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ANDERSEN CORPORATION

Date: February 11, 1998

TO: Andersen Project XL Community Advisory Committee

FROM: Kirk Hogberg

RE: Additional Materials from February 10, 1998 Meeting

At last nights Community Advisory Committee meeting, it was requested that additional information relating to our Project XL proposal be sent out to Committee members. Enclosed are copies of:

- The Andersen Corporation Project XL Formal Proposal which was submitted on January 30, 1998.
- The Air Toxics Analysis of the Andersen Corporation which was performed by the Minnesota Pollution Control Agency in 1996.

If anyone would like additional copies, or if you have any questions on this or other materials, let me know. I can be reached at (612) 430-7437.

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Agenda
Project XL
Andersen Corporation
Community Advisory Committee

March 5, 1998

I. Introductions

II. Project XL Proposal Status

III. Air Emissions Recap

IV. Project XL Proposal - Waste Section Briefing

A. Preview XL Requests

B. Regulatory Overlay

C. Waste Management Program

D. Detailed Discussion of XL Requests

V. Other Business

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Waste Overview

Ken Podpeske

Oppenheimer, Wolff & Donnelly

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3 Categories

- Hazardous Waste
- Solid Waste
- Useable Material

There are three categories that materials utilized by Andersen within its production process can fall within - useable material, hazardous waste, or solid waste.

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Hazardous Waste

- Listed Waste

- Characteristic Waste

    - Ignitable
    - Reactive
    - Corrosive
    - Toxic

Generally, there are two ways a waste can be classified as a hazardous waste - either through being listed or by exhibiting hazardous waste characteristics.

Hazardous Waste

- Waste Minimization

Solid Waste

- Pollution Prevention Plan

Company Discretion

Large quantity hazardous waste generators are required to certify that they have a waste minimization program in place.

Andersen also is obligated to prepare a pollution prevention plan which, among other things, discusses the elimination or reduction at the source of the generation of waste.

While the above plans are required, how aggressive a company decides its reduction and minimization efforts should be really is left to the discretion of the company.

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State Solid Waste

Management Hierarchy

- Waste Reduction and Reuse
- Recycling
- Composting
- Resource Recovery
- Land Disposal

Minnesota has adopted a solid waste management hierarchy encouraging waste reduction and recycling.

While landfilling is viewed as still being necessary, it is the least preferred alternative.

Waste Discussion

Agenda

- Preview XL Requests
- Regulatory Overlay
- Waste Management Program
- Detailed Discussion of XL Requests

Preview of XL Requests

Andersen's Commitments

- Recognition of Current Superiority
- Continuation of Reduction in Solid and Hazardous Waste Generated
- Continued Evaluation of Waste to Product Opportunities
- Explore Continued Enhancement of Groundwater Remediation System

Preview of XL Requests

Flexibility Requests

- Remove F032 Listing for Dip Tanks
- Streamline Closure of Dip Tanks
- Streamline Fibrex Experimentation
- Flexible Lead Removal Processing

Waste Program

Jeff R. Nelson

Anderson Corporation

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Andersen Corporation

1997 Material Output From Operations

(PIE CHART NOT INCLUDED)

By-Product Material: 36%

Product Shipped: 64%

Total Quantity Represented: 204,252 tons

Of the materials utilized in our Bayport operations, 64% were manufactured into window and patio door products.

The remaining 36% resulted in by-product materials which were available for beneficial utilization.

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Andersen Corporation 1997 Generation

By-Product Material Utilization

(PIE CHART NOT INCLUDED)

Reuse: 63%

Fuel Use: 21%

On-Site Reclaim: 8%

Off-Site Recycle: 5%

Non-Beneficial Use: 3%

Total Volume Represented: 72,821 tons

97% of the by-product materials were beneficially reused. The remaining 3% included solid waste landfilled, air emissions and sewered components.

Beneficial utilization of these materials is in line with the State's recommended waste management hierarchy.

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1997 Reuse - 63%

(63% of By-Product Material Utilization Total)

(PIE CHART NOT INCLUDED)

Brokered Sawdust: 95%

Employee Sales: 5%

Total Volume Represented: 45,669 tons

Brokered sawdust was utilized for animal bedding and raw material for other manufacturing operations.

