

TABLE 4.7.1.3–3.—Estimated Pantex Plant Chemical Air Emissions Inventory

POLLUTANT	CHEMICAL ABSTRACT SERVICE NUMBER	KILOGRAMS (POUNDS) PER YEAR	METRIC TONS (TONS) PER YEAR
<i>CLEAN AIR ACT LISTED AIR POLLUTANTS</i>			
1,1,2-trichloroethane	79005	3.78 (8.34)	0.00 (0.00)
1,3-butadiene	106990	51.76 (114)	0.05 (0.06)
2-nitropropane	79469	1.71 (3.76)	0.00 (0.00)
Benzene	71432	91.27 (199)	0.09 (0.10)
Carbon Disulfide	75150	27.03 (59.60)	0.03 (0.03)
Carbon Tetrachloride	56235	15.60 (34.4)	0.02 (0.02)
Chlorobenzene	108907	1.79 (3.94)	0.00 (0.00)
Chromium	7440473	1.51 (3.33)	0.00 (0.00)
Cresols	1319773	0.05 (0.11)	0.00 (0.00)
Cresylic Acid	1319773	0.05 (0.11)	0.00 (0.00)
Dibenzofurans	132649	0.07 (0.16)	0.00 (0.00)
Dimethylformamide	68122	0.95 (2.09)	0.00 (0.00)
Ester Glycol Ethers	NA	0.86 (1.89)	0.00 (0.00)
Ethyl Acetate	141786	5,625 (12,400)	5.54 (6.20)
Ethyl Benzene	100414	1.51 (3.33)	0.00 (0.00)
Ethylene Dichloride	107062	1.33 (2.93)	0.00 (0.00)
Formaldehyde	50000	54.89 (121)	0.06 (0.06)
HCl (Hydrogen chloride)	7647010	5,206.59 (11,478.37)	1.11 (1.22)
HCN (Hydrogen cyanide) ^{a b}	74908	0.00 (0.00)	0.00 (0.00)
HF (Hydrogen fluoride)	7664393	3,973.54 (8,760)	1.18 (1.30)
Lead	7439421	7.71 (17.0)	0.19 (0.20)
Mercury ^b	7439976	0.00 (0.00)	0.00 (0.00)
Methanol	67561	1,093.18 (2,410)	1.10 (1.21)
Methyl Cyanide ^b	NA	0.00 (0.00)	0.00 (0.00)
Methyl Ethyl Ketone	78933	7,076.16 (15,600)	7.07 (7.79)
Methyl Isobutyl Ketone	108101	0.62 (1.36)	0.00 (0.00)
Methylene Chloride	75092	187.79 (414)	0.18 (0.20)
Naphthalene	91203	0.41 (0.90)	0.00 (0.00)
Nickel ^a	7440020	0.16 (0.36)	0.00 (0.00)
Nitrobenzene	98953	0.05 (0.11)	0.00 (0.00)
Phenol	108952	2.22 (4.90)	0.00 (0.00)
Tetrachloroethylene	127184	6.44 (14.20)	0.01 (0.01)
Titanium ^a	7440326	0.03 (0.07)	0.00 (0.00)
Toluene	108883	2,227.18 (4,910)	0.47 (0.51)
Trichloroethylene	79016	19.50 (43.00)	0.02 (0.02)
Triethylamine	121448	0.00 (0.00)	0.00 (0.00)
Xylene	1330207	222.72 (491)	0.22 (0.25)

TABLE 4.7.1.3–3.—Estimated Pantex Plant Chemical Air Emissions Inventory-Continued

