Appendix 17.2.2

TAP Toxicity and Screening Results

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.1: Estimated TAP Emission in Yr 2031

Emission Source	Aircraft & ERUF	GFS & Helicopter	APU	Catering (Diesel)	Fuel Tank	Training Fire	GSE	Carpark & Truck Park	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside Vehicles	Tire and Brake Wear	Total (kg/yr)
1,3-Butadiene	8.29E+03	1.00E+02	5.30E+01	-	-	-	-	3.03E+01	-	-	5.89E+01	4.39E+02	-	8.97E+03
Acetaldehyde	2.10E+04	2.54E+02	1.34E+02	-	-	-	8.77E+02	1.21E+02	-	5.85E-01	2.13E+02	1.66E+03	-	2.42E+04
Acrolein	1.20E+04	1.45E+02	7.67E+01	-	-	-	-	1.49E+01	-	-	2.39E+01	2.29E+02	-	1.25E+04
Benzene	8.24E+03	9.97E+01	5.27E+01	2.89E-01	-	-	-	7.95E+01	1.77E+02	2.50E-02	2.45E+02	8.16E+02	-	9.71E+03
Formaldehyde	6.05E+04	7.31E+02	3.87E+02	3.23E+02	-	-	2.59E+03	3.19E+02	-	4.01E+00	5.20E+02	4.59E+03	-	6.99E+04
Naphthalene	2.63E+03	3.18E+01	1.68E+01	1.53E+00	-	-	5.09E+02	3.46E+01	5.31E+00	0.00E+00	1.65E+02	1.55E+02	-	3.55E+03
Propionaldehyde	3.56E+03	4.31E+01	2.28E+01	-	-	-	5.33E+02	-	-	-	-	-	-	4.16E+03
Toluene	3.17E+03	3.83E+01	2.03E+01	8.38E+00	1.76E+03	-	-	-	2.56E+03	-	-	-	-	7.56E+03
o-Xylene	8.29E+02	1.00E+01	5.30E+00	1.47E-01	-	-	-	-	3.52E+02	-	-	-	-	1.20E+03
m-Xylene + P-xylene	1.37E+03	1.65E+01	8.73E+00	-	-	-	-	-	2.39E+02	-	-	-	-	1.63E+03
n-Hexane	-	-	-	7.17E+01	5.84E+03	-	-	-	7.08E+00	-	-	-	-	5.92E+03
Styrene	1.46E+03	1.77E+01	9.35E+00	-	-	-	-	-	-	-	-	-	-	1.49E+03
Ethylbenzene	8.29E+02	1.00E+01	5.30E+00	8.60E-02	-	-	-	-	1.43E+02	-	-	-	-	9.87E+02
Acenaphthene	-	-	-	2.85E-02	-	-	1.64E+00	1.18E-01	-	-	5.58E-01	4.99E-01	-	2.84E+00
Acenaphthylene	-	-	-	3.42E-04	-	-	2.66E+00	2.30E-01	-	-	1.07E+00	8.10E-01	-	4.77E+00
Anthracene	1.97E-01	2.38E-03	1.26E-03	1.65E-03	-	-	1.33E+00	1.43E-01	-	-	7.14E-01	4.91E-01	-	2.88E+00
Benzo(ghi)perylene	2.70E-03	3.27E-05	1.73E-05	3.05E-03	-	-	9.64E-03	3.18E-02	-	-	1.60E-01	3.71E-03	-	2.11E-01
Benzo(bk)fluoranthene	-	-	-	2.00E-03	-	-	4.08E-02	-	-	1.28E-02	-	2.18E-02	-	7.74E-02
Benz(a)anthracene	2.97E-02	3.60E-04	1.90E-04	5.42E-03	-	-	2.07E-02	1.28E-02	-	-	6.46E-02	8.90E-03	-	1.43E-01
Benzo(a)pyrene	1.63E-02	1.97E-04	1.04E-04	-	-	-	4.76E-02	-	-	2.56E-02	-	2.54E-02	-	1.15E-01
Chrysene	2.77E-02	3.35E-04	1.77E-04	3.22E-03	-	-	5.07E-02	1.56E-02	-	-	7.94E-02	2.35E-02	-	2.01E-01
Dibenz(a,h)anthracene	-	-	-	2.26E-03	-	-	1.47E-02	-	-	-	-	7.87E-03	-	2.49E-02
Fluoranthene	4.11E-01	4.97E-03	2.63E-03	6.54E-03	-	-	2.12E+00	1.98E-01	-	-	9.92E-01	8.05E-01	-	4.54E+00
Fluorene	-	-	-	6.04E-03	-	-	6.89E+00	4.97E-01	-	-	2.42E+00	2.27E+00	-	1.21E+01
Indeno(123cd)pyrene	-	-	-	2.89E-03	-	-	6.80E-03	-	-	1.28E-02	-	3.63E-03	-	2.61E-02
Phenanthrene	1.83E+00	2.21E-02	1.17E-02	1.42E-02	-	-	3.26E+01	2.13E+00	-	-	1.05E+01	1.55E+02	-	2.02E+02
Pyrene	5.02E-01	6.07E-03	3.21E-03	5.74E-03	-	-	1.85E+00	2.16E-01	-	-	1.08E+00	7.16E-01	-	4.38E+00
Methyl alcohol	8.85E+03	1.07E+02	5.65E+01	-	-	-	-	-	-	-	-	-	-	9.01E+03
Isopropylbenzene (cumene)	1.42E+01	1.82E-01	1.32E-01	-	-	-	-	-	5.31E+00	-	-	-	-	1.98E+01
Phenol (carbolic acid)	3.56E+03	4.30E+01	2.28E+01	-	-	-	-	-	-	-	-	-	-	3.63E+03
Acetone	1.81E+03	2.19E+01	1.15E+01	-	-	-	-	-	1.36E+03	-	-	-	-	3.20E+03
2-methylnaphthalene	1.01E+03	1.22E+01	6.49E+00	-	-	-	-	-	-	-	-	-	-	1.03E+03
Benzaldehyde	2.30E+03	2.79E+01	1.47E+01	-	-	-	1.66E+02	-	8.27E+01	-	-	-	-	2.60E+03
N-heptane	3.13E+02	3.79E+00	1.99E+00	1.99E+00	2.49E+03	-	-	-	1.24E+03	-	-	-	-	4.05E+03
Ethane	2.55E+03	3.09E+01	1.63E+01	-	3.36E+03	1.12E+02	-	-	-	-	-	-	-	6.07E+03
Ethylene	7.58E+04	9.17E+02	4.85E+02	-	-	3.61E+02	-	-	-	-	-	-	-	7.76E+04
Acetylene	1.93E+04	2.34E+02	1.24E+02	-	-	-	-	-	-	-	-	-	-	1.97E+04
Propane	3.82E+02	4.62E+00	2.38E+00	7.97E+00	2.00E+04	-	-	-	-	-	-	-	-	2.04E+04
2-methyl-2-propenal (methacrolein)	2.10E+03	2.54E+01	1.35E+01	-	-	-	-	-	-	-	-	-	-	2.14E+03
Methylglyoxal	7.37E+03	8.91E+01	4.71E+01	-	-	-	-	-	-	-	-	-	-	7.50E+03
1-Methylnaphthalene	1.21E+03	1.46E+01	7.68E+00	-	-	-	-	-	-	-	-	-	-	1.23E+03
1,2,4-trimethylbenzene (1,3,4-trimethylbenzene)	1.72E+03	2.08E+01	1.10E+01	-	-	-	-	-	-	-	-	-	-	1.75E+03
N-propylbenzene	2.60E+02	3.14E+00	1.72E+00	-	-	-	-	-	8.85E+00	-	-	-	-	2.74E+02
p-Tolualdehyde	2.35E+02	2.85E+00	1.46E+00	-	-	-	-	-	1.14E+02	-	-	-	-	3.54E+02
1-butene	8.60E+03	1.04E+02	5.49E+01	-	-	-	-	-	-	-	-	-	-	8.76E+03
Glyoxal	8.90E+03	1.08E+02	5.69E+01	-	-	-	-	-	-	-	-	-	-	9.07E+03
2-methylpentane	2.00E+03	2.42E+01	1.28E+01	-	-	-	-	-	-	-	-	-	-	2.04E+03