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1997 On-Site Reclaim - 8%
(8% of By-Product Material Utilization Total)

(PIE CHART NOT INCLUDED)

Vinyl Regrind: 56%
Fibrex Sawdust: 18%
Recovered Treating Solution: 11%
Fibrex Regrind: 11%
Vinyl/Wood Reclaim System: 4%

Total Volume Represented: 5,970 tons

All of the reclaimed material leaves as product.

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1997 Off-Site Recycle - 5%

(5% of By-Product Material Utilization Total)

(PIE CHART NOT INCLUDED)

Large Volume Recyclables: 63%
Dimensional Scrap Wood: 35%
Newspapers/Magazines: 1%
Other: 1%

Total Volume Represented: 3,391 tons

Large volume recyclables include corrugated, wood pallets, scrap metal, office paper and stretchwrap.

Dimensional scrap wood was ground on-site and used as animal bedding.

ATTACHMENT 6
AIR TOXICS ANALYSIS

Using the dispersion modeling results in Attachment 5 and information submitted by the company as stated in the following text, an air toxics analysis was completed for the new facility and the existing facility. The building and stack parameters were later revised based on the PM10 and TSP modeling results, but this model does not reflect those changes. This HAP model is more conservative because the final approved building parameters (stack height increased and are now vertical) improve dispersion.

Attached is a text summary of the results. This summary was written based on the initial permit limits of 24.5 tpy for combined HAPs and 9.5 tpy for any individual HAP. The tables include the additional limits proposed by the facility as a result of the initial analysis.

Also attached are the spreadsheets for the following scenarios:

- New facility maximum impact (horizontal vents)
- New facility maximum impact where residential development is likely to occur (horizontal vents)***
- New facility typical impact (horizontal vents)
- New facility with vertical vents
- Existing facility maximum impact based on PTE from Title V application
- Existing facility impact based on actual emissions from Title V application
- Existing facility impact based on actual emissions from Title V application and submitted by company Nov. 24,1995

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Fred Adams
Air Toxics Unit
December 19, 1995

Andersen Windows Air Toxics Review.

This review is based an emissions estimates provided by Andersen Windows, air dispersion modeling conducted by Dennis Becker of the MPCA Air Quality Division, and health criteria determined by the MPCA Air Quality Division and the Minnesota Department of Health.

This assessment was requested by the MPCA AQD Permit Unit. Staff evaluated both the existing and proposed facilities. The Air Toxics Unit considers the two facilities to be related, in that community members would potentially be exposed to emissions from both facilities.

t the existing facility, staff evaluated the risks/hazards, of potential to emit (PTE) and actual air emissions, based on Andersen's April 17, 1995 Part 70 Total Facility Permit application. Staff also evaluated the existing facility based on Andersen's recent projection of 1995 emissions (given us November 24, 1995). Staff evaluated the impacts of the existing facility at three locations: immediately off-property, a "typical" residence and near the new site. Air dispersion,, modeling impacts are based on the assumption of 16,938 tpy HAPs, the PTE. Actual emissions are taken into account by taking the appropriate fraction of the modeled impact (labeled f pte in the spreadsheet). Each chemical's emissions are treated as a proportion of the total impact.

While the emission inventory appears fairly complete at the existing site, the company has not provided a definitive list of Hazardous Air Pollutants (HAP) and emission amounts at the new site. Staff evaluated risks for two of the three chemicals identified by Andersen as likely to be emitted. It was assumed that 9.5 tons per year of each HAP was emitted to air. These emission levels are allowed in the Air Quality permit. Staff evaluated risks at two locations; 100 meters directly of the south of the facility (the closest property boundary), and west of Highway 21. Staff defined "property line" as property owned by Andersen. Apparently, people do not currently live directly south of the facility, but do live across Highway 21. Based on the permit application, the new site is not a major source of toxic emissions: the HAP potential to emit is 25 tpy, and the VOC potential to emit is 96.5 tpy.

This analysis only addresses a fraction of the Andersen HAP or VOC emissions. MPCA does not have guideline limits for all of the chemicals emitted by Andersen. In addition, the company reports a portion of the emissions generically as volatile organic compounds; but the specific chemical identity is not reported. Accompanying each scenario, staff has reported the fraction of total emissions taken into account in the risk/hazard estimate. The size of this proportion indicates our success in accounting for the risk of the total volume of emissions.

