

AERSCREEN 16216 / AERMOD 18081

12/15/20

21:57:59

TITLE: ANTLER GENERATING STATION - CO IMPACTS

***** STACK PARAMETERS *****

SOURCE EMISSION RATE:	1.7640 g/s	14.000 lb/hr
STACK HEIGHT:	18.29 meters	60.01 feet
STACK INNER DIAMETER:	2.743 meters	108.00 inches
PLUME EXIT TEMPERATURE:	804.9 K	989.1 Deg F
PLUME EXIT VELOCITY:	38.163 m/s	125.21 ft/s
STACK AIR FLOW RATE:	477917 ACFM	
STACK BASE LONGITUDE:	-108.0284 deg	764376. Easting
STACK BASE LATITUDE:	37.0178 deg	4100978. Northing
STACK BASE UTM ZONE:		12
REFERENCE DATUM (NADA):		4
STACK BASE ELEVATION:	1923.90 meters	6312.01 feet
RURAL OR URBAN:	RURAL	

DIGITAL ELEVATION MAP(S)	USGS_1_n38w107.tif
	USGS_1_n38w108.tif
	USGS_1_n38w109.tif
	USGS_1_n37w107.tif
	USGS_1_n37w108.tif
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INITIAL PROBE DISTANCE =	10000. meters	32808. feet
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***** BUILDING DOWNWASH PARAMETERS *****

USER DEFINED BPIPPRM INPUT FILE: bpip.inp

MAXIMUM BUILDING HEIGHT:	7.7 meters	25.2 feet
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MAXIMUM BUILDING LENGTH: 28.0 meters 91.9 feet

MINIMUM BUILDING WIDTH: 9.5 meters 31.3 feet

***** FLOW SECTOR ANALYSIS *****

25 meter receptor spacing: 15. meters - 5000. meters

50 meter receptor spacing: 5050. meters - 10000. meters

FLOW SECTOR	BUILD WIDTH	BUILD LENGTH	XBADJ	YBADJ	MAXIMUM 1-HR CONC (ug/m3)	IMPACT DIST (m)	RECEPTOR HEIGHT (m)	TEMPORAL PERIOD
10	14.35	27.13	-13.91	-5.62	8.910	250.0	-4.60	SPR
20	17.60	25.48	-12.23	-5.16	9.559	250.0	-1.89	SPR
30	20.59	23.05	-10.18	-4.68	9.971	250.0	-0.43	SPR
40	23.59	19.92	-7.83	-4.37	10.18	225.0	-0.03	SPR
50	25.86	16.99	-6.03	-3.94	11.04	6300.0	142.38	WIN
60	27.36	13.64	-4.16	-3.38	11.77	5800.0	143.51	WIN
70	28.02	10.14	-2.16	-2.72	11.32	5100.0	123.44	WIN
80	27.94	9.53	-0.19	-1.98	9.837	4900.0	108.39	WIN
90	27.96	10.67	0.57	-1.18	11.87	4875.0	136.56	WIN
100	27.13	14.35	-1.56	-0.34	9.641	250.0	7.16	SPR
110	25.48	17.60	-3.64	0.51	9.759	250.0	10.05	SPR
120	23.05	20.59	-5.62	1.34	10.06	250.0	13.31	SPR
130	19.92	23.59	-7.42	2.13	10.25	250.0	14.76	SPR
140*	16.99	25.86	-8.99	2.46	13.30	4675.0	139.74	WIN
150	13.64	27.36	-10.30	2.66	12.78	4600.0	151.82	WIN
160	10.14	28.02	-11.29	2.91	11.48	3075.0	134.52	WIN
170	9.53	27.94	-11.99	4.58	10.59	2975.0	118.18	WIN
180	10.67	27.96	-12.80	5.90	10.10	3150.0	117.00	WIN
190	14.35	27.13	-13.22	5.62	9.639	250.0	6.42	SPR
200	17.60	25.48	-13.25	5.16	9.695	250.0	4.42	SPR
210	20.59	23.05	-12.87	4.68	9.932	225.0	1.54	SPR
220	23.59	19.92	-12.09	4.37	9.900	250.0	-0.67	SPR
230	22.35	9.01	-28.55	13.41	9.171	250.0	-3.43	SPR
240	23.52	6.05	-28.51	9.01	8.525	250.0	-6.65	SPR
250	23.99	3.16	-27.85	4.33	8.217	250.0	-8.79	SPR
260	23.72	3.62	-29.46	-0.48	8.003	250.0	-10.82	SPR
270	22.73	7.68	-30.99	-5.28	7.875	225.0	-11.66	SPR
280	21.05	11.51	-31.58	-9.91	7.813	225.0	-12.82	SPR
290	12.32	14.63	-45.21	-5.86	7.781	225.0	-13.56	SPR
300	23.05	20.59	-14.98	-1.34	7.763	225.0	-14.05	SPR
310	19.92	23.59	-16.17	-2.13	7.750	225.0	-14.44	SPR
320	16.99	25.86	-16.87	-2.46	7.727	225.0	-15.24	SPR
330	13.64	27.36	-17.06	-2.66	7.760	250.0	-14.57	SPR
340	10.14	28.02	-16.73	-2.91	7.839	250.0	-13.03	SPR