1,3,5-trimethylbenzene	2.65E+02	3.20E+00	1.72E+00	-	-	-	-	-	-	-	-	-	-	2.70E+02
N-pentane	9.70E+02	1.17E+01	6.22E+00	3.12E+01	1.26E+04	-	-	-	-	-	-	-	-	1.36E+04
1-pentene	3.80E+03	4.60E+01	2.44E+01	-	-	-	-	-	-	-	-	-	-	3.87E+03
Valeraldehyde	1.20E+03	1.45E+01	7.68E+00	-	-	-	-	-	-	-	-	-	-	1.22E+03
N-octane	3.04E+02	3.68E+00	1.99E+00	-	-	-	-	-	-	-	-	-	-	3.10E+02
1-octene	1.35E+03	1.64E+01	8.60E+00	-	-	-	-	-	-	-	-	-	-	1.38E+03
N-nonane	3.04E+02	3.68E+00	1.99E+00	-	-	-	-	-	1.54E+02	-	-	-	-	4.64E+02
N-dodecane	2.27E+03	2.74E+01	1.44E+01	-	-	-	-	-	-	-	-	-	-	2.31E+03
Propylene	2.22E+04	2.69E+02	1.42E+02	-	-	2.08E+01	-	-	-	-	-	-	-	2.27E+04
Butyraldehyde	5.84E+02	7.06E+00	3.71E+00	-	-	-	-	-	-	-	-	-	-	5.95E+02
1-nonene	1.21E+03	1.46E+01	7.68E+00	-	-	-	-	-	-	-	-	-	-	1.23E+03
N-decane	1.57E+03	1.90E+01	1.01E+01	-	-	-	-	-	-	-	-	-	-	1.60E+03
2-methyl-2-butene	9.06E+02	1.10E+01	5.82E+00	-	-	-	-	-	-	-	-	-	-	9.23E+02
1,2,3-trimethylbenzene	5.20E+02	6.28E+00	3.31E+00	-	-	-	-	-	-	-	-	-	-	5.30E+02
o-Tolualdehyde	1.13E+03	1.36E+01	7.15E+00	-	-	-	-	-	-	-	-	-	-	1.15E+03
N-Hexadecane	2.41E+02	2.90E+00	1.59E+00	-	-	-	-	-	-	-	-	-	-	2.45E+02
3-methyl-1-butene	5.49E+02	6.64E+00	3.57E+00	-	-	-	-	-	-	-	-	-	-	5.59E+02
2-methyl-1-butene	6.87E+02	8.30E+00	4.37E+00	-	-	-	-	-	-	-	-	-	-	6.99E+02
Cis-2-butene	1.03E+03	1.25E+01	6.62E+00	-	-	-	-	-	-	-	-	-	-	1.05E+03
Isovaleraldehyde	1.58E+02	1.90E+00	1.06E+00	-	-	-	-	-	-	-	-	-	-	1.60E+02
1-hexene	3.61E+03	4.36E+01	2.30E+01	-	-	-	-	-	-	-	-	-	-	3.68E+03
1-Methyl-2-ethylbenzene (o-ethyltoluene)	3.19E+02	3.85E+00	1.99E+00	-	-	-	-	-	-	-	-	-	-	3.24E+02
1-Methyl-3-ethylbenzene (m-ethyltoluene)	7.56E+02	9.13E+00	4.77E+00	-	-	-	-	-	-	-	-	-	-	7.70E+02
Tolualdehyde	1.36E+03	1.65E+01	8.74E+00	-	-	-	-	-	-	-	-	-	-	1.39E+03
1-Methyl-4-ethylbenzene (p-ethyltoluene)	3.13E+02	3.79E+00	1.99E+00	-	-	-	-	-	-	-	-	-	-	3.19E+02
Cis-2-pentene	1.35E+03	1.64E+01	8.60E+00	-	-	-	-	-	-	-	-	-	-	1.38E+03
N-tridecane	2.62E+03	3.17E+01	1.68E+01	-	-	-	-	-	-	-	-	-	-	2.67E+03
N-Tetradecane	2.04E+03	2.47E+01	1.31E+01	-	-	-	-	-	-	-	-	-	-	2.08E+03
N-Pentadecane	8.48E+02	1.03E+01	5.43E+00	-	-	-	-	-	-	-	-	-	-	8.63E+02
N-heptadecane	4.42E+01	5.35E-01	2.65E-01	-	-	-	-	-	-	-	-	-	-	4.50E+01
Trans-2-pentene	1.76E+03	2.13E+01	1.13E+01	-	-	-	-	-	-	-	-	-	-	1.79E+03
4-methyl-1-pentene	3.38E+02	4.09E+00	2.12E+00	-	-	-	-	-	-	-	-	-	-	3.44E+02
2-methyl-1-pentene	1.66E+02	2.02E+00	1.06E+00	-	-	-	-	-	-	-	-	-	-	1.69E+02
1-decene	9.06E+02	1.10E+01	5.82E+00	-	-	-	-	-	-	-	-	-	-	9.23E+02
N-undecane	2.18E+03	2.63E+01	1.39E+01	-	-	-	-	-	2.73E+02	-	-	-	-	2.49E+03
Trans-2-hexene	1.47E+02	1.78E+00	9.27E-01	-	-	-	-	-	-	-	-	-	-	1.50E+02
Crotonaldehyde	5.06E+03	6.12E+01	3.24E+01	-	-	-	3.04E+02	-	-	-	-	-	-	5.46E+03
Heptene	2.15E+03	2.60E+01	1.38E+01	-	-	-	-	-	-	-	-	-	-	2.19E+03
Dimethyl napthalene	4.41E+02	5.34E+00	2.78E+00	-	-	-	-	-	-	-	-	-	-	4.49E+02
C-10 Olefins	2.86E+04	3.46E+02	1.83E+02	-	-	-	-	-	2.42E+02	-	-	-	-	2.94E+04
C-10 Paraffins	7.16E+04	8.66E+02	4.58E+02	-	-	-	-	-	-	-	-	-	-	7.29E+04
C-14 Alkane	9.12E+02	1.10E+01	5.82E+00	-	-	-	-	-	-	-	-	-	-	9.28E+02
C-15 Alkane	8.67E+02	1.05E+01	5.56E+00	-	-	-	-	-	-	-	-	-	-	8.83E+02
C-16 Alkane	7.15E+02	8.65E+00	4.63E+00	-	-	-	-	-	-	-	-	-	-	7.28E+02
C-18 Alkane	1.06E+01	1.14E-01	-	-	-	-	-	-	-	-	-	-	-	1.07E+01
C-4 Benzene + C-3 Aroald	3.22E+03	3.89E+01	2.05E+01	-	-	-	-	-	-	-	-	-	-	3.28E+03
C-5 Benzene + C-4 Aroald	1.59E+03	1.92E+01	1.02E+01	-	-	-	-	-	-	-	-	-	-	1.62E+03
Decanol	2.86E+04	3.46E+02	1.83E+02	-	-	-	-	-	-	-	-	-	-	2.92E+04
Dodecanol	1.43E+04	1.73E+02	9.16E+01	-	-	-	-	-	-	-	-	-	-	1.46E+04
Arsenic	3.94E+00	5.83E-04	5.86E-01	3.78E-01	-	-	-	-	-	-	-	-	-	4.91E+00
Barium	3.86E+01	7.49E-03	5.74E+00	-	-	-	1.26E+00	5.89E-02	-	2.66E-01	6.38E-01	6.38E-01	-	4.72E+01
Beryllium	-	-	-	2.84E-01	-	-	-	-	-	-	-	-	-	2.84E-01
Cadmium	-	-	-	2.84E-01	-	-	-	-	-	-	-	-	-	2.84E-01
Chromium	-	2.75E-03	-	-	-	-	-	-	-	-	-	-	2.06E+01	2.06E+01
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00
Copper	6.63E+00	9.57E-03	9.87E-01	5.68E-01	-	-	-	-	-	-	-	-	2.60E+02	2.69E+02
Manganese	2.80E+00	1.12E-02	4.17E-01	-	-	-	-	-	-	-	-	-	4.18E+01	4.50E+01
Mercury	-	-	-	2.84E-01	-	-	-	-	-	-	-	-	-	2.84E-01
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00
Nickel	6.06E-01	1.50E-03	9.02E-02	2.84E-01	-	-	-	-	-	-	-	-	2.47E+01	2.56E+01
Selenium	-	-	-	1.42E+00	-	-	-	-	-	-	-	-	-	1.42E+00

