

Davis Wire

Galvanizing Line 3
D24-D29

Criteria Pollutants	Annealing Furnace	HCl Tank Pickling	Flux Tank 10% NH ₄ Cl	Hot Pot / Kettle	Zinc Melting	Process Totals	Currently in NSR	Difference
ROG-hourly	0.08			0.03		0.11		
ROG-daily	1.09			0.72		1.81	2.43	-0.62
NOx-hourly	1.089			0.5521		1.64		
NOx-daily	14.92			13.251		28.17	43.46	-15.39
CO-hourly	0.4			0.15		0.55		
CO-daily	5.44			3.6		9.04	11.68	-2.64
PM ₁₀ -hourly	0.0857	0.0014445	0.73836	0.0321	0.0667	0.92		
PM ₁₀ -daily	1.17	0.034668	17.72064	0.7714	1.6000	21.30	21.07	+0.23
SOx-hourly	0.0069			0.0026		0.01		
SOx-daily	0.09			0.0617		0.15	0	+0.15

Annealing Furnace emissions are based on 4.662 mmcf/mo usage, NOx at 75 ppm and district default values for all other pollutants.

Pickling tank based on 5 ppmv exhaust emissions at 50 scfm

Flux tank based on 28 gal/hr 10 % solution usage, 10% sticks to wire of which 30% is emitted

Hot Pot/Kettle is rated 4.5 mmbtu/hr and all default values, 24 hours/day

Zinc Melting based on 30-day average emissions with 960,000 lb/month limit and emission factor of 0.1 lb/ton (District Default for ingot)

Combustion emissions currently in NSR are as calculated for A/N 315674 using default values and total max rating of 14.5 mmbtu/hr.

14.5 mmbtu/hr = 9 from annealing furnace + 1 from dryer + 4.5 from kettle

Subsequent Galv 3 application, A/N 396848 was to increase the rating of the annealing furnace to 12 mmbtu/hr. However, only annealing furnace emissions entered in NSR at the time (not entire process emissions). Annealing furnace emissions based on maximum expected natural gas usage of 0.1554 mmcf/day (equivalent to 4.662 mmcf/mo, conditioned limit).

NSR Data Summary sheet, engineering evaluation, and Facility Permit pages for A/N 396818 included in application folder A/N 546225

Davis Wire
as conditioned

Galv. Line
Annealing Furnaces

D24

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	12,000,000	BTU/hr
Max conditioned fuel usage =	4,662,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	75	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC	=	0.0400	lb/hr	0.9600	lb/day
NOx	=	0.5445	lb/hr	13.0680	lb/day
SO2	=	0.0034	lb/hr	0.0823	lb/day
CO	=	0.2000	lb/hr	4.8000	lb/day
PART	=	0.0429	lb/hr	1.0286	lb/day

MAXIMUM EMISSIONS

RHC	=	0.0800	lb/hr	1.9200	lb/day
NOx	=	1.0890	lb/hr	26.1360	lb/day
SO2	=	0.0069	lb/hr	0.1646	lb/day
CO	=	0.4000	lb/hr	9.6000	lb/day
PART	=	0.0857	lb/hr	2.0571	lb/day

Thirty day average emissions

RHC	=	1.09	lb/dy	392	lb/yr
NOx	=	14.92	lb/dy	5371	lb/yr
SO2	=	0.09	lb/dy	34	lb/yr
CO	=	5.44	lb/dy	1958	lb/yr
PART	=	1.17	lb/dy	420	lb/yr

Monthly Emissions

RHC	=	32.63	lb/mo
NOx	=	447.55	lb/mo
SO2	=	2.80	lb/mo
CO	=	163.17	lb/mo
PART	=	34.97	lb/mo

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	4,500,000 BTU/hr
Average Operating Schedule =	24 hr/day
Maximum Operating Schedule =	24 hr/day
Expected emission of NOx=	101.4 ppm
Average Loading=	100.0%
Maximum Loading =	100.0%
Maximum operating days per month =	30 days

AVERAGE EMISSIONS

RHC =	0.0300 lb/hr	0.7200 lb/day
NOx =	0.5521 lb/hr	13.2510 lb/day
SO2 =	0.0026 lb/hr	0.0617 lb/day
CO =	0.1500 lb/hr	3.6000 lb/day
PART =	0.0321 lb/hr	0.7714 lb/day

MAXIMUM EMISSIONS

RHC =	0.0300 lb/hr	0.7200 lb/day
NOx =	0.5521 lb/hr	13.2510 lb/day
SO2 =	0.0026 lb/hr	0.0617 lb/day
CO =	0.1500 lb/hr	3.6000 lb/day
PART =	0.0321 lb/hr	0.7714 lb/day

Thirty day average and yearly emissions

RHC =	0.72 lb/dy	259 lb/yr
NOx =	13.25 lb/dy	4770 lb/yr
SO2 =	0.06 lb/dy	22 lb/yr
CO =	3.60 lb/dy	1296 lb/yr
PART =	0.77 lb/dy	278 lb/yr

Davis Wire

**Galvanizing Line 2
D17-D21**

Criteria Pollutants	Annealing Furnace	HCl Tank Pickling	Flux Tank 10% NH ₄ Cl	Hot Pot / Kettle	Zinc Melting	Process Totals
ROG-hourly	0.08			0.0177		0.10
ROG-daily	1.09			0.424		1.51
NOx-hourly	1.089			0.3251		1.41
NOx-daily	14.92			7.8033		22.72
CO-hourly	0.4			0.0883		0.49
CO-daily	5.44			2.12		7.56
PM ₁₀ -hourly	0.0857	0.0014445	0.05274	0.0189	0.005	0.16
PM ₁₀ -daily	1.17	0.034668	1.26576	0.4543	0.12	3.04
SOx-hourly	0.0069			0.0015		0.01
SOx-daily	0.09			0.0363		0.13

Annealing Furnace emissions are based on 4.662 mmcf/mo usage, NOx at 75 ppm and district default values for all other pollutants.

