.5	75.2
L	80.5	83.7	76.5	---	---

Location:	Bronx Scrap Yard
Description of Event:	Dumping Light Iron On Ground
Start Time:	11:00:12 AM
Elapsed Time:	0:02:03
Distance:	40 Feet
File #	6

L_{eq}	62.3	dBA
L_{max}	77.3	dBA
L_{min}	50.8	dBA

L_1	75.1	dBA
L_5	67.2	dBA
L_{10}	63.2	dBA
L_{50}	56.6	dBA
L_{90}	53.1	dBA
L_{95}	52.3	dBA
L_{99}	51.4	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	66.6	74.7	60.9	73.0	69.0
16	70.1	77.4	65.0	75.6	73.0
31.5	74.2	81.7	67.5	80.6	77.6
63	74.7	84.4	66.2	82.8	79.1
125	71.3	88.7	57.8	85.7	68.3
250	60.1	74.3	48.3	73.1	62.2
500	56.6	70.7	46.3	68.8	59.2
1000	55.3	70.3	43.7	68.2	56.7
2000	53.9	69.4	41.1	65.9	54.5
4000	53.0	69.5	37.8	65.9	53.4
8000	52.5	68.9	---	66.1	52.5
16000	47.4	63.4	---	61.5	47.0
A	62.3	77.3	50.8	75.1	63.2
L	79.3	90.2	73.4	---	---

Location: Bronx Scrap Yard
Description of Event: Magnetic Crane Working Scrap Metal Pile
Start Time: 11:34:55 AM
Elapsed Time: 0:02:46
Distance: 43 Feet
File # 7

L_{eq}	75.3	dBA
L_{max}	79.8	dBA
L_{min}	71.3	dBA

L_1	78.7	dBA
L_5	77.5	dBA
L_{10}	76.9	dBA
L_{50}	75.2	dBA
L_{90}	72.7	dBA
L_{95}	72.2	dBA
L_{99}	71.8	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	63.9	70.3	58.5	69.3	65.9
16	67.0	72.7	62.1	71.9	68.9
31.5	69.9	74.8	66.4	72.9	71.5
63	82.7	87.7	73.8	87.3	85.5
125	80.4	83.3	77.4	82.9	82.0
250	76.2	79.4	70.2	79.5	78.2
500	73.4	77.0	68.0	76.8	75.5
1000	68.5	73.3	64.4	72.0	70.4
2000	65.5	72.8	60.7	71.4	67.6
4000	63.4	73.7	55.9	71.8	66.0
8000	59.6	73.0	47.7	69.1	62.4
16000	56.1	66.4	36.7	65.5	61.5
A	75.3	79.8	71.3	78.7	76.9
L	86.1	89.6	82.0	---	---

Location: Bronx Scrap Yard
Description of Event: Front End Loader Working Scrap Metal Pile
Start Time: 12:02:44 PM
Elapsed Time: 0:00:54
Distance: 50 Feet
File # 10

L_{eq}	76.0	dBA
L_{max}	80.8	dBA
L_{min}	60.7	dBA

L_1	80.5	dBA
L_5	79.9	dBA
L_{10}	79.4	dBA
L_{50}	75.5	dBA
L_{90}	68.2	dBA
L_{95}	64.5	dBA
L_{99}	61.1	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	65.6	74.8	58.7	74.7	67.6
16	70.3	78.3	65.4	78.2	72.5
31.5	75.2	79.8	73.4	79.7	76.4
63	77.2	81.5	70.4	81.7	80.4
125	72.0	77.1	61.6	76.9	75.2
250	70.5	76.4	57.8	75.9	73.7
500	65.8	70.5	55.4	70.4	68.7
1000	73.3	79.2	56.1	78.8	77.3
2000	69.0	76.6	53.9	75.5	71.9
4000	62.2	69.1	47.9	68.1	65.4
8000	55.0	63.6	40.1	63.1	58.5
16000	44.6	54.9	---	54.1	47.2
A	76.0	80.8	60.7	80.5	79.4
L	82.0	84.6	77.1	---	---

Location: Bronx Scrap Yard
Description of Event: Large Tractor Trailer Tipping Scrap Metal
Start Time: 12:15:13 PM
Elapsed Time: 0:01:18
Distance: 49 Feet
File # 11

L_{eq}	80.2	dBA
L_{max}	95.6	dBA
L_{min}	65.2	dBA

L_1	94.5	dBA
L_5	85.0	dBA
L_{10}	79.7	dBA
L_{50}	66.6	dBA
L_{90}	65.7	dBA
L_{95}	65.5	dBA
L_{99}	65.3	dBA

Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	67.0	74.4	59.0	73.8	69.6
16	69.7	77.4	66.0	76.9	72.2
31.5	79.9	85.3	71.9	84.5	81.4
63	77.5	91.7	69.0	90.5	78.9
125	76.1	90.2	67.6	89.0	78.8
250	74.4	89.5	62.6	88.0	75.9
500	74.2	89.3	60.3	88.2	75.2
1000	74.7	90.2	59.7	89.2	73.9
2000	74.6	90.2	57.6	89.0	73.7
4000	71.1	86.3	54.3	85.2	72.1
8000	64.7	79.6	46.8	78.5	65.9
16000	53.3	68.2	---	67.0	55.0
A	80.2	95.6	65.2	94.5	79.7
L	85.3	98.6	79.0	---	---

Location:	Bronx Scrap Yard
Description of Event:	Crane Working Scrap Metal Pile
Start Time:	12:24:21 PM
Elapsed Time:	0:02:48
Distance:	64 Feet
File #	13

L_{eq}	70.2	dBA
L_{max}	76.0	dBA
L_{min}	64.0	dBA

L_1	74.9	dBA
L_5	74.1	dBA
L_{10}	73.2	dBA
L_{50}	69.0	dBA
L_{90}	66.8	dBA
L_{95}	66.0	dBA
L_{99}	64.2	dBA

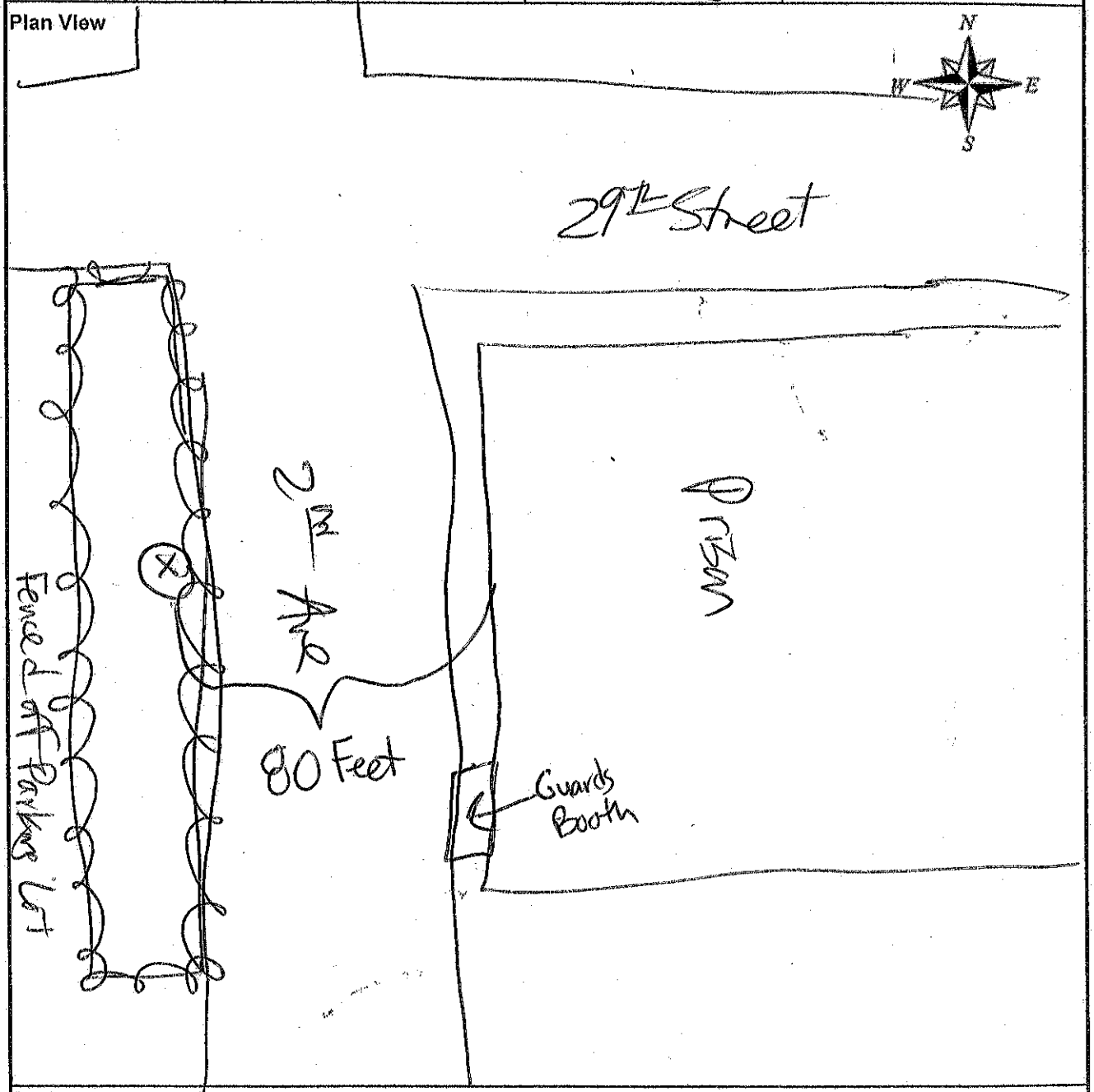
Frequency (Hz)	L_{eq} (dB)	L_{max} (dB)	L_{min} (dB)	L_1 (dB)	L_{10} (dB)
8	65.8	75.2	58.9	73.5	68.2
16	68.7	73.6	65.4	72.5	70.4
31.5	71.1	75.1	68.6	74.0	72.0
63	78.3	85.6	71.0	82.9	81.4
125	69.2	74.4	65.1	73.6	70.8
250	65.3	70.5	61.4	69.3	66.8
500	64.9	72.0	57.9	70.9	68.0
1000	64.5	70.9	59.1	69.7	67.6
2000	63.7	69.7	55.9	68.9	67.0
4000	61.1	67.0	50.5	66.4	64.4
8000	58.1	65.1	44.0	63.7	61.6
16000	45.6	56.6	30.7	54.4	49.6
A	70.2	76.0	64.0	74.9	73.2
L	80.6	86.3	76.5	---	---

