MAPLE LEAF FOODS

May 6, 2016

Tracey Braun, M.Sc.
Director, Environmental Assessment and Licensing
Manitoba Conservation
123 Main Street, Suite 160,
Winnipeg, Manitoba R3C 1A5

RE: **Notice of Alteration for Maple Leaf Foods Inc, 870 Lagimodière Blvd, Winnipeg**
Clean Environment Commission Order Number 240V

Dear Ms. Braun:

Further to a previous alteration granted in 2012 for the construction of our bacon processing facility, please accept this submission in accordance with Section 14 (1)(a) of *The Environment Act*, as a request for alteration to our 870 Lagimodière Boulevard plant which is licensed by Clean Environment Commission Order #240V. This Order was issued to Burns Food Limited on September 6, 1974. Burns Food Limited was subsequently acquired by Maple Leaf Foods in 1996.

We are requesting your authorization to increase cooking, chilling and slicing capacity of bacon. The alterations required are mainly related to provision of additional slicing capacity to accommodate increased bacon production at the Lagimodière facility. Details on the alteration and associated environmental effects are described below.

ALTERATION

The proposed alteration involves the increase to the chilling and slicing capacity in the bacon production area. Currently the chilling and slicing capacities are limiting factors in bacon production, and new market opportunities have been identified.

Chilling capacity will be expanded by the installation of a new ammonia compressor and three new blast cells, which quickly chill the product with cold air after the cooking cycle.

Slicing capacity will be increased with the installation of four new slicing lines in the existing slicing hall.

Maple Leaf Foods Inc. 870 Lagimodiere Blvd., Winnipeg, MB R2J 0T9 204-235-8232 fax 204-233-5418

This alteration will not require any new smokehouses or other sources of emissions, only increase the throughput of the existing smokehouses by increasing the number of batches cooked.

CURRENT LICENCE RENEWAL

The Lagimodière facility applied for an updated licence from Manitoba Conservation in January of 2012. To date, this licence application is still being processed. As discussed with Jennifer Winsor earlier this year, we suggest incorporating this alteration into the new licence.

ENVIRONMENTAL EFFECTS

Wastewater

As the alteration does not increase the footprint of the building, there are no new areas for sanitation. There will be a minimal increase in overall water use due to sanitation of the new slicing equipment, however there will be no additional sanitation shifts. All wastewater is pre-treated on site in the facility's Class 1 wastewater treatment plant before discharge to the City of Winnipeg municipal sewer system, under an overstrength discharge agreement. Therefore, there will be no impact to wastewater as a result of this alteration.

Stormwater

As the alteration does not require any additional footprint of the building or changes to the site, there will be no effect on stormwater.

Air emissions

There will be no additional smokehouses or cooking equipment installed in the bacon expansion. The increase in slicing capacity will allow the plant to process an increased volume through the existing smokehouses. In the 2012 Notice of Alteration application (attached as an Appendix) emissions projections were calculated using USEPA emissions factors for batch smokehouses, identifying projected emissions for total particulate matter (PM) (filterable and condensable) and volatile organic carbon (VOC). Total annual emissions were calculated based on an end state production level of 24 million kg/year of ham (and sausage) and 37 million kg/year of bacon. This alteration will allow bacon production to increase to 41 million kg/year, an increase of 10%. The increased capacity in chilling and slicing will allow the plant to cook 10% more batches in the existing smokehouses. Consequently, the total annual emissions from bacon will increase by 10% (and a total plant emission increase of 6.5%, as ham and sausage production is unchanged).

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The updated total emissions table is below:

	Previous End State	2016 Alteration
Smokehouses	15	15
Ham and Sausage prod. kg/year	24000000	24000000
Bacon prod. kg/year	37000000	41000000
Wood chips used, kg/year	126212	133891
Total PM emissions, kg/year	3345	3549
VOC emissions, kg/year	2777	2947
PM emission rate, kg/hr (average)	0.69	0.73
VOC emission rate, kg/hr (average)	0.57	0.61
Filterable PM, kg/year	1451	1540
Inorganic condensible PM, kg/year	694	737
Organic condensible PM, kg/year	1200	1273

As in 2012, these calculations were based on a production schedule of 302 days per year, with two eight hour production shifts and one sanitation shift. As expected, there is a small increase in total annual emissions. However, the average emission rates are still low.