350	9.53	27.94	-15.95	-4.58	8.069	250.0	-10.12	SPR
360	10.67	27.96	-15.16	-5.90	8.260	250.0	-8.45	SPR

* = worst case flow sector

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Desert Shrubland

DOMINANT CLIMATE TYPE: Dry Conditions

DOMINANT SEASON: Winter

ALBEDO: 0.45

BOWEN RATIO: 10.00

ROUGHNESS LENGTH: 0.150 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

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H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
-1.89	0.048	-9.000	0.020	-999.	24.	4.4	0.150	10.00	0.45	1.00		

HT	REF	TA	HT
10.0	250.0	2.0	

WIND SPEED AT STACK HEIGHT (non-downwash): 2.0 m/s
 STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 18.3 meters
 ESTIMATED FINAL PLUME RISE (non-downwash): 108.5 meters
 ESTIMATED FINAL PLUME HEIGHT (non-downwash): 126.7 meters

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR

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10 02 06 6 12

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS
400.33	0.141	1.800	0.020	826.	122.	-1.0	0.300	10.00	0.28	0.50		
HT	REF	TA	HT									
10.0	310.0	2.0										

WIND SPEED AT STACK HEIGHT (non-downwash): 0.6 m/s
STACK-TIP DOWNWASH ADJUSTED STACK HEIGHT: 18.3 meters
ESTIMATED FINAL PLUME RISE (non-downwash): 1409.8 meters
ESTIMATED FINAL PLUME HEIGHT (non-downwash): 1428.1 meters

***** AERSCREEN AUTOMATED DISTANCES *****
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	RECEPTOR HEIGHT (m)
15.24	0.8801	-2.68	3775.00	9.751	120.39
25.00	0.9475	-1.95	3800.00	9.637	122.96
50.00	0.8622	-0.29	3825.00	9.683	124.73
75.00	0.8897	1.19	3850.00	9.922	127.22
100.00	1.222	2.86	3875.00	10.15	130.11
125.00	2.383	4.51	3900.00	10.23	131.75
150.00	5.714	5.86	3925.00	10.32	133.89
175.00	7.864	2.35	3950.00	10.42	101.03
200.00	9.677	0.72	3975.00	10.73	102.49
225.00	10.19	0.31	4000.00	10.96	103.63
250.00	10.33	15.37	4025.00	11.14	104.66
275.00	10.28	20.74	4050.00	10.83	103.56
300.00	10.47	27.57	4075.00	11.56	132.62
325.00	9.746	28.27	4100.00	11.46	131.81
350.00	9.117	29.66	4125.00	11.44	132.33
375.00	8.503	29.81	4150.00	11.49	133.80
400.00	7.948	29.45	4175.00	11.62	137.97
425.00	7.456	29.86	4200.00	11.45	143.81
450.00	7.006	29.89	4225.00	10.37	103.17
475.00	6.600	25.30	4250.00	10.53	104.12
500.00	6.239	24.78	4275.00	10.69	105.11
525.00	5.910	19.25	4300.00	10.88	106.26