FIELD NOISE MONITORING DATA SHEET
AKRF Inc.

Page / of /

Project Name	Hugo New Recycling Facility	Date	11/20/06-11/21/06
Location	Prison on 2nd Ave b/t 29th/30th	Receptor #	2
Equipment	B&K 2260 Investigator	Observer:	Benjamin
Tem: 45°F	Wind: ≤5 MPH	Humidity: N/A	
Start Time: 5 PM-15h	Ending Time:	Meas. File #: 1	

Plan View



Note: Spoke with guard @ prison, he said I could park in the fenced lot, The car would be safe, no tickets, etc. His name was Tip.
☆ Noticed clock on meter is not set to Daylight Savings Time (1 Hour Fast) ☆

Receptor 1 (Correctional Facility), Continuous Measurement Results (in dBA)

Start Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}	L_{min}	L_{max}
5:00:00 PM	62.5	70.8	63.9	59.2	57.7	56.5	89.0
6:00:00 PM	60.1	67.3	61.5	58.8	57.8	56.7	74.4
7:00:00 PM	63.1	70.5	64.3	62.3	60.6	58.0	76.4
8:00:00 PM	61.4	66.6	64.1	59.9	58.4	57.1	74.5
9:00:00 PM	58.6	64.8	59.5	57.8	57.1	56.2	73.1
10:00:00 PM	58.4	65.6	59.6	57.2	56.6	55.8	71.5
11:00:00 PM	58.1	63.1	58.9	57.7	56.9	56.0	68.0
12:00:00 AM	57.1	60.2	57.8	56.8	56.1	55.0	68.5
1:00:00 AM	60.0	67.1	60.3	59.4	57.5	55.4	76.0
2:00:00 AM	59.6	60.9	60.0	59.5	59.0	58.4	64.8
3:00:00 AM	59.7	61.7	60.2	59.6	59.1	58.2	67.2
4:00:00 AM	65.1	71.8	70.1	60.7	59.3	58.5	74.2
5:00:00 AM	62.5	71.3	63.4	60.6	59.3	58.6	80.6
6:00:00 AM	64.5	72.8	66.5	61.7	60.3	58.6	78.6
7:00:00 AM	70.5	74.3	72.5	71.3	63.6	59.3	77.8
8:00:00 AM	64.8	71.5	67.4	63.1	61.2	59.3	81.5
9:00:00 AM	67.0	74.8	70.4	64.6	61.9	59.1	81.2
10:00:00 AM	63.7	72.9	65.9	61.4	60.0	58.8	78.2
11:00:00 AM	62.9	69.4	64.2	62.0	60.7	59.6	79.2
12:00:00 PM	62.1	69.5	64.2	60.7	58.9	57.7	78.0
1:00:00 PM	62.4	70.4	64.6	60.6	59.2	57.9	78.8
2:00:00 PM	63.1	73.0	65.0	60.3	58.8	56.8	79.5
3:00:00 PM	62.5	70.3	64.3	60.4	59.1	58.1	80.9
4:00:00 PM	65.0	75.1	67.0	61.7	59.0	57.8	83.5
5:00:00 PM	63.3	73.4	64.6	60.2	59.1	58.0	82.0
6:00:00 PM	60.0	67.0	61.3	59.0	57.3	56.4	75.9
7:00:00 PM	60.2	67.6	60.0	58.4	57.5	56.7	82.0
8:00:00 PM	59.0	62.4	59.5	58.7	58.1	57.2	70.8
9:00:00 PM	58.7	62.8	59.4	58.4	57.8	57.1	69.7

Note: Field measurements were performed by AKRF, Inc. on November 20 and 21, 2006.

Screening Analysis for 39th Street between 3rd and 4th Avenues

HOUR		Existing					No Build					Increase in Leq (NB vs. Ex)	Build					Increase in Leq (B vs. NB)
		Auto	Medium Truck	Heavy Truck	Bus	PCE	Auto	Medium Truck	Heavy Truck	Bus	PCE	dBA	Auto	Medium Truck	Heavy Truck	Bus	PCE	dBA
Mid-1		70	9	5	8	564	73	9	5	9	584	0.2	93	9	5	9	604	0.1
1-2		40	5	3	5	323	42	5	3	5	335	0.2	42	5	3	5	335	0.0
2-3		30	4	2	4	237	31	4	2	4	245	0.2	31	4	2	4	245	0.0
3-4		24	3	2	3	192	25	3	2	3	198	0.2	25	3	2	3	198	0.0
4-5		27	4	2	3	217	28	4	2	3	225	0.2	28	4	2	3	225	0.0
5-6		38	5	3	5	303	39	5	3	5	314	0.2	39	5	3	5	314	0.0
6-7	am	173	22	12	21	1383	179	23	12	22	1432	0.2	179	23	12	22	1432	0.0
7-8		303	39	20	36	2427	314	41	21	38	2513	0.2	347	41	23	38	2641	0.2
8-9		385	50	26	46	3081	399	52	27	48	3191	0.2	414	52	29	48	3301	0.1
9-10		405	53	27	49	3246	420	54	28	51	3361	0.2	422	54	29	51	3379	0.0
10-11		373	51	22	26	2553	386	53	23	27	2645	0.2	388	53	44	27	3650	1.4
11-12		320	44	19	23	2190	331	45	20	23	2269	0.2	333	45	44	23	3415	1.8
12-1		308	42	18	22	2110	319	44	19	23	2186	0.2	324	44	47	23	3507	2.1
1-2		295	40	18	21	2019	305	42	18	22	2092	0.2	311	42	31	22	2709	1.1
2-3		295	40	18	21	2018	305	42	18	22	2091	0.2	316	42	31	22	2713	1.1
3-4		323	44	19	23	2213	335	46	20	24	2293	0.2	365	46	26	24	2605	0.6
4-5		380	52	23	27	2602	393	54	23	28	2696	0.2	416	54	27	28	2907	0.3
5-6		436	60	26	31	2987	452	62	27	32	3095	0.2	452	62	31	32	3283	0.3
6-7	pm	416	57	25	29	2851	431	59	26	31	2954	0.2	431	59	30	31	3142	0.3
7-8		323	44	19	23	2214	335	46	20	24	2294	0.2	335	46	26	24	2576	0.5
8-9		208	28	12	15	1428	216	30	13	15	1480	0.2	216	30	20	15	1809	0.9
9-10		135	18	8	10	926	140	19	8	10	959	0.2	140	19	17	10	1382	1.6
10-11		105	14	6	7	717	108	15	6	8	743	0.2	108	15	8	8	837	0.5
11-Mid		91	12	5	6	621	94	13	6	7	643	0.2	99	13	7	7	695	0.3