In the 2012 submission, in order to quantify the effects of the projected emissions, the projected end state levels were modeled. The modelling was performed as per the draft *Guidelines for Air Dispersion Modelling in Manitoba* (2006). The model selected was the USEPA's SCREEN3 model (version date 96043), which projects the worst case pollutant concentrations (1-hour average) at discrete distances and predicts the distance at which the maximum concentration will occur.

As the alteration does not involve any new smokehouses or sources of emissions, the 2012 modelling data is still valid; the sources and receptors are still the same as in 2012. Results were compared to Ontario's *Ambient Air Quality Criteria* (2008). No significant exceedances were predicted for the AAQC for particulate matter or for VOCs. All maximum predicted concentrations all occurred within the site's boundaries. Full details on the dispersion modelling can be found in the 2012 supplemental submission, attached to this letter as an Appendix.

In our opinion, the increase to air emissions will be very small and will have no significant effects.

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Odour

As mentioned earlier, there will be no additional sources of emissions. The plant has received zero odour complaints since the bacon process was introduced in 2012 (nor in the previous 5 years). The incremental increase is in total annual emissions and does not affect maximum concentrations of emissions. Therefore, we do not anticipate any odour issues as a result of this alteration.

Noise

From a noise perspective, with the exception of trucking operations associated with receipt of raw materials and dry goods and shipping of products, all operations are conducted indoors. The plant is located in an industrial area, immediately adjacent to major roadways (Lagimodière Boulevard and Marion Street). No noise complaints have been received at the plant and none are expected as a result of this proposed alteration.

Traffic

Effects related to additional traffic into the Lagimodière plant include additional truck traffic for raw materials and dry goods receiving (projected to be up to 12 trucks per week), as well as finished product shipping (projected to be up to 10 trucks per week). Minimal change in traffic patterns is expected. There will be a small increase in truck traffic during construction activities, but this effect will be temporary. Traffic effects related to the proposed alteration are expected to be insignificant, or in the case of traffic related to construction activities, temporary and minor.

Overall, in our view, the environmental effect of the alteration is expected to be very minor.

PROJECT TIMELINE

This project is scheduled to begin construction by May 20th with completion of installation by June 1st. Ramp up of production will be throughout June and July to accommodate strategic initiatives. As such, your early review and approval of this Notice of Alteration by May 20th would be greatly appreciated.

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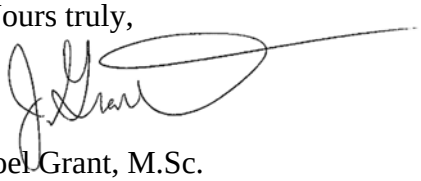
Ms Braun, I appreciate the effort that you and your staff will make in processing this request for alteration. Should you or your staff have any questions, please do not hesitate to contact me at 204-235-8232 or on my cell at 204-229-9594.

Yours truly,



Joel Grant, M.Sc.
Environmental Affairs and Sustainability Manager - West
Maple Leaf Foods

Cc : Kelly Simpson, Site Leader, Maple Leaf Foods
Kevin Croteau, Director of Engineering, Maple Leaf Foods
Tim Faveri, VP Sustainability and Shared Value, Maple Leaf Foods
Jennifer Winsor, Environmental Engineer, Conservation and Water Stewardship

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APPENDIX

2012 Notice of Alteration Supplemental Information Submission

Maple Leaf Foods Inc. 870 Lagimodiere Blvd., Winnipeg, MB R2J 0T9 204-235-8232 fax 204-233-5418

MAPLE LEAF FOODS

March 21, 2012

Tracey Braun, M.Sc.
Director, Environmental Assessment and Licensing
Manitoba Conservation
123 Main Street, Suite 160,
Winnipeg, Manitoba R3C 1A5

RE: **Supplemental Information Request – Notice of Alteration Report for Environment Act Re-Licensing – 870 Lagimodière Blvd.**

Dear Ms. Braun:

Further to my conversation with Mr. Ryan Coulter on February 22nd, we are pleased to submit this supplemental information package providing greater detail of our current and projected air emissions due to the added production of bacon and the increasing production of ham and sausages at the Winnipeg facility.

Maple Leaf Foods is committed to abiding by all applicable laws and regulations, including Manitoba Conservation's *Odour Nuisance Management Strategy*. Mr. Coulter had indicated that more information was required on the future air emissions from the smokehouses to ensure that operations would not be causing an odour nuisance in the area.