Results are reported in terms of hazard indices and cancer risks. The one-hour hazard index addresses potential toxic effects due to short-term exposure. The annual hazard index addresses toxic effects from lifetime exposure. At hazard indices below 1 (one), the Air Toxics Unit considers people to be protected from toxic effects of chemicals. The higher the index is above 1, the less confident we are that the air is healthy to breathe. For cancer-causing chemicals, the Minnesota Dept. of Health considers a risk below 1 in 100,000 (1E-5) to be negligible, in relation to the overall prevalence of cancer in the population, and the risks inherent in living.

Existing facility.

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Most of the hazardous air pollutant (HAP) emissions at the existing facility are organic solvents used in painting. Xylenes are nearly half (47.5%) of the potential (PTE) HAP emissions. Glycol ethers are another 9.9%. Some of the glycol ethers are highly toxic. Andersen did not report them individually. Staff did not request individual glycol ether amounts because Andersen told us they were eliminated in 1994, and are not expected to be used in the future.

The worksheet *existing pte max* evaluates the risk immediately off-site, based on PTE emissions (16,938 tons per year) calculated by Andersen in their l995 permit application. "Potential to Emit" refers to the maximum amounts the various processes would emit if unrestricted. Andersen's figures show that the actual emission amounts currently emitted are about 2% of the potential to emit. Staff was able to evaluate 64% of the HAPs emissions (55% of the VOC emissions) in terms of risks of short-term exposure (one-hour hazard index). Staff was able to evaluate 42% of HAP emissions (36% of VOC emissions) in terms of long-term exposure risks (annual hazard index and cancer risk).

Based on an assumption of 8,050 tons per year emissions, xylenes have a one-hour hazard index of 90 (meaning 90 times higher than MPCA recommends). At 4,307 tons per year, methyl isobutyl ketone has a annual hazard index of 10. At 10.4 tons per year formaldehyde, the potential cancer risk is 3 in 100,000 or less (3 times greater than the MDH recommendation).

This worksheet is based on maximum off-site emissions. Because people live very near the facility property line, some people could be exposed to these chemical concentrations if the company actually emitted the l6,938 tpy HAPs used in the potential to emit calculations.

The worksheet *existing pte typical* evaluates the same conditions as existing pte max, with one change. This worksheet looks at air concentrations more representative of a typical Bayport resident. As one moves further from the facility, chemical air concentrations decrease. Risk decreases proportionally. The one-hour hazard index for xylenes is 40 (40 times higher than recommended). The annual hazard index for methyl isobutyl ketone is 3. The potential cancer risk is 8 in a million or less, within the MDH negligible risk recommendation.

The worksheet *existing at new* evaluates the same conditions as *existing pte max*, except it is based on a hypothetical person at or near the new Andersen facility. The purpose of this analysis is to determine the contribution of the existing facility on any risk at the new site. It represents "background" exposure for a person near the new site. The PTE one-hour hazard index for xylenes is 5. The annual hazard index for methyl isobutyl ketone and the potential cancer risk for formaldehyde are well below MPCA or MDH levels of concern.

All of the above calculations assume emissions at 16,938 tpy potential to emit. The worksheet *existing permit appl* shows the potential hazards/risks at the property boundary of the existing plant using actual emissions calculated by Andersen for their 1995 Part 70 Total Facility Permit application. These estimates, 307.1 tpy, are much lower than PTEs. The one-hour hazard index for xylenes is 2. All other hazard and risk estimates are well below MPCA and MDH levels of concern. However, only a small proportion of the total VOC emissions estimated by Andersen, 4 to 5%, are taken into account in this analysis, because the specific VOCs are not identified.

The worksheet *existing 11-24-95 actual* is based on Hazardous Air Pollutant emission estimates provided by Andersen to MPCA on November 24, 1995. Total HAP emissions are 112.2 tpy. The highest hazard index, 0.5 for xylenes, is within the Air Toxics Unit's recommended guideline. Again, based on the actual VOC

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emissions reported by Andersen, the proportion of emissions evaluated by this worksheet is small (2% of VOCs).

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Table 1. Selected results; existing Andersen facility.