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.1: Estimated TAP Emission in Yr 2031

Emission Source	Aircraft & ERUF	GFS & Helicopter	APU	Catering (Diesel)	Fuel Tank	Training Fire	GSE	Carpark & Truck Park	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside Vehicles	Tire and Brake Wear	Total (kg/yr)
Vanadium	3.03E-01	1.83E-03	4.51E-02	-	-	-	-	-	-	-	-	-	-	3.50E-01
Zinc	1.33E+01	3.40E-02	1.98E+00	3.78E-01	-	-	5.04E+00	2.36E-01	-	1.06E+00	2.55E+00	2.55E+00	-	2.72E+01
Antimony	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00
Chromium VI	-	3.57E-04	-	2.84E-01	-	-	-	-	-	-	-	-	-	2.84E-01
Fluoride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00
Lead	6.82E-01	3.08E-03	1.01E-01	8.51E-01	-	-	-	-	-	-	-	-	2.70E+01	2.87E+01
Phosphorous	-	-	-	-	-	-	2.52E+00	1.18E-01	-	5.31E-01	1.28E+00	1.28E+00	-	5.72E+00
Calcium	2.53E+01	-	3.77E+00	-	-	-	7.56E+00	3.53E-01	-	1.59E+00	3.83E+00	3.83E+00	-	4.63E+01
Diesel Particulate Matters	-	-	-	1.35E+03	-	-	1.26E+04	4.62E+02	-	2.66E+03	3.30E+03	6.38E+03	-	2.68E+04
TCDD	-	-	-	2.09E-09	-	-	4.05E-05	2.63E-09	-	8.52E-06	2.68E-09	3.22E-09	-	4.91E-05

Table A17.2.2.2: Estimated Emission Inventory in Yr 2031

Estimated Emission Inventory in Yr 2031	VOC (Kg/yr)	RSP (kg/yr)
Aircraft & ERUF	487667	37888
GSE	29615	12601
APU	3118	5638
GFS	5898	83
Aviation Fuel Tank	110119	0
Fire Training Activities	702	5240
Aircraft maintenance centre	10745	0
Catering	664	1352
BCA Helicopter	42	0
Carpark / Truck Park	2477	589
Airport Island Roads	11604	4107
Marine navigation	2556	2656
Airsides Vehicles (Non-GSE)	9013	6383
BCF Idling	30578	1579
Tire and Brake Wear	0	143750

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.3: TAP Screening Result based on Carcinogenic Effect