In order to determine whether an odour nuisance is to be expected as a result of expanding operations at the facility, we are comparing our current air emissions from the smokehouses with the future "End State" level. As the bacon facility is slated to be built by late 2012, production will be ramped up to approximately 28 million kg/year by the end of 2013. The facility is also being designed for an eventual ramp up to end state level of 37 million kg/year. The ham and sausage production is also expected to ramp up (as detailed in our original submission) from the current level (approximately 19 million kg/year) to the eventual end state level of approximately 24 million kg/year in 2014. Increasing the production of these products will have corresponding increases in the amount of wood chips burned for the smokehouses, increasing our air emissions.

As suggested by Mr. Coulter, we have used the USEPA emission factors for batch meat smokehouses. The substances of concern are total particulate matter (PM) and volatile organic carbon (VOC). Particulate matter is divided into filterable and condensable

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(which is further divided into organic and inorganic fractions). The USEPA guidance document specifically lists formaldehyde and acetic acid as VOC's of concern, but does not have specific emission factors for these individual VOCs. The table below summarizes the current and projected air emissions from the smokehouses.

	Current State	Projected End State
Smokehouses	9	15
Ham and Sausage prod. kg/year	19000000	24000000
Bacon prod. kg/year	0	37000000
Wood chips used, kg/year	37500	126212
Total PM emissions, kg/year	994	3345
VOC emissions, kg/year	825	2777
PM emission rate, kg/hr (average)	**0.21**	**0.69**
VOC emission rate, kg/hr (average)	**0.17**	**0.57**
Filterable PM, kg/year	431	1451
Inorganic condensable PM, kg/year	206	694
Organic condensable PM, kg/year	356	1200

The calculations can be found in Appendix A (attached).

These calculations were based on a projected production schedule of 302 days per year with two eight hour shifts of production per day and one sanitation shift. As expected, the results indicate an increase in emissions. However, the emission rate in kg/hour is still quite low. At its current levels, the plant has not received any odour complaints in the past 5 years.

Air Dispersion Modelling

In order to quantify the effect of the increased emissions, the current and projected end state emissions levels were modeled. This modeling was done as per the draft *Guidelines for Air Dispersion Modelling in Manitoba* (2006).

Model Selection

The model selected was the USEPA's SCREEN3 model (version date 96043), which projects the worst case pollutant concentrations (1 hour average) at discrete distances and predicts the distance at which the maximum concentration will occur.

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Project Description
The project overview, as stated above, is to estimate the effects of increasing the amount of wood chips burned in the production of ham, sausage and the addition of bacon production to the existing facility.

Facility Description
All information regarding the description of the facility and the planned upgrades has been submitted in our original Notice of Alteration package. If there are any questions remaining about the facility or operations, please contact us.

Process Description
The process of concern producing emissions to be modeled is the burning of woodchips in the smoke generators for use in our existing and future batch smokehouses. The current and projected rates of woodchip use are detailed above.

Source Data
Two sources are being considered in this study. The existing ham/sausage smokehouses are clustered together and are to be considered as a single point source (Source 1) of emissions (as discussed with Mr. Coulter). The parameters used in the model are a stack height of 6 metres with an exit diameter of 45 cm, exhausting gas at a flow rate of 3500 ACFM at 336K (63^{o}C), as suggested by our smokehouse manufacturer. The emission level was estimated by the average rate of wood chip consumption.

Source 2 is the future stack of the bacon smokehouses. The three smokehouses will exhaust into a common duct which will connect to a single stack approximately 9 metres above the roof for a total height of 18.5 metres above ground level. The exit diameter will be 45 cm and will exhaust gas at 3500 ACFM during production at a temperature of 336K.

Receptor Data
Two Receptors were selected (“A” and “B”) based on their proximity to Sources 1 and 2. Receptor A is the nearest residential property to Source 1, located at 884 Lagimodière Boulevard, at a distance of 160 metres to the NNE.

Receptor B is the residence nearest to where Source 2 will be built. It is located at 1034 Brussels Street. From Source 2, it is located approximately 300 metres to the NNE.

The distance from Source 1 to Receptor B is approximately 200 metres to the NNW. The distance from Source 2 to Receptor A is approximately 350 metres to the NE. A

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Google Maps air photo showing the locations of sources and receptors can be found in Appendix B. The prevailing winds in the area are west to east, toward the uninhabited industrial area.