550.00	5.605	18.45	4325.00	10.93	106.79
575.00	5.317	17.46	4350.00	11.09	107.93
600.00	5.044	16.59	4375.00	11.24	109.07
625.00	4.786	15.78	4400.00	11.34	110.01
650.00	4.546	18.01	4425.00	11.43	110.97
675.00	4.317	16.33	4450.00	11.54	112.18
700.00	4.105	19.05	4475.00	11.64	113.49
725.00	3.905	19.76	4500.00	11.73	114.95
750.00	3.718	18.80	4525.00	11.80	116.44
775.00	3.543	20.75	4550.00	11.82	117.73
800.00	3.378	20.80	4575.00	11.82	118.81
825.00	3.224	21.06	4600.00	12.78	151.82
850.00	3.080	22.06	4625.00	12.67	152.36
875.00	2.996	36.71	4650.00	13.17	134.58
900.00	2.917	38.13	4675.00	13.30	139.74
925.00	2.838	39.67	4700.00	13.21	142.93
950.00	2.760	40.49	4725.00	13.17	142.23
975.00	2.684	40.27	4750.00	12.69	149.63
1000.00	2.611	40.22	4775.00	11.83	156.20
1025.00	2.540	35.44	4800.00	11.42	163.97
1050.00	2.472	34.42	4825.00	11.57	167.65
1075.00	2.406	34.08	4850.00	11.62	170.33
1100.00	2.343	33.73	4875.00	11.87	136.56
1125.00	2.282	33.23	4900.00	11.84	137.11
1150.00	2.222	32.99	4925.00	11.53	173.47
1175.00	2.164	32.80	4950.00	11.46	172.12
1200.00	2.109	33.84	4975.00	11.44	173.87
1225.00	2.056	52.04	5000.00	11.38	173.53
1250.00	2.066	52.69	5050.00	11.30	174.57
1275.00	2.086	52.99	5100.00	11.32	123.44
1300.00	2.030	52.83	5150.00	11.08	179.00
1325.00	1.933	52.40	5200.00	10.92	181.70
1350.00	3.195	59.20	5250.00	10.71	166.18
1375.00	3.941	62.54	5300.00	10.64	166.56
1400.00	4.631	65.39	5350.00	10.65	182.04
1425.00	5.220	67.74	5400.00	10.66	173.06
1450.00	5.736	69.78	5450.00	10.55	171.43
1475.00	6.148	71.41	5500.00	10.28	165.87
1500.00	6.265	72.01	5550.00	10.29	129.57
1525.00	6.101	71.76	5600.00	11.24	148.47
1550.00	5.913	71.42	5650.00	11.41	143.60
1575.00	5.737	71.10	5700.00	11.19	146.92
1600.00	5.601	70.89	5750.00	11.30	130.93
1625.00	5.526	70.87	5800.00	11.77	143.51
1650.00	5.634	71.45	5850.00	11.61	146.28
1675.00	5.948	72.70	5900.00	11.30	150.14
1700.00	6.399	74.38	5950.00	10.65	155.81
1725.00	6.964	76.40	6000.00	11.19	149.54
1750.00	7.613	78.67	6050.00	10.45	156.33
1775.00	8.331	81.17	6100.00	10.61	154.33
1800.00	8.346	81.52	6150.00	10.50	179.93
1825.00	8.298	81.67	6200.00	10.48	174.63