HAPs	Annual Total Emission (tons/year) - Yr 2031														Carcinogenic Effect					
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	IUR (per $\mu g/m^3$)	Cancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark	
Diesel Particulate Matters	-	-	-	1.35E+00	-	-	1.26E+01	4.62E-01	-	2.66E+00	3.30E+00	6.38E+00	-	2.68E+01	0.0003	8.03E-03	77.9%	77.9%	IUR value is adopted from OEHHA (http://oehha.ca.gov/air/toxic_contaminants/pdf_zip/diesel	
Formaldehyde	6.05E+01	7.31E-01	3.87E-01	3.23E-01	-	-	2.59E+00	3.19E-01	-	4.01E-03	5.20E-01	4.59E+00	-	6.99E+01	0.000013	9.09E-04	8.8%	86.8%	IUR value is adopted from USEPA - IRIS (CASRN 50-00-0, http://www.epa.gov/iris/subst/0419.htm)	
Chromium VI	-	3.57E-07	-	2.84E-04	-	-	-	-	-	-	-	-	2.06E-02	2.09E-02	0.04	8.34E-04	8.1%	94.9%	IUR value is adopted from WHO (WHO 2000 (Europe, Air Quality Guidelines))	
1,3-Butadiene	8.29E+00	1.00E-01	5.30E-02	-	-	-	-	3.03E-02	-	-	5.89E-02	4.39E-01	-	8.97E+00	0.00003	2.69E-04	2.6%	97.5%	IUR value is adopted from USEPA - IRIS (CASRN 106-99-0, http://www.epa.gov/iris/subst/0139.htm).	95% Cut-off Line
Naphthalene	2.63E+00	3.18E-02	1.68E-02	1.53E-03	-	-	5.09E-01	3.46E-02	5.31E-03	0.00E+00	1.65E-01	1.55E-01	-	3.55E+00	0.000034	1.21E-04	1.2%	98.7%	IUR value is adpoted from the Memorandum of Adoption of Unit Risk Value for Naphthalene by OEHHA.	
Benzene	8.24E+00	9.97E-02	5.27E-02	2.89E-04	-	-	-	7.95E-02	1.77E-01	2.50E-05	2.45E-01	8.16E-01	-	9.71E+00	0.000006	5.83E-05	0.57%	99.2%	IUR value is adopted from WHO (WHO 2000 (Europe, Air Quality Guidelines)	
Acetaldehyde	2.10E+01	2.54E-01	1.34E-01	-	-	-	8.77E-01	1.21E-01	-	5.85E-04	2.13E-01	1.66E+00	-	2.42E+01	0.0000022	5.33E-05	0.52%	99.7%	IUR value is adopted from USEPA - IRIS (CASRN 75-07-0, http://www.epa.gov/iris/subst/0290.htm)	
Nickel	6.06E-04	1.50E-06	9.02E-05	2.84E-04	-	-	-	-	-	-	-	-	2.47E-02	2.56E-02	0.00038	9.74E-06	0.09%	99.8%	IUR value is adopted from Europe WHO (2000) Guidelines for Air Quality	
Arsenic	3.94E-03	5.83E-07	5.86E-04	3.78E-04	-	-	-	-	-	-	-	-	-	4.91E-03	0.0015	7.36E-06	0.07%	99.9%	IUR value is adopted from WHO (WHO 2000 (Europe, Air Quality Guidelines))	99.9% Cut-off Line
Benzo(a)pyrene	1.63E-05	1.97E-07	1.04E-07	-	-	-	-	-	-	2.56E-05	-	-	-	4.21E-05	0.087	3.67E-06	0.04%	99.9%	IUR value is adopted from Europe WHO (2010) Guidelines for Indoor Air Quality	
Ethylbenzene	8.29E-01	1.00E-02	5.30E-03	8.60E-05	-	-	-	-	1.43E-01	-	-	-	-	9.87E-01	0.0000025	2.47E-06	0.024%	100.0%	IUR value is adopted from OEHHA (http://oehha.ca.gov/air/hot_spots/pdf/Ethylbenzene_FINAL110607.pdf)	
TCDD	-	-	-	2.09E-12	-	-	4.05E-08	2.63E-12	-	8.52E-09	2.68E-12	3.22E-12	-	4.91E-08	38	1.86E-06	0.018%	100.0%	IUR value is adopted from "Hot Spots Unit Risk and Cancer Potency Values" - OEHHA	
Beryllium	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	0.0024	6.81E-07	0.01%	100.0%	IUR value is adopted from IRIS (CASRN 7440-41-7, http://www.epa.gov/iris/subst/0012.htm#carc)	
Cadmium	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	0.0018	5.11E-07	0.005%	100.0%	IUR value is adopted from USEPA - IRIS (CASRN 7440-43-9, http://www.epa.gov/iris/subst/0141.htm)	
Lead	6.82E-04	3.08E-06	1.01E-04	8.51E-04	-	-	-	-	-	-	-	-	2.70E-02	2.87E-02	0.000012	3.44E-07	0.003%	100.0%	IUR Value is adopted from OEHHA Cancer Potency Values	
Dibenz(a,h)anthracene	-	-	-	2.26E-06	-	-	1.47E-05	-	-	-	-	7.87E-06	-	2.49E-05	0.0012	2.98E-08	0.0003%	100.0%	IUR value is adopted from "Hot Spots Unit Risk and Cancer Potency Values" - OEHHA	
Benz(a)anthracene	2.97E-05	3.60E-07	1.90E-07	5.42E-06	-	-	2.07E-05	1.28E-05	-	-	6.46E-05	8.90E-06	-	1.43E-04	0.00011	1.57E-08	0.0002%	100.0%	IUR value is adopted from "Hot Spots Unit Risk and Cancer Potency Values" - OEHHA	
Indeno(1,2,3-cd)pyrene	-	-	-	2.89E-06	-	-	6.80E-06	-	-	1.28E-05	-	3.63E-06	-	2.61E-05	0.00011	2.87E-09	0.00003%	100.0%	IUR value is adopted from OEHHA (2009) (http://oehha.ca.gov/risk/pdf/TCDBcas061809.pdf)	
Chrysene	2.77E-05	3.35E-07	1.77E-07	3.22E-06	-	-	5.07E-05	1.56E-05	-	-	7.94E-05	2.35E-05	-	2.01E-04	0.000011	2.21E-09	0.000021%	100.0%	IUR value is adopted from the CalEPA Office of OEHHA	
Benzo(bk)fluoranthene	-	-	-	2.00E-06	-	-	-	-	-	1.28E-05	-	-	-	1.48E-05	0.00011	1.63E-09	0.000016%	100.0%	IUR value is adopted from "Hot Spots Unit Risk and Cancer Potency Values" - OEHHA	
Acrolein	1.20E+01	1.45E-01	7.67E-02	-	-	-	-	1.49E-02	-	-	2.39E-02	2.29E-01	-	1.25E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Propionaldehyde	3.56E+00	4.31E-02	2.28E-02	-	-	-	5.33E-01	-	-	-	-	-	-	4.16E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Toluene	3.17E+00	3.83E-02	2.03E-02	8.38E-03	1.76E+00	-	-	-	2.56E+00	-	-	-	-	7.56E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
o-Xylene	8.29E-01	1.00E-02	5.30E-03	1.47E-04	-	-	-	-	3.52E-01	-	-	-	-	1.20E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
m-Xylene + P-xylene	1.37E+00	1.65E-02	8.73E-03	-	-	-	-	-	2.39E-01	-	-	-	-	1.63E+00	-	-	-			
n-Hexane	-	-	-	7.17E-02	5.84E+00	-	-	-	7.08E-03	-	-	-	-	5.92E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Styrene	1.46E+00	1.77E-02	9.35E-03	-	-	-	-	-	-	-	-	-	-	1.49E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Acenaphthene	-	-	-	2.85E-05	-	-	1.64E-03	1.18E-04	-	-	5.58E-04	4.99E-04	-	2.84E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Acenaphthylene	-	-	-	3.42E-07	-	-	2.66E-03	-	-	-	-	2.66E-03	-	5.32E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Anthracene	1.97E-04	2.38E-06	1.26E-06	1.65E-06	-	-	1.33E-03	1.43E-04	-	-	7.14E-04	4.91E-04	-	2.88E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Benzo(ghi)perylene	2.70E-06	3.27E-08	1.73E-08	3.05E-06	-	-	9.64E-06	3.18E-05	-	-	1.60E-04	3.71E-06	-	2.11E-04	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Fluoranthene	4.11E-04	4.97E-06	2.63E-06	6.54E-06	-	-	2.12E-03	1.98E-04	-	-	9.92E-04	8.05E-04	-	4.54E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Fluorene	-	-	-	6.04E-06	-	-	6.89E-03	-	-	-	-	2.27E-03	-	9.17E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Phenanthrene	1.83E-03	2.21E-05	1.17E-05	1.42E-05	-	-	3.26E-02	2.13E-03	-	-	1.05E-02	1.55E-01	-	2.02E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Pyrene	5.02E-04	6.07E-06	3.21E-06	5.74E-06	-	-	1.85E-03	2.16E-04	-	-	1.08E-03	7.16E-04	-	4.38E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Methyl alcohol (Methanol)	8.85E+00	1.07E-01	5.65E-02	-	-	-	-	-	-	-	-	-	-	9.01E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Isopropylbenzene (cumene)	1.42E-02	1.82E-04	1.32E-04	-	-	-	-	-	-	-	-	-	-	1.45E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Phenol (carbolic acid)	3.56E+00	4.30E-02	2.28E-02	-	-	-	-	-	-	-	-	-	-	3.63E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Acetone	1.81E+00	2.19E-02	1.15E-02	-	-	-	-	-	1.36E+00	-	-	-	-	3.20E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
2-methylnaphthalene	1.01E+00	1.22E-02	6.49E-03	-	-	-	-	-	-	-	-	-	-	1.03E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	
Benzaldehyde	2.30E+00	2.79E-02	1.47E-02	-	-	-	1.66E-01	-	-	-	-	-	-	2.51E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA	

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.3: TAP Screening Result based on Carcinogenic Effect