Screening Assessment

In the model calculations, all atmospheric conditions and wind speeds were considered. The land use was urban, and no terrain screens were used as topography in the area is simple.

Results

Six separate runs were done to model the maximum concentrations from particulate matter (PM) and volatile organic compounds (VOC). The full model printouts are available in the Appendix. The projected results of the six runs at both receptors are below:

Modeling Data	Max 1 hour Conc. in µm/m3	
Source	at "A"	at "B"
Current Ham and Sausage PM	21.16	16.32
Current Ham and Sausage VOC	17.63	13.6
End State Ham and Sausage PM	24.68	19.05
End State Ham and Sausage VOC	21.16	16.32
End State Bacon PM	10.54	13.02
End State Bacon VOC	8.78	10.85

All scenarios above occur during stability class D and a 1.0 m/s wind.

Maximum concentrations occurred at the following distances:

Source	Conc. µg/m3	Distance (m)	Stability	Wind Speed (m/s)
Current Ham and Sausage PM	35.36	37	3	3
Current Ham and Sausage VOC	29.46	37	3	3
End State Ham and Sausage PM	41.25	37	3	3
End State Ham and Sausage VOC	35.36	37	3	3
End State Bacon PM	22.17	113	3	1
End State Bacon VOC	18.48	113	3	1

As suggested by Mr. Coulter, the results were compared with Ontario's Ambient Air Quality Criteria (2008). The total particulate matter (PM_{10}) criterion is 50 µg/m3 as an

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interim AAQC. There is also listed a guidance suggestion for $PM_{2.5}$ of 30 μg/m3 (not an AAQC). None of the scenarios run resulted in a maximum concentration that exceeded this level. If the end state of both Sources 1 and 2 were to occur at maximum predicted levels at the same time at either receptor, the 24 hour guidance suggestion of 30 μg/m3 for $PM_{2.5}$ would be slightly exceeded; however, this scenario would be highly unlikely as the wind direction from each source to each receptor varies significantly. For example, for both maximum concentrations to occur at Receptor B at the same time, the wind would need to be blowing NNW from Source 1 and NNE from Source 2.

For VOCs, the USEPA identifies acetic acid and formaldehyde as contaminants of concern from smokehouses. The Ontario AAQC for acetic acid is to be updated, but is currently at 2500 μg/m3 as a 24 hour average. The AAQC for formaldehyde is 65 μg/m3. All scenarios run indicate that even if all VOCs generated are taken as either contaminant, concentrations are far below the criteria.

The model's maximum predicted concentrations all occur within the site's boundaries.

Production Notes

Production of ham, sausage and bacon (actual running of the batch smokehouses) is scheduled to take place on midnight (10pm to 6am) and day (6am to 2pm) shifts. As such, outdoor activities are lowest at night and the early morning hours, when most of the production takes place.

It is also prudent to mention that while production volumes are projected to exceed the typical levels seen in prior years, the plant is currently licensed for temporary livestock housing, live animal slaughtering, edible and inedible rendering and blood drying. These activities are much more odour intensive than the current and future operations of the plant.

Conclusion

The increase in production is not expected to cause any significant odour or particulate matter issues from the burning of woodchips in the smokehouses. The modeled data confirms that the impact of the increased production will be very low. However, in the event that the plant and/or Manitoba Conservation begins receiving a significant number of odour complaints due to the operation of the plant, Maple Leaf Foods is committed to working with Manitoba Conservation to monitor and resolve any odour related issue. Should the need arise, we will provide the department with an acceptable action plan to mitigate the issue.

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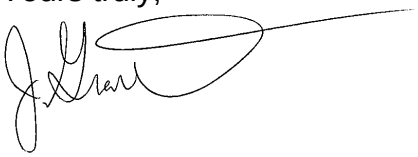
Ms Braun, I appreciate the effort that you and your staff are making in processing our request for alteration. Should you or your staff have any questions, please do not hesitate to contact me at 204-235-8100 ext.4103 or on my cell at 204-229-9594.