Worksheet	Scenario	Chemical	Amount (tpy)	Selected	Results
existing pte max	Existing facility	Formaldehyde	10.4	-0.85	1-hr HI
	PTE emissions (16,938 tpy HAPs)			2.8E-5	cancer risk
	Property line receptor	MIBK	4307.1	10.98	annual HI
		Toluene	764.0	2.72	1-hr HI
		Xylenes	8050.1	86.13	1-hr HI
existing pte typical	Existing facility	Formaldehyde	10.4	0.36	1-hr HI
	PTE emissions (16,938 tpy HAPs)			8.0E-6	cancer risk
	"Typical" Bayport receptor	MIBK	4307.1	3.18	annual HI
		Toluene	764.0	1.15	1-hr HI
		Xylenes	8050.1	36.43	1-hr HI
existing at new	Existing facility emissions	Formaldehyde	10.4	0.05	1-hr HI
	PTE emissions (16,938 tpy HAPs)			2.0E-7	cancer risk
	Receptor at new site	MIBK	4307.1	0.08	annual HI
		Toluene	764.0	0.15	1-hr HI
		Xylenes	8050.1	4.68	1-hr HI
existing permit appl	Existing facility emissions	Formaldehyde	1.7	0.13	1-hr HI
	actual emissions (307.1 tpy HAPs)			4.4E-6	cancer risk
	Property line receptor	MIBK	88.7	0.22	annual HI
		Toluene	8.1	0.03	1-hr HI
		Xylenes	147.5	1.53	1 hr HI
existing 11-24-95 actual	Existing facility emissions	Formaldehyde	1.7	0.14	1-hr HI
	revised actual emissions			4.5E-6	cancer risk
	(112.2 tpy HAPs)	MIBK	48.5	0.12	annual HI
	Property line receptor	Toluene	5.0	0.02	1-hr HI
		Xylenes	42.5	0.45	1-hr HI

New facility.

According to Andersen Windows representatives, emissions from the new facility are primarily related to adhesive operations. They project emissions at the new facility to be much lower than at the existing facility. The air quality permit states that all HAP emissions will be less than 10 tons per year, and total HAP emissions will be less than 25 tons per year.

Staff evaluated two HAPs; formaldehyde and methanol. These chemicals, along with phenol, were identified by the company as the largest likely HAP emissions. MPCA does not have guideline limits for phenol.

Dennis Becker, the air dispersion modeler for this project, has suggested Andersen consider the benefits of installing vertical stacks, instead of the horizontal stacks now planned. The vertical stacks give better air dispersion, and so reduce the pollution impacts at locations very near the facility. They have less impact distant from the facility. Staff evaluated four scenarios for the new facility. Staff evaluated risks based on the horizontal and vertical stacks, at the property line and west of Highway 21.

Staff was able to assess only 10 to 20% of the new facility emissions on a VOC basis.

Table 2. Selected results; new Andersen facility.

Worksheet	Scenario	Chemical	Amount (tpy)		Selected Results
new max horiz	New facility PTE emissions (25 tpy HAPs) Property line receptor Horizontal stacks	Formaldehyde	9.5	4.20	1-hr HI 5.2E-5 cancer risk
new typical horiz	New facility PTE emissions (25 tpy HAPs) Receptor west of Highway 21 Horizontal stacks	Formaldehyde	9.5	0.86	1 -hr HI 3.3E-6 cancer risk
new max vert	New facility PTE emissions (25 tpy HAPs) Property line receptor Vertical stacks	Formaldehyde	9.5	0.53	1-hr HI 2.3E-5 cancer risk
new typical vert	New facility FTE emissions (25 tpy HAPs) Receptor west of Highway 21 Vertical stacks	Formaldehyde	9.5	0.29	1-hr HI 2.4E6 cancer risk

The worksheet *new max horiz* is based on the horizontal stack assumption and maximum off-property air concentrations. The company's plans to install horizontal stacks. Assuming 9.5 tpy formaldehyde emissions, the one hour hazard index is 4 and the potential cancer risk is 5 in 100,000 or less.

The worksheet *new typical horiz* shows that to the west of Highway 21 the one hour hazard index is for formaldehyde is 0.9 and the potential cancer risk is 3 in a million (equivalent to 0.3 in 100,000) or less.

The worksheet *new max vert* shows is based on the vertical stack assumption and maximum off-property air concentrations. For 9.5 tpy formaldehyde emissions, the one-hour hazard index is 0.5 and the potential cancer risk is 2 in 100,000 or less.