HAPs	Annual Total Emission (tons/year) - Yr 2031														Carcinogenic Effect				
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	IUR (per $\mu g/m^3$)	Cancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark
n-Heptane	3.13E-01	3.79E-03	1.99E-03	1.99E-03	2.49E+00	-	-	-	-	-	-	-	-	2.81E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Ethane	2.55E+00	3.09E-02	1.63E-02	-	3.36E+00	1.12E-01	-	-	-	-	-	-	-	6.07E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Ethylene	7.58E+01	9.17E-01	4.85E-01	-	-	3.61E-01	-	-	-	-	-	-	-	7.76E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Acetylene	1.93E+01	2.34E-01	1.24E-01	-	-	-	-	-	-	-	-	-	-	1.97E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Propane	3.82E-01	4.62E-03	2.38E-03	7.97E-03	2.00E+01	-	-	-	-	-	-	-	-	2.04E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-2-propenal (methacrolein)	2.10E+00	2.54E-02	1.35E-02	-	-	-	-	-	-	-	-	-	-	2.14E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Methylglyoxal	7.37E+00	8.91E-02	4.71E-02	-	-	-	-	-	-	-	-	-	-	7.50E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-methylnaphthalene	1.21E+00	1.46E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.23E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1,2,4-trimethylbenzene (1,3,4-trimethylbenzene)	1.72E+00	2.08E-02	1.10E-02	-	-	-	-	-	-	-	-	-	-	1.75E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Propylbenzene	2.60E-01	3.14E-03	1.72E-03	-	-	-	-	-	-	-	-	-	-	2.65E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
p-Tolualdehyde	2.35E-01	2.85E-03	1.46E-03	-	-	-	-	-	-	-	-	-	-	2.40E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-butene	8.60E+00	1.04E-01	5.49E-02	-	-	-	-	-	-	-	-	-	-	8.76E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Glyoxal	8.90E+00	1.08E-01	5.69E-02	-	-	-	-	-	-	-	-	-	-	9.07E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2-methylpentane	2.00E+00	2.42E-02	1.28E-02	-	-	-	-	-	-	-	-	-	-	2.04E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1,3,5-trimethylbenzene	2.65E-01	3.20E-03	1.72E-03	-	-	-	-	-	-	-	-	-	-	2.70E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Pentane	9.70E-01	1.17E-02	6.22E-03	3.12E-02	1.26E+01	-	-	-	-	-	-	-	-	1.36E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-pentene	3.80E+00	4.60E-02	2.44E-02	-	-	-	-	-	-	-	-	-	-	3.87E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Valeraldehyde	1.20E+00	1.45E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.22E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Octane	3.04E-01	3.68E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.10E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-octene	1.35E+00	1.64E-02	8.60E-03	-	-	-	-	-	-	-	-	-	-	1.38E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Nonane	3.04E-01	3.68E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.10E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Dodecane	2.27E+00	2.74E-02	1.44E-02	-	-	-	-	-	-	-	-	-	-	2.31E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Propylene	2.22E+01	2.69E-01	1.42E-01	-	-	2.08E-02	-	-	-	-	-	-	-	2.27E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Butyraldehyde	5.84E-01	7.06E-03	3.71E-03	-	-	-	-	-	-	-	-	-	-	5.95E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-nonene	1.21E+00	1.46E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.23E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Decane	1.57E+00	1.90E-02	1.01E-02	-	-	-	-	-	-	-	-	-	-	1.60E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-2-butene	9.06E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.23E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1,2,3-trimethylbenzene	5.20E-01	6.28E-03	3.31E-03	-	-	-	-	-	-	-	-	-	-	5.30E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
o-Tolualdehyde	1.13E+00	1.36E-02	7.15E-03	-	-	-	-	-	-	-	-	-	-	1.15E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Hexadecane	2.41E-01	2.90E-03	1.59E-03	-	-	-	-	-	-	-	-	-	-	2.45E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
3-methyl-1-butene	5.49E-01	6.64E-03	3.57E-03	-	-	-	-	-	-	-	-	-	-	5.59E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-1-butene	6.87E-01	8.30E-03	4.37E-03	-	-	-	-	-	-	-	-	-	-	6.99E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Cis-2-butene	1.03E+00	1.25E-02	6.62E-03	-	-	-	-	-	-	-	-	-	-	1.05E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Isovaleraldehyde	1.58E-01	1.90E-03	1.06E-03	-	-	-	-	-	-	-	-	-	-	1.60E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-Hexene	3.61E+00	4.36E-02	2.30E-02	-	-	-	-	-	-	-	-	-	-	3.68E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-2-ethylbenzene (o-ethyltoluene)	3.19E-01	3.85E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.24E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-3-ethylbenzene (m-ethyltoluene)	7.56E-01	9.13E-03	4.77E-03	-	-	-	-	-	-	-	-	-	-	7.70E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Tolualdehyde	1.36E+00	1.65E-02	8.74E-03	-	-	-	-	-	-	-	-	-	-	1.39E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-4-ethylbenzene (p-ethyltoluene)	3.13E-01	3.79E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.19E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Cis-2-pentene	1.35E+00	1.64E-02	8.60E-03	-	-	-	-	-	-	-	-	-	-	1.38E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Tridecane	2.62E+00	3.17E-02	1.68E-02	-	-	-	-	-	-	-	-	-	-	2.67E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Tetradecane	2.04E+00	2.47E-02	1.31E-02	-	-	-	-	-	-	-	-	-	-	2.08E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Pentadecane	8.48E-01	1.03E-02	5.43E-03	-	-	-	-	-	-	-	-	-	-	8.63E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.3: TAP Screening Result based on Carcinogenic Effect

HAPs	Annual Total Emission (tons/year) - Yr 2031														Carcinogenic Effect				
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	IUR (per $\mu g/m^3$)	Cancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark
n-Heptadecane	4.42E-02	5.35E-04	2.65E-04	-	-	-	-	-	-	-	-	-	-	4.50E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Trans-2-pentene	1.76E+00	2.13E-02	1.13E-02	-	-	-	-	-	-	-	-	-	-	1.79E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
4-methyl-1-pentene	3.38E-01	4.09E-03	2.12E-03	-	-	-	-	-	-	-	-	-	-	3.44E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-1-pentene	1.66E-01	2.02E-03	1.06E-03	-	-	-	-	-	-	-	-	-	-	1.69E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
1-Decene	9.06E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.23E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
n-Undecane	2.18E+00	2.63E-02	1.39E-02	-	-	-	-	-	-	-	-	-	-	2.22E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Trans-2-hexene	1.47E-01	1.78E-03	9.27E-04	-	-	-	-	-	-	-	-	-	-	1.50E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Crotonaldehyde	5.06E+00	6.12E-02	3.24E-02	-	-	-	3.04E-01	-	-	-	-	-	-	5.46E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Heptene	2.15E+00	2.60E-02	1.38E-02	-	-	-	-	-	-	-	-	-	-	2.19E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Dimethyl napthalene	4.41E-01	5.34E-03	2.78E-03	-	-	-	-	-	-	-	-	-	-	4.49E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-10 Olefins	2.86E+01	3.46E-01	1.83E-01	-	-	-	-	-	-	-	-	-	-	2.92E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-10 Paraffins	7.16E+01	8.66E-01	4.58E-01	-	-	-	-	-	-	-	-	-	-	7.29E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-14 Alkane	9.12E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.28E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-15 Alkane	8.67E-01	1.05E-02	5.56E-03	-	-	-	-	-	-	-	-	-	-	8.83E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-16 Alkane	7.15E-01	8.65E-03	4.63E-03	-	-	-	-	-	-	-	-	-	-	7.28E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-18 Alkane	1.06E-02	1.14E-04	-	-	-	-	-	-	-	-	-	-	-	1.07E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-4 Benzene + C-3 Aroald	3.22E+00	3.89E-02	2.05E-02	-	-	-	-	-	-	-	-	-	-	3.28E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
C-5 Benzene + C-4 Aroald	1.59E+00	1.92E-02	1.02E-02	-	-	-	-	-	-	-	-	-	-	1.62E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Decanol	2.86E+01	3.46E-01	1.83E-01	-	-	-	-	-	-	-	-	-	-	2.92E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Dodecanol	1.43E+01	1.73E-01	9.16E-02	-	-	-	-	-	-	-	-	-	-	1.46E+01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Barium	3.86E-02	7.49E-06	5.74E-03	-	-	-	1.26E-03	5.89E-05	-	2.66E-04	6.38E-04	6.38E-04	-	4.72E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Chromium	-	2.75E-06	-	-	-	-	-	-	-	-	-	-	-	2.75E-06	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Copper	6.63E-03	9.57E-06	9.87E-04	5.68E-04	-	-	-	-	-	-	-	-	2.60E-01	2.69E-01	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Manganese	2.80E-03	1.12E-05	4.17E-04	-	-	-	-	-	-	-	-	-	4.18E-02	4.50E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Mercury	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Selenium	-	-	-	1.42E-03	-	-	-	-	-	-	-	-	-	1.42E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Vanadium	3.03E-04	1.83E-06	4.51E-05	-	-	-	-	-	-	-	-	-	-	3.50E-04	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Zinc	1.33E-02	3.40E-05	1.98E-03	3.78E-04	-	-	5.04E-03	2.36E-04	-	1.06E-03	2.55E-03	2.55E-03	-	2.72E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Antimony	0.00E+00	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Fluoride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Phosphorous	-	-	-	-	-	-	2.52E-03	1.18E-04	-	5.31E-04	1.28E-03	1.28E-03	-	5.72E-03	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
2,2,4-Trimethylpentane	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
Calcium	2.53E-02	-	3.77E-03	-	-	-	7.56E-03	3.53E-04	-	1.59E-03	3.83E-03	3.83E-03	-	4.63E-02	-	-	-	-	No IUR value is available in WHO, USEPA - IRIS nor OEHHA
															Total	1.03E-02	100%		