Yours truly,



Joel Grant, M.Sc.
Manager, Environmental Projects - West
Maple Leaf Foods

Cc : Mr. John Burnett, Plant Manger, MLCF Winnipeg
Ms. Anne Tennier, VP Environmental , Maple Leaf Foods
Mr. Ryan Coulter, Environmental Engineer, Manitoba Conservation
Ms. Jennifer Winsor, Environmental Engineer, Manitoba Conservation

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APPENDIX A

CALCULATIONS

APPENDIX A - Calculations

	kg Ham and sausage (plus weiners)	kg Bacon	total kg	total lbs	total tons
Current wood chips	37467	0	37467	82601	41.3005
2013 wood chips	37500	59670	97170	214233	107.1165
end state wood chips	47250	78764.4	126014.4	277813	138.9065

		Emission factors, lbs/ton burned				
		Total PM	Filterable PM	Cond. Inorg.	Cond. Org.	VOC
	Wood burned in tons	53	23	11	19	44
Current	41.3	2188.9	949.9	454.3	784.7	1817.2
For 2013						
Total	107.1	5676.3	2463.3	1178.1	2034.9	4712.4
Ham and sausage	41.5	2199.5	954.5	456.5	788.5	1826
Bacon	65.6	3476.8	1508.8	721.6	1246.4	2886.4
End state						
Total	139	7367	3197	1529	2641	6116
Ham and Sausage	52	2756	1196	572	988	2288
Bacon	87	4611	2001	957	1653	3828

		Emission factors, lbs/ton burned				
		Total PM	Filterable P	Cond. Inorg	Cond. Org.	VOC
	Wood burned in t	53	23	11	19	44
Current	41.3	2188.9	949.9	454.3	784.7	1817.2
For 2013						
Total	107.1	5676.3	2463.3	1178.1	2034.9	4712.4
Ham and sausage	41.5	2199.5	954.5	456.5	788.5	1826
Bacon	65.6	3476.8	1508.8	721.6	1246.4	2886.4
End state						
Total	139	7367	3197	1529	2641	6116
Ham and Sausage	52	2756	1196	572	988	2288
Bacon	87	4611	2001	957	1653	3828

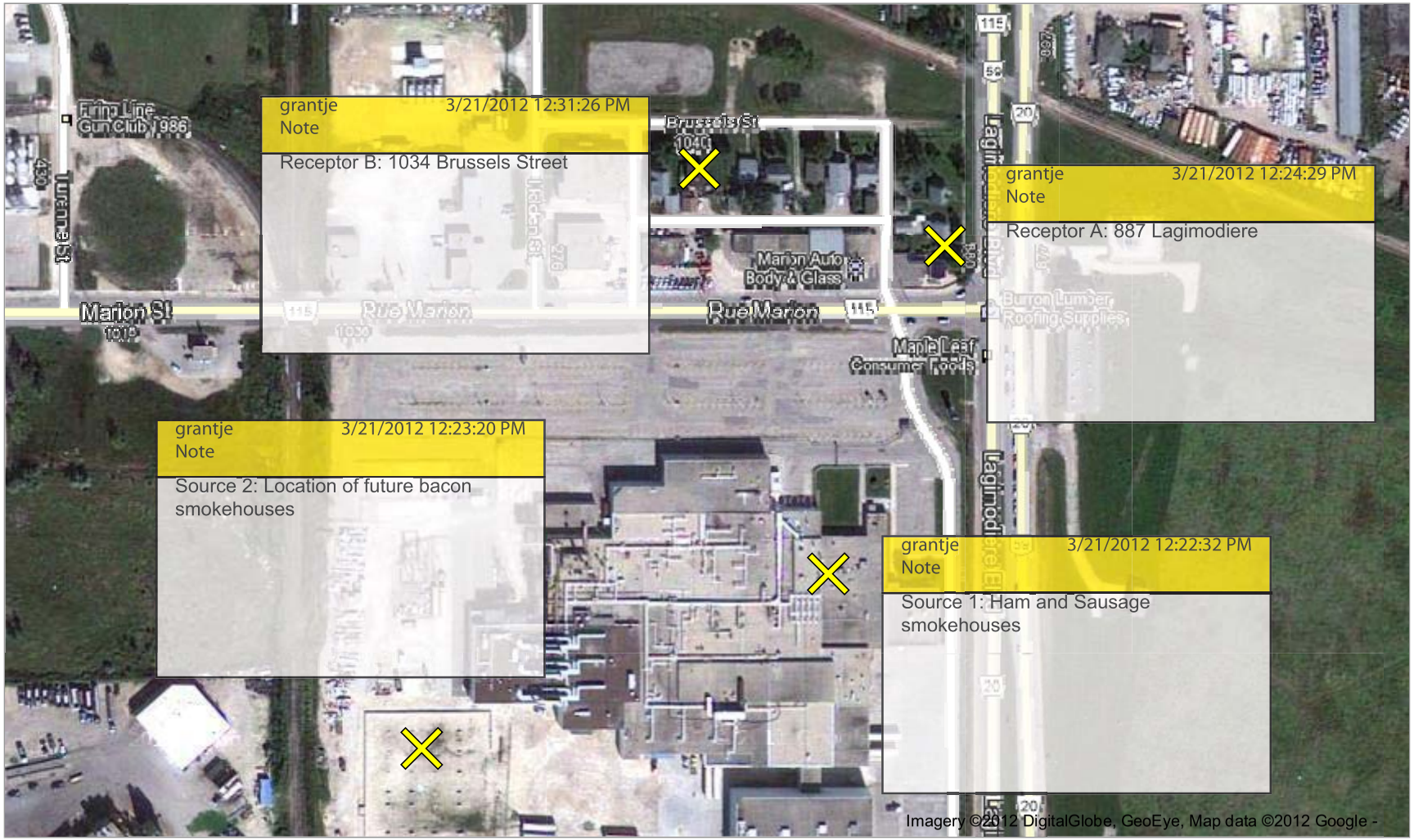
	Convert to kg					
Current	37500.4	993.7606	431.2546	206.2522	356.2538	825.0088
For 2013						
Total	97246.8	2577.04	1118.338	534.8574	923.8446	2139.43
Ham and sausage	37682	998.573	433.343	207.251	357.979	829.004
Bacon	59564.8	1578.467	684.9952	327.6064	565.8656	1310.426
End state						
Total	126212	3344.618	1451.438	694.166	1199.014	2776.664
Ham and Sausage	47216	1251.224	542.984	259.688	448.552	1038.752
Bacon	78996	2093.394	908.454	434.478	750.462	1737.912