The worksheet *new typical vert* shows that to the west of Highway 21 the one-hour hazard index is 0.3 for formaldehyde, and the potential cancer risk is 2 in a million (equivalent to 0.2 in 100,000) or less.

The accompanying worksheets give more complete information, including the hazard indices and potential cancer risks for all of the HAPs addressed in this air toxics review. The worksheets can be modified to reflect the impacts of further emission reductions or to evaluate risks at other receptor locations (i.e., the other places where people live).

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New plant maximum impacts, using 10 tpy HAP threshold limits and horizontal stack assumption

Impact							
1 hr	650.00	ug/m3	maximum off property estimate p. 16				
annual	10.26	ug/m3	maximum off property estimate p. 10				
Emissions							
HAPs	24.5	tons/year					
VOCs	96.5	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr. Haz.	annual	Cancer
	tons/yr	of HAPs	ug/m3	ug/m3	Index	Haz. Index	Risk
Formaldehyde	9.5	0.388	60	0.8	4.20	4.97	5.2E-05
Phenol	9.5	0.388					
Methanol	9.5	0.388	10,000		0.03		
Total proportion of HAP emissions		1.16	0.78	0.39			
Total proportion of HAP emissions		0.30	0.20	0.10			
Emission limit calculator							
	risk	ug/m3/ton	unit risk	tons/year			
formaldehyde	1.0E-05	0.42	1.3E-05	1.8			
annual ACLs, non carcinogens							
	ACL	Impact/ton		Acceptable			
	(ug/m3)	(ug/m3/ton)		tpy emissions			
MDI	0.02	0.42		0.048	Given MDI limit (B32), finds acceptable emission level (E32)		
toluene (as example)	400	0.42		955.352	Given any chronic chemical limit (B33), finds acceptable tpy emissions		
any	3.98	0.42		9.500	4 ug/m3 corresponds to 9.5 tpy limit		
one-hour ACLs							
	ACL	impact/ton		Acceptable			
	(ug/m3)	(ug/m3/ton)		tpy emissions			
formaldehyde	60	26.5		2.262	Given formaldehyde acute ACL (B40), find tpy		

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					emission limit (E40)
chlorine (as example)	90	26.5		3.392	Given a chemical with an ACL less than 252 ug/m3, the acceptable emissions are less that 9.5 tpy
xylenes (as example)	1000	26.5		37.692	Given a chemical with an ACL less than 252 ug/m3, the acceptable emissions are less that 9.5 tpy
any	252	26.5		9.500	252 ug/m3 corresponds to an emission limit of 9.5 tpy

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New plant impacts to west of Highway 21, using 10 tpy HAP threshold limits and horizontal stacks							
Impact							
1 hr	133.00	ug/m3		400 m, 260 deg		p. 16	
annual	0.65	ug/m3		400 m, 240 deg		p. 10	
Emissions							
HAPs	24.5	tons/year					
VOCs	96.5	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr. Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Formaldehyde	9.5	0.388	60	0.8	0.86	0.32	3.3E-06
Phenol	9.5	0.388					
Methanol	9.5	0.388	10,000		0.01		
Total proportion of HAP emissions		1.16	0.78	0.39			
Total proportion of VOC emissions		0.30	0.20	0.10			

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New plant maximum impacts, using 10 tpy HAP threshold limits and vertical stack assumption							
Impact							
1 hr	81.60	ug/m3	maximum off property estimate			p. 16	
annual	4.58	ug/m3	maximum off property estimate			p. 12	
Emissions							
HAPs	24.5	tons/year					
VOCs	96.5	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr. Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Formaldehyde	9.5	0.388	60	0.8	0.53	2.22	2..3E-05
Phenol	9.5	0.388					
Methanol	9.5	0.388	10,000		0.00		
Total proportion of HAP emissions		1.16	0.78	0.39			
Total proportion of VOC emissions		0.30	0.20	0.10			

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New plant maximum impacts, using 10 tpy HAP threshold limits and vertical stacks							
Impact							
1 hr	44.24	ug/m3		100 m, 290 deg		p. 18	
annual	0.49	ug/m3		400 m, 250 deg		p. 10	
Emissions							
HAPs	24.5	tons/year					
VOCs	96.5	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr. Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Formaldehyde	9.5	0.388	60	0.8	0.29	0.24	2.4E-06
Phenol	9.5	0.388					
Methanol	9.5	0.388	10,000		0.00		
Total proportion of HAP emissions		1.16	0.78	0.39			
Total proportion of VOC emissions		0.30	0.20	0.10			