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.4: TAP Screening Result based on Non-carcinogenic Effect

TAPs	Annual Total Emission (tons/year) - Yr 2031														Non-Carcinogenic Effect (Chronic)					
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	RfC (μg/m^3)	Noncancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark	
Acrolein	1.20E+01	1.45E-01	7.67E-02	-	-	-	-	1.49E-02	-	-	2.39E-02	2.29E-01	-	1.25E+01	0.35	3.57E+01	69.2%	69.2%	RfC value is adopted from WHO 2002:http://apps.who.int/iris/bitstream/10665/42490/1/a75363.pdf	
Diesel Particulate Matters	-	-	-	1.35E+00	-	-	1.26E+01	4.62E-01	-	2.66E+00	3.30E+00	6.38E+00	-	2.68E+01	5	5.35E+00	10.4%	79.6%	RfC valus is adopted from USEPA - IRIS (http://www.epa.gov/iris/subst/0642.htm#carc)	
1,3-Butadiene	8.29E+00	1.00E-01	5.30E-02	-	-	-	-	3.03E-02	-	-	5.89E-02	4.39E-01	-	8.97E+00	2	4.49E+00	8.7%	88.3%	RfC value is adopted from USEPA - IRIS (CASRN 106-99-0, http://www.epa.gov/iris/subst/0139.htm). LOAEL value is adopted	
Acetaldehyde	2.10E+01	2.54E-01	1.34E-01	-	-	-	8.77E-01	1.21E-01	-	5.85E-04	2.13E-01	1.66E+00	-	2.42E+01	9	2.69E+00	5.2%	93.5%	RfC value is adopted from USEPA - IRIS (CASRN 75-07-0, http://www.epa.gov/iris/subst/0290.htm)	
Formaldehyde	6.05E+01	7.31E-01	3.87E-01	3.23E-01	-	-	2.59E+00	3.19E-01	-	4.01E-03	5.20E-01	4.59E+00	-	6.99E+01	100	6.99E-01	1.4%	94.9%	RfC value is adopted from WHO (guideline for IAQ P.xix)	
Propionaldehyde	3.56E+00	4.31E-02	2.28E-02	-	-	-	5.33E-01	-	-	-	-	-	-	4.16E+00	8	5.20E-01	1.0%	95.9%	RfC value is adopted from USEPA - IRIS (CASRN 123-38-6, http://www.epa.gov/iris/subst/1011.htm)	95% Cut-off Line
Naphthalene	2.63E+00	3.18E-02	1.68E-02	1.53E-03	-	-	5.09E-01	3.46E-02	5.31E-03	0.00E+00	1.65E-01	1.55E-01	-	3.55E+00	10	3.55E-01	0.69%	96.6%	RfC value is adopted from WHO (WHO 2010, Indoor Air Quality)	
Arsenic	3.94E-03	5.83E-07	5.86E-04	3.78E-04	-	-	-	-	-	-	-	-	-	4.91E-03	0.015	3.27E-01	0.635%	97.2%	RfC value is adopted from OEHHA (http://oehha.ca.gov/air/allrels.html)	
Benzene	8.24E+00	9.97E-02	5.27E-02	2.89E-04	-	-	-	7.95E-02	1.77E-01	2.50E-05	2.45E-01	8.16E-01	-	9.71E+00	30	3.24E-01	0.628%	97.9%	RfC value is adopted from USEPA - IRIS (CASRN 71-43-2, http://www.epa.gov/iris/subst/0276.htm)	
Manganese	2.80E-03	1.12E-05	4.17E-04	-	-	-	-	-	-	-	-	-	4.18E-02	4.50E-02	0.15	3.00E-01	0.58%	98.4%	RfC value is adopted from WHO (WHO 2000 (Europe, Air Quality Guidelines)	
Nickel	6.06E-04	1.50E-06	9.02E-05	2.84E-04	-	-	-	-	-	-	-	-	2.47E-02	2.56E-02	0.09	2.85E-01	0.55%	99.0%	ATSDR (from http://www.atsdr.cdc.gov/mrls/pdfs/atsdr_mrls_july_2013.pdf)	
Chromium VI	-	3.57E-07	-	2.84E-04	-	-	-	-	-	-	-	-	2.06E-02	2.09E-02	0.1	2.09E-01	0.40%	99.4%	RfC value is adopted from USEPA - IRIS (CASRN 18540-29-9, http://www.epa.gov/iris/subst/0144.htm)	
Copper	6.63E-03	9.57E-06	9.87E-04	5.68E-04	-	-	-	-	-	-	-	-	2.60E-01	2.69E-01	2.4	1.12E-01	0.22%	99.6%	RfC value is adopted from the OEHHA (http://oehha.ca.gov/risk/pdf/APENDX-B.pdf)	
Lead	6.82E-04	3.08E-06	1.01E-04	8.51E-04	-	-	-	-	-	-	-	-	2.70E-02	2.87E-02	0.5	5.73E-02	0.111%	99.7%	0.5μg/m3 is the annual-avg. criteria adopted from WHO	
m-Xylene + P-xylene	1.37E+00	1.65E-02	8.73E-03	-	-	-	-	-	2.39E-01	-	-	-	-	1.63E+00	100	2.83E-02	0.110%	99.8%	RfC value is adopted from USEPA - IRIS (CASRN 1330-20-7, http://www.epa.gov/iris/subst/0270.htm)	
o-Xylene	8.29E-01	1.00E-02	5.30E-03	1.47E-04	-	-	-	-	3.52E-01	-	-	-	-	1.20E+00	100	2.83E-02				
Cadmium	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	0.01	2.84E-02	0.06%	99.9%	RfC value is adopted from ASTDR (http://www.atsdr.cdc.gov/toxprofiles/tp5.pdf)	99.9% Cut-off Line
Phenol (carbolic acid)	3.56E+00	4.30E-02	2.28E-02	-	-	-	-	-	-	-	-	-	-	3.63E+00	200	1.81E-02	0.04%	99.9%	RfC value is adopted from OEHHA (http://oehha.ca.gov/air/allrels.html)	
Beryllium	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	0.02	1.42E-02	0.03%	100.0%	RfC value is adopted from WHO (Section 11.1.3 from http://apps.who.int/iris/bitstream/10665/42369/1/9241530324.pdf)	
n-Hexane	-	-	-	7.17E-02	5.84E+00	-	-	-	7.08E-03	-	-	-	-	5.92E+00	700	8.45E-03	0.02%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 110-54-3, http://www.epa.gov/iris/subst/0486.htm)	
Propylene	2.22E+01	2.69E-01	1.42E-01	-	-	2.08E-02	-	-	-	-	-	-	-	2.27E+01	3000	7.55E-03	0.01%	100.0%	RfC value is adopted from OEHHA	
Toluene	3.17E+00	3.83E-02	2.03E-02	8.38E-03	1.76E+00	-	-	-	2.56E+00	-	-	-	-	7.56E+00	5000	1.51E-03	0.00293%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 108-88-3, http://www.epa.gov/iris/subst/0118.htm)	
Styrene	1.46E+00	1.77E-02	9.35E-03	-	-	-	-	-	-	-	-	-	-	1.49E+00	1000	1.49E-03	0.00289%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 100-42-5, http://www.epa.gov/iris/subst/0104.htm)	
Ethylbenzene	8.29E-01	1.00E-02	5.30E-03	8.60E-05	-	-	-	-	1.43E-01	-	-	-	-	9.87E-01	1000	9.87E-04	0.00192%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 100-41-4, http://www.epa.gov/iris/subst/0051.htm)	
Methyl alcohol (Methanol)	8.85E+00	1.07E-01	5.65E-02	-	-	-	-	-	-	-	-	-	-	9.01E+00	20000	4.51E-04	0.00087%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 67-56-1, http://www.epa.gov/iris/subst/0305.htm#refinhal).	
Mercury	-	-	-	2.84E-04	-	-	-	-	-	-	-	-	-	2.84E-04	1	2.84E-04	0.00055%	100.0%	RtC value is adopted from WHO (WHO 2000, Air Quality Guidelines for Europe)	
Selenium	-	-	-	1.42E-03	-	-	-	-	-	-	-	-	-	1.42E-03	20	7.10E-05	0.00014%	100.0%	RfC value is adopted from OEHHA (http://oehha.ca.gov/air/allrels.html)	
Isopropylbenzene (cumene)	1.42E-02	1.82E-04	1.32E-04	-	-	-	-	-	-	-	-	-	-	1.45E-02	400	3.62E-05	0.00007%	100.0%	RfC value is adopted from USEPA - IRIS (CASRN 98-82-8, http://www.epa.gov/iris/subst/0306.htm)	
Chromium	-	2.75E-06	-	-	-	-	-	-	-	-	-	-	-	2.75E-06	0.2	1.37E-05	0.00003%	100.0%	RfC value is adopted from OEHHA for Cr(VI) (http://oehha.ca.gov/air/allrels.html)	
1,3,5-trimethylbenzene	2.65E-01	3.20E-03	1.72E-03	-	-	-	-	-	-	-	-	-	-	2.70E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
1,2,3-trimethylbenzene	5.20E-01	6.28E-03	3.31E-03	-	-	-	-	-	-	-	-	-	-	5.30E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
1,2,4-trimethylbenzene (1,3,4-trimethylbenzene)	1.72E+00	2.08E-02	1.10E-02	-	-	-	-	-	-	-	-	-	-	1.75E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Acenaphthene	-	-	-	2.85E-05	-	-	1.64E-03	1.18E-04	-	-	5.58E-04	4.99E-04	-	2.84E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Acenaphthylene	-	-	-	3.42E-07	-	-	2.66E-03	-	-	-	-	2.66E-03	-	5.32E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Anthracene	1.97E-04	2.38E-06	1.26E-06	1.65E-06	-	-	1.33E-03	1.43E-04	-	-	7.14E-04	4.91E-04	-	2.88E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Benzo(ghi)perylene	2.70E-06	3.27E-08	1.73E-08	3.05E-06	-	-	9.64E-06	3.18E-05	-	-	1.60E-04	3.71E-06	-	2.11E-04	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Benzo(bk)fluoranthene	-	-	-	2.00E-06	-	-	-	-	-	1.28E-05	-	-	-	1.48E-05	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Benz(a)anthracene	2.97E-05	3.60E-07	1.90E-07	5.42E-06	-	-	2.07E-05	1.28E-05	-	-	6.46E-05	8.90E-06	-	1.43E-04	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Benzo(a)pyrene	1.63E-05	1.97E-07	1.04E-07	-	-	-	-	-	-	2.56E-05	-	-	-	4.21E-05	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Chrysene	2.77E-05	3.35E-07	1.77E-07	3.22E-06	-	-	5.07E-05	1.56E-05	-	-	7.94E-05	2.35E-05	-	2.01E-04	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Dibenz(a,h)anthracene	-	-	-	2.26E-06	-	-	1.47E-05	-	-	-	-	7.87E-06	-	2.49E-05	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	
Fluoranthene	4.11E-04	4.97E-06	2.63E-06	6.54E-06	-	-	2.12E-03	1.98E-04	-	-	9.92E-04	8.05E-04	-	4.54E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA	