Screening Analysis for 2nd Avenue between 29th and 30th Streets

HOUR		Existing					No Build					Increase in Leq (NB vs. Ex)	Build					Increase in Leq (B vs. NB)
		Auto	Medium Truck	Heavy Truck	Bus	PCE	Auto	Medium Truck	Heavy Truck	Bus	PCE	dBA	Auto	Medium Truck	Heavy Truck	Bus	PCE	dBA
Mid-1		80	5	4	3	387	87	6	4	4	429	0.4	127	6	4	4	469	0.4
1-2		46	3	2	2	221	50	4	2	2	246	0.4	50	4	2	2	246	0.0
2-3		33	2	2	1	162	36	3	2	2	180	0.4	36	3	2	2	180	0.0
3-4		27	2	1	1	131	30	2	1	1	146	0.4	30	2	1	1	146	0.0
4-5		31	2	1	1	149	33	2	2	1	165	0.4	33	2	2	1	165	0.0
5-6		43	3	2	2	208	47	3	2	2	231	0.4	47	3	2	2	231	0.0
6-7	am	195	13	9	9	948	213	15	10	10	1051	0.4	213	15	10	10	1051	0.0
7-8		343	23	16	15	1664	374	26	18	17	1844	0.4	441	26	22	17	2099	0.6
8-9		435	30	20	19	2112	475	34	22	21	2342	0.4	506	34	26	21	2561	0.4
9-10		458	31	21	20	2225	500	35	24	22	2467	0.4	505	35	24	22	2503	0.1
10-11		585	71	41	17	3754	629	76	44	18	4033	0.3	634	76	87	18	6043	1.8
11-12		502	61	35	14	3220	540	66	38	16	3460	0.3	544	66	87	16	5752	2.2
12-1		483	59	34	14	3102	520	63	37	15	3334	0.3	531	63	93	15	5977	2.5
1-2		463	56	33	13	2969	498	60	35	14	3191	0.3	509	60	61	14	4424	1.4
2-3		462	56	33	13	2968	497	60	35	14	3189	0.3	518	60	61	14	4432	1.4
3-4		507	61	36	15	3254	545	66	38	16	3497	0.3	606	66	50	16	4122	0.7
4-5		596	72	42	17	3826	641	78	45	19	4112	0.3	687	78	53	19	4534	0.4
5-6		684	83	48	20	4392	736	89	52	21	4720	0.3	736	89	60	21	5096	0.3
6-7	pm	653	79	46	19	4193	703	85	50	20	4505	0.3	703	85	58	20	4881	0.3
7-8		507	62	36	15	3256	546	66	38	16	3498	0.3	546	66	50	16	4062	0.6
8-9		327	40	23	9	2100	352	43	25	10	2257	0.3	352	43	39	10	2915	1.1
9-10		212	26	15	6	1361	228	28	16	7	1462	0.3	228	28	34	7	2308	2.0
10-11		164	20	12	5	1055	177	21	12	5	1133	0.3	177	21	16	5	1321	0.7
11-Mid		142	17	10	4	912	153	19	11	4	981	0.3	163	19	13	4	1085	0.4

Existing TNM Results at Correctional Facility Receptor

Receptor Description	TNM Receptor ID	Existing L_{eq} (in dBA)														
		Measured Mid-1 AM	TNM Mid-1 AM	Adj Factor	Measured 1-2 AM	TNM 1-2 AM	Adj Factor	Measured 2-3 AM	TNM 2-3 AM	Adj Factor	Measured 3-4 AM	TNM 3-4 AM	Adj Factor	Measured 4-5 AM	TNM 4-5 AM	Adj Factor
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	57.1	55.6	1.5	60.0	52.4	7.6	59.6	50.8	8.8	59.7	49.4	10.3	65.1	49.6	15.5

Receptor Description	TNM Receptor ID	Existing L_{eq} (in dBA)														
		Measured 5-6 AM	TNM 5-6 AM	Adj Factor	Measured 6-7 AM	TNM 6-7 AM	Adj Factor	Measured 7-8 AM	TNM 7-8 AM	Adj Factor	Measured 8-9 AM	TNM 8-9 AM	Adj Factor	Measured 9-10 AM	TNM 9-10 AM	Adj Factor
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	62.5	52.3	10.2	64.5	59.4	5.1	70.5	61.7	8.8	64.8	62.8	2.0	67.0	63.0	4.0

Receptor Description	TNM Receptor ID	Existing L_{eq} (in dBA)														
		Measured 10-11 AM	TNM 10-11 AM	Adj Factor	Measured 11 AM - 12 PM	TNM 11 AM - 12 PM	Adj Factor	Measured 12-1 PM	TNM 12-1 PM	Adj Factor	Measured 1-2 PM	TNM 1-2 PM	Adj Factor	Measured 2-3 PM	TNM 2-3 PM	Adj Factor
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	63.7	65.2	-1.5	62.9	64.6	-1.7	62.1	64.5	-2.4	62.4	64.2	-1.8	63.1	64.2	-1.1

Receptor Description	TNM Receptor ID	Existing L_{eq} (in dBA)														
		Measured 3-4 PM	TNM 3-4 PM	Adj Factor	Measured 4-5 PM	TNM 4-5 PM	Adj Factor	Measured 5-6 PM	TNM 5-6 PM	Adj Factor	Measured 6-7 PM	TNM 6-7 PM	Adj Factor	Measured 7-8 PM	TNM 7-8 PM	Adj Factor
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	62.5	64.6	-2.1	65.0	65.3	-0.3	63.3	65.9	-2.6	60.1	65.7	-5.6	63.1	64.7	-1.6

Receptor Description	TNM Receptor ID	Existing L_{eq} (in dBA)											
		Measured 8-9 PM	TNM 8-9 PM	Adj Factor	Measured 9-10 PM	TNM 9-10 PM	Adj Factor	Measured 10-11 PM	TNM 10-11 PM	Adj Factor	Measured 11 PM - Mid	TNM 11 PM - Mid	Adj Factor
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	61.4	62.7	-1.3	58.6	60.8	-2.2	58.4	59.8	-1.4	58.1	59.1	-1.0

No Build 2009 TNM Results at Correctional Facility Receptor

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM Mid-1 AM	Adj. No Build TNM Mid-1 AM	Increase Over Existing	Existing TNM	No Build TNM 1-2 AM	Adj. No Build TNM 1-2 AM	Increase Over Existing	Existing TNM	No Build TNM 2-3 AM	Adj. No Build TNM 2-3 AM	Increase Over Existing	Existing TNM	No Build TNM 3-4 AM	Adj. No Build TNM 3-4 AM	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	57.1	56.0	57.5	0.4	60.0	52.8	60.4	0.4	59.6	52.2	61.0	1.4	59.7	49.6	59.9	0.2

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM 4-5 AM	Adj. No Build TNM 4-5 AM	Increase Over Existing	Existing TNM	No Build TNM 5-6 AM	Adj. No Build TNM 5-6 AM	Increase Over Existing	Existing TNM	No Build TNM 6-7 AM	Adj. No Build TNM 6-7 AM	Increase Over Existing	Existing TNM	No Build TNM 7-8 AM	Adj. No Build TNM 7-8 AM	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	65.1	50.8	66.3	1.2	62.5	52.4	62.6	0.1	64.5	59.9	65.0	0.5	70.5	62.2	71.0	0.5

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM 8-9 AM	Adj. No Build TNM 8-9 AM	Increase Over Existing	Existing TNM	No Build TNM 9-10 AM	Adj. No Build TNM 9-10 AM	Increase Over Existing	Existing TNM	No Build TNM 10-11 AM	Adj. No Build TNM 10-11 AM	Increase Over Existing	Existing TNM	No Build TNM 11AM - 12PM	Adj. No Build TNM 11AM - 12PM	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	64.8	63.2	65.2	0.4	67.0	63.5	67.5	0.5	63.7	65.6	64.1	0.4	62.9	64.9	63.2	0.3