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Existing plant impacts, using maximum off-site impacts (estimate of property boundary) and PTE (controlled) emission estimates							
Impact							
1 hr	82,748	ug/m3	190 deg, 200 min				p. 21
annual	3,454	ug/m3	320 deg, 200 min				p. 15
Emissions							
HAPs	16938	tons/year					
VOCs	19782	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Ethyl benzene	636.5	0.0376	10000	1000.00	0.31	0.13	
Formaldehyde	10.4	0.0006	60	.80	.85	2.65	2.8E-05
Glycol ethers	1682.8	0.0994					
a) 2-ethoxyethanol							
b) 2-methoxyethanol							
c) PGME							
Hydrogen chloride	25.4	0.0015		20.00		0.26	
Manganese	0.1	0.0000		0.05		0.35	
Methylene chloride*	5.5	0.0003	7000	20.00	0.01	0.06	5.2E-07
Methyl ethyl ketone*	1377.6	0.0813	30000	1000.0	0.49	0.28	
Methyl isobutyl ketone	4307.1	0.2543		80.00		10.98	
Toulene*	764.0	0.0451	3000	400.00	2.72	0.39	
Xylene*	8050.1	0.4753	1000		86.13		
Total Proportion of HAP emissions		1.00	0.64	0.42			
Total Proportion of VOC emissions		0.85	0.55	0.36			
This worksheet shows the impact of HAP emissions from the existing Andersen Windows facility immediately off-site. It is based on Potential to Emit (PTE) permit limits proposed by Andersen.							
*The one hour hazard index is adjusted to reflect emissions when paint line is actually running, assumed to be 16 hrs/day, 250 days/yr (multiply annual emissions by 2.19).							

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Existing plant impact to nearby residences using “typical” off-site impacts and PTE emissions (controlled)							
Impact							
1 hr	35,000	ug/m3	typical value		p. 21		
annual	1,000	ug/m3	typical value		p. 15		
Emissions							
HAPs	16938	tons/year					
VOCs	19782	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Ethyl benzene	636.5	0.0376	10000	1000.00	0.13	0.04	
Formaldehyde	10.4	0.0006	60	0.80	0.36	0.77	8.0E-06
Glycol ethers	1682.8	0.0994					
a) 2-ethoxyethanol							
b) 2-methoxyethanol							
c) PGME							
Hydrogen chloride	25.4	0.0015		20.00		0.07	
Manganese	0.1	0.0000		0.05		0.10	
Methylene chloride*	5.5	0.0003	7000	20.00	0.00	0.02	1.5E-07
Methyl ethyl ketone*	1377.6	0.0813	30000	1000.0	0.21	0.08	
Methyl isobutyl ketone	4307.1	0.2543		80.00		3.18	
Toulene*	764.0	0.0451	3000	400.00	1.15	0.11	
Xylene*	8050.1	0.4753	1000		36.43		
Total Proportion of HAP emissions		1.00	0.64	0.42			
Total Proportion of VOC emissions		0.85	0.55	0.36			

This worksheet shows the impact of HAP emissions from the existing Andersen Windows facility on nearby receptors. It is based on Potential to Emit (PTE) permit limits proposed by Andersen.

The above table analyzes impacts from typical receptors nearby the facility, but away from “hot spots.”

*The one hour hazard index is adjusted to reflect emissions when paint line is actually running, assumed to be 16 hrs/day, 250 days/yr (multiply annual emissions by 2.19).