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.4: TAP Screening Result based on Non-carcinogenic Effect

TAPs	Annual Total Emission (tons/year) - Yr 2031														Non-Carcinogenic Effect (Chronic)				
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	RfC (μg/m^3)	Noncancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark
Fluorene	-	-	-	6.04E-06	-	-	6.89E-03	-	-	-	-	2.27E-03	-	9.17E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Indeno(1,2,3-cd)pyrene	-	-	-	2.89E-06	-	-	6.80E-06	-	-	1.28E-05	-	3.63E-06	-	2.61E-05	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Phenanthrene	1.83E-03	2.21E-05	1.17E-05	1.42E-05	-	-	3.26E-02	2.13E-03	-	-	1.05E-02	1.55E-01	-	2.02E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Pyrene	5.02E-04	6.07E-06	3.21E-06	5.74E-06	-	-	1.85E-03	2.16E-04	-	-	1.08E-03	7.16E-04	-	4.38E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Acetone	1.81E+00	2.19E-02	1.15E-02	-	-	-	-	-	1.36E+00	-	-	-	-	3.20E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methylnaphthalene	1.01E+00	1.22E-02	6.49E-03	-	-	-	-	-	-	-	-	-	-	1.03E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Benzaldehyde	2.30E+00	2.79E-02	1.47E-02	-	-	-	1.66E-01	-	-	-	-	-	-	2.51E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Heptane	3.13E-01	3.79E-03	1.99E-03	1.99E-03	2.49E+00	-	-	-	-	-	-	-	-	2.81E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Ethane	2.55E+00	3.09E-02	1.63E-02	-	3.36E+00	1.12E-01	-	-	-	-	-	-	-	6.07E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Ethylene	7.58E+01	9.17E-01	4.85E-01	-	-	3.61E-01	-	-	-	-	-	-	-	7.76E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Acetylene	1.93E+01	2.34E-01	1.24E-01	-	-	-	-	-	-	-	-	-	-	1.97E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Propane	3.82E-01	4.62E-03	2.38E-03	7.97E-03	2.00E+01	-	-	-	-	-	-	-	-	2.04E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-2-propenal (methacrolein)	2.10E+00	2.54E-02	1.35E-02	-	-	-	-	-	-	-	-	-	-	2.14E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Methylglyoxal	7.37E+00	8.91E-02	4.71E-02	-	-	-	-	-	-	-	-	-	-	7.50E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-methylnaphthalene	1.21E+00	1.46E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.23E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Propylbenzene	2.60E-01	3.14E-03	1.72E-03	-	-	-	-	-	-	-	-	-	-	2.65E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
p-Tolualdehyde	2.35E-01	2.85E-03	1.46E-03	-	-	-	-	-	-	-	-	-	-	2.40E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-butene	8.60E+00	1.04E-01	5.49E-02	-	-	-	-	-	-	-	-	-	-	8.76E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Glyoxal	8.90E+00	1.08E-01	5.69E-02	-	-	-	-	-	-	-	-	-	-	9.07E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methylpentane	2.00E+00	2.42E-02	1.28E-02	-	-	-	-	-	-	-	-	-	-	2.04E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Pentane	9.70E-01	1.17E-02	6.22E-03	3.12E-02	1.26E+01	-	-	-	-	-	-	-	-	1.36E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-pentene	3.80E+00	4.60E-02	2.44E-02	-	-	-	-	-	-	-	-	-	-	3.87E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Valeraldehyde	1.20E+00	1.45E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.22E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Octane	3.04E-01	3.68E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.10E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-octene	1.35E+00	1.64E-02	8.60E-03	-	-	-	-	-	-	-	-	-	-	1.38E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
N-nonane	3.04E-01	3.68E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.10E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
N-dodecane	2.27E+00	2.74E-02	1.44E-02	-	-	-	-	-	-	-	-	-	-	2.31E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Butyraldehyde	5.84E-01	7.06E-03	3.71E-03	-	-	-	-	-	-	-	-	-	-	5.95E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-nonene	1.21E+00	1.46E-02	7.68E-03	-	-	-	-	-	-	-	-	-	-	1.23E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Decane	1.57E+00	1.90E-02	1.01E-02	-	-	-	-	-	-	-	-	-	-	1.60E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-2-butene	9.06E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.23E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
o-Tolualdehyde	1.13E+00	1.36E-02	7.15E-03	-	-	-	-	-	-	-	-	-	-	1.15E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Hexadecane	2.41E-01	2.90E-03	1.59E-03	-	-	-	-	-	-	-	-	-	-	2.45E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
3-methyl-1-butene	5.49E-01	6.64E-03	3.57E-03	-	-	-	-	-	-	-	-	-	-	5.59E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-1-butene	6.87E-01	8.30E-03	4.37E-03	-	-	-	-	-	-	-	-	-	-	6.99E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Cis-2-butene	1.03E+00	1.25E-02	6.62E-03	-	-	-	-	-	-	-	-	-	-	1.05E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Isovaleraldehyde	1.58E-01	1.90E-03	1.06E-03	-	-	-	-	-	-	-	-	-	-	1.60E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-Hexene	3.61E+00	4.36E-02	2.30E-02	-	-	-	-	-	-	-	-	-	-	3.68E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-2-ethylbenzene (o-ethyltoluene)	3.19E-01	3.85E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.24E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-3-ethylbenzene (m-ethyltoluene)	7.56E-01	9.13E-03	4.77E-03	-	-	-	-	-	-	-	-	-	-	7.70E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Tolualdehyde	1.36E+00	1.65E-02	8.74E-03	-	-	-	-	-	-	-	-	-	-	1.39E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-methyl-4-ethylbenzene (p-ethyltoluene)	3.13E-01	3.79E-03	1.99E-03	-	-	-	-	-	-	-	-	-	-	3.19E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA

Appendix 17.2.2: TAP Toxicity and Screening Results

Table A17.2.2.4: TAP Screening Result based on Non-carcinogenic Effect

TAPs	Annual Total Emission (tons/year) - Yr 2031														Non-Carcinogenic Effect (Chronic)				
	Aircraft & ERUF	GFS & Helicopter	APU	Catering	Fuel Tank	Training Fire	GSE	Carpark	Aircraft Maintenance Centre	Marine Navigation	Airport Island Roads	Airside vehicles (Non-GSE)	Tire and Brake Wear	Total	RfC ($\mu g/m^3$)	Noncancer Equivalent (tones/year)	Percentage of Total	Cumulative Percentage	Remark
Cis-2-pentene	1.35E+00	1.64E-02	8.60E-03	-	-	-	-	-	-	-	-	-	-	1.38E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Tridecane	2.62E+00	3.17E-02	1.68E-02	-	-	-	-	-	-	-	-	-	-	2.67E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Tetradecane	2.04E+00	2.47E-02	1.31E-02	-	-	-	-	-	-	-	-	-	-	2.08E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Pentadecane	8.48E-01	1.03E-02	5.43E-03	-	-	-	-	-	-	-	-	-	-	8.63E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Heptadecane	4.42E-02	5.35E-04	2.65E-04	-	-	-	-	-	-	-	-	-	-	4.50E-02	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Trans-2-pentene	1.76E+00	2.13E-02	1.13E-02	-	-	-	-	-	-	-	-	-	-	1.79E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
4-methyl-1-pentene	3.38E-01	4.09E-03	2.12E-03	-	-	-	-	-	-	-	-	-	-	3.44E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2-methyl-1-pentene	1.66E-01	2.02E-03	1.06E-03	-	-	-	-	-	-	-	-	-	-	1.69E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
1-Decene	9.06E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.23E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
n-Undecane	2.18E+00	2.63E-02	1.39E-02	-	-	-	-	-	-	-	-	-	-	2.22E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Trans-2-hexene	1.47E-01	1.78E-03	9.27E-04	-	-	-	-	-	-	-	-	-	-	1.50E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Crotonaldehyde	5.06E+00	6.12E-02	3.24E-02	-	-	-	3.04E-01	-	-	-	-	-	-	5.46E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Heptene	2.15E+00	2.60E-02	1.38E-02	-	-	-	-	-	-	-	-	-	-	2.19E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Dimethyl napthalene	4.41E-01	5.34E-03	2.78E-03	-	-	-	-	-	-	-	-	-	-	4.49E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-10 Olefins	2.86E+01	3.46E-01	1.83E-01	-	-	-	-	-	-	-	-	-	-	2.92E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-10 Paraffins	7.16E+01	8.66E-01	4.58E-01	-	-	-	-	-	-	-	-	-	-	7.29E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-14 Alkane	9.12E-01	1.10E-02	5.82E-03	-	-	-	-	-	-	-	-	-	-	9.28E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-15 Alkane	8.67E-01	1.05E-02	5.56E-03	-	-	-	-	-	-	-	-	-	-	8.83E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-16 Alkane	7.15E-01	8.65E-03	4.63E-03	-	-	-	-	-	-	-	-	-	-	7.28E-01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-18 Alkane	1.06E-02	1.14E-04	-	-	-	-	-	-	-	-	-	-	-	1.07E-02	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-4 Benzene + C-3 Aroald	3.22E+00	3.89E-02	2.05E-02	-	-	-	-	-	-	-	-	-	-	3.28E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
C-5 Benzene + C-4 Aroald	1.59E+00	1.92E-02	1.02E-02	-	-	-	-	-	-	-	-	-	-	1.62E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Decanol	2.86E+01	3.46E-01	1.83E-01	-	-	-	-	-	-	-	-	-	-	2.92E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Dodecanol	1.43E+01	1.73E-01	9.16E-02	-	-	-	-	-	-	-	-	-	-	1.46E+01	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Barium	3.86E-02	7.49E-06	5.74E-03	-	-	-	1.26E-03	5.89E-05	-	2.66E-04	6.38E-04	6.38E-04	-	4.72E-02	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Vanadium	3.03E-04	1.83E-06	4.51E-05	-	-	-	-	-	-	-	-	-	-	3.50E-04	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Zinc	1.33E-02	3.40E-05	1.98E-03	3.78E-04	-	-	5.04E-03	2.36E-04	-	1.06E-03	2.55E-03	2.55E-03	-	2.72E-02	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Antimony	0.00E+00	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Fluoride	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	13	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Phosphorous	-	-	-	-	-	-	2.52E-03	1.18E-04	-	5.31E-04	1.28E-03	1.28E-03	-	5.72E-03	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
TCDD	-	-	-	2.09E-12	-	-	4.05E-08	2.63E-12	-	8.52E-09	2.68E-12	3.22E-12	-	4.91E-08	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
2,2,4-Trimethylpentane	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
Calcium	2.53E-02	-	3.77E-03	-	-	-	7.56E-03	3.53E-04	-	1.59E-03	3.83E-03	3.83E-03	-	4.63E-02	-	-	-	-	No RfC value is available in WHO, USEPA - IRIS nor OEHHA
															Total	5.15E+01	100%		