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM 12 - 1 PM	Adj. No Build TNM 12 - 1 PM	Increase Over Existing	Existing TNM	No Build TNM 1 - 2 PM	Adj. No Build TNM 1 - 2 PM	Increase Over Existing	Existing TNM	No Build TNM 2-3 PM	Adj. No Build TNM 2-3 PM	Increase Over Existing	Existing TNM	No Build TNM 3-4 PM	Adj. No Build TNM 3-4 PM	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	62.1	64.7	62.3	0.2	62.4	64.6	62.8	0.4	63.1	64.6	63.5	0.4	62.5	65.0	62.9	0.4

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM 4-5 PM	Adj. No Build TNM 4-5 PM	Increase Over Existing	Existing TNM	No Build TNM 5-6 PM	Adj. No Build TNM 5-6 PM	Increase Over Existing	Existing TNM	No Build TNM 6-7 PM	Adj. No Build TNM 6-7 PM	Increase Over Existing	Existing TNM	No Build TNM 7-8 PM	Adj. No Build TNM 7-8 PM	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	65.0	65.7	65.4	0.4	63.3	66.3	63.7	0.4	60.1	66.1	60.5	0.4	63.1	65.0	63.4	0.3

Receptor Description	TNM Receptor ID	No Build L_{eq} (in dBA)															
		Existing TNM	No Build TNM 8-9 PM	Adj. No Build TNM 8-9 PM	Increase Over Existing	Existing TNM	No Build TNM 9-10 PM	Adj. No Build TNM 9-10 PM	Increase Over Existing	Existing TNM	No Build TNM 10-11 PM	Adj. No Build TNM 10-11 PM	Increase Over Existing	Existing TNM	No Build TNM 11 PM - Mid	Adj. No Build TNM 11 PM - Mid	Increase Over Existing
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	61.4	63.1	61.8	0.4	58.6	61.2	59.0	0.4	58.4	59.9	58.5	0.1	58.1	59.5	58.5	0.4

Build 2009 TNM Results at Correctional Facility Receptor

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM Mid-1 AM	Adj. Build TNM Mid-1 AM	Increase Over No Build	No Build TNM	Build TNM 1-2 AM	Adj. Build TNM 1-2 AM	Increase Over No Build	No Build TNM	Build TNM 2-3 AM	Adj. Build TNM 2-3 AM	Increase Over No Build	No Build TNM	Build TNM 3-4 AM	Adj. Build TNM 3-4 AM	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	57.5	56.0	57.5	0.0	60.4	52.8	60.4	0.0	61.0	52.2	61.0	0.0	59.9	49.6	59.9	0.0

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM 4-5 AM	Adj. Build TNM 4-5 AM	Increase Over No Build	No Build TNM	Build TNM 5-6 AM	Adj. Build TNM 5-6 AM	Increase Over No Build	No Build TNM	Build TNM 6-7 AM	Adj. Build TNM 6-7 AM	Increase Over No Build	No Build TNM	Build TNM 7-8 AM	Adj. Build TNM 7-8 AM	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	66.3	50.8	66.3	0.0	62.6	52.4	62.6	0.0	65.0	59.9	65.0	0.0	71.0	62.5	71.3	0.3

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM 8-9 AM	Adj. Build TNM 8-9 AM	Increase Over No Build	No Build TNM	Build TNM 9-10 AM	Adj. Build TNM 9-10 AM	Increase Over No Build	No Build TNM	Build TNM 10-11 AM	Adj. Build TNM 10-11 AM	Increase Over No Build	No Build TNM	Build TNM 11AM - 12PM	Adj. Build TNM 11AM - 12PM	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	65.2	63.4	65.4	0.2	67.5	63.6	67.6	0.1	64.1	67.0	65.5	1.4	63.2	66.6	64.9	1.7

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM 12 - 1 PM	Adj. Build TNM 12 - 1 PM	Increase Over No Build	No Build TNM	Build TNM 1-2 PM	Adj. Build TNM 1-2 PM	Increase Over No Build	No Build TNM	Build TNM 2-3 PM	Adj. Build TNM 2-3 PM	Increase Over No Build	No Build TNM	Build TNM 3-4 PM	Adj. Build TNM 3-4 PM	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	62.3	66.6	64.2	1.9	62.8	65.5	63.7	0.9	63.5	65.5	64.4	0.9	62.9	65.4	63.3	0.4

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM 4-5 PM	Adj. Build TNM 4-5 PM	Increase Over No Build	No Build TNM	Build TNM 5-6 PM	Adj. Build TNM 5-6 PM	Increase Over No Build	No Build TNM	Build TNM 6-7 PM	Adj. Build TNM 6-7 PM	Increase Over No Build	No Build TNM	Build TNM 7-8 PM	Adj. Build TNM 7-8 PM	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	65.4	65.9	65.6	0.2	63.7	66.5	63.9	0.2	60.5	66.3	60.7	0.2	63.4	65.3	63.7	0.3

Receptor Description	TNM Receptor ID	Build L_{eq} (in dBA)															
		No Build TNM	Build TNM 8-9 PM	Adj. Build TNM 8-9 PM	Increase Over No Build	No Build TNM	Build TNM 9-10 PM	Adj. Build TNM 9-10 PM	Increase Over No Build	No Build TNM	Build TNM 10-11 PM	Adj. Build TNM 10-11 PM	Increase Over No Build	No Build TNM	Build TNM 11 PM - Mid	Adj. Build TNM 11 PM - Mid	Increase Over No Build
Continuous Measurement @ Correctional Facility	R1(24 Hour Continuous Measurement)	61.8	63.8	62.5	0.7	59.0	62.6	60.4	1.4	58.5	60.3	58.9	0.4	58.5	59.7	58.7	0.2

Calculations of Prison Wall TL to assess with regard to NYC Noise Regulation. Assumes 2x2 window, closed.

Awt

Hz		50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300
Wall TL	Brick Construction	33	31	31	26	29	38	44	40	42	50	55	57	61	64	67	69	71	70	72	77	82	
Closed Window TL	TL Laminated 1/4 inch glass	0	0	0	30	35	42	43	42	38	31	38	37	35	37	40	40	40	39	39	41	42	0
Composite TL					26	29	38	44	40	42	42	49	48	47	49	52	52	52	51	51	53	54	
To get Octave TL																							
Assume 100 dB in each octave					95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	
Reduced by TL					69	66	57	51	55	53	53	46	47	48	46	43	43	43	44	44	42	41	
Add third octaves and subtract total from 100						29			42			46			49			52			53		

Assumed sizes	Wall Area	60
	2x2 window	4

	31.5	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Octave TL			29	42	46	49	52	53	
Noise Reduction			25	38	42	45	48	49	

NR=TL-10*log(.25+(Sw/R)