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existing at new

Existing plant impact to nearby residences using “typical” off-site impacts and PTE emissions (controlled)							
Impact							
1 hr	4,500	ug/m3	typical value		p. 20		
annual	25	ug/m3	typical value		p. 14		
Emissions							
HAPs	16938	tons/year					
VOCs	19782	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Ethyl benzene	636.5	0.0376	10000	1000.00	0.02	0.00	
Formaldehyde	10.4	0.0006	60	0.80	0.05	0.02	2.0E-07
Glycol ethers	1682.8	0.0994					
a) 2-ethoxyethanol							
b) 2-methoxyethanol							
c) PGME							
Hydrogen chloride	25.4	0.0015		20.00		0.00	
Manganese	0.1	0.0000		0.05		0.00	
Methylene chloride*	5.5	0.0003	7000	20.00	0.00	0.00	3.8E-09
Methyl ethyl ketone*	1377.6	0.0813	30000	1000.0	0.03	0.00	
Methyl isobutyl ketone	4307.1	0.2543		80.00		0.00	
Toulene*	764.0	0.0451	3000	400.00	0.15	0.08	
Xylene*	8050.1	0.4753	1000		4.68	0.00	
Total Proportion of HAP emissions		1.00	0.64	0.42			
Total Proportion of VOC emissions		0.85	0.55	0.36			
This table indicates the potential exposures due to the existing facility, on people living near the new site. It is part of the “background” exposure for people living near the new site.							
*The one hour hazard index is adjusted to reflect emissions when paint line is actually running, assumed to be 16 hrs/day, 250 days/yr (multiply annual emissions by 2.19).							

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Existing plant maximum off-site impact, using actual emissions from permit application							
Impact							
1 hr	82,748	ug/m3	190 deg, 200 m				
annual	3,454	ug/m3	320 deg, 200 m				
Emissions			f pte				
HAPs	307	tons/year	0.017526				
VOCs	3444	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Ethyl benzene	26.3	0.0858	10000	1000.00	0.01	0.01	
Formaldehyde	1.7	0.0055	60	0.80	0.13	0.42	4.4E-06
Glycol ethers	19.0	0.0618					
a) 2-ethoxyethanol							
b) 2-methoxyethanol							
c) PGME							
Hydrogen chloride	4.1	0.0132		20.00		0.04	
Manganese	0.0	0.0000		0.05		0.05	
Methylene chloride*	1.1	0.0036	7000	20.00	0.00	0.01	1.0E-07
Methyl ethyl ketone*	0.4	0.0014	30000	1000.00	0.00	0.00	
Methyl isobutyl ketone	88.7	0.2888		80.00		0.22	
Toulene*	8.1	0.0263	3000	400.00	0.03	0.00	
Xylene*	147.5	0.4805	1000		1.53		
sum	296.9						
Total Proportion of HAP emissions		0.97	0.60	0.42			
Total Proportion of VOC emissions		0.09	0.05	0.04			
This table shows the impact of existing site emissions immediately off-site, given the emission estimates provided by Andersen in their 1993 permit application.							
*The one hour hazard index is adjusted to reflect emissions when paint line is actually running, assumed to be 16 hrs/day, 250 days/yr (multiply annual emissions by 2.19).							

US EPA ARCHIVE DOCUMENT

existing 11-24-95 actual

Existing plant maximum impacts, using actual emissions listed in permit application and estimates provided by Andersen 11/24/95							
Impact							
1 hr	82,748	ug/m3	190 deg, 200 m		p. 20		
annual	3,454	ug/m3	320 deg, 200 m		p. 14		
Emissions			f pte				
HAPs	112.2	tons/year	0.006625				
VOCs	3444	tons/year					
Chemical		proportion	1 hr limit	annual limit	1 hr Haz.	annual	Cancer
	tons/yr	of HAPS	ug/m3	ug/m3	Index	Haz Index	Risk
Ethyl benzene	5.0	0.0446	10000	1000.00	0.01	0.01	
Formaldehyde	1.7	0.0152	60	0.80	0.14	0.43	4.5E-06
Glycol ethers	5.0	0.0446					
a) 2-ethoxyethanol							
b) 2-methoxyethanol							
c) PGME							
Hydrogen chloride	4.1	0.0362		20.00		0.04	
Manganese	0.0	0.0001		0.05		0.06	
Methylene chloride*	0.0	0.0000	7000	20.00	0.00	0.00	1.0E-07
Methyl ethyl ketone*	0.4	0.0038	30000	1000.00	0.00	0.00	
Methyl isobutyl ketone	48.5	0.4322		80.00		0.12	
Toulene*	5.0	0.0446	3000	400.00	0.02	0.00	
Xylene*	42.5	0.3788	1000		0.45		
sum	112.2						
Total Proportion of HAP emissions		1.00	0.49	0.58			
Total Proportion of VOC emissions		0.03	0.02	0.02			
This table shows the impact of existing site emissions immediately off-site. It included recent reductions reported by Andersen.							
*The one hour hazard index is adjusted to reflect emissions when paint line is actually running, assumed to be 16 hrs/day, 250 days/yr (multiply annual emissions by 2.19).							