	Current State	Projected for 2013	Projected End State
Smokehouses	9	12	15
Ham and Sausage prod. kg/year	19000000	19000000	24000000
Bacon prod. kg/year	0	28000000	37000000
Wood chips used, kg/year	37500	97250	126212
Total PM emissions, kg/year	994	2577	3345
VOC emissions, kg/year	825	2139	2777
PM emission rate, kg/hr	0.21	0.53	0.69
VOC emission rate, kg/hr	0.17	0.44	0.57
Filterable PM, kg/year	431	1118	1451
Inorganic condensible PM, kg/year	206	535	694
Organic Condensible PM, kg/year	356	924	1200

APPENDIX B

SOURCE AND RECEPTOR LOCATIONS

To see all the details that are visible on the screen, use the Print link next to the map.



APPENDIX C

SCREEN3 MODEL OUTPUTS

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Current Ham and Sausage PM

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .600000E-01
   STACK HEIGHT (M)       =       6.0000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   23.21        3    10.0   10.0  3200.0    7.15    3.30    3.02    NO
   100.   28.72        4     1.5    1.5   480.0   16.46   15.97   14.11    NO
   200.   16.32        4     1.0    1.0   320.0   21.69   31.12   27.56    NO
   300.   12.14        6     1.0    1.0 10000.0   27.47   31.78   20.85    NO
   400.   10.18        6     1.0    1.0 10000.0   27.47   41.31   26.03    NO
   500.   8.229        6     1.0    1.0 10000.0   27.47   50.58   30.85    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
    37.   35.36        3     3.0    3.0   960.0   11.23    8.43    7.75    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
160.	21.16	4	1.0	1.0	320.0	21.69	25.22	22.34	NO
200.	16.32	4	1.0	1.0	320.0	21.69	31.12	27.56	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	35.36	37.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Current Ham and Sausage VOC

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .500000E-01
   STACK HEIGHT (M)       =       6.0000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   19.34        3    10.0   10.0  3200.0    7.15    3.30    3.02    NO
   100.   23.94        4     1.5    1.5   480.0   16.46   15.97   14.11    NO
   200.   13.60        4     1.0    1.0   320.0   21.69   31.12   27.56    NO
   300.   10.12        6     1.0    1.0 10000.0   27.47   31.78   20.85    NO
   400.   8.483        6     1.0    1.0 10000.0   27.47   41.31   26.03    NO
   500.   6.858        6     1.0    1.0 10000.0   27.47   50.58   30.85    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
    37.   29.46        3     3.0    3.0   960.0   11.23    8.43    7.75    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
160.	17.63	4	1.0	1.0	320.0	21.69	25.22	22.34	NO
200.	13.60	4	1.0	1.0	320.0	21.69	31.12	27.56	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	29.46	37.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