Sw radiating wall	64
R is room constant	30

live room of 500 ft.3

NYC Noise Code

Activity	Receiver	Description	Octave Band								
			31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
			dB	dB	dB	dB	dB	dB	dB	dB	dB
Crane Loading Scrap Metal Into Barge	NYC Noise Code	L_1 Level	49.6	49.5	48	48.4	42.4	39.2	35.8	25.6	-0.9
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	36.6	30.5	22.5	10.3	0.5	0.0	0.0	0.0	0.0
Truck Tipping Metal Operations	NYC Noise Code	L_1 Level	57.1	54.1	51.7	54.4	55.4	54.3	51.9	39.4	-0.4
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	44.1	35.1	26.2	16.3	13.5	9.1	3.8	0.0	0.0
Front End Loader Working Scrap Metal Pile	NYC Noise Code	L_1 Level	49.5	50.3	46.3	43.5	35.4	41.5	35.6	23.2	-11.6
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	36.5	31.3	20.8	5.4	0.0	0.0	0.0	0.0	0.0
Large Trailer Tipping Scrap Metal	NYC Noise Code	L_1 Level	54.9	59.5	55.6	54.9	54.5	54.1	50.4	38.9	2.6
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	41.9	40.5	30.1	16.8	12.6	8.9	2.3	0.0	0.0
Magnetic Crane Separating Scrap Metal Pile	NYC Noise Code	L_1 Level	40.6	54.5	49.7	45	39.8	33.1	30.3	27.9	-5.4
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	27.6	35.5	24.2	6.9	0.0	0.0	0.0	0.0	0.0
Truck Tipping Scrap Metal and Crane Working Metal	NYC Noise Code	L_1 Level	65.2	60.1	57.2	53.6	50.4	53.7	44.9	40.5	3.3
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	52.2	41.1	31.7	15.5	8.5	8.5	0.0	0.0	0.0
Crane Metal Operations	NYC Noise Code	L_1 Level	46.3	54.2	44.3	38.6	38.5	34.8	32	26.6	-6.7
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	33.3	35.2	18.8	0.5	0.0	0.0	0.0	0.0	0.0
Non-Metal Operations - All Operations Simultaneously Running	NYC Noise Code	L_1 Level	58.1	56.7	51	48.2	39.8	41.6	35.2	18.7	-26.1
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	45.1	37.7	25.5	10.1	0.0	0.0	0.0	0.0	0.0
Non Metal Tipping Operations	NYC Noise Code	L_1 Level	47.6	46.3	40	36.6	32.2	38.4	29.3	10.7	-32.4
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	34.6	27.3	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Off Road Truck Tipping	NYC Noise Code	L_1 Level	37.7	39.5	37.1	35.7	28.3	32.7	24.6	5.9	-45.1
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	24.7	20.5	11.6	0.0	0.0	0.0	0.0	0.0	0.0
Sanitation Truck Tipping	NYC Noise Code	L_1 Level	50	47.7	45.4	37	30.6	35	32.8	17.2	-28.8
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	37.0	28.7	19.9	0.0	0.0	0.0	0.0	0.0	0.0
Crane and FEL and Trommel	NYC Noise Code	L_1 Level	52.2	55	47.8	46.9	37.2	33.3	23.4	7.5	-33
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	39.2	36.0	22.3	8.8	0.0	0.0	0.0	0.0	0.0
Loading Plastics From Barge To Truck	NYC Noise Code	L_1 Level	55	45	42	35.7	28.4	26.2	18.1	-1.5	-48.3
		Building Attenuation Level	13.0	19.0	25.5	38.1	41.9	45.2	48.1	49.0	55.0
		Resulting L_1 Level	42.0	26.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0

Name	ID	Type	Octave Spectrum, Hz, in dB									A-Wt.	Linear	Data Source
			31.5	63	125	250	500	1000	2000	4000	8000			
Non Metal Tipping Operations	Non_Metal_Tip	Lw	116	118	115	115	114	115	111	106	105	118.6	123.8	Field Measured Data on 10-25-06
Off Road Truck Tipping	OffRoadTruckTip	Lw	107	112	113	115	111	110	107	102	93	114.7	120.1	Field Measured Data on 10-25-06
Sanitation Truck Tipping	Sani_Truck_Tip	Lw	119	120	121	116	113	112	115	113	109	120.3	126.4	Field Measured Data on 10-25-06
Loading Plastics From Barge To Truck	Pl_BargetoTruck	Lw	125	118	118	115	111	110	107	100	94	114.8	127	Field Measured Data on 10-25-06
Crane and FEL and Trommel	Miscellaneous	Lw	122	128	124	121	115	115	111	108	107	120	131	Field Measured Data on 10-25-06
Truck Tipping Metal Operations	Metal_Tip	Lw	120	119	119	120	122	122	122	118	108	127.4	129.6	Field Measured Data on 10-25-06
Truck Tipping Scrap Metal and Crane Working Metal	MetalTruckCrane	Lw	128	124	121	119	118	123	117	115	108	125.5	131.6	Field Measured Data on 10-25-06
Loading Light Iron Into Barge	Crane_LightIron	Lw	113	115	116	115	111	109	108	106	101	115.3	121.9	Field Measured Data on 5-10-07
Magnetic Crane Working Metal	MagCraneMetal_Q	Lw	103	118	113	110	107	102	102	102	99	110.3	120.2	Field Measured Data on 5-10-07
Front End Loader Working Scrap Metal Pile	FELWrkingMetal	Lw	111	113	109	108	102	110	107	100	95	113	118.1	Field Measured Data on 5-10-07
Large Tractor Trailor Tipping Scrap Metal	TractorTrMetal	Lw	116	122	120	119	120	121	120	117	110	125.9	128.8	Field Measured Data on 5-10-07
Crane Working Scrap Metal Pile	CraneScrpMetal	Lw	108	117	107	103	105	103	103	100	97	109.2	118.6	Field Measured Data on 5-10-07
Dumping Light Iron on Ground	DumpLightIron	Lw	110	113	115	103	99	98	96	96	96	105.4	118.2	Field Measured Data on 5-10-07

Non Metal Operations - All Operations Simultaneously Running

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	55.7	80	-	56.9	80	-	54.6	75	-	51.2	70	-	46.7	64	-	45.5	58	-	40.1	53	-	22.7	49	-	-32.3	46	-
Receiver_02	R_02	55.7	80	-	57	80	-	55.1	75	-	51	70	-	46.6	64	-	45.4	58	-	39.8	53	-	22.2	49	-	-33.6	46	-
Receiver_03	R_03	55	80	-	56.3	80	-	54	75	-	50.5	70	-	46.1	64	-	45	58	-	39.5	53	-	21.5	49	-	-35.6	46	-
Receiver_04	R_04	54.5	80	-	55.8	80	-	53.5	75	-	50.1	70	-	48.3	64	-	47.1	58	-	41.4	53	-	22.6	49	-	-38.1	46	-
Receiver_05	R_05	55	80	-	56.3	80	-	54.9	75	-	51.4	70	-	47.1	64	-	45.5	58	-	42.2	53	-	22.8	49	-	-42.3	46	-
Receiver_06	R_06	57.1	80	-	60	80	-	58.5	75	-	55.6	70	-	50.8	64	-	49.1	58	-	41.9	53	-	21.8	49	-	-41.4	46	-
Receiver_07	R_07	58.2	80	-	60.9	80	-	57.2	75	-	53.9	70	-	47.7	64	-	45.5	58	-	39.3	53	-	21.1	49	-	-30.1	46	-
Receiver_08	R_08	58.6	80	-	59.9	80	-	58.4	75	-	53.2	70	-	47.4	64	-	45.7	58	-	40.4	53	-	24.4	49	-	-23	46	-
Receiver_09	R_09	65.1	80	-	61	80	-	65.3	75	-	61.5	70	-	56.1	64	-	54.9	58	-	49.7	53	-	33.1	49	-	-14.3	46	-
Receiver_10	R_10	61.1	80	-	59.6	80	-	59.3	75	-	54.3	70	-	48.8	64	-	47	58	-	41.5	53	-	26.3	49	-	-9.4	46	-
Receiver_11	R_11	58.1	80	-	56.8	80	-	55	75	-	49.2	70	-	43.9	64	-	42	58	-	38	53	-	22.7	49	-	-11.5	46	-
Receiver_12	R_12	57.7	80	-	55.7	80	-	52.1	75	-	47.2	70	-	42.7	64	-	40.5	58	-	34.7	53	-	18.5	49	-	-17.4	46	-
Receiver_13	R_13	59.4	80	-	56.2	80	-	52.2	75	-	47.5	70	-	39.8	64	-	36	58	-	29.4	53	-	14.9	49	-	-16	46	-
Receiver_14	R_14	57.6	80	-	56.6	80	-	55	75	-	48	70	-	40.5	64	-	37.2	58	-	30.9	53	-	20.6	49	-	-9.3	46	-
Receiver_15	R_15	58.2	80	-	59.1	80	-	58.2	75	-	50.7	70	-	43.9	64	-	44	58	-	38.7	53	-	28.8	49	-	2.1	46	-
Receiver_16	R_16	50.4	80	-	49.9	80	-	48.6	75	-	39	70	-	31.7	64	-	35.1	58	-	29.2	53	-	16.1	49	-	-20.3	46	-
Receiver_Prison	R_P	58.6	80	-	58	80	-	55.9	75	-	49.1	70	-	41.7	64	-	42.5	58	-	36.6	53	-	24.6	49	-	0	46	-