1850.00	7.559	79.60	6250.00	10.10	186.50
1875.00	6.335	75.84	6300.00	11.04	142.38
1900.00	6.900	77.97	6350.00	10.06	145.93
1925.00	7.437	80.01	6400.00	10.13	170.40
1950.00	7.872	81.74	6450.00	10.00	182.46
1975.00	8.147	82.96	6500.00	9.802	185.72
2000.00	8.280	83.72	6550.00	9.790	184.53
2025.00	8.353	84.28	6600.00	9.698	185.15
2050.00	8.546	85.28	6650.00	9.782	137.53
2075.00	8.899	86.91	6700.00	9.633	134.75
2100.00	9.225	88.52	6750.00	9.532	146.95
2125.00	9.497	90.01	6800.00	9.631	179.06
2150.00	9.721	91.39	6850.00	9.503	168.83
2175.00	9.889	92.61	6900.00	8.676	195.87
2200.00	9.943	93.35	6950.00	8.191	203.18
2225.00	9.963	93.95	7000.00	7.896	207.35
2250.00	10.01	94.73	7050.00	7.508	108.71
2275.00	10.05	95.52	7100.00	7.837	112.64
2300.00	10.07	96.22	7150.00	8.078	117.69
2325.00	10.08	96.85	7200.00	9.164	127.99
2350.00	10.13	97.87	7250.00	9.761	136.72
2375.00	10.05	97.94	7300.00	9.799	143.47
2400.00	9.860	97.23	7350.00	9.627	147.48
2425.00	9.564	95.81	7400.00	9.580	147.35
2450.00	9.166	93.90	7450.00	9.312	151.11
2475.00	8.798	92.31	7500.00	9.598	142.22
2500.00	8.526	91.30	7550.00	9.207	132.40
2525.00	8.334	90.75	7600.00	9.343	148.08
2550.00	8.257	90.65	7650.00	9.021	152.39
2575.00	8.307	91.26	7700.00	9.269	135.98
2600.00	8.517	92.79	7750.00	9.306	145.10
2625.00	8.573	93.53	7800.00	8.293	158.55
2650.00	8.574	93.97	7850.00	8.314	165.82
2675.00	8.627	94.69	7900.00	8.444	175.74
2700.00	8.790	96.32	7950.00	8.116	187.34
2725.00	9.023	97.27	8000.00	7.514	197.31
2750.00	9.531	100.72	8050.00	7.268	200.95
2775.00	9.850	102.65	8100.00	7.127	203.29
2800.00	10.02	103.92	8150.00	7.290	198.98
2825.00	10.14	105.03	8200.00	8.185	127.27
2850.00	10.23	106.03	8250.00	8.886	141.86
2875.00	10.35	107.24	8300.00	8.425	152.67
2900.00	10.35	111.54	8350.00	7.945	157.63
2925.00	10.56	109.96	8400.00	8.144	155.13
2950.00	10.87	113.97	8450.00	8.079	155.42
2975.00	10.98	119.15	8500.00	8.138	154.28
3000.00	10.76	124.53	8550.00	8.623	140.23
3025.00	11.25	129.03	8600.00	7.841	126.91
3050.00	11.32	132.63	8650.00	7.244	135.93
3075.00	11.48	134.52	8700.00	7.355	138.85
3100.00	11.37	132.80	8750.00	7.327	140.50
3125.00	11.18	132.26	8800.00	7.425	186.41

3150.00	10.83	129.07	8850.00	7.669	126.99
3175.00	10.30	124.53	8900.00	7.368	139.00
3200.00	10.34	119.26	8950.00	7.437	125.34
3225.00	10.16	115.05	9000.00	7.956	131.92
3250.00	9.958	112.96	9050.00	8.098	135.23
3275.00	9.836	112.21	9100.00	8.151	137.81
3300.00	9.755	111.99	9150.00	7.911	150.60
3325.00	9.670	112.39	9200.00	7.891	150.33
3350.00	9.402	118.60	9250.00	7.583	133.08
3375.00	9.434	118.22	9300.00	7.678	135.24
3400.00	9.326	120.32	9350.00	7.700	136.43
3425.00	9.258	119.67	9400.00	7.750	137.89
3450.00	9.195	119.35	9450.00	7.909	145.43
3475.00	9.113	118.38	9500.00	7.861	145.96
3500.00	9.040	117.82	9550.00	7.686	139.27
3525.00	9.020	118.87	9600.00	7.838	143.69
3550.00	8.950	118.27	9650.00	7.813	140.86
3575.00	8.904	117.36	9700.00	7.731	137.68
3600.00	9.342	108.78	9750.00	7.619	135.28
3625.00	9.552	110.23	9800.00	7.536	149.42
3650.00	9.636	111.69	9850.00	7.535	134.79
3675.00	9.708	113.31	9900.00	7.354	151.68
3700.00	9.814	115.18	9950.00	7.351	151.19
3725.00	9.828	116.96	10000.00	7.378	150.11
3750.00	9.804	118.55			

***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
ELEVATED TERRAIN	13.30	13.30	11.97	7.983	1.330

DISTANCE FROM SOURCE 4665.00 meters directed toward 140 degrees
RECEPTOR HEIGHT 138.58 meters

IMPACT AT THE
AMBIENT BOUNDARY 0.8801 0.8801 0.7921 0.5281 0.8801E-01

DISTANCE FROM SOURCE 15.24 meters directed toward 160 degrees
RECEPTOR HEIGHT -2.68 meters