End State Ham and Sausage PM

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .700000E-01
   STACK HEIGHT (M)       =       6.0000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   27.08        3    10.0   10.0  3200.0    7.15    3.30    3.02    NO
   100.   33.51        4     1.5    1.5   480.0   16.46   15.97   14.11    NO
   200.   19.05        4     1.0    1.0   320.0   21.69   31.12   27.56    NO
   300.   14.16        6     1.0    1.0 10000.0   27.47   31.78   20.85    NO
   400.   11.88        6     1.0    1.0 10000.0   27.47   41.31   26.03    NO
   500.   9.601        6     1.0    1.0 10000.0   27.47   50.58   30.85    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
    37.   41.25        3     3.0    3.0   960.0   11.23    8.43    7.75    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
160.	24.68	4	1.0	1.0	320.0	21.69	25.22	22.34	NO
200.	19.05	4	1.0	1.0	320.0	21.69	31.12	27.56	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	41.25	37.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

End State Ham and Sausage VOC

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .600000E-01
   STACK HEIGHT (M)       =       6.0000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   23.21        3    10.0   10.0  3200.0    7.15    3.30    3.02    NO
   100.   28.72        4     1.5    1.5   480.0   16.46   15.97   14.11    NO
   200.   16.32        4     1.0    1.0   320.0   21.69   31.12   27.56    NO
   300.   12.14        6     1.0    1.0 10000.0   27.47   31.78   20.85    NO
   400.   10.18        6     1.0    1.0 10000.0   27.47   41.31   26.03    NO
   500.   8.229        6     1.0    1.0 10000.0   27.47   50.58   30.85    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
    37.   35.36        3     3.0    3.0   960.0   11.23    8.43    7.75    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
160.	21.16	4	1.0	1.0	320.0	21.69	25.22	22.34	NO
200.	16.32	4	1.0	1.0	320.0	21.69	31.12	27.56	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	35.36	37.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

End State Bacon PM

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .120000
   STACK HEIGHT (M)       =      18.5000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   .1884E-03    2     5.0    5.5  1600.0   21.36    4.82    3.68    NO
   100.   21.57        3     1.0    1.1   320.0   32.37   21.93   20.39    NO
   200.   19.55        4     1.0    1.2   320.0   31.95   31.03   27.47    NO
   300.   13.02        4     1.0    1.2   320.0   31.95   45.52   40.41    NO
   400.   9.795        6     1.0    1.2 10000.0   38.69   41.26   25.95    NO
   500.   9.277        6     1.0    1.2 10000.0   38.69   50.54   30.78    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
   113.   22.17        3     1.0    1.1   320.0   32.37   24.85   23.14    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
350.	10.54	4	1.0	1.2	320.0	31.95	52.59	46.77	NO
300.	13.02	4	1.0	1.2	320.0	31.95	45.52	40.41	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	22.17	113.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

End State Bacon VOC

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      .100000
   STACK HEIGHT (M)       =      18.5000
   STK INSIDE DIAM (M)    =        .4500
   STK EXIT VELOCITY (M/S)=      10.3860
   STK GAS EXIT TEMP (K)  =     336.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       2.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   3500.0000     (ACFM)

BUOY. FLUX =     .660 M**4/S**3;  MOM. FLUX =    4.762 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    15.   .1570E-03    2     5.0    5.5  1600.0   21.36    4.82    3.68    NO
   100.   17.98        3     1.0    1.1   320.0   32.37   21.93   20.39    NO
   200.   16.29        4     1.0    1.2   320.0   31.95   31.03   27.47    NO
   300.   10.85        4     1.0    1.2   320.0   31.95   45.52   40.41    NO
   400.   8.163        6     1.0    1.2 10000.0   38.69   41.26   25.95    NO
   500.   7.731        6     1.0    1.2 10000.0   38.69   50.54   30.78    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    15. M:
   113.   18.48        3     1.0    1.1   320.0   32.37   24.85   23.14    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
```

(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
350.	8.783	4	1.0	1.2	320.0	31.95	52.59	46.77	NO
300.	10.85	4	1.0	1.2	320.0	31.95	45.52	40.41	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	18.48	113.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****