Crane Loading Scrap Metal Into Barge

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	41.6	80	-	43.6	80	-	44.5	75	-	43.2	70	-	38.9	64	-	36.3	58	-	32.7	53	-	20.3	49	-	-33.1	46	-
Receiver_02	R_02	41.7	80	-	43.7	80	-	44.5	75	-	43.2	70	-	38.7	64	-	35.7	58	-	31.4	53	-	16.5	49	-	-36	46	-
Receiver_03	R_03	41.6	80	-	43.6	80	-	44.5	75	-	43.3	70	-	39	64	-	36.5	58	-	33.4	53	-	20.5	49	-	-32.8	46	-
Receiver_04	R_04	41.4	80	-	43.4	80	-	44.3	75	-	43.1	70	-	38.9	64	-	36.7	58	-	34.4	53	-	21.6	49	-	-34.4	46	-
Receiver_05	R_05	41	80	-	43	80	-	43.9	75	-	47.1	70	-	42.9	64	-	40.9	58	-	38.6	53	-	22.1	49	-	-36.5	46	-
Receiver_06	R_06	41.5	80	-	43.5	80	-	46.6	75	-	45.4	70	-	41.2	64	-	39	58	-	36.6	53	-	21.1	49	-	-34.4	46	-
Receiver_07	R_07	43	80	-	45	80	-	46	75	-	45.1	70	-	41.3	64	-	40.4	58	-	37.9	53	-	24.5	49	-	-22	46	-
Receiver_08	R_08	53.8	80	-	55.8	80	-	57	75	-	55.7	70	-	51.4	64	-	48.6	58	-	45.1	53	-	33.2	49	-	-7.9	46	-
Receiver_09	R_09	45.7	80	-	47.7	80	-	48.6	75	-	50	70	-	45.8	64	-	43.5	58	-	41.4	53	-	31.5	49	-	-5.4	46	-
Receiver_10	R_10	46.9	80	-	51.4	80	-	52.3	75	-	51.3	70	-	47.3	64	-	45.4	58	-	44.2	53	-	36.3	49	-	3.8	46	-
Receiver_11	R_11	48	80	-	50	80	-	51.1	75	-	51.8	70	-	47.9	64	-	46.3	58	-	45.9	53	-	37.3	49	-	8.3	46	-
Receiver_12	R_12	48.5	80	-	50.5	80	-	51.5	75	-	50.3	70	-	46.1	64	-	43.8	58	-	41.4	53	-	33.8	49	-	8.1	46	-
Receiver_13	R_13	52.8	80	-	54.6	80	-	55.4	75	-	54.2	70	-	49.9	64	-	47.2	58	-	44.4	53	-	35.7	49	-	7.5	46	-
Receiver_14	R_14	50.7	80	-	50.9	80	-	49.8	75	-	46.2	70	-	39.4	64	-	34.3	58	-	29	53	-	18	49	-	-13.6	46	-
Receiver_15	R_15	49.1	80	-	48.9	80	-	50.6	75	-	47.9	70	-	42	64	-	38.9	58	-	35.9	53	-	26.2	49	-	-8.2	46	-
Receiver_16	R_16	41	80	-	40.2	80	-	44.9	75	-	41.1	70	-	33.6	64	-	28.9	58	-	23.3	53	-	10.2	49	-	-29.4	46	-
Receiver_Prison	R_P	49.6	80	-	49.5	80	-	48	75	-	48.4	70	-	42.4	64	-	39.2	58	-	35.8	53	-	25.6	49	-	0	46	-

Truck Tipping Metal Operations

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	56.5	80	-	55.4	80	-	55.3	75	-	55.9	70	-	57.3	64	-	56.3	58	-	52.6	53	-	34.6	49	-	-26.6	46	-
Receiver_02	R_02	54.3	80	-	53.2	80	-	53.1	75	-	53.7	70	-	55.2	64	-	54.1	58	-	50.5	53	-	32.7	49	-	-27.6	46	-
Receiver_03	R_03	48.8	80	-	47.8	80	-	47.6	75	-	48.2	70	-	49.7	64	-	48.7	58	-	45.2	53	-	27.6	49	-	-32.6	46	-
Receiver_04	R_04	51.2	80	-	50.1	80	-	50	75	-	50.6	70	-	52	64	-	51	58	-	47.3	53	-	28.9	49	-	-33.2	46	-
Receiver_05	R_05	48.2	80	-	47.2	80	-	47.1	75	-	50.3	70	-	51.8	64	-	50.8	58	-	47	53	-	28.2	49	-	-35.7	46	-
Receiver_06	R_06	48.7	80	-	47.7	80	-	49.8	75	-	50.4	70	-	51.9	64	-	50.8	58	-	47.1	53	-	28.8	49	-	-32	46	-
Receiver_07	R_07	55	80	-	54	80	-	53.8	75	-	54	70	-	54.6	64	-	52.2	58	-	47.2	53	-	29	49	-	-26.6	46	-
Receiver_08	R_08	55.3	80	-	52.8	80	-	50.8	75	-	49.2	70	-	48.2	64	-	44.7	58	-	39.4	53	-	23.1	49	-	-26.2	46	-
Receiver_09	R_09	51.4	80	-	47.6	80	-	44.8	75	-	42.8	70	-	41.9	64	-	38.9	58	-	34.8	53	-	20.9	49	-	-21	46	-
Receiver_10	R_10	56.2	80	-	53	80	-	50.5	75	-	48.7	70	-	47.8	64	-	44.7	58	-	40.5	53	-	27.1	49	-	-11.8	46	-
Receiver_11	R_11	55.6	80	-	52.1	80	-	49.3	75	-	53.2	70	-	53.4	64	-	52.6	58	-	50.8	53	-	39.5	49	-	1.5	46	-
Receiver_12	R_12	51.5	80	-	47.8	80	-	45	75	-	43.3	70	-	42.9	64	-	40.6	58	-	37.8	53	-	27.3	49	-	-4	46	-
Receiver_13	R_13	54.2	80	-	50.6	80	-	47.8	75	-	45.9	70	-	45.2	64	-	42.5	58	-	39.3	53	-	28.3	49	-	-3.1	46	-
Receiver_14	R_14	56.4	80	-	53.1	80	-	50.6	75	-	48.8	70	-	47.9	64	-	45.1	58	-	50.4	53	-	38.2	49	-	-0.1	46	-
Receiver_15	R_15	56.9	80	-	54	80	-	51.7	75	-	54.3	70	-	55.2	64	-	54	58	-	51.6	53	-	38.8	49	-	-2	46	-
Receiver_16	R_16	44.1	80	-	40.5	80	-	38	75	-	36.8	70	-	37	64	-	43.1	58	-	38.7	53	-	24.1	49	-	-17.9	46	-
Receiver_Prison	R_P	57.1	80	-	54.1	80	-	51.7	75	-	54.4	70	-	55.4	64	-	54.3	58	-	51.9	53	-	39.4	49	-	0	46	-