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Meeting Record
Project XL
Andersen Corporation
Community Advisory Committee

February 10, 1998
Bayport, Minnesota Library

Members Present: Wally Abrahamson, Washington County commissioner; Dr. Ian Greaves, U of M School of Public Health/Baytown Twp, resident; Jim Kellison, Stillwater Chamber of Commerce; Bill Klein, Baytown Township resident; Jim Menard, Bayport City Council member; Jody Miranda, First State Bank of Bayport; Ron Van Zee, Bayport resident; Susan Wallace, Andersen employee; Carol Wiessner, Minnesota Center for Environmental Advocacy.

Members Absent: Greg St. Claire, Baytown Township,

Regulatory Agency Representatives: Peggy Bartz, Minnesota Pollution Control Agency; Brian Barwick, Region V, U. S. Environmental Protection Agency; Brad Beeson, Region V, EPA; Nancy Birnbaum, Headquarters, EPA; Cynthia Hollerbach, MPCA; Margaret McCourtney, MPCA; Kari Palmer, MPCA; Denise Reape, Region V, EPA; Rachel Rhinehart, Region V, EPA; Andrew Ronchak, MPCA; Daniel Tatulski, Region V, EPA,

Guests: Don Erickson, Bay West, Inc.; Nancy McLellan, Bayport resident; Gayle Momchilovich, citizen; Dave Nelson, Bayport resident; Ken Podpeskar, Oppenheimer Wolff and Donnelly.

Support Staff: Jon Bloomberg, Oppenheimer, Wolff and Donnelly, Kirk Hogberg, Andersen; Richard Fowler, Andersen, Libby Johnston, Andersen; Tom Vandervoort, facilitator.

Libby Johnston started the meeting by welcoming Community Advisory Committee members and guests. Libby reviewed the evening's agenda and asked CAC members and guests to introduce themselves. It was announced that Russ Kirby of Lakeland had called and said he would no longer be able to participate in the CAC due to other commitments. Because of the broad representation currently on the CAC, Kirby will not be replaced.

Upcoming CAC meetings were confirmed for Thursday, March 5, 1999 and Tuesday, March 24, 1998. A request for committee members to name alternates was made. In the ensuing discussion, it was pointed out that it will be somewhat difficult for alternates to be completely up-to-date on committee considerations due to the fact they will not have

participated in all committee meetings. The consensus of the committee was that the appointment of alternates would be optional and that members unable to attend meetings would be able to be briefed by support staff. Four CAC members designated alternates to represent them.

John Bloomberg reported that the Andersen Project XL Proposal was finally submitted to EPA on January 30, 1998. Comments from CAC member Carol Wiessner

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were taken into account in the submission. Copies of the proposal as submitted were mailed to committee members immediately after the meeting.

Jon and Brian Barwick of EPA updated committee members on the process to followed in considering Andersen's XL proposal submission. That process includes EPA doing an initial review of the proposal and returning technical questions on the document for response by Andersen. That portion of the process is likely to be accomplished in the coming weeks.

After Andersen responds to questions, EPA will make a decision on admitting the Andersen proposal to the XL program. If admitted, negotiations will take place over a period of some months which will, hopefully, result in a Final Project Agreement and XL Permit. In the dialogue with committee members, the importance of the CAC having the opportunity to review and provide meaningful input to the Andersen proposal throughout the admission and negotiation process was emphasized.

A continuation of briefings and dialogue on the Air Section of the Andersen XL proposal took up most of the meeting. A review of the February 10 Criteria Air Pollutant discussion was accomplished with a variety of committee questions being answered including ones focused on PTE or Potential To Emit, particulate matter emissions and filter systems.

Kirk Hogberg conducted a detailed briefing on the Hazardous Air Pollutants or HAPs portion of the Air Section of the Andersen XL Proposal. In the course of the briefing, committee members and guests asked a variety of questions about specific constituents, emission levels, exposure risks, testing and results.

Daniel Tatulski of Region V, EPA addressed questions about wood treatment emissions raised by Jim Menard in the last CAC meeting.

7:00 p.m., Thursday, March 5, 1998 was designated as the time for the next Andersen Community Advisory Committee meeting. The meeting will again take place at the Bayport Library. Air briefings will be recapped and briefings on the Waste Section of the Andersen Proposal will be started.

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