POLLUTANT	CHEMICAL ABSTRACT SERVICE NUMBER	KILOGRAMS (POUNDS) PER YEAR	METRIC TONS (TONS) PER YEAR
TNRCC LISTED AIR POLLUTANTS			
1,1,1-chloroethane	75003	22.74 (50.14)	0.02 (0.03)
1,3,5-trinitrobenzene	99354	0.00 (0.00)	0.00 (0.00)
1-butanol	71363	0.09 (0.02)	0.00 (0.00)
2,4,6-trinitrotoluene	118967	0.02 (0.04)	0.00 (0.00)
2,4-dinitrotoluene	121142	0.05 (0.10)	0.00 (0.00)
2,6-dinitrotoluene	606202	0.09 (0.19)	0.00 (0.00)
2-nitronaphthalene	NA	0.02 (0.05)	0.00 (0.00)
2-ethoxyethanol	110805	1.81 (3.98)	0.00 (0.00)
Acetone	67641	3,519 (7,750)	3.36 (3.88)
Acetylene	74862	84.44 (186)	0.08 (0.09)
Alcohols	NA	1,185 (2,610)	1.18 (1.31)
Aluminum	7429905	0.02 (0.043)	0.00 (0.00)
Ammonia	7664417	18.16 (40.0)	0.02 (0.02)
Barium	7440393	2.24 (4.94)	0.00 (0.00)
Benzo(a)anthracene	56553	0.04 (0.08)	0.00 (0.00)
Benzo(a)pyrene	50328	0.02 (0.05)	0.00 (0.00)
Bismuth	1304821	0.01 (0.01)	0.00 (0.00)
Butane	106978	85.35 (188)	0.09 (0.09)
Butene	2516673	99.43 (219)	0.11 (0.11)
Calcium	7440702	0.38 (0.85)	0.00 (0.00)
Chlorinated Fluorocarbon	NA	53.12 (117)	0.05 (0.06)
Copper	7440508	3.78 (8.32)	0.00 (0.00)
Cyanogen	460195	0.00 (0.00)	0.00 (0.00)
Cyclohexane	110827	312.35 (688)	0.31 (0.34)
Cyclohexanone	108941	4.34 (9.56)	0.00 (0.00)
Dioxane	123911	40.90 (90.1)	0.04 (0.05)
Ethyl Ether	60297	4,903.2 (10,800)	4.90 (5.40)
Ethylene	74851	213.8 (471)	0.21 (0.24)
Formic Acid ^b	64186	0.00 (0.00)	0.00 (0.00)
Iron	7439896	22.50 (49.57)	0.02 (0.03)
Isobutane	75285	11.80 (26.0)	0.01 (0.01)
Isobutanol	78831	1.11 (2.45)	0.00 (0.00)
Ketene ^b	763514	0.00 (0.00)	0.00 (0.00)
Ketone	NA	0.28 (0.61)	0.00 (0.00)
Lithium	NA	0.00 (0.00)	0.00 (0.00)
Magnesium	546930	0.77 (1.69)	0.00 (0.00)
Methane	74828	1,889 (4,160)	1.89 (2.08)
N-butyl Alcohol	71363	0.39 (0.86)	0.00 (0.00)

TABLE 4.7.1.3-3.—Estimated Pantex Plant Chemical Air Emissions Inventory-Continued

POLLUTANT	CHEMICAL ABSTRACT SERVICE NUMBER	KILOGRAMS (POUNDS) PER YEAR	METRIC TONS (TONS) PER YEAR
Non-F Listed Solvents	NA	0.021 (0.46)	0.00 (0.00)
Ortho-dichlorobenzene	95501	0.29 (0.64)	0.00 (0.00)
Propane	74986	103 (227)	0.10 (0.11)
Propene	115071	158.9 (350)	0.16 (0.18)
Pyrene	129000	0.00 (0.00)	0.00 (0.00)
Pyridine	110861	1.85 (4.08)	0.00 (0.00)
Silicon	7440213	46.31 (100)	0.05 (0.05)
Silver	7440224	1.05 (2.32)	0.00 (0.00)
Tetrahydrofuran	109999	776.34 (1710)	0.78 (0.85)
Trichlorofluoromethane	75694	157.99 (348)	0.16 (0.17)
Trichlorotrifluoroethane	76131	11.39 (25.1)	0.01 (0.01)
Zinc	7440666	0.031 (0.68)	0.00 (0.00)

^aProjected emissions that would result from future Burning Ground upgrade. Only included in modeling for 2,000, 1,000, and 500 projected activity levels.

^bThese chemicals are emitted but in amounts far below 0.01 kilograms or pounds per year.

NA - Not available.

Sources: CAA Nov 1990; Pantex 1996, 6.6; PC 1994; TNRCC 1996a

**TABLE 4.7.1.3-4.—Estimated Maximum Fence Line Concentration of
Criteria Pollutants at Pantex Plant Site**

POLLUTANT	AVERAGING TIME	NAAQS $\mu\text{g}/\text{m}^3$	MAXIMUM FENCE LINE CONCENTRATION $\mu\text{g}/\text{m}^3$
CO - 45.4 kg (100 lb) HE	1-hour	4.00×10^4	9.24×10^2
	8-hour	1.00×10^4	1.61×10^2
CO - 363 kg (800 lb) HE	1-hour	4.00×10^4	9.24×10^2
	8-hour	1.00×10^4	1.61×10^2
Lead	1st Qtr	1.50	1.02×10^{-3}
	2nd Qtr	1.50	9.60×10^{-4}
	3rd Qtr	1.50	1.58×10^{-3}
	4th Qtr	1.50	9.50×10^{-3}
NO ₂ - 45.4 kg (100 lb) HE	Annual	1.00×10^2	8.95×10^{-1}
NO ₂ - 363 kg (800 lb) HE	Annual	1.00×10^2	5.79×10^{-1}
PM ₁₀ - 45.4 kg (100 lb) HE	Annual	5.00×10^1	8.73
	24-hour	1.50×10^2	8.85×10^1
PM ₁₀ - 363 kg (800 lb) HE	Annual	5.00×10^1	1.51
	24-hour	1.50×10^2	2.24×10^1

Note: Table shows the ISCST2 and ISCLT2 modeling results (maximum fence line concentrations).

Source: TNRCC 1993a