Front End Loader Working Scrap Metal Pile

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	39	80	-	40.9	80	-	36.8	75	-	35.4	70	-	29	64	-	36.1	58	-	29.9	53	-	10	49	-	-42.5	46	-
Receiver_02	R_02	46.8	80	-	48.7	80	-	44.5	75	-	43.1	70	-	36.6	64	-	43.6	58	-	37	53	-	16.4	49	-	-38.4	46	-
Receiver_03	R_03	39	80	-	40.9	80	-	36.8	75	-	35.4	70	-	29	64	-	36.1	58	-	29.7	53	-	9.5	49	-	-44.3	46	-
Receiver_04	R_04	38.7	80	-	40.7	80	-	36.5	75	-	35.2	70	-	28.7	64	-	35.8	58	-	29.5	53	-	10.9	49	-	-44.6	46	-
Receiver_05	R_05	38.3	80	-	40.3	80	-	36.2	75	-	39.2	70	-	32.7	64	-	39.7	58	-	33.2	53	-	11.9	49	-	-45.6	46	-
Receiver_06	R_06	38.8	80	-	40.8	80	-	38.9	75	-	37.5	70	-	31	64	-	38.1	58	-	31.5	53	-	10.7	49	-	-43.5	46	-
Receiver_07	R_07	40.3	80	-	42.3	80	-	38.2	75	-	36.9	70	-	30.6	64	-	38	58	-	32.5	53	-	15.3	49	-	-31	46	-
Receiver_08	R_08	46.3	80	-	48.3	80	-	44.1	75	-	43.9	70	-	36.8	64	-	43.3	58	-	36.9	53	-	18.9	49	-	-24.6	46	-
Receiver_09	R_09	47.8	80	-	49.5	80	-	44.4	75	-	42.1	70	-	34.8	64	-	41.5	58	-	35.8	53	-	19.7	49	-	-17.2	46	-
Receiver_10	R_10	44.2	80	-	48.7	80	-	44.6	75	-	43.4	70	-	37.1	64	-	44.6	58	-	39.7	53	-	25.2	49	-	-7.1	46	-
Receiver_11	R_11	50	80	-	51.2	80	-	46.1	75	-	44.8	70	-	36.8	64	-	43	58	-	37.3	53	-	23.2	49	-	-9.4	46	-
Receiver_12	R_12	47.7	80	-	47.4	80	-	40.8	75	-	36.9	70	-	27.9	64	-	32.8	58	-	25.8	53	-	10.6	49	-	-18.1	46	-
Receiver_13	R_13	46.9	80	-	46.3	80	-	39.6	75	-	35.6	70	-	26.7	64	-	31.6	58	-	24.8	53	-	9.8	49	-	-18.5	46	-
Receiver_14	R_14	48.5	80	-	48.7	80	-	44.9	75	-	42.1	70	-	34	64	-	40.6	58	-	35.1	53	-	22.5	49	-	-12.1	46	-
Receiver_15	R_15	49.5	80	-	51.2	80	-	46.3	75	-	44	70	-	36.1	64	-	41.5	58	-	39.5	53	-	24	49	-	-10.6	46	-
Receiver_16	R_16	42.7	80	-	43.7	80	-	40.4	75	-	37.2	70	-	28.5	64	-	40.5	58	-	34.5	53	-	17.6	49	-	-21.9	46	-
Receiver_Prison	R_P	49.5	80	-	50.3	80	-	46.3	75	-	43.5	70	-	35.4	64	-	41.5	58	-	35.6	53	-	23.2	49	-	0	46	-

Large Trailer Tipping Scrap Metal

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	52.5	80	-	58.5	80	-	56.3	75	-	54.9	70	-	55.4	64	-	55.3	58	-	50.6	53	-	33.5	49	-	-25.1	46	-
Receiver_02	R_02	50.3	80	-	56.3	80	-	54.1	75	-	52.7	70	-	53.2	64	-	53.2	58	-	48.5	53	-	31.6	49	-	-26	46	-
Receiver_03	R_03	44.9	80	-	50.8	80	-	48.6	75	-	47.3	70	-	47.8	64	-	47.8	58	-	43.2	53	-	26.5	49	-	-31	46	-
Receiver_04	R_04	47.2	80	-	53.2	80	-	51	75	-	49.6	70	-	50.1	64	-	50	58	-	45.3	53	-	27.9	49	-	-31.6	46	-
Receiver_05	R_05	49.1	80	-	55	80	-	52.8	75	-	52.5	70	-	52.9	64	-	52.8	58	-	47.9	53	-	29.4	49	-	-33.4	46	-
Receiver_06	R_06	49.6	80	-	55.5	80	-	54.2	75	-	52.8	70	-	53	64	-	52.1	58	-	46.2	53	-	27	49	-	-34.7	46	-
Receiver_07	R_07	51.1	80	-	56.8	80	-	53.6	75	-	50.8	70	-	49.5	64	-	47.2	58	-	40.6	53	-	23	49	-	-30	46	-
Receiver_08	R_08	50.9	80	-	55.1	80	-	50.9	75	-	47.1	70	-	45.1	64	-	42.6	58	-	36.2	53	-	21.1	49	-	-25.4	46	-
Receiver_09	R_09	47.7	80	-	50.9	80	-	46	75	-	42.1	70	-	40.1	64	-	38.1	58	-	32.9	53	-	19.9	49	-	-19.3	46	-
Receiver_10	R_10	51.6	80	-	55.2	80	-	50.6	75	-	46.7	70	-	44.8	64	-	42.8	58	-	37.7	53	-	25.4	49	-	-10.5	46	-
Receiver_11	R_11	51.4	80	-	54.7	80	-	49.9	75	-	52.1	70	-	51.3	64	-	51.4	58	-	48.2	53	-	37	49	-	0.7	46	-
Receiver_12	R_12	47	80	-	50.3	80	-	45.6	75	-	41.9	70	-	40.5	64	-	39.4	58	-	35.7	53	-	26.2	49	-	-2.1	46	-
Receiver_13	R_13	51.2	80	-	54.7	80	-	49.9	75	-	46	70	-	44.2	64	-	42.4	58	-	38	53	-	27.9	49	-	-0.6	46	-
Receiver_14	R_14	54.2	80	-	58.4	80	-	54.1	75	-	54.2	70	-	54.1	64	-	53.9	58	-	50.5	53	-	41.5	49	-	5	46	-
Receiver_15	R_15	54.2	80	-	58.7	80	-	54.6	75	-	54.3	70	-	53.9	64	-	53.6	58	-	50	53	-	38.2	49	-	0.8	46	-
Receiver_16	R_16	40.3	80	-	43.6	80	-	39.2	75	-	35.9	70	-	35.1	64	-	42.2	58	-	36.8	53	-	23.3	49	-	-15.4	46	-
Receiver_Prison	R_P	54.9	80	-	59.5	80	-	55.6	75	-	54.9	70	-	54.5	64	-	54.1	58	-	50.4	53	-	38.9	49	-	2.6	46	-

Magnetic Crane Separating Scrap Metal Pile

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	40.8	80	-	55.7	80	-	50.5	75	-	47.1	70	-	43.6	64	-	37.6	58	-	34	53	-	20.1	49	-	-33.4	46	-
Receiver_02	R_02	30.9	80	-	45.8	80	-	40.6	75	-	37.3	70	-	33.8	64	-	27.8	58	-	24.3	53	-	10.7	49	-	-41.9	46	-
Receiver_03	R_03	30.8	80	-	45.8	80	-	40.6	75	-	37.4	70	-	34	64	-	28.4	58	-	25.8	53	-	14.9	49	-	-38.4	46	-
Receiver_04	R_04	30.6	80	-	45.5	80	-	40.4	75	-	37.2	70	-	33.9	64	-	28.5	58	-	26.6	53	-	16	49	-	-39.9	46	-
Receiver_05	R_05	30.2	80	-	45.2	80	-	40.1	75	-	41.2	70	-	38	64	-	32.7	58	-	31.1	53	-	16.7	49	-	-41.7	46	-
Receiver_06	R_06	30.7	80	-	45.6	80	-	42.8	75	-	39.5	70	-	36.3	64	-	30.9	58	-	29.2	53	-	15.6	49	-	-39.7	46	-
Receiver_07	R_07	32.1	80	-	47.2	80	-	42.1	75	-	39	70	-	36.1	64	-	31.6	58	-	30.9	53	-	19	49	-	-27.2	46	-
Receiver_08	R_08	38.1	80	-	53.1	80	-	47.9	75	-	45.5	70	-	41.4	64	-	34.9	58	-	31.6	53	-	20.7	49	-	-20.8	46	-
Receiver_09	R_09	39.6	80	-	54	80	-	47.9	75	-	43.7	70	-	39.5	64	-	33.3	58	-	30.6	53	-	21.8	49	-	-12.9	46	-
Receiver_10	R_10	36	80	-	53.5	80	-	48.5	75	-	45.4	70	-	42.3	64	-	37.2	58	-	36.5	53	-	31	49	-	-0.6	46	-
Receiver_11	R_11	41.2	80	-	55.4	80	-	49.2	75	-	46.2	70	-	41.4	64	-	35	58	-	34	53	-	26.2	49	-	-5.8	46	-
Receiver_12	R_12	38.8	80	-	51.5	80	-	43.9	75	-	38	70	-	32.1	64	-	24	58	-	20	53	-	12	49	-	-14.6	46	-
Receiver_13	R_13	38	80	-	50.5	80	-	42.7	75	-	36.8	70	-	30.8	64	-	22.9	58	-	19.1	53	-	11.3	49	-	-15	46	-
Receiver_14	R_14	39.7	80	-	52.8	80	-	48.4	75	-	43.7	70	-	38.6	64	-	32.4	58	-	30	53	-	26.9	49	-	-6.6	46	-
Receiver_15	R_15	41	80	-	55.4	80	-	49.6	75	-	45.2	70	-	40.3	64	-	32.7	58	-	34.9	53	-	27.6	49	-	-3.3	46	-
Receiver_16	R_16	34.5	80	-	48.6	80	-	44.4	75	-	39.2	70	-	33.6	64	-	32.5	58	-	29.6	53	-	19.9	49	-	-17.2	46	-
Receiver_Prison	R_P	40.6	80	-	54.5	80	-	49.7	75	-	45	70	-	39.8	64	-	33.1	58	-	30.3	53	-	27.9	49	-	0	46	-