Pickling tank based on 5 ppmv exhaust emissions at 50 scfm

Flux tank based on 2 gal/hr, 8.79 lb/gal, 10 % solution usage, 10% sticks to wire of which 30% is emitted

Hot Pot/Kettle is rated 2.65 mmbtu/hr and all default values, 24 hours/day

Zinc Melting based on 2,400 lb/day zinc usage and emission factor of 0.1 lb/ton (District Default for ingot)

Davis Wire

Galv Lines 1 & 2 Kettles D14 & D21

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	2,650,000 BTU/hr
Average Operating Schedule =	24 hr/day
Maximum Operating Schedule =	24 hr/day
Expected emission of NOx=	101.4 ppm
Average Loading=	100.0%
Maximum Loading =	100.0%
Maximum operating days per month =	30 days

AVERAGE EMISSIONS

RHC	=	0.0177 lb/hr	0.4240 lb/day
NOx	=	0.3251 lb/hr	7.8033 lb/day
SO2	=	0.0015 lb/hr	0.0363 lb/day
CO	=	0.0883 lb/hr	2.1200 lb/day
PART	=	0.0189 lb/hr	0.4543 lb/day

MAXIMUM EMISSIONS

RHC	=	0.0177 lb/hr	0.4240 lb/day
NOx	=	0.3251 lb/hr	7.8033 lb/day
SO2	=	0.0015 lb/hr	0.0363 lb/day
CO	=	0.0883 lb/hr	2.1200 lb/day
PART	=	0.0189 lb/hr	0.4543 lb/day

Thirty day average and yearly emissions

RHC	=	0.42 lb/dy	153 lb/yr
NOx	=	7.80 lb/dy	2809 lb/yr
SO2	=	0.04 lb/dy	13 lb/yr
CO	=	2.12 lb/dy	763 lb/yr
PART	=	0.45 lb/dy	164 lb/yr

Davis Wire
as conditioned

Galv. Line
Annealing Furnaces

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	12,000,000	BTU/hr
Max conditioned fuel usage =	4,662,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	75	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC	=	0.0400	lb/hr	0.9600	lb/day
NOx	=	0.5445	lb/hr	13.0680	lb/day
SO2	=	0.0034	lb/hr	0.0823	lb/day
CO	=	0.2000	lb/hr	4.8000	lb/day
PART	=	0.0429	lb/hr	1.0286	lb/day

MAXIMUM EMISSIONS

RHC	=	0.0800	lb/hr	1.9200	lb/day
NOx	=	1.0890	lb/hr	26.1360	lb/day
SO2	=	0.0069	lb/hr	0.1646	lb/day
CO	=	0.4000	lb/hr	9.6000	lb/day
PART	=	0.0857	lb/hr	2.0571	lb/day

Thirty day average emissions

RHC	=	1.09	lb/dy	392	lb/yr
NOx	=	14.92	lb/dy	5371	lb/yr
SO2	=	0.09	lb/dy	34	lb/yr
CO	=	5.44	lb/dy	1958	lb/yr
PART	=	1.17	lb/dy	420	lb/yr

Monthly Emissions

RHC	=	32.63	lb/mo
NOx	=	447.55	lb/mo
SO2	=	2.80	lb/mo
CO	=	163.17	lb/mo
PART	=	34.97	lb/mo

Davis Wire

Galvanizing Line 1
D10-D14

Criteria Pollutants	Annealing Furnace	HCl Tank Pickling	Flux Tank 10% NH ₄ Cl	Hot Pot / Kettle	Zinc Melting	Process Totals
ROG-hourly	0.08			0.0177		0.10
ROG-daily	1.09			0.424		1.51
NOx-hourly	1.089			0.3251		1.41
NOx-daily	14.92			7.8033		22.72
CO-hourly	0.4			0.0883		0.49
CO-daily	5.44			2.12		7.56
PM ₁₀ -hourly	0.0857	0.0014445	0.05274	0.0189	0.005	0.16
PM ₁₀ -daily	1.17	0.034668	1.26576	0.4543	0.12	3.04
SOx-hourly	0.0069			0.0015		0.01
SOx-daily	0.09			0.0363		0.13

Annealing Furnace emissions are based on 4.662 mmcf/mo usage, NOx at 75 ppm and district default values for all other pollutants.

Pickling tank based on 5 ppmv exhaust emissions at 50 scfm

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Davis Wire

Galv Lines 1 & 2 Kettles D14 & D21

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Emission factors are from form B-1
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Maximum Burner Rating in BTU/hr =	2,650,000 BTU/hr
Average Operating Schedule =	24 hr/day
Maximum Operating Schedule =	24 hr/day
Expected emission of NOx=	101.4 ppm
Average Loading=	100.0%
Maximum Loading =	100.0%
Maximum operating days per month =	30 days

AVERAGE EMISSIONS

RHC	=	0.0177 lb/hr	0.4240 lb/day
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Galv. Line
Annealing Furnaces

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Max conditioned fuel usage =	4,662,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	75	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC	=	0.0400	lb/hr	0.9600	lb/day
NOx	=	0.5445	lb/hr	13.0680	lb/day
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