Truck Tipping Scrap Metal and Crane Working Metal

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	55.3	80	-	51.3	80	-	48.2	75	-	45.9	70	-	44.5	64	-	48.7	58	-	39.8	53	-	25.6	49	-	-30.1	46	-
Receiver_02	R_02	55.5	80	-	51.4	80	-	48.2	75	-	45.9	70	-	44.4	64	-	48.4	58	-	38.9	53	-	23.3	49	-	-33.4	46	-
Receiver_03	R_03	55.4	80	-	51.4	80	-	48.2	75	-	45.9	70	-	44.6	64	-	49	58	-	40.4	53	-	27.5	49	-	-29.8	46	-
Receiver_04	R_04	55.2	80	-	51.1	80	-	48	75	-	45.8	70	-	44.5	64	-	49.1	58	-	41.2	53	-	28.6	49	-	-31.3	46	-
Receiver_05	R_05	54.8	80	-	50.8	80	-	47.7	75	-	49.8	70	-	48.6	64	-	53.3	58	-	45.8	53	-	29.3	49	-	-33.1	46	-
Receiver_06	R_06	55.3	80	-	51.2	80	-	50.4	75	-	48.1	70	-	46.8	64	-	51.5	58	-	43.8	53	-	28.2	49	-	-31.1	46	-
Receiver_07	R_07	56.7	80	-	52.8	80	-	49.7	75	-	47.6	70	-	46.7	64	-	52.2	58	-	45.5	53	-	31.6	49	-	-18.6	46	-
Receiver_08	R_08	62.7	80	-	58.7	80	-	55.5	75	-	54	70	-	51.9	64	-	55.4	58	-	46.1	53	-	33.2	49	-	-12.2	46	-
Receiver_09	R_09	64.2	80	-	59.7	80	-	55.6	75	-	52.4	70	-	50.2	64	-	53.9	58	-	45.3	53	-	34.4	49	-	-4.3	46	-
Receiver_10	R_10	60.6	80	-	56.6	80	-	53.6	75	-	51.5	70	-	50.5	64	-	55.4	58	-	48.8	53	-	41.6	49	-	6.9	46	-
Receiver_11	R_11	65.5	80	-	60.5	80	-	56	75	-	54.1	70	-	51.2	64	-	55	58	-	48.3	53	-	38.6	49	-	2.4	46	-
Receiver_12	R_12	63.2	80	-	56.8	80	-	51.2	75	-	46.3	70	-	42.3	64	-	44.3	58	-	34.4	53	-	24.4	49	-	-6	46	-
Receiver_13	R_13	62.6	80	-	56	80	-	50.3	75	-	45.3	70	-	41.4	64	-	43.4	58	-	33.7	53	-	23.9	49	-	-6.2	46	-
Receiver_14	R_14	64.3	80	-	58.4	80	-	56	75	-	52.3	70	-	49.2	64	-	53	58	-	44.6	53	-	39.5	49	-	2	46	-
Receiver_15	R_15	65.6	80	-	61	80	-	57.1	75	-	53.7	70	-	50.8	64	-	53.2	58	-	49.5	53	-	40.2	49	-	5.4	46	-
Receiver_16	R_16	59.1	80	-	54.2	80	-	52	75	-	47.8	70	-	44.2	64	-	53.1	58	-	44.2	53	-	32.6	49	-	-8.5	46	-
Receiver_Prison	R_P	65.2	80	-	60.1	80	-	57.2	75	-	53.6	70	-	50.4	64	-	53.7	58	-	44.9	53	-	40.5	49	-	3.3	46	-

Crane Metal Operations

Receiver		NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed	NYC PS	M3 Limit	Exceed
Name	ID	31.5 Hz	31.5 Hz	31.5 Hz	63 Hz	63 Hz	63 Hz	125 Hz	125 Hz	125 Hz	250 Hz	250 Hz	250 Hz	500 Hz	500 Hz	500 Hz	1000 Hz	1000 Hz	1000 Hz	2000 Hz	2000 Hz	2000 Hz	4000 Hz	4000 Hz	4000 Hz	8000 Hz	8000 Hz	8000 Hz
		dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
Receiver_01	R_01	46.5	80	-	55.4	80	-	45.2	75	-	40.8	70	-	42.3	64	-	39.3	58	-	35.7	53	-	18.8	49	-	-34.7	46	-
Receiver_02	R_02	36.6	80	-	45.5	80	-	35.3	75	-	31	70	-	32.5	64	-	29.5	58	-	26	53	-	9.4	49	-	-43.2	46	-
Receiver_03	R_03	36.5	80	-	45.5	80	-	35.3	75	-	31.1	70	-	32.7	64	-	30.1	58	-	27.5	53	-	13.7	49	-	-39.7	46	-
Receiver_04	R_04	36.3	80	-	45.2	80	-	35.1	75	-	30.9	70	-	32.6	64	-	30.2	58	-	28.3	53	-	14.7	49	-	-41.2	46	-
Receiver_05	R_05	35.9	80	-	44.9	80	-	34.8	75	-	34.9	70	-	36.7	64	-	34.4	58	-	32.8	53	-	15.4	49	-	-43	46	-
Receiver_06	R_06	36.4	80	-	45.3	80	-	37.5	75	-	33.2	70	-	35	64	-	32.6	58	-	30.9	53	-	14.3	49	-	-40.9	46	-
Receiver_07	R_07	37.8	80	-	46.9	80	-	36.8	75	-	32.7	70	-	34.8	64	-	33.3	58	-	32.6	53	-	17.7	49	-	-28.5	46	-
Receiver_08	R_08	43.8	80	-	52.8	80	-	42.6	75	-	39.2	70	-	40.1	64	-	36.6	58	-	33.3	53	-	19.4	49	-	-22.1	46	-
Receiver_09	R_09	45.3	80	-	53.7	80	-	42.6	75	-	37.4	70	-	38.2	64	-	35	58	-	32.4	53	-	20.5	49	-	-14.2	46	-
Receiver_10	R_10	41.7	80	-	53.2	80	-	43.2	75	-	39.1	70	-	41	64	-	38.9	58	-	38.2	53	-	29.7	49	-	-1.9	46	-
Receiver_11	R_11	46.9	80	-	55.1	80	-	43.9	75	-	39.9	70	-	40	64	-	36.7	58	-	35.7	53	-	24.9	49	-	-7.1	46	-
Receiver_12	R_12	44.5	80	-	51.2	80	-	38.6	75	-	31.7	70	-	30.8	64	-	25.7	58	-	21.7	53	-	10.7	49	-	-15.9	46	-
Receiver_13	R_13	43.7	80	-	50.1	80	-	37.4	75	-	30.5	70	-	29.5	64	-	24.6	58	-	20.8	53	-	10	49	-	-16.2	46	-
Receiver_14	R_14	45.4	80	-	52.5	80	-	43.1	75	-	37.3	70	-	37.3	64	-	34.1	58	-	31.7	53	-	25.6	49	-	-7.9	46	-
Receiver_15	R_15	46.7	80	-	55.1	80	-	44.2	75	-	38.8	70	-	38.9	64	-	34.3	58	-	36.6	53	-	26.3	49	-	-4.6	46	-
Receiver_16	R_16	40.2	80	-	48.3	80	-	39.1	75	-	32.9	70	-	32.3	64	-	34.2	58	-	31.3	53	-	18.6	49	-	-18.5	46	-
Receiver_Prison	R_P	46.3	80	-	54.2	80	-	44.3	75	-	38.6	70	-	38.5	64	-	34.8	58	-	32	53	-	26.6	49	-	0	46	-

APPENDIX E: LITERATURE CITED

Appendix E: Literature Cited

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